

# LIBRARY RESOURCES AND TECHNICAL SERVICES

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# Marie Louise Prebost

## 1876-1961

Marie Louise Prebost died September 25 at Elizabeth, New Jersey; and this Magazine lost its Honorary Editor, and its Editor lost her guardian spirit.

There is no need to comment on Miss Prebost's professional accomplishments—there is a trail of them in the literature, and her niche is well established in the history. She said of herself at the time she received the Margaret Mann Citation in 1952: "Having been born in . . . the same year as the ALA, it may have been in the stars that I should be a librarian; and having been graduated in the year of the *ALA List of Subject Headings*, what more proper for me than to be a cataloger? I have never regretted getting immersed in our techniques."

But our concern here is the Magazine's debt to her. Without her, quite literally, there would have been no *Journal of Cataloging and Classification*; and without the *JCC*, there would undoubtedly have been no *LRTS*. Paul Dunkin has told something (*JCC*, 8:104-108) about the years during which she battled indifference, opposition, reluctance, skepticism, even a war, before she achieved, in 1948, approval to start a cataloging quarterly. At no time did she doubt its eventuality; at no time did she fail to believe in its potential value. Although she would have made a lively editor and was urged to take the position, she modestly doubted her own "suitability" and refused. But her continued enthusiasm and backing for the struggling infant were always complete even though never dictatorial nor interfering.

I feel this loss personally. I did not know Marie Louise until after my appointment as Editor, but that was soon remedied. Until her sight failed her, she stood four-square behind me, intensely loyal and devoted even to me as a person because she felt I was nursing her baby. Each issue brought a letter of analysis, warm praise for the right moves, warm dressings-down for the bad ones. As I worked, I would find myself thinking, "Marie Louise will like this" or "Marie Louise won't like this!" Sure enough, she did (or didn't) and, sure enough, she was usually right. Her withdrawal from these activities the last few years has left an emptiness which is now here to stay.

It's a grayer world today without this warm, keen, and big-spirited woman.

—ESTHER PIERCY

# A Proposal for a National Code Number System for Current Publications

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and

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DURING THE LAST FEW YEARS a great deal of time, money, and effort have been expended in various ways to develop methods to control the ever-expanding problem of the publishing market. Publishers are faced with increasing lists; jobbers and book-sellers are attempting to locate, buy, and sell a fantastic variety of different publications; and libraries must identify and purchase this vast array of material. The need of libraries to identify these publications and quickly incorporate them into the collections has led to such studies as the Cataloging-in-Source experiment by the Library of Congress and cooperative arrangements between the Library of Congress and *Publishers' Weekly* and also the *American Book Publishing Record* to list books under the standard library entries. Publishers, themselves, to simplify their internal procedures, have gone into electronic machine record keeping, making it necessary to assign a code number to identify each title.

Last year the Business Methods Committee of the American Book Publishers Council, in reviewing this developing practice, suggested that it would be valuable for some one to survey the matter on an industry-wide basis to see whether it might be feasible to interrelate these code numbers so that a uniform national numbering system could be designed. Because it was obvious that such coordination would be of benefit not only to the publishing world but to librarians as well, it was deemed desirable that the library profession be represented at the initial stages of the project in order to insure that its needs would be taken into consideration in any developments. For this reason the American Library Association took the initiative and requested a grant from the Council on Library Resources for the purpose of conducting a feasibility study. After due consideration, the Council approved the grant, and the writers were invited to make the study.

In the course of the survey, several questions were continually raised, and answers to them are basic to a solution. First was the question as to the desirability of a code number for book identification to libraries, to jobbers, and to publishers; and second, the question as to the possibility of use of the Library of Congress catalog card number as the identifying number.

A third question which had to be answered in connection with any system proposed *de novo* was the relationship of any new numbering system to the numbers already assigned by many publishers to their own publications.

Let us consider these questions seriatim:

### *Libraries*

One of the principal advantages for libraries of a book code numbering system is in the realm of book ordering and acquisition. Assuming that the code number will become an integral part of the bibliographical description of a book, it will be easier and more efficient to order books by number than it is by author and title. Using a numerical code in the ordering techniques will reduce clerical costs. Moreover, it should result in faster and more accurate service from publishers and jobbers. Ordering by number is not a new routine for libraries. LC cards have been ordered by number for decades with very satisfactory results. Some libraries, too, have been ordering music records by number, and in the school library field it is not uncommon to order books by number.

If a standard code numbering scheme is adopted, only the number of the book will need to be written or typed on the order slip. It may be, in order to insure a high degree of accuracy, that it will be desirable to add the last name of the author as well. Ordering books by number will, of course, require procedural changes in the present standard order department operations. But a proposed printed index by code number will facilitate locating an item when only the author and title are given.

In addition to expediting the acquisition process, a code numbering system has other uses. It can, for example, be an effective instrument for identifying hard-to-find titles where the author entry is obscure. It can also be very useful in distinguishing editions. It has potential uses in the realm of bibliography and reference, particularly in the area of retrospective bibliography.

In the new and expanding field of electronic storage and retrieval of information, a national code number has great possibilities. Technologists predict that very soon it will be feasible to carry large libraries of information, including the contents of books, in one-line digital computer storage.<sup>1</sup> If this comes to pass, books will have to be identifiable by code number for rapid retrieval.

As in the case of other innovations, as time passes new uses will no doubt be found for the code number. For comprehensive bibliographic control, a numerical scheme of identification holds much greater promise than an author and title approach.

### *Jobbers*

With regard to the general wholesaler of books, it appears that there are different requirements depending on the size and nature of the jobber.

<sup>1</sup> *Wilson Library Bulletin*, 35:82. October 1960.

In the case of a small jobber dealing with a relatively limited number of customers, the advantage of specific identification of the item required is great, though, of course, small jobbers could hardly afford to use automatic equipment which would require a code numbering system. At the other end of the line, large jobbers have a distinct problem in keeping up with a great number of titles supplied to a great number of customers from an immense field of publications. From many discussions, the writers of this report have discovered that there is not only great interest in the use of code numbers, but that it is probable that if jobbers are to continue in business in the future, it will be necessary to mechanize procedures and adopt a numbering system for stock control. Only so will it be possible to maintain efficient and profitable operations.

There are certain technical problems, however, which require additional study. Nevertheless, the writers of this report are satisfied that, with the great amount of data-processing equipment available and the demonstrated ingenuity of its purveyors, these problems will be solved in a satisfactory fashion.

### *Publishers*

In the past two decades most of the major book publishers of America have installed electronic data processing equipment for their business operations such as billing, sales analysis, inventory control, royalty accounting, order filling, and kindred activities. The pivotal mechanism in all of these processes is the punched card, the use of which has necessitated a code number to identify each individual title handled. Thus a number, and not the name of the author, has become the key to the commercial routines of a publishing house.

In reply to a questionnaire which was mailed to the members of the American Book Publishers Council, American Textbook Publishers Institute, and the Association of American University Presses, 113 replies were received. The following results were obtained:

- |  |        |       |
|--|--------|-------|
| 1. Do you use numbers to identify books published by you in any of your internal or external operations? | 63 yes | 40 no |
| 2. Do you use electronic or other data-processing equipment, such as IBM, in record keeping?             | 53 yes | 50 no |
| 3. Is a number required by this equipment?   | 50 yes | 3 no  |
| 4. To what purposes do you put the number?   |        |       |
| a. For handling the books in all internal operations?  | 40 yes | 23 no |
| b. For stock layout in the warehouse?  | 32 yes | 31 no |
| c. For stock control?  | 51 yes | 12 no |
| d. For royalty payments?   | 46 yes | 17 no |
| e. For sales analysis?   | 49 yes | 14 no |
| 5. Do your publications themselves, blurbs, or catalogs carry this number anywhere?                      | 31 yes | 32 no |

Until recently the code number assigned to a title has been purely a private matter for each publisher. To be sure the code number appeared

on invoices; but aside from this, the number had no special significance for the book-buying world or the user of books. In the past few years, however, the code number has assumed a greater degree of relevance because of certain practices adopted by the publishers. Some publishers started to print the code number in their catalogs and announcements, and later it began to appear in the books as well. In the case of at least one important publisher, the number is carried on the spine of the jacket, on the verso of the title page, and on the back cover of the book.

It was not without some opposition that the publishers adopted this innovation. First to object were the designers who claimed it would mar the typographical appearance of the book. Next, the salesmen objected that the code number, if printed on the spine, might be confused with the library classification number. Finally, the editors argued that books are extensions of a personality, not ordinary pieces of merchandise to which a serial number could be attached. But the advantages of economical data processing were convincing.

At this point, let us examine in more detail how publishers typically employ the code number. As soon as a book is placed into production, a code number is designated to identify the title. The number is generally assigned by the accounting department. There appear to be several types of numbering systems used. Some publishers utilize a numerical-alphabetical system in which five digits are employed, thus accommodating 99,999 numbers. By allowing proper gaps in the sequence of numbers, it is possible to design a numerical scheme and retain an alphabetical arrangement as well. Other publishers use a numbering system based on category of materials, e.g. 1-1000 is assigned to trade books; a second block, 1001-2000, is assigned to text books, and so on until provision is made for all necessary categories. Some publishers have no planned scheme of designation, with titles merely numbered in the order in which they are published.

When an order for books is received, the first step is to pull a pre-punched card from the customer file which is referred to as the "header" card. Into this card has been punched the name and address of vendee, credit rating, amount of discount applicable, and special shipping and handling instructions. Then the pre-punched cards for the individual titles that have been ordered are pulled. These are maintained in an alphabetical file by author, with the code number, price, and other information previously punched into the cards. After the quantity of each title ordered has been punched into the cards, they are run through a machine which computes the discount and extends the totals for each item ordered. If the order is large, the cards may possibly be run through a sorter and arranged numerically or alphabetically as desired. The cards are now ready to be inserted into the tabulator or printer.

Invoices are printed automatically by the tabulator from the punched cards fed into the machine. These are printed in the requisite number of copies by the use of carbon sheets together with a packing memorandum and shipping label which is printed simultaneously. The invoices are

separated and routed to the proper operating units, and the packing memorandum and shipping label are sent to the warehouse promptly so that the order may be filled.

In the warehouses of an increasing number of publishers the code number has become an important tool for handling books. Titles are arranged numerically by code number both in the open stock bins and in the reserve stock areas. Orders are filled from a packing memorandum or a copy of the invoice on which the items have been listed numerically to correspond with the numerical arrangement of the stock.

After the orders have been filled, the punched cards are preserved and become the source of whatever additional data processing is necessary. Here, too, the code number plays a vital role. In the area of sales analysis, electronic equipment makes possible a variety of reports, breaking down sales by title, by category (i.e. adult, juvenile), by vendee, by geographical area, by salesmen, etc. For inventory purposes the punched cards provide the data to maintain an effective control of each title on a daily, weekly, or monthly basis. Royalty accounting has also been simplified through the use of the punched cards, particularly where the royalty varies according to the rate of discount offered the vendee.

It is clear from all of this that code numbers for books are here to stay because modern business conditions make the use of electronic equipment imperative. Since the major publishers of the country are already using coding schemes of their own, it would not appear to be a great hardship on them to have the various individual systems coordinated into a uniform pattern. A national code system should be advantageous to the publishing industry because it would help to identify titles more readily and clearly and thus speed up the book distribution processes.

#### *The Library of Congress Card Number*

As is generally known, the Library of Congress Card Division presently assigns numbers to a majority of the books published in this country prior to their publication. Last year, 2374 publishers requested preassigned numbers, and over 12,500 numbers were assigned during the first 11 months. Such a number may be obtained from the Library of Congress Card Division by letter, by telegram, or by telephone and is the number which will be used to identify the printed catalog card produced later and made available to libraries throughout the world by the Card Division. It is by this number that the specific card is stocked, identified, and supplied.

It has been suggested that since numbers of this series are available for a vast number of publications going back over the last 60 years, this number itself could be used as the identifying number in a national code. The number (e.g., 60-20162) is composed of a two-digit unit indicating the year of cataloging by the Library of Congress and up to a five-digit number assigned to the specific publication within that year. The insertion between these two elements of a publisher's number or code, or the breakdown of the second unit of the number by publisher, so that in fact blocks of numbers might be assigned to individual publishers, would thus pro-

duce a national coding system identical with the Library of Congress card number system and allow double use of the number.

This system is objected to from various sources on various grounds. First, catalogers have pointed out that the existence of this card number indicates the availability of a card from the Library of Congress. If the number were indistinguishable from the national code number for the book, there would be no sure indication that the Library of Congress had or would produce a card.

The most unanswerable objection to this system, however, comes from the Library of Congress itself. Presently, as numbers are assigned, the next number in series is used, regardless of publisher. As these numbers are assigned relatively near to publication date, the books are published in a sequence relatively close to that of the serial number assigned. As a result, cataloging is done in a similar sequence, relatively, and the cards are produced and taken to the stock room in this order. There is thus only a small problem in leaving space to interfile the card stock for books whose cards have not yet been produced. If blocks of numbers were assigned on an industry-wide basis (perhaps corresponding to the alphabetical arrangement of publishers), with the first few cards published the ultimate space expected to be used during the year would have to be blocked out and gaps left for interfiling. This space is *not* presently available at the Library of Congress. Under the present program, as space becomes tighter, back year files of cards are weeded and cut down to allow more room for the current year. It is the opinion of the Library of Congress that the amount of shifting to allow for interfiling on a block assignment system would be so great as to be impossible of accomplishment in the present space and with the present staff.

After careful study and much discussion of the above problem, it appears to the investigators that, although this was an integral part of the original idea, these are cogent reasons for the present of leaving out of the question the integration of a national code numbering system with the Library of Congress card numbering system. It appears to the investigators, however, that in the future, if a national code system for publication is adopted, it would be to the great advantage of the country at large and to the Library of Congress to shift to this system for the identification of their cards, especially when space becomes available to the Card Division.

#### *Proposal for a National Code Number System*

In the light of the information gained and opinions expressed throughout the country concerning a national code system, the investigators believe that a national code system has great merit and should be adopted. Since no code number system is presently available which could be used for this purpose, it is necessary to devise a system which would serve the purpose. The following is therefore proposed.

The questions concerning a new code numbering system may be divided as follows:

1. The actual design or organization of the code.

2. The assignment of the individual portions of the code.
3. The availability of information on code numbers.

It is proposed that the organization of this code be as follows: three units, comprising a two digit numerical unit, a three-letter alphabetic unit and a five-digit numerical unit, representing respectively the year of publication, the publisher, and the specific title in the publisher's stock.

The year of publication should probably be that of the year of copyright. This would distinguish new editions from old editions even though published by the same publisher and would not lead to confusion between printings because these are bibliographically identical units. It is, of course, true that some publishers are hesitant to make too great a point of the year of copyright of publications which they are presently reprinting and releasing. This information is, however, usually available in small print on the back of the title page, in the same position that the code number might be found. It would therefore seem to be an innocuous comment on the age of the publication itself and would nevertheless be of advantage in distinguishing between publications, in allowing the re-use of the second and third elements of the code, and in bibliographic work in identifying the age of the publication itself.

The second unit of code, a three-letter unit, would indicate the publisher. Preference is given to a three-letter unit rather than a three-digit number for several reasons: a three-letter code would allow for the assignment of 17,576 different codes as compared to the possible 999 if one uses numbers. It has not appeared more difficult to use letters than numbers in the standard IBM or similar data processing equipment. It would, further, break up the 10 figure code and facilitate handling.

The third element of the code, a four or five-digit number, might be any number the publisher cared to assign to his title and would probably be the only number with which the publisher would concern itself. A five-digit number, allowing 99,999 different titles, has proved to be sufficiently large for even the largest publishers to leave numbers between titles for subsequent interfiling of later published books. Although publishers assign such numbers to their publications now and use the same number year after year, they expect to reuse the number after a while, and this would be made possible by the year prefix in the national code system.

As has been indicated above, the first and third units of the code, the year of copyright and the specific title number, would be determined by the publisher. The publisher is in a position to know the year of copyright of the book and can thus establish the prefix. He would have a free hand in the assignment of the five-digit title number so that it would correspond to any series that he has already set up or which he might care to arrange in a specific pattern. Moreover, the latter is the only number with which he need concern himself internally. The publisher's code, the middle unit of the overall code number, should be assigned by a central office. In considering who should be invested with the responsibility, three organizations come to mind: American Book Publishers Council; *Publishers' Weekly*; or the Library of Congress. To the ABPC, it might be objected

that not all publishers are members and that, actually, from the standpoint of numbers, only a relatively small group of publishers are affiliated with it. To *Publishers' Weekly*, it might be objected that although it has broad publishing interests, its contacts are also principally with a limited number of publishers, and it is a commercial firm. This leaves the Library of Congress as the agency that is best suited for this assignment. Though closely related to the world of books, it is not part of the publishing industry and therefore can be expected to discharge this responsibility in an impartial manner. It seems that the Library of Congress is eminently suited for the task for other reasons. Through its "Pre-assigned Numbering Program" and the "All the Books Program," it has won the cooperation of over 2300 publishers, demonstrating its ability to maintain an effective liaison with the publishers of America. Finally, it operates the Copyright Office which is still another link with the totality of the publishing output of this country.

Some publishers have objected that adding the ten digits of this code to the other information they need on the punched cards would strain or exceed the capacity of the card. This indicates a misunderstanding of the proposal. The publisher would use *only the final five digits*—the year of copyright and his own letter code being of no interest to him—and these five digits would be the same ones he is already using for bookkeeping operations. There would be *no* additional burden placed on the capacity of the data processing equipment.

It is obvious that the code number should be available in connection with the title at the earliest possible date. Under a national system, publishers should attempt to assign a definite code number to titles to be published by them as soon as any information on the title is released to the general public. Although it may be difficult at times to determine exactly the year of copyright, particularly in the case of books to be published in the period of November to February, assignment of a definite number should not be held up on this account.

Maximum use of code numbers will be possible only if they are made an integral part of the book itself. The code number should appear on the title page or its verso, but preferably on the former. For the convenience of publishers and jobbers, it would also be desirable to have the number printed on the dust jacket and on the spine or back of the book. Its appearance on the title page would require its incorporation into the bibliographical description of the book and the code number would therefore appear in the "Weekly Record" of *Publishers' Weekly*, the *Cumulative Book Index*, and in all other standard bibliographies and listings, as well as on Library of Congress catalog cards.

The use of code numbers for books would require that provisions be made for a printed index, arranged by code number. This will make it possible to determine quickly what title a specific number represents and would operate as a cross-reference from code number to author and title. With respect to this aspect of the problem, *Publishers' Weekly* could provide the publishing world with such an index.

### *Summary and Recommendations*

The survey that has been made indicates a genuine interest in this proposal on many fronts. Since most, if not all, of the large publishers have already adopted numbering systems of their own for their titles, it is desirable that these individual schemes be integrated into a uniform pattern on an industry-wide basis along the lines indicated in the body of this paper. It is therefore recommended that:

1. The national code number consist of three units, namely: a two digit numerical unit to designate the year of publication, a three letter alphabetical unit to designate the publisher, and a five digit numerical unit to represent the specific title.
2. The Library of Congress be requested to operate as a clearing house for the assignment of the publishers' code letters. This would be an extension as well as an aid to the LC "All-the-Books" program.
3. This proposal be inaugurated at once. It is not essential that there be 100% publishers' participation at the start for the scheme to function. Medium-size and small publishers can adopt the code at their convenience.

Finally it is urged that a national code number system for current publications will prove beneficial, not only to the publishing industry, but also to book jobbers, booksellers, libraries, and book users as well.

(A limited number of copies of the final report on this project is available upon request by writing to the Office of the Executive Secretary, Resources & Technical Services Division, American Library Association.)

### *CODE REVISION*

"The draft of the new American [cataloging] code, the work of Seymour Lubetzky, is a trail-blazing act. In the recent history of cataloging rules there is not another work which had dared to break away so decisively, not only from predecessors and tradition, but also from prevailing usages, nor one which represented such a vaulting advance over governing practice."

The above is a translation of a paragraph from "Die Korporative Verfasserschaft," by Akos Domanovsky, Associate Director of the University Library in Budapest. The article appeared in *Libri*, 11:129, 1961.

### *BRITISH TECHNOLOGY INDEX*

Slated to begin publication this month is *British Technology Index, a Cumulative Index to British Technical Periodicals*. Published by The Library Association, Chaucer House, London, it is "intended initially to analyze about 400 titles, over one-third of which are not currently indexed or abstracted elsewhere." It is planned to appear in eleven monthly issues, excluding August, and a bound annual volume. The price is 15 guineas (\$50).

# Xerox Copyflo at Harvard University Library: A Study of the Costs and the Problems

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ALLEN B. VEANER, *Specialist  
for Document Reproduction  
Harvard University Library*

## *Introduction*

REVOLUTIONARY TECHNICAL ADVANCES within the past decade have completely changed the cost and the availability of copying services in nearly every major library. The impact of these new developments has made scholars and librarians cost conscious as never before, for at no previous time have so many processes competed for the claim to economical reproduction of vast bodies of research materials.

Among the several new methods of reproduction, Xerox Copyflo<sup>1</sup> is of particular interest and attraction because of its speed and independence from water and chemicals. Since its ready availability about five years ago, it has been championed as an exceedingly inexpensive means of gaining access via microfilm to collections obviously beyond the capacity of other reproduction processes. Consequent demand for low cost paper copies induced the Harvard University Library in the winter of 1959 to offer Xerox Copyflo service through the facilities of commercial firms. This article summarizes the experience of a large research library attempting to supply its users with paper prints of individual items required by scholars and the library; it should be carefully noted that its conclusions do *not* necessarily apply to large scale, edition-like operations with Xerox Copyflo, but pertain solely to problems arising from the demand for single copies of originals held in a library having vast retrospective holdings and from the special needs of researchers and scholars.

The Copyflo electrostatic printer manufactured by Xerox Corporation is capable of reproducing from negative microfilm more than 50 pages per minute of an ordinary-sized book.<sup>2</sup> This high speed and the relatively low cost of raw materials make the Copyflo an ideal machine for continuous, long-run commercial applications. How suitable is it for reproduction service in the research library? When the first Copyflo was installed in a laboratory whose chief customers were libraries, it was announced that paper copies of out-of-print books would be available for only \$.03 per page for ordinary paper and \$.035 per page for alpha cellulose paper.<sup>3</sup> Other material, it was stated, could be produced at correspondingly low prices. This figure of \$.03 or \$.035 has become an *idée fixe* in the minds of many individuals who believe that *any* book whatsoever can be reproduced at this fantastically low price. What the enthusiastic scholar or librarian often fails to consider are the assumptions behind

this price. The chief declared assumptions are: (1) that more than one Xerox copy of the book will be sold, and as a corollary, (2) it will be possible for Copyflo operators to absorb the cost of the required microfilming, or alternatively, (3) a suitable microfilm of the book already exists and has been paid for, and (4) the maximum page size is 6" by 9". The undeclared assumptions are: (1) there will be no special difficulty in microfilming the original; (2) films supplied by the customer will be of adequate technical quality to guarantee excellent, economical results; and (3) a sacrifice in delivery time may be required to accommodate certain conditions required for economical operation of the Copyflo machine.<sup>4</sup>

But hardly any of these assumptions suits the materials to be reproduced or those who need the reproductions. Nevertheless, enthusiasm rather than skepticism seems to have swept many library photographic departments and acquisitions branches; scholars certainly lost no time in reporting to each other the cheapness of Xerox prints. But were the prints really so cheap? It is the purpose of this report to indicate some of the cost factors of Xerox service in one library not having its own machine.

Several critical articles on Copyflo have already appeared.<sup>5-8</sup> While a number of important technical and administrative points are covered in them, none analyzes a custom document reproduction job, i.e., a single copy order. It is with the single copy to order that librarians and scholars are chiefly concerned, and this requirement is the one under investigation here.<sup>9</sup>

### *The Xerox Process for Books*

A book offers to the reader easy, rapid, parallel access to its contents. In microfilming, the content of the book is rearranged in serial form—a long strip of film similar to the ancient scroll, and with the attendant disadvantages of that format. The Copyflo machine transfers and magnifies the moving film images onto a moving strip of paper X times as long and wide as the film. X is the magnification ratio, which for 35 mm. films varies from 7 to 15 in ten fixed steps. So far, so simple; now one needs only to cut the scroll of paper, fold and bind to behold the recreated book. However, let us analyze in detail the steps from original book to copied book.

### *Microfilming for Xerox Reproduction*

Contrary to popular opinion, the initial microfilming operation is not a cheap means of reducing books—especially bad paper books—to permanent, miniature form. Commenting on the cost of microfilm, one expert states: "It is literally true that the raw materials of three feet of microfilm are still 'cheap,' but what goes into the production of those three feet is relatively expensive."<sup>10</sup> Let us see what some of those expenses might be for library owned originals:

1. Selection of items from the library collection to be microfilmed for Xerox reproduction.
2. Circulation and delivery of original (charging, page service, etc.)

3. Administration of records in the photographic department (writing the order, filing, invoicing, etc.)
4. Examination of original for condition, filming position, reduction.
5. Cost of repair or removal of binding.
6. Decision about half-tone illustrations which cannot be reproduced satisfactorily by Xerox.
7. Filming to specifications; processing, inspection, editing, and spooling of film.

In addition to these costs are the administrative costs of ordering Xerox copy, as described below.

For best results, the book must be microfilmed to certain technical specifications different from those employed for ordinary microfilming. The negative film images for Xerox must be less opaque than usual in order that the image areas will remain as transparent as possible to accommodate the Xerox process. This means that the best Xerox prints are made when the librarian knows in advance that the film is destined for Copyflo—otherwise, the film might be exposed and processed to a higher contrast, with consequent degradation of the possibilities for enlargement by Xerox. Many films brought to Harvard for Xerox reproduction exhibit wide variation in density; this defect, which can occur in any film, is the result of poor quality control. Such films cannot produce the best results with the Xerox process. Likewise, spliced segments of films of different densities cannot produce satisfactory prints, for Xerox Copyflo is a continuous process and requires films of even, constant density for optimum results.<sup>11</sup> Stains and dirt marks on the film tend to obliterate the text or reduce its legibility. For best results, each soiled film should first be cleaned on a film cleaning machine.

European library experience with Xerox Copyflo also emphasizes the need for careful adherence to xerographic filming standards:

Jedenfalls ist mit großer Sorgfalt darauf zu achten, daß die Verfilmung nur von solchen Stellen durchgeführt wird, die über die nötigen Voraussetzungen für einwandfreie Qualität und maßstabgerechte Anordnung der Aufnahmen verfügen, um sich Enttäuschungen und unnötige Mehrkosten zu ersparen.<sup>12</sup>

also

Mittlere Dichte mit einem Wert von 1—1,2 in der Schwärze, einwandfreie Klarheit der Abbildung zur Erzielung guter Kontrastwirkung und Lesbarkeit, flache Gradation besonders bei den in Helligkeit und Kontrastumfang meist schwankenden Titelvorlagen, exakte Anordnung der Vorlagen zur Aufnahme auf den Film, um unnötig breite Papierbahnen zu vermeiden und das maßgerechte Schneiden im Einzelzettel zu gewährleisten, möglichst große Abbildung und damit maximale Nutzung des Filmformats, um die höchstmögliche Zahl an Kopien per Meter Papierbahn zu erreichen.<sup>13</sup>

The Xerox process at present does not satisfactorily reproduce half-tones or photographs. These must be produced by conventional enlarging techniques. Reproduction of such illustrations by a separate additional process adds considerably to the cost of Xerox copying.

Originals which are stained, foxed, or whose ink has bled through the paper are particularly bad prospects for Xerox—yet these very types of originals are in great demand for reproduction! Another problem is created by “show through” of type where printing has been done on paper of insufficient opacity. Such originals require additional filming time, because backing sheets must be inserted behind each page to reduce this effect.

Films originating outside the library's own laboratory may or may not, therefore, be suitable for Xerox. Experience has demonstrated that film technique in some libraries both here and abroad is still very primitive; inferior films will produce Xerox prints of poor legibility, yet many of those films may contain the most valuable material.

Soiling and scratching of the film during handling by the Copyflo operators is not uncommon. Since much commercial film is a temporary intermediate—and is therefore not even produced to archival standards—no one usually cares what happens to it after enlargement, and it may be assumed that the operators do not distinguish library film from commercial film. One solution is to provide extra long (two to three feet) leaders and trailers to keep dirty fingers from the image areas. Alternatively, one may clean the films with a special apparatus. In either event, extra labor and materials are involved to preserve the archival character of library microfilms.

Frequently, a scholar wishes to have several books or pamphlets reproduced on the same Xerox order. As the formats and sizes of these books often vary considerably, they cannot always be successfully placed adjacent to each other on the same roll of film for reproduction to original size. For best results each requires its own optimum image placement, reduction ratio, reel, and leader and trailer; this is especially true if there is much variation in the size of the type, or if some uniformity is required for binding purposes. Each should be handled by the Copyflo as an individual roll—a further increase in setup cost, as well as a greater film production cost.

If a number of works of different sizes have already been filmed on one strip at the same reduction, the images will be of various sizes. In this instance, in order to determine the Xerox magnification ratio, the film will have to be put on rewinds or in a reader and inspected to find the largest image; this preliminary inspection of films originating outside the laboratory can be quite costly. The largest image will then determine the magnification ratio for the entire strip of film, since the magnification cannot be changed during a printing run. Some images might be inconveniently small on the Xerox copy in this case, but there is no remedy unless the purchaser wishes to buy silver enlargements of the smaller images or pay for additional Xerox work.

A particularly vexing problem would be a library-owned “tract reel” containing a number of different bibliographic units. Cutting out a section and then resplicing may not be possible or convenient; marking sections with tape or paper clips could damage the film.

If a positive film is submitted, a new negative must be made. While it is possible to operate the Copyflo from positive microfilm, the machine changeover is costly; therefore, most operators prefer to generate a new negative film. Some degradation of quality may be experienced as the Xerox copy will be removed one additional step from the original.

### *Size of Reproduced Copies*

The reduction should always be mentioned on the target for reproducing the image to its original size. But if the reduction was not exactly one of the ten fixed Copyflo magnification ratios, the book can never be reproduced to its original size. Also, if the page is not held a constant distance from the lens, the image size on the film will vary slightly as the thickness of the book builds up on one side and down on the other. Constant distance of the book from the lens is possible only with a book holder. Without a holder, the book also tends to shift up and down on the copy board which causes variations in the image position along the length of the film; this could necessitate the use of a smaller than desirable magnification ratio to keep the enlarged images from falling off the edge of the paper. However, even the book holder does not hold the book with perfect rigidity.

Paper stock influences the size of the reproduced copy. While the Copyflo will accommodate 12" paper, 11" is the maximum width of paper utilized by many commercial operators as their standard, because so much of their work is geared to  $8\frac{1}{2}'' \times 11''$  business documents. Hence they may be reluctant to stock 12" paper for small library jobs. It should also be remembered that even though 12" paper might be used, 11" is the maximum projected width of the image; hence there would be little advantage to a commercial laboratory using the larger paper. Depending on the filming position, it might occasionally be desirable to use  $8\frac{1}{2}''$  instead of 11" paper; and for card reproduction, 7- or 10-point card stock 5" or 6" wide would be required. Some people even might want copies on rag paper, or alpha cellulose instead of sulfite stock; and other applications would require 10" offset master stock. Since the machine can operate economically only on a continuous basis, few commercial operators would be willing to interrupt the more profitable continuous runs for the sake of several rolls of library film, each of which might involve the expense of wasting some machine running time, loading and unloading films, changing magnification, adjusting the lighting to suit the particular film, and possibly changing the paper stock. For library purposes it is obviously impossible to overcome this by splicing onto one roll a number of films, because each film usually requires a different magnification, and density variations would require differing light settings. Hence, library work tends to receive low priority and is done when the machine would ordinarily be idle.

### *Margins and Binding Problems*

Adequate instructions must always be given to commercial firms to assure correct lateral positioning of the Copyflo projector so that images

will be properly spaced for binding. Centering of the image is absolutely essential for the 2A position; otherwise the prints cannot be bound.

Cutting and trimming the printed roll requires a degree of precision that most commercial firms do not care to undertake. From one operator came prints often cut in completely arbitrary fashion. Sometimes the entire blank space between frames was left to one side, while the other side was trimmed right up to the text, making the whole useless for binding. Sometimes the blank spaces were cut out altogether.

At another operator's plant the standard cut was a trim up to the document's left margin. This cut is obviously aimed at trimming for filing commercial documents and is unbindable.

Those libraries which do their own microfilming should film a trimming mark so that it will appear between the finished prints as a guide for the trimmer. Harvard solved the trimming problem by taking its prints in roll form and having the cutting done in the Photographic Department. Arrangements were made to have the rolled prints delivered with the end of the book on the outside of the roll; in this way—and with the aid of a wooden dowel to hold the large roll—prints could be speedily cut and automatically collated with any ordinary paper trimmer.

Even though a film has the correct density, image placement, and reduction, it still may not be suitable for Xerox if there is too little or too much interframe spacing. In the 2B position, for instance,

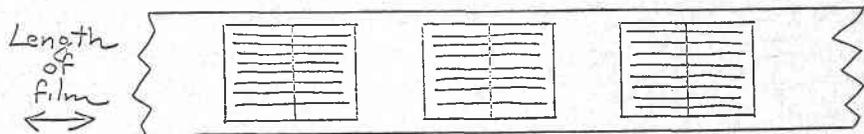


Figure 1

too little spacing means no binding margins; too much spacing means money wasted on blank paper in the enlargement. This spacing must be custom tailored to each book filmed. If a book has very wide margins, the spacing may be small; if there is very little margin (as might be the case with a rebound book), the interframe spacing has to be extended. In the 1B position, spacing can be arranged more readily, but care must be taken in trimming oriental materials to ensure leaving the binding stub on the correct side.

Users of Copyflo service sometimes request extra large margins on the Xerox copy. When a book is being republished or a manuscript is being edited, a copy which can be annotated, cut up, or scribbled on is often required. However, unless the user will settle for a much reduced image, extra margin space can be provided only in a limited number of places. For books filmed 2B and folded at the gutter, no extra space can be provided along the fore edge, since the text may run clear out to the fold:

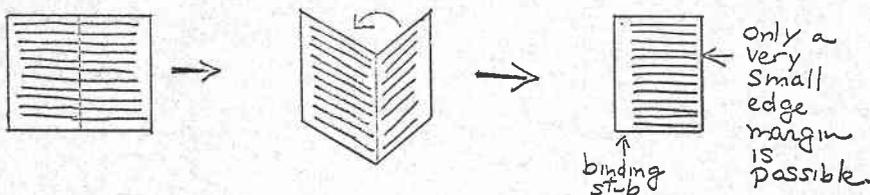


Figure 2

In case the text from facing pages disappears into the binding, the edge margins are reduced to zero, and the text is additionally difficult to decipher because of curvature of the original during filming.

One method of obtaining some extra margin next to the binding is to increase the spacing between the prints; this can be done only while the work is being filmed. This method *must* be employed to keep important marginal notes on the original from disappearing into the binding stub. Additional top and bottom margin may be gained by reducing the magnification, but this decreases the binding stub.

For materials filmed 2A, top and bottom margins can be supplied merely by adjusting the interframe spacing when the work is being microfilmed. There is little possibility of providing additional left and right margins. An extra half inch of binding margin is available if 12" paper is used instead of 11" paper to reproduce books filmed in position 2A; obviously this extra half inch is not going to be obtained from those commercial operators who stock only the 11" paper.

Duplex Xerography, recently introduced by a well-known firm, will solve many of the binding problems; however, its full utilization will call for stringent observation of filming standards. At present the method will work only for books filmed in position 2A.

### *Administering Copyflo Orders*

In order to keep track of the cost of Xerox Copyflo, fairly detailed records must be maintained. Films must be identified with the library's name to guard against loss or misplacement. In addition to order numbers for internal accounting, it is well to keep records of the number of prints purchased and to compute the footage of paper required. When computed paper footages are compared with invoices, one may find that additional payment has been requested for any paper leader and trailer (non-image area) consumed. It is advisable for the library to specify the magnification desired in order to avoid disappointments with the size of the finished prints. In estimating costs it is important to total the page count rather than rely on the last numbered page, since unnumbered pages, introductory matter, and plates often take up considerable space. If films are sent to an out-of-town Xerox laboratory, about 5% of the value of the order should be allowed for shipping and insurance.

With each film we record and send to the Xerox operator the following: (1) the Harvard order number, (2) density of film, (3) magnification

desired, (4) number of copies wanted, (5) film footage, (6) estimated footage of paper required, (7) the number of images on the film, and (8) the insurance value of the film. A record of this information is very useful if additional Xerox copies are ordered subsequently. Paper stock should also be specified. At Harvard, working copies are made on sulphite paper, while copies for the stacks are printed on permanent/durable book paper: library cards are reproduced on card stock when large quantities are involved. In the case of rare or valuable films, a positive microfilm security copy is made as protection against possible loss in transit. If the film is destined for the Master Film Collection, additional routing information is added. Below is an outline of steps required to administer three types of orders for Xerox Copyflo:

A. From a book filmed at Harvard

1. Prepare an estimate by (a) counting *all* pages, including the unnumbered pages, roman paging, etc., (b) measuring the page size, and (c) multiplying the total number of pages by the page rate for the size involved.
  2. Decide on the reduction and position to be used during filming, keeping in mind any binding stub required upon subsequent enlargement.
  3. Film the book at correct light setting to obtain a negative of optimum density for Xerox.
  4. Inspect processed film for bibliographic accuracy and technical quality.
  5. Select the most suitable or economical magnification to be used; this may or may not be the same as the reduction employed during filming.
  6. Measure the length of the film with film footage counter.
  7. Figure the paper footage by multiplying the magnification and the film footage.
  8. Compute insurance value of film.
  9. Specify grade of paper desired.
  10. Prepare order to operator.
  11. Pack and ship films.
  12. Unpack and cut rolled prints according to specifications.
- (Note: The above does not include internal paper work or searching and paging of volumes.)

B. From a film produced elsewhere:

1. Measure the footage of the film.
  2. Establish the number of frames or pages on the film; use to determine estimate if requested.
  3. Inspect film for technical quality.
  4. If the paper copy is for binding, determine the magnification which will allow for binding margins; if not, select a magnification which gives the best compromise between cost and size of copy.
- (a) Images of uniform size:
- (1) Measure the image with a ruler.

- (2) Compute magnification nearest to the ten available enlargement factors.
- (b) Images NOT of uniform size.
  - (1) Find the nearest image on the film.
  - (2) Repeat steps 1-2 above.
5. Repeat steps 7-12 above.

C. From a positive film.

1. Make a new negative.
2. Repeat above additional steps.

*Conclusions*

It is evident from the above that Xerox service purchased from a commercial firm on a relatively small scale and administered by a library photographic laboratory is a costly operation, especially if really satisfactory service is to be given. Normal management procedures in an educational institution would require the entirety of such work to be done by outside firms for reasons of economy, efficiency, and speed. However, since these objectives are difficult to achieve from any single firm, it may be argued that the research library has an obligation to scholarship to secure the best compromise in economical, efficient, and rapid Xerox service. If this assumption is correct, it follows that users must be prepared to pay the penalty of higher costs.

Nearly two years' experience with commercial Copyflo service demonstrates that it costs Harvard much more than \$.035 per book page to turn out single Xerox copies acceptable to a wide variety of requirements. A lowering of costs is unlikely since the Xerox Corporation has recently changed the basis of leasing the Copyflo so that the heavy users will face higher total charges. One firm which supplied service to Harvard stated that after July 1, 1960, its expenses on machine time alone would rise 120%. Harvard's use of Copyflo at this point is miniscule—we cannot even qualify as a "small" user. Only consolidation of the documentary reproduction of the entire University could justify the use of our own machine. This is an improbability in the decentralized structure of Harvard. For publishing lengthy runs of entire volumes the efficiency of the Copyflo machine is at present unchallenged, but its economy for the production of single copies is questionable; really low cost reproduction will depend on the future development of cheaper, simpler, and more automatic equipment.

We have now developed standard procedures for Xerox Copyflo. But the process is expensive.<sup>14</sup> Some recognize this fact: "Despite the obvious advantages of a process of printing in editions of one, experience has proved that the costs are relatively high due to the processes involved;"<sup>15</sup> and

Pour conclure, la xérophotographie, procédé de reproduction intéressant, peu onéreux, susceptible de rendre de grands services aux bibliothécaires, nécessite

l'emploi d'un appareillage coûteux que seules les grandes bibliothèques peuvent songer à se procurer, leurs besoins en reproductions assurant l'utilisation suffisante des machines et par conséquent la possibilité d'amortissement. Dans les autres cas, il est probablement préférable de recourir au travail à façon par des maisons commerciales spécialisées.<sup>16</sup>

Some do not, as is evidenced by the following statements: "It uses the Copyflo machine, which by a continuous Xerographic process enlarges from microfilm at a cost of *less* [my italics] than 3 cents per page."<sup>17</sup> "Possibly enough has been said here to show that a single machine of the Copyflo type could adequately deal with the loan demands on any large lending library. In addition, the process is a simple one and requires the minimum of skilled labour. This simplicity of electrostatic copying processes coupled with their intrinsic speed and cheapness must make their general introduction into all large scientific lending libraries merely a matter of time."<sup>18</sup>

Many of the statements about Xerox Copyflo, it must be surmised, have been made by persons who have had no working experience with the process. Some of these statements appear to be based upon the notion that the volume of Xerox work and its cost are in inverse proportion, a claim which while certainly true for business and commercial documents, hardly applies to library materials. This writer suspects that for library and scholarly reproduction, administrative costs increase faster than the machine service costs decrease with higher volume. This is readily understandable, for where collections are large and originals diverse, the very availability of copying service operates to increase the complexity of the demands upon it.<sup>19</sup> If this is true, it is questionable whether, given current costs, any private research library will find it possible to compete economically with a commercial operator whose large volume of work affords many significant savings.<sup>20</sup>

The fact is that the equipment used and the type of service rendered will be largely dependent on the character of the library's resources and on the needs of its clientele, rather than on the capacities or virtues of any one system of reproduction. Large libraries which supply memorandum copies of technical reports and current items from periodicals will very likely be able to make economical use of Xerox Copyflo, whether as an in-plant operation or by contractual service, whereas those libraries holding original research materials representing all variations in condition, size, age, and format must necessarily maintain more flexible reproduction facilities, since the reproductions will usually serve a different purpose.<sup>21</sup> An unfortunate but unavoidable consequence of such diversification is higher cost per unit of output.

Vernon D. Tate, Executive Secretary of the National Microfilm Association, has stated: "The time to prepare to use microfilm is before it is made."<sup>22</sup> Our experience with Xerox Copyflo harshly demonstrates the truth of this dictum. Without an adequate understanding of and preparation for new processes, the librarian is likely to get carried away by the

potentialities of improved technology. Failure to study the requirements of any new process can result in some very costly mistakes. In the past, because of low volume, much of the cost of these mistakes was invisible. But as document reproduction moves into high gear—as it surely will in the next few years—expenses will loom very large and the library administrator will be faced with the serious problem of how these costs are to be justified. Untold damage has been rendered by the notion that microfilm costs nothing; surely no one can say that Xerox Copyflo is excessively cheap. The fact is that at this moment reproduction of library materials is expensive; with that fact in mind, the librarian will be in a much better position to utilize present methods and evaluate newer techniques.

APPENDIX

Harvard's scale of charges for single copy Xerox Copyflo service is as follows:

Size of original page	If microfilm must be made	If microfilm is supplied
Up to (but not including) 8.5 × 11	\$ .10	\$ .08
8.5 × 11	\$ .15	\$ .12
Larger than 8.5 × 11, MSS., or material of unusual format	\$ .20	\$ .15

The minimum order is \$5.00; permanent/durable book paper is normally used.

The above scale is based on cost studies which show that where micro-filming is required, it costs Harvard about \$.15 to produce an 8.5 × 11 print; this includes all excess paper whether from wastage or for binding stubs. As in almost all reproduction work, some users thus pay a little more than cost, some a little less, since it is virtually impossible to cost each job individually. This straightforward price scale simplifies the preparation of estimates for the public; the office staff is also relieved of all technical calculations which are done by laboratory personnel.

REFERENCES

1. Xerox and Copyflo are registered trademarks of Xerox Corporation, formerly Haloid Xerox Inc., Rochester, N. Y.
2. Complete specifications for the Copyflo may be found in the Xerox Corporation's *Operating Manual for Xerox Copyflo 11 Continuous Printer*.
3. Power, Eugene. "O-P Books, A Library Breakthrough." *American Documentation*, 8:273-276, October, 1958.

4. Reports of excessive delays in delivery of Xerographic copies come from both sides of the Atlantic. Complaints from a British and an American librarian are published in *Library Association Record*, 62:198, June 1960, and 62:296, Sept. 1960.
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7. Striedl, Hans. *Der Xerographische Rollendruck als Bibliothekarisches Hilfsmittel*. Munchen, 1959.
8. Guéniot, Yvonne. "La Xérogaphie dans les bibliothèques." *Bulletin des Bibliothèques de France*, 6:201-213, Mai, 1961.
9. For reproduction of multiple copies some economies may be realized by generating paper offset masters on the Copyflo from films which meet proper specifications.
10. La Hood, Charles G. "Production and Uses of Microfilm in the Library of Congress Photoduplication Service." *Special Libraries*, 51:69, February, 1960.
11. Density is an index of the opacity of the dark portions of the negative. The useful density range for Xerox Copyflo is from 0.9 to 1.2.
12. Striedl, Hans. *Der Xerographische Rollendruck als Bibliothekarisches Hilfsmittel*. Munchen, 1959, p. 181.
13. *Ibid.*, p. 161.
14. Harvard's price per page for books up to (but not including)  $8\frac{1}{2}'' \times 11''$  is \$.10 per page including the cost of microfilming. In view of the fact that University Microfilms states that it can break even on five copies at \$.035 per page, the Harvard rate of \$.10 per page for one copy is very reasonable indeed. In this connection it will be useful to emphasize the three component charges in Xerox Copyflo: microphotography, printing, and binding. A clear exposition of these three costs may be found in Philip Ward's "Reprinting by Xerography," in *The Private Library*, 3:66-67, January, 1961.
15. Tomlinson, Norman. Communication in *Library Association Record*, 62:122-23, April, 1960.
16. Guéniot, Yvonne. "La Xérogaphie dans les Bibliothèques." *Bulletin des Bibliothèques de France*, 6:212, Mai, 1961.
17. Coblans, Herbert. "Documentation in the Second Half of the Twentieth Century." *Libri*, 10:23. 1960.
18. Hill, E. G. "Minimum Cost Document Reproduction in Large Lending Libraries." *Journal of Documentation*, 15:98, June, 1959.
19. A brief discussion of how unit costs rise disproportionately in large libraries and how improved services stimulate more and more demand for those services may be found in Keyes D. Metcalf's *Cooperation Among Maine Libraries*. Cambridge, Mass., 1961. p. 4-5.
20. An important principle of reproduction methodology may be emphasized here. Every continuous production apparatus demands serial cumulation of like operations—in this instance filming, processing, enlarging, trimming, binding, etc.—if the low unit cost inherent in continuous methods is to be realized. Every step type machine—the Xerox 914 is an example—which gives immediate copies at a higher unit cost forfeits its advantage of immediate delivery the moment it is used for high volume production. Inevitably the first method dictates a large work load, a centralized operation, and some delay in delivery. But the penalty of delay by the second method is the higher unit cost. Therefore in the absence of intermediate reproduction devices, each method must be used selectively to best advantage.
21. It must be remembered in this connection that the two government libraries using these machines (the Library of Congress and the National Library of Medicine) buy their apparatus and supplies at lower than commercial rates and that their Copyflo work is of a different character.
22. Tate, Vernon D. "Microreproduction." *Photo Methods for Industry*, Sept. 1959. p. 17.

# Library Experience with the Xerox<sup>1</sup> 914 Copier

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## *Introduction*

LIBRARIANS were among the first to take advantage of the electrostatic method of copying, which became available for general use about 1950. Following the initial breakthrough, the next significant development of this method was the Copyflo<sup>1</sup> Continuous Printer, in which the electrostatic process was completely automated. By inserting a roll of microfilm made from the original copy into the Copyflo, an enlarged reproduction could be produced on a ribbon of paper, which could then be folded and cut into pages and bound in book form. This was the first time that a book could be reproduced in substantially its original form in a single copy at a cost of only a few cents per page. A large scale reproduction of out-of-print books, requested by librarians, quickly followed the development of the Copyflo.

In 1960 there appeared another electrostatic copying device of great interest to librarians and others engaged in mass copying: the Xerox 914 Copier.<sup>2</sup> This model is a completely automatic, low cost, electrostatic office copier. Few libraries could afford the approximately \$950 monthly rental charge for the Copyflo, or the cost of a similar copier from another manufacturer. But the Xerox 914 is available at a monthly rental of \$95, based on a 2,000 copy use. If more than 2,000 copies per month are made, there is an additional charge of 3½ cents per copy. The machine is 45" long, 46" wide, 31" high, weighs 640 pounds, and can be operated from a seated position.

Because of the importance of automatic electrostatic copying to libraries, the experiences of several libraries with the Xerox 914 are described briefly in this article. Although a number of similar copiers are either in production or in development at this date,<sup>3</sup> the following description is limited to the Xerox 914, for which adequate experience could be reported at this time. I am indebted to the following libraries for reports: Library of Congress (Charles G. LaHood, Jr.), Harvard Medical Library (Catherine L. Binderup), and Chemical Abstracts Library (James L. Wood).

### *Capabilities*

The Xerox 914 is intended, and commonly used, for copying from flat sheets, bound books, and unbound material onto regular, untreated copy paper. The material to be copied is placed text down on a glass platen, the number of copies desired is dialed, and a button is pressed to put the machine in operation. The copies made on an untreated bond copy paper are delivered to the machine's copy receiving tray. Actual operation of the machine is so simple that no training is required. Harvard Medical Library allows library users to make their own copies or to have an operator make them. The speed of producing copies has been reported at four or five single exposures per minute, or about as fast as the operator can position the original. Multiple copies can be made at the rate of eight per minute.

The quality of the copies is very good; in fact, reports are that the copy from the 914 will be of more uniform blackness than an original that is lightly or unevenly printed or typed. Colored inks and colored papers are satisfactorily copied as black and white. However, halftones cannot be copied by the electrostatic process, since the necessary static electric charge will not hold over an extensive black area. Halftones may be almost unrecognizable in an electrostatic copy. Furthermore, copying is at a one-to-one ratio; the original cannot be enlarged or reduced. Because the copying surface is flat, there is a tendency to open bound volumes as much as possible, potentially harmful to the binding. However, this problem is less serious than it is on other copiers, since the Xerox 914 will copy the part of the text which does not contact the plate, although it will be slightly curved.

The copy paper is an untreated stock. The Xerox Corporation sells a 20 pound sulphite bond paper specially developed, manufactured, and cut for best results on the 914 Copier. However, any carefully cut and packaged bond paper may be used. Card stock, ledger stock, and paper offset masters may also be used, if they are not too thick. The 914 Copier's specifications limit the thickness of a sheet of in-put material to .006 inches. Provision is made on the machine for adjusting feeder tension and fuser temperature to accommodate different paper and card stocks. However, if the library plans to use light weight offset masters, card stock, or ledger stock as in-put material, the optimum weight of stock and settings for feeder and fuser should be worked out with the Xerox Corporation serviceman. This precaution may not only ensure trouble-free feeding but also prevent excessive wear on the printing drum.

The Library of Congress has tried to use the Xerox 914 to copy catalog cards. However, it was found that the feeder mechanism is not capable of handling stock of this weight (caliper thickness approximately .01 inch) with sufficiently close registration to produce good quality catalog cards.

### *Maintenance*

If the actual operation of the Xerox 914 is absurdly easy, the maintenance of the machine is not so simple. The manufacturer requires that

a key operator be designated by the library. This operator is thoroughly trained by a service man in the mechanical operation of the machine, so that he can instruct users, perform routine maintenance (replenish paper supply, clean the selenium-coated printing drum and other parts, replace the filter receptacle for excess toner), and correct simple difficulties (clear paper jams, adjust feeder tension or fuser setting). For the first few months of operation, paper jams and other problems are frequent. At least this has been the experience of the libraries reporting. As the local operator becomes familiar with the problem, and the machine is properly adjusted, paper jams and other breakdowns become less frequent. One library reports that it had 33 service calls during the first six months it used the Xerox 914. This is not difficult to understand when one remembers how complex this machine is. It contains many parts made on close tolerances, with complex electrical circuits and optical apparatus. A slight deviation from normal in any of these parts can cause the machine to operate improperly and require a service call. Breakdowns may put the machine out of operation from several hours to several days. In fairness, it should be pointed out that the reports of experiences all relate to the early months of development of the Xerox 914. The manufacturer has made improvements in its later models for easier, more foolproof operation. Recent models have an improved paper tray. They also have standard power requirements (115 volts, 30 amp.), instead of the special wiring formerly required. Another factor which caused long delays when a breakdown occurred was that needed printing drums and other replacement parts had to be ordered from the manufacturer's plant in Rochester, N. Y. This has now been largely corrected, with local distributors stocking most replacement parts. Some service calls can be avoided by the simple preventive maintenance of keeping the machine cleaned.

### *Location*

Location of the Xerox 914 within the library depends largely on the nature of its principal use. If it is to be used wholly or primarily in the library's internal operations, as it is at Chemical Abstracts, it will be housed in a room not open to the public. If, on the other hand, it is to be available to the library's readers, it ought to be in an accessible location. The Harvard Medical Library gave this copying service a high space priority and set up its Xerox 914 in the front corridor.<sup>4</sup> The operation is not quiet and should not be installed in a reading room or other location where silence is required. On the other hand, a small room may be heated uncomfortably by the fusing mechanism in the machine. The slight odor given off in the operation may also be somewhat objectionable in a small room, particularly one that is not well ventilated. The 914, like other electrostatic printing equipment, operates best where the humidity is controlled by an air conditioning unit.

### *Unit Costs*

Costs reported by the libraries are difficult to compare because of the

different volumes of work and different conditions under which copies are made. Mr. LaHood, after a careful analysis of cost and life of printing drum and supplies at The Library of Congress, arrives at a unit cost of 5.9 cents for the first 2,000 copies, and 4.65 cents for copies over 2,000 produced during the month. This figure includes machine rental and all supplies, but does not include labor or overhead. Thus, the unit cost, excluding labor and overhead, of producing 20,000 copies per month would be 4.78 cents; for 10,000 copies per month, it would be 4.9 cents.

Chemical Abstracts, using its 914 as production-line equipment, produces about 1,000 to 1,400 copies per day from issues of current journals. Based on a minimum of 1,000 copies per day, Chemical Abstracts states that its total cost per copy, including labor, machine rental, and supplies, is between five and six cents.

Contrasting conditions prevail at Harvard Medical Library. As noted above, its Xerox 914 Copier is placed where library patrons may make their own copies or have them made by an operator. Two operators are employed on split schedules, in order to give copying service from 7 a.m. to 10 p.m. While one of these operators must be available for service to the machine, it is possible that he can also perform other library work not related to the cost of this service. The charge to readers is five cents per copy. Payment is on the honor system, thus relieving the library of overhead costs of billing and mailing. Library staff members and other university administrative staff members are not charged for copies they need. Unit costs have not been estimated, but it is known that the charge of five cents does not cover the total cost. The cost of labor would necessarily be greater in this situation than in the production-line use at Chemical Abstracts. It is important to notice that the unit cost is a cost per copy and may include two pages of a small book or journal.

### *Summary*

In summary, early users of the Xerox 914 report that they are making copies of excellent quality, in some cases superior to the original document, at a cost of about five and one-half cents to seven and one-half cents per copy. If the use of the machine is production-line, *i.e.*, the operator uses the machine continuously throughout the day, the cost per copy is close to five cents. Where the use is intermittent throughout the day, the cost approaches the higher figure. Flat sheets, bound books, or unbound journals may be copied. Operation of the copier is so simple that untrained staff or library users may make their own copies. However, a key operator must be trained to maintain the machine, correct infrequent paper jams, and make simple adjustments. Up until the end of 1960, users have reported a difficult initial period of getting the machine properly adjusted and learning to keep it in operation. However, improvements have been made in later models, and replacement parts have been stocked locally, so that less breaking-in difficulties have been experienced in 1961. Because of the noise, heat, and odor of the machine (all of a low level, however), it should be housed either in an air conditioned, or well-venti-

lated workroom, or in an open public area where quiet is not essential. Any library producing more than 1,000 copies per month should investigate the Xerox 914.

#### REFERENCES

1. Xerox and Copyflo are registered trademarks of Xerox Corporation, formerly Haloid Xerox, Inc., of Rochester, New York.
2. 914 is a trademark of Xerox Corporation.
3. Veaner, Allen B. "Developments in Copying Methods: 1960." *Library Resources and Technical Services*, 5:120. Spring, 1961.
4. Harvard Medical Library reports that it has made some changes in its location and use of the 914 since its installation, but no changes that materially alter the general statements in this article.

## The Bibliographical Control of Microforms\*

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### *Preface*

THE PURPOSE OF THE present study, as stated in an early draft of the request for funds to the Council on Library Resources, has been "to develop with the cooperation of scholars, librarians, and the producers of microforms a comprehensive mechanism for bringing scholarly material in microform under bibliographic control. The specific and immediate project proposed is a study in consultation with a number of interested groups of the problems to be solved before such a mechanism can be evolved, and the preparation of a report identifying these problems and proposing tentative solutions."

It should be noted that this study is concerned only with the problems of the bibliographical control of materials which have been reproduced in microform. It is not concerned with such topics as the physical aspects of the various media and their reading devices, with evaluation of any of the large micropublishing projects, with consideration of what sort of material should be reproduced in microformat, or of the most appropriate medium of microreproduction for particular bibliographical forms (i.e., newspapers, periodicals, monographs, etc.). Further, attention has been devoted exclusively to those microforms which, so far as can be determined, are destined to be retained permanently in libraries or other comparable institutions.

The study has been carried out under the auspices of the Association of Research Libraries, with the advice and help of an advisory committee consisting of Herman Fussler, Director of Libraries, University of Chicago; Stanley Pargellis, Librarian, Newberry Library; and George A.

\* A report submitted to the Association of Research Libraries, June 1, 1961.

Schwegmann, Jr., Chief, Union Catalog Division, Library of Congress.\*\* Data and opinion have been gathered through visits and correspondence with individuals and interested corporate groups: (1) librarians, in public, academic and special libraries; (2) representatives of scholarly and professional associations, including the American Association of Law Libraries, the American Council of Learned Societies, the American Historical Association, the American Library Association, the American Theological Library Association, the Association of Research Libraries, the Modern Language Association of America, the National Microfilm Association, the Society of American Archivists, and the Special Libraries Association; (3) commercial producers of microforms, most notably the Microcard Corporation, the Microcard Foundation, the Readex Microprint Corporation, and University Microfilms; (4) bibliographical agencies which have been or may be involved in the bibliography of microforms, such as the Philadelphia Bibliographical Center and Union Library Catalogue, the National Union Catalog, the H. W. Wilson Company, and the R. R. Bowker Company.

The importance of the topic and the desire of all parties to achieve solutions of the many problems involved have been reflected in the courtesies extended to the author on every hand. Without exception, the welcome has been cordial and the data requested have been provided completely and promptly.

### *Introduction*

The problems involved in the bibliographical control of microforms grow out of three general considerations. *First*, microreproduction has become a medium of publication as well as a method of making copies. So far as libraries are concerned, at least, the problems derive not so much from the use of microreproduction to provide a single copy on demand as from the fact that books, serials, newspapers, and other types of materials are now being produced either originally and solely in microform or as simultaneous or later versions of a paper-copy original. Further, material published in microform presumably can be kept in print indefinitely. Beyond this, assuming sufficient demand or a sufficiently important demand, works which are no longer "in print" can be brought back into print, or, for that matter, corpora of manuscript material heretofore available only in single geographical locations can be put "in print" for wide distribution. *Second*, the life of a microform copy in many instances will be longer than the life of its paper counterpart. *Third*, the rapid development of the technology of microreproduction has made it relatively easy to make a microcopy of virtually any textual material.

In attempting to answer the questions and problems arising from these developments, the present report proceeds on the assumption that for

\*\* At its meeting in Cleveland on July 8, 1961, the ARL endorsed in principle the recommendations contained in the report as presented herewith. An advisory committee, consisting of Herman Fussler, George Schwegmann, Stanley Pargellis, and Gordon Williams, was directed to take the steps necessary to carry out the recommendations.

bibliographical purposes the intellectual content of a microform is more important than its physical format. It follows, then, that microforms should be listed and cataloged according to the same methods and the same criteria as those employed in successful attempts at bibliographical control of the traditional carriers of knowledge, insofar as possible. This is true of all microforms, whether they represent copies of previously-extant materials or materials first made available through the medium of microreproduction. The problems and methods of the bibliographical control of microforms are inextricably bound up with the problems and methods of bibliographical control in general.

For purposes of this report, three facets of the bibliographical control of microforms have been identified:

1. "internal bibliographical control of microforms," that is, the control provided by the bibliographic information included on the microform itself
2. "bibliothecal bibliographical control of microforms," that is, the measures employed in individual libraries to organize and catalog microforms
3. "external bibliographical control of microforms," that is, the control provided by bibliographies, lists, and other records of microforms.

#### *Internal Bibliographical Control of Microforms*

The necessity for adequate internal bibliographical controls for microreproductions, in the form of bibliographical identifications and targets placed at the beginning of the microreproduction, has long been recognized, and little more can be done here than to add to the exhortations of the past. The main reason for the lack of effective internal bibliographical controls has been the preparation of microreproductions by persons uninterested in or unaware of the information which should be included on the microcopy. The present study and other developments in this area, hopefully, have made most of the parties concerned more aware than before of the problem. The most important current development is the revision of the *ALA Guide to Microfilming Practices*, by the special Library Standards for Microfilm Committee of ALA, under the chairmanship of Peter Scott. This document, when completed, should provide a detailed guide for the preparation of scholarly microfilm and, by extension, of other microforms.

Because of the imminence of publication of the revised *Guide*, no attempt will be made in the present report to present detailed recommendations concerning the introductory information which should be placed on microforms. However, the following twelve items may be specified, of which the first five should always be given, the others only as necessary or appropriate: (1) macroscopic legend (a brief bibliographic citation, legible with the naked eye); (2) full bibliographic citation, prepared according to standard ALA and LC rules; (3) date and agency of filming, plus distributing agency, if different; (4) reduction ratio; (5) intended location of master negative; (6) contents or gaps; (7) location of

original material (in the case of rare books or other items which have been subjected at some time to a full bibliographical description); (8) an introduction to the material, containing background information concerning it, ideally prepared according to instructions such as those in *The Preparation of Records for Publication on Microfilm* of the National Archives (this ordinarily only for manuscript materials); (9) reference to a separate index or description of the material, published or unpublished; (10) any necessary statements concerning restriction on use of the reproduced material, literary rights, provenance, etc.; (11) the form of the microform (microfilm, microfiche, Microcard, etc.); and (12) image placement. (The last two items need be included only in those instances where it may be feasible or desirable to reproduce a copy of the introductory information to serve as a form reporting the existence of the microform to a central agency for bibliographical purposes, as discussed subsequently in this report.)

### *Bibliothecal Bibliographical Control of Microforms*

In the area of bibliothecal bibliographical control of microforms, that is, measures employed in individual libraries to organize and catalog microforms, three broad problem areas may be discerned: (1) to what extent are microforms to be cataloged; (2) how are they to be described as physical objects; and (3) how are they to be arranged.

EXTENT OF CATALOGING OF MICROFORMS. The economics of acquiring and cataloging library materials have been significantly changed by the advent of microforms as a major factor in library holdings. The relatively low cost and ease of acquiring individual titles and large bodies of materials have given new depth to the old problem of how thoroughly library collections should be cataloged. By and large, librarians have hitherto attempted to provide at least a main entry for each of the bibliographically-independent works (books, periodicals, etc.) in their collections, leaving unrecorded the bibliographically-dependent works (chapters in books, articles in periodicals, etc.). Now that it is possible for any library to secure microform copies of all of the titles listed in Evans's *American Bibliography*, the question arises—are the microform copies to be considered bibliographically independent, like their paper copy counterparts, or bibliographically dependent, in the sense that they may be identified by reference to the Evans bibliography?

With full recognition of the magnitude of the problem, it still must be asserted that decisions concerning the need for cataloging and the depth of cataloging should be based on the importance of the content of library materials (and, to a lesser degree, on the ease with which they may be located if they are not cataloged) rather than on their physical format. It is therefore essential that every effort be made to develop cooperative or centralized analytic cataloging for multiple-title micropublishing projects, of the sort provided by the University of Michigan Library for STC films. Even with a limited number of subscribers, this project has been successful and self-supporting over the years, at a cost to par-

ticipating libraries of only 50¢ per title. Most microform publishers are willing to expedite such projects if librarians are willing to undertake them. The logical agency to pursue these activities is the Subcommittee on Micropublishing Projects of the Committee on Resources of ALA.

**PHYSICAL DESCRIPTION OF MICROFORMS.** With regard to the physical description of microforms in library catalogs, two basic problems may be identified: first, how to relate the microform to the original work of which it is a copy and second, how much information concerning the physical form of the microform is necessary or desirable on the catalog card. In considering the first of these problems, it is convenient to identify two theories of the cataloging of microforms, which may be termed the "facsimile theory" and the "edition theory." The facsimile theory may be said to be primarily concerned with the intellectual content of the work, in that it considers all microforms to be reproductions of previously existing works, whether these works have been "published" or not, and is not concerned with whether the microform represents publication or is intended merely as a single copy. In describing the microform, it attempts first to describe the original, and then to add to this description the pertinent items for identifying the microform. The edition theory, on the other hand, is more concerned with the physical object. It draws a distinction between those microforms which may be called "editions," in the sense that several or many copies are produced, which are widely available, and those microforms which represent single copies. Further, in describing the microform, greater prominence is given to the physical format of the microform than that of the original of which it is a copy. The present Library of Congress *Rules for Descriptive Cataloging* at times follow the facsimile theory and at times the edition theory.

The examples on pp. 39-40 illustrate the differences between current LC practice in the descriptive cataloging of microforms and the practices to be employed if the facsimile theory were to be adopted in all cases. On the basis of these examples, several observations may be made. *First*, under the facsimile theory, any bibliographical entity once described need not be described again, except to add a brief note if some new physical form has been used. (Hopefully, this practice could be extended even to manuscript collections. Cards prepared for the National Union Catalog of Manuscript Collections might provide the basis for the description of microcopies of such collections.) *Second*, if desired, it would be possible for a library which had microfilmed an item from its previously-cataloged collection to limit the change on the catalog card to the call number. *Third*, the facsimile theory relegates to the last position on the catalog card information concerning the physical features of the item in hand. (This should not create problems in library catalogs, where the call number includes indication of the physical format of the item, but conceivably it could present problems in the bibliographical listing of microforms.) *Fourth*, the facsimile theory makes possible the wider use of LC cards in cataloging microreproductions, since the card for the original may be

easily used, with the addition of a note concerning the microform. *Fifth*, the edition theory gives greater prominence to the facts of publication of the microform. *Sixth*, the edition theory results in separating copies in a bibliography or a catalog which is based on date, such as the *National Union Catalog*.

*It is recommended that in the course of the present revision of Section 10 of the Rules for Descriptive Cataloging at the Library of Congress, serious consideration be given to an attempt to apply the facsimile theory in all details of the cataloging of microforms and that research libraries of the country follow this principle, so that uniformity of microform cataloging practices will be at least as great as that of book cataloging practices.*

In considering the information regarding the physical aspects of the microform which may be presented on the catalog card, it is possible to identify the following eleven items which should be considered for inclusion in any description of a microform: (1) the form of the microcopy, i.e., microtransparency, micro-opaque, reel or sheet form, etc.; (2) the number of pieces, if more than one; (3) whether the item is positive or negative; (4) width (of reel microfilm) or size (of items in sheet or card form); (5) location of the original paper copy (at least for rare or unusual items); (6) date and agent of filming; (7) location of master negative (if item in hand is a copy thereof); (8) reduction ratio; (9) image placement; (10) length (i.e., feet of film); and (11) density.

The decision as to how many of these items should be recorded on the catalog card must depend upon the purpose of that card. Strictly speaking, none of these items needs to be given in order to list or service the microform in the library, and if the microform has been properly made, most of these items will be recorded on the microform. If none of these items were included on the catalog card, it would be possible to use the same card to represent a microfilm prepared to replace a discarded cataloged book as that used for the book itself, by changing only the call number. However, if the catalog card prepared locally is intended to serve as the record or as the basis for the record of the item in a union catalog or union list (as discussed later in this report), obviously certain of these items need to be included. The present *Rules for Descriptive Cataloging* call for inclusion of the first seven items in this list, either directly in the rules or by example. *It is recommended that the Rules be rewritten so as to make explicit rather than implicit the inclusion on the catalog card of the first seven items in the list above.*

**METHODS OF ARRANGING MICROFORMS.** With regard to methods of arranging microforms in libraries, no single method will be recommended in this report, since this is primarily a policy question subject to varying decisions in different libraries, with many factors external to this report necessary of consideration. However, the major choices are presented below, for guidance in making the decision.

Leaving aside those works which are essentially self-cataloging or self-

indexing, such as U. S. government documents on Microprint, arranged in *Monthly Catalog* listing order, or the reproduction of titles from Evans arranged according to Evans number, the librarian may choose from among several degrees of subject arrangement of his microforms, depending upon the importance he attaches to classification. At least five degrees of subject classification of microforms may be distinguished: (1) no classification whatever, the microforms being arranged in accession or alphabetical order; (2) a broad classification based on the bibliographical form of the original work (book, serial, newspaper, manuscript, etc.); (3) representation in the classified shelf list, combined with accession order filing; (4) a broad subject classification, as for example the degree represented by the letter classes of the LC classification, supplemented by a running accession number within each class; and (5) complete classification, including shelving of microforms in classified order.

In deciding among these alternatives, it must be recognized that, as of the moment at least, browsing among microforms is not widely practiced. At the same time, however, if one is convinced that microforms should be treated as much like codex books as possible on the theory that both forms are designed to carry information, it is possible to make a stronger case for the subject classification of microforms, at least in a library which classifies its books by subject, than has traditionally appeared in the literature on the subject. It should also be kept in mind that while to date most library collections of microforms have been centralized, it is quite likely that eventually departmental or divisional libraries organized on a subject basis will be considered quite incomplete if they are limited to codex materials. A microform collection arranged at least in broad subject classes will permit the identification of materials on a subject basis much more readily than one arranged in accession order.

#### *External Bibliographical Control of Microforms*

The basic bibliographical needs of the scholar and the librarian may be expressed as (1) a record of published materials, (2) a record of available materials and, (3) a record of locations of materials. The structure of the "external" bibliographical control of microforms must take account of these needs, without ignoring the basic consideration that microreproductions of previously extant works constitute copies rather than editions and should therefore be listed and recorded in the same way and in the same place as the originals, insofar as possible.

**RECORD OF PUBLISHED MATERIALS.** To make our records of published materials as complete as possible, it is desirable that any microform which represents original publication, such as *Wildlife Disease* and Hanley's *Index to Rimes in American and English Poetry*, be listed in the bibliography appropriate for the particular bibliographical form involved. Thus, *Wildlife Disease* should be listed in *New Serial Titles*, and Hanley's *Index* should be listed in *Publishers' Weekly* and *Cumulative Book Index*.

*It is recommended that the Association of Research Libraries make vigorous representation to the publishers of such works and the compilers*

of the appropriate bibliographies that such titles be included in our basic bibliographical records.

**RECORD OF AVAILABLE MATERIALS.** A record of materials available in microform is needed by the librarian and the scholar in order to avoid duplication of filming and to make known what is available for reproduction of copies. To date, this need has been met in part by the *Union List of Microfilms* and by *Newspapers on Microfilm*, both of which locate master negative copies. However, the record has been incomplete, in that many libraries and other agencies have not reported to the compilers of these lists and the lists have not included materials issued in micro-opaque form for which a master negative exists.

*It is therefore recommended that a new bibliographical record be established, devoted to listing those titles for which a master negative\* exists.* Broad recommendations concerning the scope, form, and other major details of this record are presented below. As the record is compiled, further discussion of these points by all interested parties will doubtless be necessary.

**SCOPE.** The goal should be to list all negatives which are retained as "file" or "master" negatives, including (1) negatives prepared for the making of micro-opaques, (2) works filmed abroad, (3) items whose use is restricted, in the sense that positive copies may not be made, and (4) titles already listed in other printed bibliographies, both of originals and of microforms, such as the *STC*, the *Microfilm Catalogue*, *Basic Baptist Historical Materials*, *Dissertation Abstracts*, the forthcoming *Guide to Photocopied Historical Materials*, etc.

With regard to the types of materials which should be considered for listing, it is possible to define three broad categories:

1. Materials which should definitely be included
  - a. serials
  - b. newspapers
  - c. separately published monographs—books, pamphlets, etc.
  - d. manuscripts (single works)
  - e. manuscript collections
2. Materials which it is impossible or undesirable to include
  - a. government documents (at least those included in large scale projects such as those of Readex Microprint)
  - b. subject-oriented collections, such as chemical patents and projects like those of the Petroleum Research Corporation
  - c. unitized records such as the Human Relations Area File
  - d. technical report literature
3. Borderline materials
  - a. dissertations
  - b. copies of card catalogs and other unpublished indexes

\* The term "master negative" is used here to designate a film which is used only for making prints. A "master," or "file," negative should never be used for ordinary reading or reference.

- c. materials of genealogical interest (vital records, court records, etc.)
- d. public records, including archival collections

FORM. *It is recommended that the record be maintained or published in sections, reflecting the bibliographical form of the original.* This would have the two-fold advantage of simplifying the description of the items and facilitating the use of the record, by relating it to the general pattern of bibliography. The question of possible publication of part or all of the record is discussed below.

INFORMATION INCLUDED FOR TITLES RECORDED. In addition to the bibliographic citation, prepared according to standard procedures, and indication of location of the copy filmed in the case of rare or unusual materials, certain technical information concerning the negative should be included, in order to identify the auspices and circumstances of filming and to indicate what kind of a copy can be made from the negative. These items include: (1) reduction ratio, (2) image placement, (3) width of film, (4) indication whether positive or negative, (5) date and agent of filming, (6) intended location of the master negative, (7) length of film, and (8) format (for sheet film).

METHOD OF COMPILATION. The first step in the preparation of the record of master negatives is the assembling at a central agency of copies of many existing bibliographies, some of them printed and some in card form, some from public agencies, some from private or commercial agencies. The logical agency to undertake the work is the Microfilm Clearing House of the Library of Congress, with the assistance, possibly, of the Manuscripts Division and of the National Union Catalog of Manuscript Collections of the Library of Congress. After the existing records have been brought together in the central agency, it is essential that all subsequent filming be reported to the agency. Widespread publicity will be necessary to secure the cooperation of all interested parties, both institutional and commercial. Standard report forms will need to be worked out, similar to those presently used for reporting to the Microfilm Clearing House, but it is only realistic to assume that many agencies will find it desirable, perhaps mandatory, to report in their own individual way, including the use of copies of catalog cards. A large amount of editorial work at the central agency cannot be avoided.

As reports are assembled and received at the central agency, the possibility of publishing part or all of the record should be investigated in greater detail than has been possible in the preparation of this report. In view of the magnitude of the record, experimentation with machine methods of preparation will perhaps be necessary. *It is recommended that the order of priority of publication of the various sections of the record be as follows:*

1. newspapers (probably in the form of new editions of *Newspapers on Microfilm*)
2. serials

3. separately published monographs, including perhaps dissertations and films of unpublished indexes
4. manuscript collections, including perhaps public records, archival collections, and genealogical materials
5. manuscripts (single works)

LOCATION OF COPIES OF MICROFORMS. The third basic bibliographical need is a record of location of usable copies. On the assumption that a microform copy should be treated bibliographically as much like its original as possible and that a microform copy may be just as usable as a paper copy, it is recommended that microform copies be listed in the same union catalogs and union lists as are appropriate for their originals, insofar as possible. Thus, a microcopy of a book published in 1860 should be recorded in the National Union Catalog; a microcopy of a book published in 1960 should be listed in the *National Union Catalog*; a microcopy of a periodical should be listed in *New Serial Titles* or the *Union List of Serials*; a microcopy of the Adams papers should be recorded in the National Union Catalog of Manuscript Collections.

*It is therefore recommended that libraries and other comparable institutions report their holdings of usable copies of microforms to the National Union Catalog at the Library of Congress, according to the same criteria as those employed for the reporting of copies of the original.* (Ideally, books should be reported to the National Union Catalog, serials to *New Serial Titles*, and manuscript collections to the National Union Catalog of Manuscript Collections. The recommendation of a single recipient for all reports is made with a view to simplification of the reporting procedure, in the hope of securing wider participation.) The impact of the additional load on the appropriate catalogs and bibliographies may force reconsideration of the present criteria for listing locations in these records, but to exclude microform copies *per se* is clearly illogical.

#### *Summary and Recommendations*

On the assumptions that the problems and methods of the bibliographical control of microforms cannot be divorced from the problems and methods of bibliographical control in general, and that microforms should be listed and cataloged in the same places and in the same manner as their originals whenever possible, specific recommendations have been made in this report as follows:

1. Efforts should be made to ensure that microforms which represent original publications should be listed in bibliographies of printed materials as appropriate.
2. Details of a proposed new bibliographical record of master negatives have been presented. The purpose of the record would be to indicate what materials have been filmed, in order to avoid duplication of filming, and to make known what materials are available for reproduction of copies.
3. Library copies of microforms should be listed in the same union catalogs and union lists as are appropriate for their originals, insofar as possible. Libraries and other comparable institutions should therefore

report their holdings of microforms to the National Union Catalog, at the Library of Congress, according to the same criteria as those employed for the reporting of copies of the original materials.

4. Bibliographical and technical information which should be specified at the beginning of any microform have been identified. Publicizing of this information should be effected through the approval and wide dissemination of the revised ALA *Guide to Microfilming Practices*, as soon as it is available.

5. Efforts to provide separately issued catalog cards for titles included in large scale micropublishing projects should be encouraged.

6. In the physical description of microforms, an attempt should be made always to describe first the original work, supplementing this description with a description of the microform. It is recommended that the Library of Congress apply this principle in its revision of the microforms section of its *Rules for Descriptive Cataloging*. Recommendations are also made concerning the extent of description of microforms as physical objects.

#### PRESENT LC PRACTICE

Frarey, Carlyle James

Subject heading revision by the Library of Congress, 1941-1950. Rochester, N. Y., University of Rochester Press for the Association of College and Reference Libraries, 1954.

3 cards. 7½ x 12½ cm. (ACRL microcard series, no. 15)

Microprint copy of typescript.

Collation of the original: iii, 97 l. diags., tables. 29 cm.

Thesis (M.S.)—Columbia University.

Bibliography: leaves 94-97.

The Medical examiner. v. 1-7, Jan. 3, 1838-Dec. 26, 1844; new ser., v. 1-12 (no. 1-144), Jan. 1845-Dec. 1856. Philadelphia, Lindsay & Blakiston.

10 reels (American periodical series. 1800-1850. 428-437)

Microfilm copy (positive) by University Microfilms, Ann Arbor, Mich.

Collation of the original as determined from the film: 19 v. illus.

Frequency varies.

Title varies: 1843, The Medical examiner and retrospect of the medical sciences.—1844-53, The Medical examiner and record of medical science.

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#### FACSIMILE THEORY

Frarey, Carlyle James

Subject heading revision by the Library of Congress, 1941-1950. [n.p.] 1951.

iii, 97 l. diags., tables. 29 cm.

Thesis (M.S.)—Columbia University.

Bibliography: leaves 94-97.

Microprint copy. Rochester, N. Y., University of Rochester Press for the Association of College and Reference Libraries, 1954. 3 cards. 7½ x 12½ cm. ACRL microcard series, no. 15.

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Lang, William Bailey

Views with ground plans of the highland cottages at Roxbury (near Boston) designed and erected by Wm. Bailey Lang. Boston, Printed by L. H. Bridg-ham and H. E. Felch, 1845.

(American culture series, 31:10)

Microfilm copy (positive) made in 1956 by University Microfilms, Ann Arbor, Mich.

Collation of the original: [10] 1. 9 plates (incl. 3 plans)

Menzel, Johanna Margarete, 1930-

German-Japanese relations during the Second World War. Chicago [Dept. of Photoduplication, University of Chi-cago Library] 1957.

Microfilm copy (positive) of type-script.

Collation of the original: 539 l. illus.

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Lang, William Bailey

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[10] 1. 9 plates (incl. 3 plans)

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Thesis—University of Chicago.

Includes bibliography.

Microfilm copy (positive) of type-script, made in 1957 by Dept. of Photo-duplication, University of Chicago Li-brary.

## An Example of Conventional-Title Cataloging

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JOHN CALDWELL'S ARTICLE "Conventional Titles: a Suggestion" (*Library Resources and Technical Services*, Summer 1960) was of great interest to the Milwaukee Public Library, since its tentative outline of a theoretical basis for conventional-title cataloging shows a wider acceptance than was anticipated of the kind of thinking that we are adopting. The author's proposals toward this end have been implemented largely by Mary E. Tesovnik, Chief of Processing, and Orval Liljequist, Coordinator of Humanities, both of whom have been concerned in making such a system of cataloging applicable to any area of the total collection where "classics" predominate. Milwaukee's pilot project is in the philosophy collection, since in that area we have a listing of the classic titles in "conventional" form.

Unadulterated descriptive cataloging, while it may serve the primary purpose of giving a clue to the holdings of the library's collection by a particular author, is heir to the same confusion that would prevail were this particular author's form of entry used in all the forms used on the title-pages of the various books by him in the collection. And the same desideratum that led in the past to the justification of conflicting author-entries can be achieved in regard to titles as well; such a justification is what is to be supplied by the following conventional-title procedure.

All the works of one author  
together

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Acceptance of the printed  
author-entry

All editions of one work  
together

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Unadulterated descriptive  
cataloging

The system here proposed was devised to make possible a refined and unambiguous form of entry for a comprehensive bibliography of the classics in philosophy; it had early become clear that the information supplied by a publisher as to the identity of the material at hand in the particular book was often misleading, when not downright erroneous. The system devised to reconcile these difficulties with the more acceptable scholarly practice was seen as a potential great benefit to the user of the card catalog.

There have been precedents, of course,\* but they all rely for the order of items on information not actually found within the bibliographic entry itself (except Library of Congress music-cataloging). These positive precedents are powerfully reinforced by the negative demand for the removal of the confusion which may result from unadulterated descriptive cataloging, as in cases where the title-page begins with the author's name in the possessive case, *etc.* This sort of confusion can be solved not by the present practice of "other editions published under title: . . ." notes, or the like, but by the systematic imposition of a title which will bring together all entries which refer to the same bibliographic unit, with appropriate references from non-used variants. Before we can make a decision as to the best form of entry for certain troublesome types of material such as commentaries and "dedicated" works, so that there will be uniformity in the form of such titles not only between various examples of them in one author's work, but in all authors', it is necessary to have made a very wide-ranging examination of the classics of the entire field.

When the preliminary bibliographic investigation has been completed, there still remain certain problem areas, notably:

- a) the separation of the author's total literary production into the separate bodies of writing to which "individual titles" are to be assigned;
- b) the question of what language to use in setting up the conventional titles;

\* *E.g.*, the *Gesamtkatalog der Wiegendrucke*; present practice in the cataloging of the Bible, Shakespeare, and anonymous classics; the Library of Congress catalog (1942-48), and the Library of Congress classification tables.

- c) the general problem of the relation between bibliographic units (individual titles) and book-units (publishers' titles);
- d) problems with certain types of writings (commentaries, letters, *etc.*);
- e) the setting-up of a device to distinguish between various language-versions and/or editions of the same work; and
- f) the establishment of precise criteria for determining the individuality of titles.

If it is to be solved at all, (a) must be solved during the preliminary bibliographic investigation. But the first problem to come within our scope of examination is (b): shall we advocate the use of the original language in every case, or the use of a mixture of original-language forms and of translations into English or Latin; shall we adopt the first form of each title to come into the collection, or translate literally into one language (English seems the most obvious choice, though Latin might occur to the very cosmopolitan), not from the form of the title on the title-page, but from a critically arrived-at original-language form of the title? The decision at Milwaukee has been in favor of the last, since to use original languages in every case would make it necessary to use such non-Roman alphabets as Greek, Arabic, and Russian, either transliterated or "native," and such unfamiliar (though Roman) alphabets as Danish; to use several different languages seems illogical except in retention of proper-name titles; to adopt the first English form of title to come our way would be to deny the necessity of a thorough preliminary over-view of the works of the author being cataloged, in effect denying the existence of confusion in titling.

The next major problem is (c) the organization of the collection of works by one author in terms of the degree of inclusiveness of the book-units themselves. The clearest distinction is between virtual total inclusion (a collection of all the literary products of the one author) and the smallest integral degree of inclusion (any one work of the one author). These first we designate by the conventional title "Works," applying this title only to collections which actually contain or intend to contain all the works of the one author, with the optional omission of material unpublished during the author's life, such as letters, journals, fragmentary works, *etc.* Individual works are at the further limits of inclusion, having been published as independent units during the life of the author; the criteria for the determination of the titles of such individual works appear below.

To each such type ("Works" and "Individual title") can be added the qualification "Selections.," indicating a degree of inclusiveness less than that intended by the preceding main element of the title. That is, a particular collection of two or more individual works not intended to be the complete "Works" of the author, is given the conventional title "Works. Selections." Selected passages from an individual work will receive the conventional title "Individual title. Selections." A specific major portion of an individual work would receive a conventional title showing the

position of that portion, e.g., "The great renovation, II: The new organon.", or "Philosophical logic, I: On truth."

(d) Certain problems do arise even with such a generalizing treatment, regarding (1) "Works. Selections." and (2) various types of individual works:

(d.1) Only titles assigned by the author himself need be literally translated, since it can be assumed that the works corresponding to these titles will appear in greater profusion of language and edition than will those collections of works or portions of works with titles assigned by editors or publishers. Thus the non-literal translation of the title of an individual work into a language other than English will not be translated into English, nor will the non-English title of a collection. But collections are sometimes issued during the author's life and with his approval, or even under his active editorship; the title of such a collection is assigned by the author and thus achieves a semi-authentic individuality close to that of the separately-published works which comprise it. Two treatments are feasible for such a collection: either adding another element to "Works. Selections." thus: "Works. Selections: Author's collective title.", with this last element in literal English translation; or treatment as if the collection in question were in fact an individual work, i.e., by literal translation of the author's collective title alone. Either of these guarantees that various editions and translations of the collective contents will be found together. We have decided on the second for Milwaukee; though perhaps not bibliographically as rigorous, it is probably more readily intelligible to the user of the catalog; it also avoids the otherwise necessary titles-x-reference "Author's collective title / see / Works. Selections: Author's collective title."

(d.2) Various types of works pose problems in that they appear under such a bewildering variety of forms of title. These are treated so as to reduce their diversity to unity:

Commentaries which have themselves become classics (i.e., commentaries by classic authors) are to be found published under all sorts of titles, even appearing without any operative element at all, e.g., "Expositio in Aristotelis Metaphysicam," or "In Metaphysicam Aristotelis," both of which could be publishers' titles for the same work. Even greater confusion can arise with such prolific classic commentators as Averroes, who wrote two and sometimes three commentaries on each of many of Aristotle's works, commonly known as the "greater," "middle," and "lesser" commentaries (and the "lesser" commentaries are also known as "epitomes"). In order to keep all commentaries by the classic author together, and all of those on one author together, and all those on one work together, the invariable form of conventional title for such classic authors' commentaries is (e.g.) "Commentary on Aristoteles, Metaphysics. ("lesser")," even where the title-page might read "Averrois Epitome in Metaphysicam Aristotelis." This form of title would *not* be given to a commentary by a non-classic author, though the subject-heading for any commentary, classic or not, on Aristotle's *Metaphysics* would be the same as

that for Averroes' commentary, namely: ARISTOTELES. METAPHYSICS.

If the author commented on is not among those whose works have been reduced to conventional title, the form of his title as it figures in the commentary-title will be that of the majority of English editions of this work already in the collection; or failing that, the English form under which it is available or commonly cited; or failing that, the original-language form, if discoverable; or failing that, the form used in the original title of the commentary (by the classic author) itself.

The extension of the term "commentary" is posited as being broad enough to include any type of study confined to the examination of another single work; a study by a classic author of another author's total production (or of any aspect of it) would not be a commentary, but would instead receive its conventional title by literal translation from the original-language title. A commentary on a portion of an individual work would be given the more inclusive title, without reference to the partiality of its intended subject-focus; *i.e.*, the secondary element "Selections" never appears as part of the title of the work commented on. This would not prevent the use of specific-portion secondary elements, of course. Commentaries with distinctive titles are given conventional titles by literal translation; *e.g.*, Heidegger's *Wer ist Nietzsches Zarathustra?* would become not "Commentary on Nietzsche, Thus spoke Zarathustra.", but "Who is Nietzsche's Zarathustra?"

Especially in the case of classical authors, there are many works with titles beginning with a "dedication," *e.g.*, *To Consentius, against lying*; the operative word is not the dedication but the subject-orientation phrase and is accordingly transposed to the beginning of the title, thus: "Against lying; to Consentius." This rule applies even when there is a form-word attached to the "dedication," such as in "A treatise addressed to So-and-so, on something-or-other," which is conventionalized as "A treatise on something-or-other; addressed to So-and-so."

Titles such as many of Plato's dialogues', employing proper names as titles, sometimes have subject-orientation expressed in some other part of the title (*e.g.*, "Theaitētos; or, On knowledge."); this sub-title is used only as *x*-reference, unless it is definitely supported by the consensus of scholarly opinion as more authentic than the proper-name part of the title. Such proper-name titles are transliterated from their original-language form according to Library of Congress rules. (Non-proper-name titles such as "The sophist" have become hypostatized to such an extent as to seem almost proper names, but only almost: they must be translated rather than transliterated.)

An author's correspondence is assumed to include letters not intended for publication and is also assumed to be never completely discoverable. To remind the catalog-user of this inevitable incompleteness, the form of title for any such collection is always "Letters. Selections." Single published letters are entered as individual titles, subject to the rules for "dedicated" works.

Journals and other such materials are also assumed to be never completely discoverable; the form of title for a collection of such materials is intended to include any such type, thus: "Journals, notes, conversations. Selections." A collection of such materials published with the author's approval is entered under the literal translation of the original-language title, since its publication by the author gives it the same sort of semi-unity that obtains in the case of the author's own collections of his works. Collections of fragments of works not published during the author's life and for which titles assigned by the author cannot be discovered become "Works. Selections." Sermons which were not published as separates during the life of the author represent another form of material assumed to be undiscoverable in their totality and are thus entered as "Sermons. Selections." The usual exceptions would apply to those which had been published as individual works during the author's life.

For reasons of economy, language and editor/translator subdivisions are not to be applied except to otherwise identical titles, and where a sufficient number of significantly-varied editions of the same material occurs. This limit has been established at a minimum of ten; that is, should the collection include ten different issues of Plato's works, all in Jowett's translation, neither language nor editor/translator subdivisions would be given; but adding another edition in another language, say Greek, would necessitate language subdivision for itself as well as for the English editions. This would still not mean that translator subdivisions would be needed among the English editions, unless one translator were someone other than Jowett; and the use of such a subdivision for the English editions would not necessitate its use for the Greek edition(s) until the number of them had become ten, with more than one editor among them. The same procedure is followed when the main element of the title is different (*e.g.*, "Works. Selections.", "Individual title.", "Letters. Selections.").

The criteria for the determination of the individuality of the works to be cataloged as individual titles are as follows:

a) publication during the life of the author as a separate bibliographic unit;

b) or intention of the author to publish as a bibliographic unit, but not so published until after the author's death (whether complete or incomplete at that time);

c) not included by the author at a later date in a larger work in a way which destroys the individuality of the earlier work (when, for instance, an article originally published in a periodical is later used as a chapter in a unified treatise, since such an organic assimilation destroys the former individuality: in such cases the title of the larger work is the authentic one, followed by "Selections." or specific-portion title\*);

\* This does not refer to collections edited by the author; in these the original bibliographic units retain their individuality, since such a collection is not a unified treatise and cannot therefore assimilate organically.

d) the form of the original-language title from which the conventional title is literally translated is that of the last edition issued during the author's life and with his approval.

The embodiment of these policies in the official catalog takes the following forms:

For each conventionalized title an "official control card" is inserted in the official catalog, bearing title- and author-*x*-references, thus:

- Malebranche, Nicolas.  
Christian and metaphysical meditations.
- 
- ax     refer from his  
tx     Christian meditations.  
       Méditations chrétiennes et métaphysiques.
- 
- tx     Christian and metaphysical meditations

It is not necessary to type out each of these references for the official catalog; thus no packing of the official catalog will result, as could be the case were all such references inserted separately. There is thus the one usual main entry for each book-unit, and one control card for each conventional title (each bibliographic unit so conventionalised).

The implications for the public catalog takes shape thus:

There is the one usual main entry for each book-unit, and one analytic for each bibliographic unit which is not by itself a book-unit (*e.g.*, each individual work contained in a book-unit with the conventional title "Works. Selections."). These analytics are to be found *only* under their authors; there are no title-card tracings, only title-*x*-references, both from authentic and from such variant forms of the title as are in the collection or are likely to be asked for. However, the number of analytics in the public catalog will not result in packing, since only those works will be so analysed which appeared during the author's life as separate books; other works, though full bibliographic units, are not analysed, when their appearance during the author's life did not indicate that he regarded them as full-scale works. This would not preclude a more thorough analysis in such libraries as would profit from greater bibliographic rigor. (The greater number of cards resulting from this attitude toward analytics is mitigated by the reduction of variant title-card tracings, and could be reduced further by using subject-*x*-references as well.)

The need for title-card tracings is obviated by the insertion of title-*x*-references and author-title-*x*-references from each form of title not used but in the collection or likely to be asked for, as well as from the title used. Retyping of title-cards as a result of adding a more recent edition is rendered unnecessary, with the concomitant "also published under title-" note. No cases of the former confusion among main entries and among title-cards will remain; this is the primary end of the system as presented. Author-title- and title-*x*-references, as well as the official control card in

the official catalog, need not be changed except for removal when all editions have been withdrawn from the collection.

To ascertain the difference between the confusion inherent in unadulterated descriptive cataloging and the clarity resulting from conventional-title cataloging, examine the following listing of cards (in our former public catalog) all referring to the same work: Aristotle's *On the poetic*. Cards referring to this work are spread throughout the others under his name, without perceptible organization, and separated from each other by other titles equally unorganized in their succession: 1 main entry / 1 collection (unanalyzed) / 3 other cards / 3 main entries / 1 other card / 1 main entry / 10 other cards / 1 main entry / 3 other cards / 1 collection (unanalyzed) / 25 other cards / 1 collection (unanalyzed) / 18 other cards / 1 collection (unanalyzed) / 2 main entries / 2 subject-cards / 10 other cards / 1 subject-card / 1 main entry / 10 subject-cards / 4 main entries / 21 other cards / 1 main entry / 1 collection (unanalyzed). Against this confusion conventional-title cataloging offers an organized sequence: first comes "Works" and "Works. Selections," to which the user knows to refer since they are by definition of multiple content; then all other cards that alphabetically precede the one form of title, "On the poetic"; then all editions (main entries and analytics) of the work itself, in order of language, and among each such by order of translator or editor; then all subject-cards dealing with the one title; then all other cards that alphabetically follow the one form of title. Among the "other" cards would also be found author-title-x-references corresponding to the variant forms of title in the library's collection, all referring to the one established form of entry.

Order *can* be made from the present confusion of conflicting forms of title, just as it has been made from the previous confusion of conflicting forms of author-entry.

## DECIMAL CLASSIFICATION MEETINGS

The Decimal Classification Editorial Policy Committee held its spring 1961 meeting at the Library of Congress on April 14-15; this was preceded by a joint meeting of the members of the Committee with the directors of Forest Press, Inc., and representatives of the Library of Congress.

At these meetings, both of which were presided over by EPC Chairman Wyllis E. Wright, it was reported that: (1) sales of both Edition 16 and Abridged Edition 8 of the Dewey Decimal Classification have been gratifying, and sales abroad excellent; (2) two more translations are under consideration, an Italian one for the *Bibliografia Nazionale Italiana* and a French one sponsored by Unesco; (3) the Decimal Classification Office is expanding its coverage of children's books to include all juvenile titles in English for which Library of Congress cards are printed, except fiction, picture-books, "easy" books; and these

are being classified according to the 8th abridged edition of DC, with each number prefixed by a "j."

It was decided (1) that the Committee recommend to the publisher that the Manual, as it has been known heretofore, be entitled *Guide to the Use of the Dewey Decimal Classification*, and be published late in 1961 if possible (since the text will be completed about midsummer); (2) that hereafter *Decimal Classification Additions, Notes, and Decisions* show by formalized notes the relocations from Edition 16 to Edition 17 rather than those from Editions 14 and 15 to 16; (3) that certain modifications, which will in any case be beneficial to most DDC users, be made to bring the Dewey Decimal Classification closer into line with the Universal Decimal Classification; (4) that, to the extent that time permits, other "preferred" schedules be made for Edition 17 in addition to that for Psychology, whose approval has already been reported in these pages; (5) that in Edition 17 relocations from Edition 16 be shown in the tables, but not in the index except by a symbol directing the user to consult the tables for detailed information.

One matter of concern to the Committee is the misconception, which appears to exist in some quarters, that the Library of Congress controls editorial policy of the Dewey Decimal Classification. The Library does not, in fact, participate in the making of policy decisions as to the content of the Classification, except to the extent that it is represented by one person on the nine-member Decimal Classification Editorial Policy Committee. The Library's responsibility is to implement the decisions of the Committee. The Library, the Committee, and the Forest Press join in wanting the best possible DC.

The Decimal Classification Editorial Policy Committee held its 1961 fall meeting at the Library of Congress on September 28-29. Attending the meeting as an observer was Eric J. Coates, representing the Dewey Decimal Classification Revision Sub-Committee of the (British) Library Association. Mr. Coates's presence made possible a valuable exchange of views on the British and American approaches to classification in general and to the Dewey Decimal Classification in particular, with special reference to its frequent use in Britain for the arrangement of classified catalogs, as well as its use in a modified form in the *British National Bibliography*. Methods for continuing liaison were suggested. The Committee also reviewed once again the relations of the Dewey Decimal Classification with its offspring, the Universal Decimal Classification.

Recommendations were approved to develop a schedule for Administrative Law in 344, a revised schedule for Meteorology in 551.5-551.6, a schedule for Microbiology in 576, and a device to distinguish the various kinds of material covered by 914-919. The Committee approved recommendations from the Editor on important future expansions and refinements in the Classification, and also his recommendations on priorities for the preparation of the 17th edition, which is due in 1965.

The Committee welcomed its new member, Esther J. Piercy of the Enoch Pratt Free Library, who succeeds Elizabeth C. Borden of the University of Pennsylvania Library. *Benjamin A. Custer, Editor, Dewey Decimal Classification, Library of Congress.*

# The Geographical Approach to Materials in the Library of Congress Subject Headings

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IN THE LIBRARY OF CONGRESS subject headings, there are three types of headings by means of which the geographical aspect of a subject may be expressed:

A. A topical heading with geographical subdivisions (direct or indirect in noun form, or adjective form after a comma), e.g. ART—PARIS; AGRICULTURE—IRELAND—CORK (COUNTY); PAINTING, FRENCH.<sup>1</sup> There are also phrase headings with "in" which belong to this type, e.g. FRENCH IN AFRICA; FRANCISCANS IN AMERICA.

B. Name of place (country, region, state, city, etc.) with a topical subdivision, e.g. U. S.—HISTORY; PARIS—DESCRIPTION. The phrase heading, [Place] in literature, e.g. LONDON IN LITERATURE, might also be considered as belonging to this type.

C. A phrase heading beginning with a geographical adjective, e.g. NORWEGIAN LITERATURE. Sometimes these may also be subdivided geographically as in Type A, e.g. GERMAN PERIODICALS—BERLIN.

Almost from the beginning there has been considerable debate in library literature on the question of whether it is more important to emphasize the place, as in Types B and C, or the topic, as in Type A. Current practice, with its emphasis on assigning the one or two most specific subject headings, probably tends towards the more frequent use of Type A headings, except, of course, when the place itself is obviously the only subject for the book. The assumption is that the reader is interested primarily in a specific subject and only secondarily in its local applications. Presumably that kind of reader is satisfied with the present practice.

On the other hand, the recent surge of interest in area studies naturally makes another reader think first of the Type B headings. The uninitiated reader, using only the Type B headings, will obviously not find all the material on his area; the more sophisticated reader will be forced to plod through many Type A headings scattered throughout the catalog. The former, unless he gets help, may be baffled by not finding what he wants; the latter may be exasperated by the extra work; and both will probably be confused by the use of the two types.

The present study was designed to give a true picture of the situation concerning the geographical approach to materials in subject headings.<sup>2</sup> The basic idea was to try to find out whether there is any consistency in the development of the Type A and Type B headings.<sup>3</sup> It was hoped that the discovery of a rationale in the development of the two types might provide at least a rule of thumb to guide the reader more easily to the proper type of heading for the material he wants. At the same time, it was felt that the study might uncover some stumbling blocks for catalogers for which remedies could be suggested.

Haykin, in his *Subject Headings: a Practical Guide*, devotes only one paragraph to this problem—oddly enough, in the middle of his discussion of direct versus indirect geographical subdivision. The opening sentence is clearly an understatement (p. 32); “The basis for subdivision of some subjects by place and the use of other subjects as subdivisions under names of places is not likely to be clear to the reader.” He goes on to suggest, as a solution to the problem, at least a partial system of cross references under names of places.

The Introduction to the 6th edition of *Subject Headings Used in the Dictionary Catalogs of the Library of Congress* (hereafter called the *LC List*) throws no light on the situation. It states that the subject headings reflect the practices and policies of several generations and that the newer headings are based on the theories to be found in Haykin’s *Guide*. As already indicated, Haykin evades the issue completely.

However, the elderly and now abandoned special list issued by the Library of Congress, *Subject Subdivisions* (6th edition, 1924), does offer two clues that seemed worth pursuing. At the head of the list of subdivisions used under names of countries, states, etc., there is the following statement (p. 5): “The subjects in this list belong mostly to the historical, political, and social sciences. . . . Subjects in technology, science, and art, etc., which have country subdivision, . . . are represented under the country by a *see* reference only (e.g. Canada—Botany. See Botany—Canada).” Then, at the head of the list of subdivisions used under names of cities and towns, there is this statement (p. 17): “Classes of institutions or establishments, e.g. Theaters, Libraries, Hospitals, etc., are represented under names of cities, but not under names of countries—that is to say, a book dealing with libraries in France is entered under Libraries—France; one restricted to the libraries of a particular city, as Paris, under Paris—Libraries.”

In order to test the validity of these statements and to delve further into the rationale, it was necessary to compare the subject coverage of the two types of headings. The first step, therefore, was to go through the *LC List* item by item, listing all headings with geographic subdivision and all pertinent subdivisions that could be found in scope notes and *see*-also references. In addition to the list of Type A headings, this produced up-to-date lists of the topical subdivisions used under names of cities and under names of countries and also subsidiary lists of the topical subdivisions used under names of armies, navies, legislative bodies, etc. These

lists were then roughly classified according to the Library of Congress classification scheme. This permitted a direct comparison of the two types of headings.

The easiest way to present the results of the survey will be to use the lists of topical subdivisions as the starting point. There are approximately 180 subdivisions that can be used under names of cities and towns and about the same number that can be used under names of countries, regions and states (not counting those used under names of armies, legislative bodies, etc.). Comparison with the lists in *Subject Subdivisions* shows, as expected, that many new subdivisions have been added. On the other hand, some subdivisions have been dropped. Some of these have gone through an easily traced or surmised metamorphosis; for example, *Nationality* (under countries) has become a Type A heading, and *Industrial Schools* (under cities) has become *Trade schools* (under cities). Others seem to have quietly disappeared into limbo, e.g. *Products* (under countries); *Business associations* and *City hall* (under cities); *Religious and ecclesiastical institutions* and *Sanitary affairs* (under countries and cities). Finally, a couple which were on the 1924 country list, *Coast defenses* and *Princes and princesses*, appear to have been dropped temporarily, but were restored as late as 1960.

Comparing the two lists of topical subdivisions in a general way, one finds that there are about 80 topics which can be used as subdivisions under names of both countries and cities. These include, of course, the form subdivisions, such as *Bibliography*; *Dictionaries and encyclopedias*; *Statistics*; also many of the rather generalized topics, such as *Antiquities*; *Biography*; *Description and travel* (cf. *Description*, under cities); *History*; *Industries*; *Social life and customs*; and others of a more specific nature, such as *Air defenses*; *Climate*; *Fairs*; *Historic houses, etc.*; *Seal*. Of the topics which are on the country list only, most are naturally appropriate only for use under a country or state, e.g. *Armed forces*; *Colonies*; *Foreign relations*; *Kings and rulers*; *Rural conditions*. But there are some which would seem to be equally useful under cities, though not so designated, e.g. *Appropriations and expenditures*; *Famines*; *History—Sources*; *Religion*. The majority of the topics which appear only on the city list are the same as, or very similar to, Type A headings with indirect subdivision. Some belong to the groups of institutions and establishments referred to in *Subject Subdivisions*, e.g. *Almshouses*; *Churches*; *Palaces*; *Prisons and reformatories*; *Schools*. There are others which don't fit into this category, e.g. *Amusements*; *Charities*; *Police*; *Poor*; *Water-supply*. It is clearly impossible to say that such topics are appropriate only for use under cities. While this gives rise to certain speculations, the reader who is interested in a particular city will be happy to find such material under the city.

The breakdown of the two lists according to the Library of Congress classification and the comparison of the subdivisions with the Type A headings are much more interesting and instructive. In the discussion of each class, the emphasis will be on pointing out what could be a source of confusion to the reader. Since *Subject Subdivisions* referred to the fields

of history and the political and social sciences, the LC classes C-J will be discussed first.

In the C class, for the general civilization section, there are the subdivisions *Civilization* and *Intellectual life* and possibly *Relations (general) with [place]*. These are all very general topics, and there is no question about their logical use as subdivisions. The only possible confusion would come from the Type A heading, CIVILIZATION, with adjectival subdivision; the distinction between CIVILIZATION, AMERICAN and SPANISH AMERICA—CIVILIZATION might be hard to grasp. Skipping over to heraldry, one finds that the general heading, HERALDRY, is Type A and so are practically all the specific headings, e.g. DECORATIONS OF HONOR; EMBLEMS, NATIONAL; FLAGS. On the other hand, there are the subdivisions *Seal*, *Name*, and *Insignia*. The use of *Name* seems logical enough, but possibly not so the use of *Seal* or *Insignia* when one considers that EMBLEMS, NATIONAL, and FLAGS are Type A headings. For genealogy, the subdivisions are again the general ones, e.g. *Genealogy*; *Gentry*; *Nobility*; *Peerage*. And for biography too, the generic heading, *Biography*, is used as a subdivision, though the headings for specific groups of people are all Type A, e.g. ADMIRALS; GENERALS; STATESMEN. In the C class, then, except for numismatics and epigraphy, for which there are no applicable subdivisions, and heraldry, the pattern seems to be to use the general heading as a subdivision and make the specific topics Type A headings.

In the history classes, D-F, as one would expect, there are numerous subdivisions. *History* itself is, of course, the primary one, and it has many secondary subdivisions, most of them used only under countries, e.g. *History—Chronology*; *History—Historiography*; *History—Philosophy*; *History, Military*; *History, Naval*. Some more specific subdivisions refer to important events, e.g. *Annexation*; *Riot*; *Siege*. Still others relate to natural disasters of historic importance, e.g. *Earthquake*; *Famines*; *Floods*; *Hurricane*; *Tornado*; but one can find a few headings, e.g. DROUGHTS, which are Type A headings instead. The principal Type A headings are EUROPEAN WAR, 1914-1918, and WORLD WAR, 1939-1945; many of the topical subdivisions under these two are also subdivided geographically. Since it is standard practice to use names of special wars in preference to assigning the rather more general heading for a special period under the history of a particular country, these two headings are not troublesome. As a different aspect of history, there are the subdivisions *Antiquities*; *Antiquities, Roman*; and *Historic houses, etc.* The very similar Type A headings include CHRISTIAN ANTIQUITIES; EXCAVATIONS (ARCHAEOLOGY); ROMAN WALLS; HISTORIC TREES; and HISTORICAL MARKERS. These may cause some reservations about consistency, but in general the approach to history is reasonably straight-forward.

The G class is a mixed bag because of the number of fields of knowledge included. For general geography, although such material about a particular place is actually classified in D-F, one must consider here the

general subdivision, *Description and travel*, plus the several secondary subdivisions of that, such as *Description and travel—Gazetteers*; *Description and travel—Guide-books*; *Description and travel—Views*. There are also such specific subdivisions as *Altitudes*; *Area*; *Boundaries*; *Distances*, etc.; and all the varied subdivisions for maps, e.g. *Maps*; *Maps, Topographic*; *Road maps*; *Relief models*; *Zoning maps*. And finally there are the semi-historical subdivisions such as *Discovery and exploration* and *Historical geography*. These pretty well cover the field of topography, and there are almost no Type A headings to compare with them directly. On the other hand, the field of physical geography, which is so closely allied, shows the opposite pattern. The general heading and all the specific headings are Type A, e.g. PHYSICAL GEOGRAPHY; LAKES; MOUNTAINS.

For anthropology and ethnology in G, there are the subdivisions *Native races* and *Race question*, which are ethnological. But the general heading, ETHNOLOGY, and all the headings for specific races are Type A. As far as *Native races* and ETHNOLOGY are concerned, each one considered separately might seem logically used; but considered together, they could well cause confusion. In the field of manners and customs and folklore, there is the very general subdivision, *Social life and customs*; also a few specific ones that are used under cities only, e.g. *Carnival*; *Cries*; *Festivals*. One may wonder about the basis for choosing these three, since every other similar heading is Type A. For amusements, sports and games, there are several subdivisions used only under cities, e.g. *Amusements*; *Bathing beaches*; *Playgrounds*; *Recreation areas*; *Recreational activities*. Most of these are also Type A headings with indirect subdivision. It would certainly be stretching a point to regard them all as belonging to the category of groups of institutions which was mentioned in *Subject Subdivisions*.

For the economics part of the H class, the subdivisions that come to mind first are the obvious general ones, such as *Economic conditions*; *Economic policy*; *Census*; *Population*; *Statistics*. There are only a very few Type A headings, among them being GROSS NATIONAL PRODUCT and NATURAL RESOURCES. The latter is a rather special case, for there is the directive that when it is subdivided by place there is to be made a see-also reference from [PLACE]—ECON. CONDIT. Turning to the more specific field of land and the economic aspects of agriculture, one finds the pattern shifting in the other direction. There are numerous general and specific Type A headings, but the only subdivision seems to be *Public lands*. For industry, there are the two general subdivisions, *Industries* and *Manufactures*. All the specific industries have Type A headings. This is a pattern that is found many times, i.e. the general topic used as a subdivision for a Type B heading and the more specific topics used as Type A headings. In the field of labor and industrial relations, however, the general headings and those for the special aspects of labor relations are Type A, with the exception of *Full employment policies*, *General strike* and *Gilds*. The last is used under cities and is also a Type A head-

ing with indirect subdivision. There is also the general subdivision *Occupations*; but the headings for the workers in special industries are all Type A.

The further one gets into the special aspects of economics, the more confused the picture seems to be. All the headings for the various kinds of communications are main headings with geographic subdivision. Likewise, all the general and specific headings for transportation are Type A, except that some which have indirect subdivision are also used as subdivisions under cities, e.g. *Canals; Ferries; Streets; Transit systems*. The last one could be misleading, because the headings for special kinds of transit companies are straight Type A, e.g. MOTOR BUS LINES; RAILROADS, ELEVATED; STREET RAILROADS; SUBWAYS. For commerce, one again finds the very general subdivisions, e.g. *Commerce; Commercial policy; Commercial treaties; Foreign economic relations*. There are also the special subdivisions under cities which are also Type A headings with indirect subdivision, e.g. *Docks; Harbor; Markets; Wharves*. Other special aspects of commerce, particularly tariff, have Type A headings only, however.

For public finance, one might expect to find one or two very general subdivisions, such as there are for economic history and commerce. Instead, the general headings are Type A, e.g. FINANCE, PUBLIC; BUDGET; GOVERNMENT SPENDING POLICIES; MUNICIPAL FINANCE. The only comparable subdivision is *Appropriations and expenditures*. Taxation, as a special aspect of public finance, has Type A headings exclusively. This applies even to cases where a topic by itself may be used as a subdivision; for example, *Water-supply* is used as a subdivision under cities, but WATER-SUPPLY—TAXATION is a straight Type A heading. In spite of some areas of consistency, there would seem to be no overall pattern for the treatment of economics.

Proceeding to the sociology section of the H class, one is again met with some puzzling situations. For sociology in general, there are the obvious general subdivisions, e.g. *Social conditions; Social life and customs; Social policy*. On the other hand, SOCIAL SURVEYS is a Type A heading. For the more specific field of domestic relations, the only subdivision would seem to be *Moral conditions*, which is a rather specialized aspect. In the field of associations and secret societies, there are two subdivisions, *Clubs and Benevolent and moral institutions and societies*. The latter can be regarded as fitting into the institutional category mentioned in *Subject Subdivisions*; but *Clubs* does not follow the rule, since it is used under countries as well as under cities. For the social communities and classes, there are the subdivisions *Rural conditions, Gentry, and Nobility*. With the first, one can compare such Type A headings as COUNTRY LIFE; FARM LIFE; and VILLAGE COMMUNITIES. With the others, one can contrast the Type A headings FREEMEN and PEASANTRY and MIDDLE CLASSES and hope that this does not indicate an undemocratic point of view.

In the field of crime and punishment, one finds that all the headings for crimes and offenses and types of criminals are Type A. For the other side of the coin, there are two subdivisions under cities, *Police and Prisons and reformatories*. But to get the whole picture, one would have to look into such Type A headings as CONSTABLES; DETECTIVES; POLICE, PRIVATE; PUNISHMENT; PAROLE; and PROBATION. In the field of charity and public welfare there are again only subdivisions under cities, including *Almshouses; Charities; Orphans and orphan-asylums; and Poor*. These are also Type A headings with indirect subdivisions. *Poor* seems to be out of place as a subdivision, since AGED and HANDICAPPED are Type A headings and all the other subdivisions do fit into the institutional category. As before, not all such institutions are treated this way; for example, IDIOT ASYLUMS is a straight Type A heading. It is interesting to note, too, that PUBLIC WELFARE, which is the heading for government sponsored welfare work, is a Type A heading, while CHARITIES, which is the heading for private welfare work, can be used as a subdivision under cities and is at the same time a Type A heading with indirect subdivision. One might have expected that both would be treated the same way or that the use of one of them as a subdivision would be reversed. Perhaps because there are fewer subdivisions and the subject itself is somewhat less complex, the situation for sociology seems better than that found for economics. Even so, it is not a model of clarity, and there is no over-all pattern.

For the political sciences, the picture is perhaps rather more confusing. To begin with, there are the two general subdivisions, *Constitutional history* and *Constitutional law* (both under countries and states). The Type A heading, CONSTITUTIONS, STATE, might cause trouble. All the headings for special aspects of constitutional law are Type A. Then there is, on the one hand, the subdivision *Charters, grants, privileges* used under countries and cities; on the other hand, there are the Type A headings, COUNTY CHARTERS and MUNICIPAL CHARTERS, which both have direct subdivision and could certainly cause trouble. In the field of practical government and administration, the obvious subdivision is the general one, *Politics and government*. Matching it among the Type A headings are FEDERAL GOVERNMENT; LOCAL GOVERNMENT; MUNICIPAL GOVERNMENTS; and STATE GOVERNMENTS. For the heads of state, there are such generic subdivisions as *Kings and rulers; Queens; Presidents; Governors; and Mayors*; but PRIME MINISTERS and STATESMEN are Type A headings. Slightly down the scale, *Executive departments* is used as a subdivision, but CABINET OFFICERS is a Type A heading. Similarly, the subdivision *Officials and employees* is closely related to such Type A headings as CIVIL LIST; CIVIL SERVICE; COUNTY OFFICIALS AND EMPLOYEES; SUPERVISORS (LOCAL GOVERNMENT); and TOWN CLERKS. And finally, the subdivision *Administrative and political divisions* can be paired with such Type A headings as ELECTION DISTRICTS; FEDERAL AREAS WITHIN STATES; and SPECIAL DIS-

TRICTS. The subdivisions used under names of legislative bodies and government agencies merely add to the confusion.

In the field of colonial government, the subdivision *Colonies* stands alone. The Type A heading, COLONIES IN [PLACE], has a different connotation and should not be confusing. For emigration, there are two general subdivisions, *Emigration and immigration* and *Foreign population*. The headings for specific races are all Type A, which seems reasonable. The headings ALIENS, which is very similar to the subdivision *Foreign population*, and the somewhat more specific REFUGEES are both Type A. In the field of international law, the headings are all Type A. But for practical international relations, there are several subdivisions, e.g. *Claims; Diplomatic and consular service; Foreign economic relations; Foreign relations; Foreign relations—Treaties; Neutrality*. There are only a few Type A headings to conflict with these, e.g. DIPLOMATS; GOVERNMENT MISSIONS; TREATY-MAKING POWER. Any others one might think of have a definitely legal connotation. For the J class, then, the pattern seems to be to use the general topics as subdivisions, except in international law. However, there are enough variations and similar Type A headings to cause some trouble for the reader.

The other classes can be dealt with more quickly, primarily because there are usually fewer subdivisions. In fact, one class, K, stands out because there are no subdivisions. The headings for legal subjects are Type A without exception. This is true also in cases where a topic without legal connotation can be used as a subdivision; for example *Charities* is used as a subdivision under cities, but CHARITY LAW AND LEGISLATION is a Type A heading with direct subdivision.

In the A class, there are the form subdivisions for reference works and periodicals, e.g. *Dictionaries and encyclopedias; Directories; Registers; Periodicals; Yearbooks*. These are quite natural and expected. But for learning in general, there is the subdivision *Learned societies and institutions*, used for both countries and cities. This does not follow the rule in *Subject Subdivisions* for groups of institutions; and the similar heading, HISTORICAL SOCIETIES, is Type A. The Z class is quite similar. The two form subdivisions, *Bibliography* and *Biobibliography*, obviously fall in this class, as does the subdivision *Government publications*. There is also the subdivision, *Libraries*, used under cities. This one does fit into the institutional category rule; but the headings for special kinds of libraries are Type A.

In the B class, there are no subdivisions for philosophy or psychology. This is to be expected, since the subject matter does not lend itself to that treatment anyway. For ethics, there is the general subdivision *Moral conditions*, though this could possibly be considered, instead, a sociological heading. For religion, there are two general subdivisions, *Church history* and *Religion*, while the more specific headings for various religions and sects are Type A. There are also a few headings belonging to the institutional category which are used as subdivisions under cities, e.g. *Chapels*;

*Churches; Mosques.* But there are many such headings which are Type A only, e.g. ABBEYS; MONASTERIES; ORATORIES.

In the L class, there are only the institutional subdivisions under cities, e.g. *Schools; Evening and continuation schools; Public schools; Trade schools; Vacation schools.* That seems like a good many, but as usual there are some institutions which have Type A headings, e.g. CHARITY-SCHOOLS; CHURCH SCHOOLS; HIGH SCHOOLS; PRIVATE SCHOOLS; and all those for institutions of higher learning. The situation is the same in the M class, where one finds *Conservatories of music* and *Music-halls (Variety theaters, cabarets, etc.)* used as subdivisions under cities, though all the other headings, including MUSICAL SOCIETIES, are Type A.

The N class presents a similar picture. Two of the subdivisions used under cities, *Exhibitions* and *Galleries and museums*, relate to art in general, or to any type of art. Most of the others, however, relate to architecture or sculpture, since they are the headings for various kinds of buildings and monuments, e.g. *Buildings; Bridges; Churches; Office buildings; Palaces; Theaters; Monuments; Fountains; Sepulchral monuments; Tombs.* Though the list of such subdivisions used under cities is actually much longer than the examples given here, there are many more headings of a similar nature which are Type A with direct subdivision. Some of these subdivisions are the institutional type; the others could be regarded as such by stretching a point only slightly. Two more subdivisions, *Historic houses, etc.* and *Public buildings*, break the rule, since they are used as subdivisions under countries as well as under cities. In the special field of landscape architecture and city planning, there are two more subdivisions used under cities, *Civic improvement* and *Parks.* *Zoning maps* is used under both countries and cities, though ZONING is a Type A heading.

In the P class, there is the subdivision, *Languages*, used under both countries and cities. Considering the type of material for which the subdivision is used, it seems quite logical. On the literary side there is the subdivision *Poetry.* This is really a form subdivision and is also a special case in that duplicate entry is required under the Type A heading POETRY OF PLACES.

The Q class presents a rather strange picture, since one would not expect to find any subdivisions falling into this field. However, there is the subdivision *Scientific bureaus*, used under countries only. Then in the special field of meteorology, there is the subdivision *Climate* used under both countries and cities; also there are several subdivisions relating to storms, e.g. *Blizzard; Hurricane; Storm.* Climate could be thought of, instead, as part of geography, and the storm subdivisions are certainly best considered as part of history. But there seems no way of explaining *Scientific bureaus*, except as a forgotten hold-over.

In the R class, one again finds only subdivisions used under cities. These belong to the institutional category, e.g. *Ambulance service; Dispensaries; Hospitals; Morgues.* But CLINICS is a similar Type A heading.

For the S class, there is one subdivision used under countries, *Forest policy*. There are other "policy" subdivisions elsewhere, to be sure (cf. *Economic policy*); but if *Forest policy* is used as a subdivision, one wonders why there is not also a more general subdivision such as *Agricultural policy*.

The T class has several subdivisions used under cities that relate to various aspects of civil engineering, e.g. *Fires and fire prevention*; *Floods*; *Lighting*; *Sewerage*; *Street cleaning*; *Water consumption*; *Water-supply*. These are also Type A headings with indirect subdivision. The various headings for the subject "water" make a neat illustration of the whole problem under discussion. Compared with the two subdivisions used only under cities, *Water consumption* and *Water-supply*, there are the following Type A headings: WATER—POLLUTION; WATER CONSERVATION; WATER DISTRICTS; WATER RESOURCES DEVELOPMENT; WATER-STORAGE; WATER-SUPPLY—TAXATION; WATER-SUPPLY—INDUSTRIAL; and many related headings in other parts of the alphabet. The reader is led a merry chase, no matter where he starts looking for material about water in a particular locality.

The situation for the composite groups of trades and manufactures is similar to that found for industry and labor in the H class. There are the three general subdivisions used under countries and cities: *Industries*; *Manufactures*; *Occupations*. All the headings for specific trades are Type A. For one aspect of domestic science, there are also a few subdivisions of the institutional type used under cities, e.g. *Hotels, taverns, etc.*; *Lodging-houses*; *Restaurants, lunch rooms, etc.* These might also be thought of as belonging to the tourist trade as part of geography.

Finally, for the U and V classes, there is a full panoply of subdivisions. Two are used under both countries and cities, *Air defenses* and *Civilian defense*. There are also the more general subdivisions under countries only, e.g. *Armed forces*; *Defenses*; *Military policy*; *Militia*. A few specific ones are used under cities only, e.g. *Arsenals*; *Fortifications*; *Walls*. With the latter group, one should compare such Type A headings as ARMORIES; CASTLES; and ROMAN WALLS. In addition, as part of military science, there are the numerous subdivisions used under names of armies and navies; many of those are also used as secondary subdivisions under the subdivision *Armed forces*. These literally run the gamut from A to Z as far as subject matter is concerned. In many cases, however, they can be matched with very similar Type A headings.

To summarize this discussion of the headings in various classes, the results do not bear out the statements in *Subject Subdivisions*. While it may be true that many of the subdivisions used under countries fall into the fields of history and the political and social sciences, there are enough in other fields to negate that idea as the basic pattern. Adding the military sciences and the general form subdivisions to the statement would make it somewhat more correct. But the broader the statement, the less value it has as a rule of thumb. And it should be pointed out that the situation in those fields, with history as a possible exception, seems no less

confusing than in the others. The subdivisions used under cities cover an even broader range of subjects. The reader who is interested in a particular city, rather than in a country or state, does stand a somewhat better chance of finding more of his material in one place under the city, but he must take his good fortune with a grain of salt. Many of the extra subdivisions used under cities are for groups of institutions or establishments; but not all such institutions are treated in the same way, since many are Type A headings with direct geographical subdivision. And this institutional category does not account for all the extra subdivisions under cities. If the statements in *Subject Subdivisions* were ever valid as guiding rules, they are no longer so.

When one tries to find other patterns of consistency, the first possibility that comes to mind is that the Type B headings are meant to be general, whereas the Type A headings are specific. This, of course, does apply in many cases to the groups of institutions, but only when considered solely as groups of institutions; for within the field to which they belong they would be specific, e.g. *Schools* is a specific heading in relation to EDUCATION. The idea does apply also to many of the other subdivisions, such as *History*; *Economic conditions*; and *Social conditions*. But there are many examples of specific Type B headings and also cases where similar general and specific headings are treated differently. At almost every turn, one wonders why some heading is Type B rather than Type A and vice versa. In the beginning, there may have been an underlying rationale, but it has long since disappeared. Indeed, the only field in which there is a completely consistent pattern is Law, and that may be a reflection of the Library of Congress's function as the Congressional law library. This probably also explains the consistency in certain other more specific fields, such as international law, tariff, and taxation. Whether that pattern is equally appropriate for the average library is a debatable question.

Since logic fails, one may be tempted into flights of fancy. In the Type B headings, it is possible to reverse the order of the words and make a sensible phrase with the word "of," e.g. History of France, Description of Paris. On the other hand, the Type A headings seem at first glance to require the use of "in" to make a meaningful phrase, e.g. Education in France, Fishing in the U. S. But further study shows that this simple rule of thumb breaks down for some large categories of Type A headings; for example, those for certain specific objects—Flags of Gt. Brit., Birds of America—and those which are Type A with indirect subdivision and also subdivisions under cities—Schools of England, Water-supply of California. Perhaps it is just as well that this idea fails, too. Though it may be one of the factors, the ability or inability to use "of" to make a phrase is a very tenuous basis on which to build a whole theory for the construction of subject headings.

The situation thus appears to be quite chaotic. Though there may have been an over-all pattern at one time, it is no longer evident. One remedy for the situation has been proposed in the past, the use of dupli-

cate entry whereby both a Type A and a Type B heading are assigned to a book. This would most readily answer the demands of both types of readers, those who are looking for everything on a specific subject and those who are looking for everything on a specific place. The *LC List* has a few cases in which duplicate entry is required, and in actual practice it may be used where a minor or little-known place is concerned. However, there are cogent arguments against adopting this as a general policy. The obvious reasons are that it would increase the size and cost of the catalog and make unwieldy files under many place names. There is also the fact that an appropriate subdivision for a Type B heading is not always available, at least as the lists are presently constituted.

If, as seems likely, the use of the most specific heading will continue to be the general rule in assigning subject headings, then what is obviously needed is the re-establishment of a definite and consistent policy for the construction and use of the two types of headings. With a logical pattern established and maintained, the reader should have a much clearer idea of where to look for the material he wants, even though he might not find it all at one place in the catalog. The picture of the situation assembled through this study clearly shows the need for such a policy, but the study has been too superficial to warrant making any proposals about what the policy should be. That is something for the Library of Congress to decide after a more thorough study and a full-scale discussion of the various possibilities. Presumably, the "Haykin code" would have provided the policy for this problem as well as for others, so it is regrettable that work on the code has stopped even temporarily.

The obvious corollary to setting a policy for the future would be to change the existing headings to conform to it. This is the only sensible long-range course of action. Many will shudder at the amount of work that this might mean. The most troublesome changes would be any involving Type B headings. While it is a relatively simple matter to change a Type A heading into a Type B heading, it is much more difficult to eliminate a subdivision after it has been established for any appreciable length of time. But whatever changes are necessary could be made gradually, and the task might prove no more formidable than that which would result from the adoption of some of the proposed new rules for descriptive cataloging.

In the meantime, probably the greatest boon to the reader would be more references. As already indicated, Haykin, in both his *Guide* and in *Subject Subdivisions* advocated see references under places to appropriate Type A headings. Considering what has been revealed so frequently during this study, see-also references from many of the subdivisions would be equally helpful. Such a system of see and see-also references would mean a lot of work for countless librarians. However, it could be added to the present structure gradually, and its use would pay dividends. While there might still be much head-shaking over lack of consistency, the reader would at least be told where to look for his material in the catalog. Librarians who assign subject headings daily become so familiar

with the *LC List* and its vagaries that they are prone to forget that readers do not have the same knowledge and do need all the help they can get in the form of references. It is true that, under U. S. and in some other cases already noted, the *LC List* does give examples of such references, but the number is small in comparison to what it should be. The Library of Congress could help give greater emphasis to the cross reference structure by incorporating more examples and directives in the alphabetical list and by adding full explanation and definite instructions in the Introduction to the *LC List* as well as in whatever code may be written in the future.

In the course of the project, a few problems for the cataloger came to light.<sup>4</sup> The present method of indicating what topics may be used as subdivisions under places is not always consistent. The usual method is to include the information as the last of all the see-also references, so that one expects to find it there. But sometimes the information is given only in a scope note. Perhaps when scope notes are used, the information should be repeated at the end of the see-also references.

Furthermore, the method of giving such information is not always clear. For the topics which can be used as subdivisions under cities or under both countries and cities, there is often no problem. The references usually include the phrase "under names of cities and towns" or "under names of countries, states, cities, etc." Judging from those, one must conclude that the phrase "under names of countries, states, etc." means that the headings can be used as subdivisions under any geographical area except cities and towns. On the other hand, the "etc." may easily be construed to mean that they can be used under cities and towns as well as under the larger areas. To eliminate the possibility of error, a revision of that phrase would be helpful. Some of the recent references have only the phrase "under localities." This is not only very vague (perhaps intentionally so), but it does not conform to the style of the other references.

Another facet of the lack of consistency is the fact that several references to the same subdivision may differ in content for no apparent reason. For example, two or three references to the subdivision *Social conditions* indicate that it may be used only under countries or regions; but another reference shows that it can be used also under cities. Unless one happened to find that particular reference, he would be unaware of that use of the subdivision.

A closely-related aspect of the problem is that the references to a subdivision are not always made where one would naturally look for them. Frequently a reference is made from the exact form of the subdivision, but that is not always the case. For instance, there is a reference to the subdivision *Religious life and customs* from FASTS AND FEASTS and from FOLKLORE; one looks in vain, however, under RELIGION or any heading beginning with the word "Religious." Such a situation makes it difficult to check on whether a certain subdivision can be used. Obviously, the references would be most useful if they were consistent, precise, and at the proper places.

The most troublesome headings are the Type A headings with indirect subdivision which are also used as subdivisions under cities and towns. In the *LC List* these have what appears to be a perfectly normal form of entry, e.g. SCHOOLS (*Indirect*), and then, perhaps an inch or more below, comes the see-also reference which indicates their use as subdivisions under cities. The example in the Introduction to the *LC List* and the statement in *Subject Subdivisions* make it clear how these headings are to be used, but the former may be glanced at only occasionally and the latter is now abandoned. Of course, a careful reading of the whole entry should make it clear, too; but the fact is that errors do occur, probably from looking only at the "Indirect" note. The 1950-1954 cumulation of the *Library of Congress Catalog. Books: Subjects* yields the following specimens of the incorrect use of such headings: ALMSHOUSES—FRANCE—LYONS; CHARITIES, MEDICAL—MASSACHUSETTS—SOMERVILLE; FORTIFICATION—FRANCE—DIEPPE; FORTIFICATION—WASHINGTON, D. C.; ORPHANS AND ORPHAN-ASYLUMS—RUSSIA—OKHANSK; POOR—ITALY—MILAN; SCHOOLS—MALAYA—KUALA LIPIS; THEATERS—VIENNA. More than twice as many appear in the 1955-1958 supplements. There are other cases in which a city and province have the same name but in which there is no indication as to which one is meant, e.g. FIRE PREVENTION—HAMBURG; LIBRARIES—ITALY—PAVIA; MONUMENTS—SPAIN—BARCELONA; MOSQUES—SPAIN—CÓRDOBA; POLICE—HAMBURG. A qualifying phrase or special symbol coming immediately after the word "Indirect" in the listing of these headings would help to correct this situation.

Finally, in addition to making these minor editorial changes in the *LC List*, the Library of Congress could perform a valuable service by issuing a new and revised edition of that part of *Subject Subdivisions* which contained the special lists of subdivisions that are to be used under cities and under countries. Although it would duplicate the information in the *LC List*, it would be a very handy reference work for everyday use. The separate lists would really solve the special problems just discussed by showing definitely what topics can be used as subdivisions under which kinds of places. Furthermore, these special lists would give better control over any additions or deletions to be made in the future, because one can see at a glance what topics are already included. As for keeping those lists up to date between editions, a special note at the end of the cumulative supplements to the *LC List*, in addition to the usual entry among the see-also references at the proper place in the alphabetical list, should make it easy for any one to correct his own copy. With this system a new edition would be needed only every five or ten years or whenever there are new editions of the *LC List*.<sup>5</sup>

#### NOTES

1. For the sake of clarity, the main headings which can be geographically subdivided (Type A) are printed in capitals, and the subdivisions used under names of places to

make Type B headings are printed in italics. All complete headings (main heading plus subdivision) are printed in capital letters.

2. This article originated as the report of a study project undertaken by the ALA-CCS Subject Headings Committee in 1958-1960 when the writer was Chairman. Committee members who worked on the project were Ruby E. Egbert (Washington State Library), May G. Hardy (History of Medicine Division, National Library of Medicine, Cleveland), Florence M. Hopkins (Educational Testing Service, Princeton), Hilda Steinweg (Detroit Public Library), Frances L. Yocom (University of North Carolina Library), and Allen J. Hogden (New York Public Library). The writer owes them a large debt of gratitude for their yeoman service in compiling the lists of headings and subdivisions which formed the basis of the study and for their many helpful suggestions during the drafting of the report.
3. The Type C headings are omitted from this study. They pertain mostly to literature, and it was felt that their inclusion would not contribute anything really significant.
4. The following paragraphs, adapted from the Committee Report, apply to the 6th edition of the *LC List*. Because of the announced 7th edition, it may seem inappropriate to repeat them now. However, the writer has been unable to learn (as of June 1961) whether the Library of Congress intends to adopt any of the Committee's recommendations for the new edition.
5. A recent letter from Richard S. Angell indicated that the Library of Congress would like to bring back into print many of the supplementary publications, including the lists of subdivisions under places. That would necessarily have to wait until completion of the editorial work on the 7th edition of the *LC List*.

#### COMMENT FROM THE LIBRARY OF CONGRESS

The Processing Department of the Library of Congress is grateful to the Editors of *LRTS* for providing an opportunity to see Mr. Brinkler's study and to offer this preliminary comment upon it.

Differences of opinion on the matter of using Type A headings (topic divided by place) and Type B headings (place divided by topic) are of long standing in the development of subject heading theory and practice. With respect to our practice, the Library is guided by the desire to give the different categories of readers a direct approach to the subject matter. Therefore, subject headings are divided by place or place by subject in accordance with the presumed primary interest of the readers.

In more concrete terms, subdivision of place by subject has been used for subjects whose predominant interest is focused on the area, i.e. in the fields of history, geography, and government. Where the subject is primarily of interest to the subject specialist, subdivision of subject by place is applied, i.e. in the natural sciences, technology, and law. In other areas, such as especially in the social sciences, the cataloger must decide whether the subject or the area are of predominant interest to the reader. Within this framework the cataloger will prefer the place subdivided by subject mainly for broad topics, e.g. U. S.—INDUS. while subject divided by place will be applied to specific subjects as more suitable to the reader's approach, e.g. AUTOMOBILE INDUSTRY—U. S. In case of doubt, subject divided by place will be favored. In the last analysis, however, the choice between the two often depends on the cataloger's subjective judgment which may be tempered by his knowledge of the objectives of his particular catalog and the clientele it is to serve.

The study pinpoints certain variants in our practice, of which we

have long been aware, but have been obliged to preserve because of long-established files. Codification of our practice is indeed desirable. An even degree of development in all fields, however, is not likely since the establishment of new headings and the growth of our subject heading list is determined by the material added to the Library's collections.

Mr. Brinkler's suggestions concerning the use of more cross references are certainly valid. While the Library does make many references in connection with geographic headings for insertion in its catalogs, it is not feasible to print all of them in the list of subject headings because of the great increase in bulk which would result. The preface to the subject heading list appears to be the logical place for incorporation of suggestions for and examples of such cross references. Serious consideration is being given to this possibility and also to the use of some special symbol to call attention to Type A headings with indirect subdivision which are also used as subdivisions under cities and towns.

This study has performed a valuable service in raising cardinal questions regarding the development and application of area-oriented subject headings. The solution to these problems which will be valid for all libraries will require continued effort—an effort to which this Department will continue to contribute.—*John W. Cronin, Director, Processing Department, The Library of Congress*

## Looking Forward to the Seventeenth Edition

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CATALOG ADVISORY COMMITTEE\*  
*Los Angeles County Public Library*

### SOME EXPERIENCES OF THE LOS ANGELES COUNTY PUBLIC LIBRARY WITH THE SIXTEENTH EDITION OF DEWEY

#### *The Library and its Organization*

THE LOS ANGELES COUNTY Public Library, established in 1912, is young in relation to other large institutions such as the New York Public and Enoch Pratt Free libraries. It is a comparative new-comer to the ranks of the giants which circulate several millions of books each year. Statistics for 1959-60 show a bookstock of 1,721,520 volumes with a circulation of 7,737,604. At present we serve a total of 713,929 registered borrowers.

\* Members of the Committee are Chairman, CATHERINE MacQUARRIE, Chief Technical Services Division; Secretary, HYPATIA Y. PETKUS, Subject Specialist; Member, CALVIN G. TOOKER, Regional Librarian; Member, MAYO SHORT, Regional Children's Librarian; Member, BETTY L. ADDISON, Branch Librarian.

This latter achievement is partially the result of a phenomenal population explosion in Southern California. The wide geographical area of Los Angeles County, one of the largest counties in the United States, with 4,071 square miles, combined with population growth, results in problems which are being felt by all libraries in the area. In this respect the Los Angeles County Library is not unique. However, in many other aspects there are distinguishing features.

From its inception the Los Angeles County Public Library has been, and continues to be, an extension library. The bulk of the collection is housed in 93 separate community branch libraries of various sizes organized into nine regional areas. In 1958 a ten-year building program was outlined, emphasizing construction of regional headquarters facilities as well as local community branches.\* Central headquarters provides over-all administration, book selection, centralized technical services and preparations, and a reserve book stock. Regional librarians order titles recommended for purchase by the Subject Specialist staff at weekly book meetings. Books are delivered to the regions from Central and reassigned to the branches within the regions under the Regional Librarian's direction and supervision. The regions may draw on each other, as well as on Central, for needed material. Because of this dispersal of books, only occasionally do the branch shelves reflect classification congestion which is apparent in the Official Shelf List. Likewise, because some branch collections are small, 35,000 volumes or less, the problem is often alleviated by the fact that the memory of the branch librarians plays its usually important role in the location of books on the shelves. Dispersal, expense, and the mechanics of recalling books demand selectivity and deliberation in making classification changes.

Another unique feature of the Los Angeles County Public Library is the printed catalog in book form showing the holdings of the entire library system. This Catalog, along with its monthly cumulative supplements, makes all titles available on request to the branch librarians and patrons—regardless of the size or location of the branch library. The very mechanics of making changes in this invaluable tool demands careful consideration of any classification change.\*\*

A third unique factor is that prior to World War II this was a rural library which was serving some cities and was gradually becoming urbanized. Since the War, however, in rapid succession it has become urbanized and is now in the throes of becoming a municipal library. Within a mere three-year period tremendous progress has brought the system within sight of the goal. The Regionalization Program, started in 1957, is a revolutionary phase of the Library's history and development and has affected

\* For detailed information, see "Los Angeles Emphasizes Regional Facilities," by John D. Henderson, L.A. County Librarian. *Library Journal*, 85:4291-94. December 1, 1960.

\*\* For a full description of the book catalog see: "The Book Catalog of the Los Angeles County Public Library: Articles by C. MacQuarrie, B. L. Martin, and T. Hewitson." *Library Resources and Technical Services*, :208-232. Summer 1960.

the cataloging and classification process. With an exploding population and a greatly expanded book budget, much emphasis has been placed on getting the books to the public with a minimum of delay in reclassification and/or initiating new classifications that would necessitate reclassification of older material.

The foregoing problems and unique features of the system do not mean that there is a lack of awareness of the need for new classification. Quite the contrary! It will soon be made clear that the Library's classification policies have attempted to keep up with the social and technological changes of our era. Los Angeles County Public Library can point with pride to the fact that all classification changes were based on unusually thorough evaluation and analysis. Likewise, responsibility to the taxpayer has been fulfilled by avoiding costly innovations or experimentation.

#### *Our Approach to Changes Suggested in the 16th Edition of Dewey*

Our approach to classification changes suggested by the 16th edition of Dewey has been a cautious one. In this respect, our experience has been similar to that of some other libraries. In June 1960, we made a nationwide survey to which thirteen public libraries responded (Boston, Brooklyn, Chicago, Cincinnati, Detroit, Los Angeles, Milwaukee, New York, Philadelphia, Pittsburgh, Queens Borough, St. Louis, and Washington, D. C.). For texts of their replies as to changes they expected to make in their classification systems, see Appendix A to this article.

We do not know how we compare with other libraries in actual number of changes introduced, but we can state that any action we took was based on the most careful consideration. Needless to say, the 16th edition could not be accepted in its entirety, as in our opinion it contains some serious deficiencies. As far as shortcomings are concerned, some criticisms voiced in professional journals seem valid to us at Los Angeles County Public Library in the light of our own experience. Some schedules are inadequate and ill-arranged, with errors and anachronisms left uncorrected for decades. Many of the changes suggested in the 16th edition are a step backwards. Furthermore, numerous suggested changes are incomplete, i.e., the whole subject field was not revised—it was only patched up. We believe that the "integrity of numbers" theory is fallacious. Material should be relocated when there is a definite shift of opinion concerning it, even if only a partial shift of the books is practical. Otherwise, Dewey may become as dead as the proverbial Dodo, and an entirely new system of classification will have to be devised, or at least a complete transformation of Dewey will be required. Actually a complete over-all evaluation is long overdue, and we hope this will be accomplished in the forthcoming 17th edition. Specific instances of deficiencies in the 16th edition of Dewey are as follows:

1. The whole of engineering is still contained in the 620's.
2. Materials on careers are scattered by subject.
3. In its efforts to keep pace with political changes, the 16th edition is not always accurate in its 900 classifications.

4. Psychology remains in two separated areas, the 130's and the 150's.
5. The history of philosophy is similarly sundered (140 and 190).
6. Economics is divorced from commerce (330 and 380).
7. Social welfare and social anthropology are separated from sociology (360, 572, and 301).
8. History is separated from prehistoric history (900 and 571).
9. Not enough general numbers are provided, i.e., subjects are sometimes split into many small specific numbers, with no general number provided for the whole subject.

On the other hand, positive features are numerous, and we have proved this in practice by adopting many of the changes suggested in the 16th edition. Some time ago, our Technical Services Division completed a systematic page-by-page evaluation of this edition of Dewey, starting in February 1959, comparing it with the 15th edition and the Los Angeles County Public Library Official Shelf List. Regular meetings of catalogers took place every few weeks, over a period of more than a year. Every number in Dewey was evaluated and marked, showing whether or not it was to be used or subdivisions started when new titles were received. In general, we have been cautious about accepting outright relocations to new categories and reclassification of old holdings; and enthusiastic about suggested expansions and reassignments of topics within the same category.

Obviously we cannot afford the time nor the expense required to reclassify all titles, because of the enormous size of our collection and its scattered location in our many branches. Much of the older material is left under the old number, always depending on the importance of the subject; whereas the newly-acquired titles may be placed under the new number suggested by the 16th edition. Changes in old titles are limited to important subjects where the holdings are small enough to enable us to recall copies from our branches. We change to the new classification when the number of titles is small; when the copies are so few that they can be easily handled; and when the subject is a timely and important one that promises to grow rapidly. In general, relocation of old titles, except the most important works, has been infrequent, as this combination of circumstances seldom occurs. In many cases suggested changes are already in effect at the Los Angeles County Public Library, mainly for the reasons that they represent a return to the 14th edition. Although we used the 15th edition extensively, some of the changes started in the 15th edition were never initiated due to lack of time. In some cases, new numbers assigned to a new subject by the Los Angeles County Public Library because there was no provision for that subject in earlier Dewey editions, coincided with the suggestions given by the 16th edition.

#### *Practical Effects of Changes in Cataloging and Classification*

The following study will serve to give a picture of changes adopted from the 16th edition of Dewey by the Los Angeles County Public Library.

A questionnaire was sent to a representative sampling of branch libraries throughout the system as a means of studying effects on the branch

level of changes. Of the 10 branches chosen, one had an annual circulation of over 200,000 volumes, five had between 100,000 and 200,000, two had between 35,000 and 100,000, and two had less than 35,000.

The four questions asked of supervising branch librarians were related to the relocation and expansion of numbers which the Technical Services Division had adopted according to the 16th edition of Dewey. Only those changes which would have a marked effect on the location of books in branches were used in the questionnaire. Efforts were made to exclude questions of academic interest only.

Because of the size of the Los Angeles County Public Library collection and wide dispersal throughout 93 branches, 6 mobilibraries, and 15 institutions, little reclassification of old titles has been done. Because, in most cases, the new Dewey numbers are used on new titles only, the effects of these changes have only recently been felt at the branch level. Therefore, the first two questions of the questionnaire asked opinions on the *anticipated* effects of relocation and expansion of Dewey numbers adopted for the following sample categories: Philosophic Systems, Judaism, Canon Law, Biophysiology, Absolutism, Industrial Sociology, Automation, Theory of Numbers, Engineering, Electronic Engineering, Astronautics, Medicine, and Modern Art. The third question was about the increased use of the Book Catalog as a result of the changes. The fourth question concerned difficulties previously encountered under the old classification system.

#### *Statistical Summary of the Questionnaire*

100% of questionnaires were answered.

1. Question: Do you anticipate difficulties in relocation of the following subjects? (For complete list, see Appendix)

43% do not anticipate difficulties.

17% anticipate difficulties.

6% made no reply to specific question.

34% had other comments.

2. Question: Would the expansion of numbers in the 16th edition of Dewey make it easier to locate specific information?

73.5% Yes (approval of expansion).

12% made no reply.

14.5% had other comments.

3. Question: Would more frequent reference to the Book Catalog be required?

50% Yes.

20% No.

20% Some.

10% No reply.

4. Question: Have you experienced difficulty in locating material on other subjects as a result of the relocation or expansion of numbers?

40% Yes.

40% No.

20% had other comments.

For a summary of answers and comments of individual supervising branch librarians, see Appendix B to this article.

### *Conclusions:*

Generally, the results of the survey indicated the following:

1. Branches having more than 100,000 annual circulation would be affected to a greater degree by cataloging changes which influence the position of books on their shelves.

2. More reference to the Catalog would be required by staff and patrons.

3. Approval was expressed concerning specific relocations, except in those instances where masses of similar materials became separated from one another.

4. A favorable reaction was expressed to the expansion of numbers to indicate more specific use of the classification for subjects which were previously in more general classifications.

5. Many supervising branch librarians indicated that radical changes are needed in the Dewey classification system, emphasizing some deficiencies we have mentioned previously in this article. The point most frequently made was the need of reorganizing the engineering classification (620) because of the mass of published material and the many ramifications of the subject.

On the basis of the above, we should like to state that, while the 16th edition of Dewey was helpful, we are looking forward to a new and transformed 17th edition. We hope that the format will be better adapted to its use as a working tool for catalogers. Perhaps the idea of loose-leaf insertions for changes suggested in the interim between editions will find favor with the editors. Improved communications in the modern Space Age have resulted in the expansion of our frontiers of knowledge and of our cultural horizons. It may be that the Dewey classification can no longer be geared solely to the needs of the English-speaking world (as was originally intended). Perhaps there should be more awareness of other literatures in addition to those stemming from our Western Anglo-Saxon heritage. In view of the widespread use of Dewey in many countries today, we believe valuable suggestions may emerge for changes in its basic philosophy.

## APPENDIX A

### 16th Edition Dewey Survey of Implementing all or portions of this Edition (June 1960)

#### Question:

*Do you expect to make changes in your classification system in accordance with the new 16th edition of Dewey?*

Yes.

Boston, P.L.

The only major change we anticipate at the moment is to adopt the 16th edition schedules for 546—Inorganic chemistry, and 547—Organic chemistry—and their subdivisions. We will use 16th edition numbers for new subjects not provided for in the 15th edition as far as possible.  
Brooklyn, P.L.

Yes because we are counting on the 16th edition, with its current "Additions" to be the basis for future editions.  
Chicago, P.L.

We are making some changes in our classifications in accordance with the 16th edition of Dewey. It would be good to conform completely in order to fully utilize L.C.'s cataloging but we won't be able to do that and we're taking it up area by area.  
Cincinnati & Hamilton County, P.L.

At this time, we do not expect to make any extensive changes in our classifications. I have not had time to study the 16th edition in great detail, so we have been using it as a guide to the definitions and scope of certain new subject areas where we have not heretofore subdivided.  
Detroit, P.L.

We are in the process of reclassifying the library collection from the Cutter Classification. We are using the 14th Edition of Dewey as the basic system. Where there are variations in the 16th Edition we try to give consideration to 1) the relative merits of the two editions in the area under consideration; 2) the amount of change involved in items already classed; 3) the probably future advantages of accepting the new arrangement; and 4) whether it is feasible at the moment to make any desired changes or more practicable to delay them until some future date.  
District of Columbia, P.L.

The LAPL Catalog Dept. expects to adopt the class numbers of the 16th edition of Dewey in so far as a number has not already been established for the subject. Also subdivisions under basic numbers will be used, if such use does not involve recataloging our present material.  
Los Angeles, P.L.

Yes, we are planning and have made some changes in accordance with the new 16th Edition of Dewey.  
Milwaukee, P.L.

We have already made some small changes in our classification system in the 300's and 600's in accordance with the new Dewey, and we expect to make more. Two of the changes required some reclassification.  
New York, P.L.

Very few.  
Philadelphia, P.L.

We intend to expand numbers which are now too limited in terms of our outdated usages, particularly in the 300's, on the basis of the 16th. Pittsburgh, P.L.

The classification used in the Queens Borough Public Library is based on the 14th edition and includes special schemes devised in a number of fields to conform to the Library's departmentalization system. Changes in the classification to accord with the 16th edition would require a prohibitive amount of time and labor. When new subjects are introduced, we prefer to use the 16th edition if no conflict occurs with established policy. Also where little change is required, we do change to the 16th edition.  
Queens Borough, P.L.

I have discussed your letter of April 22nd with Mr. George Hartje, Chief of Technical Processes, and he tells me that we do not expect to make many changes in our classifications to conform to the 16th edition of Dewey. He explains that we did not depart from the 14th edition too much and that the 16th edition is

more comparable to the 14th edition. You will recall that the 15th edition departed more drastically with many changes incorporated in that edition.

St. Louis, P.L.

Question:

*If you do plan to make changes do you know to what extent the changes will be made or what limitations you plan to place on the change-over on the 16th Edition?*

We are now using the 13th Edition. Where the 16th Edition expands or relocates a rubric without conflicting with the arrangement in the 13th Edition, we will follow the 16th Edition.

We are not reclassifying to bring our collections in line with the 16th Edition. We expect that Science will be the area with the greatest number of changes that will be accepted.

Boston, P.L.

The only major change we anticipate at the moment is to adopt the 16th edition schedules for 546—Inorganic chemistry, and 547—Organic chemistry—and their subdivisions. We will use the 16th edition numbers for new subjects not provided for in the 15th edition as far as practical.

We have not made a systematic comparison of the 16th edition with the 15th edition which was adopted (with exceptions) by the Brooklyn Library in 1952. Until such a study can be made and needs evaluated, we plan to continue with our present scheme as amended in our answer to #1 above.

Brooklyn, P.L.

No. We have not yet made decisions on the entire schedule.

Our practice is this: If, in cataloging current books, we discover that a number has been changed we make a decision about that number as follows:

When the number of titles is small, the total number of copies easily handled by the Technical Processes Departments; and the subject such that the books can be spared from the Department concerned, we change to the new number immediately.

When the number of titles is large, and if the change is not of great significance and leaving the material under the old number will not affect its usefulness we leave it under the old number.

If the subject is one in which timeliness is of importance we leave the old material under the old number to wear out and class the new material and new editions under the new number.

If the subject is one in which the date of the material is not important we put new books and new editions under the new number and reclassify other material under the old number as soon as it can be handled by the Technical Processes and as soon as it can be spared from the Department concerned.

Classification changes are made only after the Departments concerned are consulted, or informed, as the case requires.

Chicago, P.L.

In deciding whether to reclassify we consider the following points—

Will it relocate material in a different subject department? If it does, we assume there will be a good bit of reclassification and shifting necessary and

I ask the head of this Catalog Department and the subject departments to make a joint recommendation to me for approval. My own rule of thumb on this is if there are over a hundred books to be shifted it should be left alone.

Subject importance and publication date of material to be reclassified.

No use putting time into material that is little used.

Ability of staff to absorb reclassification along with current work.

These are very general answers, of course. We aren't going into an extensive reclassification.  
Cincinnati & Hamilton County, P.L.

We have reclassified a few books and set up a few new numbers and subdivisions, but that is all. We have been using the 14th edition, and since the 16th edition returns to the 14th in many respects, we do not at this time see much need for reclassification. The shortage of staff and time also limits any reclassification projects at this time.  
Detroit, P.L.

We are not anticipating making any general changes to the 16th Edition, but only making spot changes as indicated above in areas where it seems to us both desirable and practicable. This is done as the problems arise in handling new material.  
District of Columbia, P.L.

We cannot afford the time or expense that would be required if we recataloged books in our present collection, so will limit our changes to new subjects—or in cases where the 16th edition number seems much better—to cases where we have not more than 2 or 3 titles in the old number. We will file references in our shelf list from numbers used in the 16th edition to numbers used for the same subjects by Los Angeles Public Library since the Library of Congress is now putting only the 16th edition classification numbers on its catalog cards.  
Los Angeles, P.L.

We will not make extensive changes where the cost and time involved is too great to warrant such changes, and there is no serious conflict between the tables of the 14th and 16th editions of Dewey. We have made changes and will continue to make other changes where new numbers have been provided in the 16th edition or where expansions have been provided for subjects in which there has been considerable growth.  
Milwaukee, P.L.

We expect to limit any further changes to areas in which we have small holdings (principally some of the newer subject fields in the 300's and 600's) so that reclassification will not be necessary. Whenever it is possible to follow the practice of the 16th edition of Dewey without reclassification or any great sacrifice of consistency, we will do so. But this policy precludes any major changes. N. Y., P.L.

As expansion is required, the 16th edition will be consulted. Phil., P.L.

We will not relocate any numbers. Any new numbers adopted will be of a date—rather than involving any reclassification. Pittsburgh, P.L.

When new subjects are introduced, we prefer to use the 16th edition if no conflict occurs with established policy. Also where little change is required, we do change to the 16th edition. Queens Borough, P.L.

No changes to be made. St. Louis, P.L.

## APPENDIX B

Report on results of a Questionnaire on the 16th edition of Dewey sent to 10 large, medium-sized and small branches of L.A.Co.P.L. by Catalog Advisory Committee (January 1961).

1. *What difficulties would you anticipate experiencing in the location of newly acquired titles on the following subjects:*

<i>Subject</i>	<i>Previous Classification</i>	<i>Present Classification</i>
Philosophic Systems, including individual philosophers and schools of philosophy	190	Schools of philosophy given new location in 140

REPLIES: 4 answered: No; 4 answered: Yes; 1 had no reply; 1 had other comments.

COMMENTS: (1) Requests in this field are few. (2) Consulting Book Catalog and memorizing is always necessary. (3) More reference to Book Catalog will be needed.

OPINIONS ON RELOCATION: 1 approved; 1 disapproved.

Canon Law	262.9	348 under "Law"
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REPLIES: 3 answered: No; 2 answered: Yes; 5 had other comments.

COMMENTS: (1) Few requests, would use catalog. (2) Anticipate violent reaction from patrons about moving from religious section.

OPINIONS: 2 approved of relocation; 3 disapproved.

Biophysiology	612.014	Moved to Biology 574.1
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REPLIES: 3 answered: No; 1 answered: Yes; 1 did not reply; 5 had other comments.

COMMENTS: (1) Few problems in present collection (3 comments). (2) Have no calls for this material (1 comment).

OPINIONS: 3 approved of new location; 1 was dubious.

Modern Art	709.03 (including all periods from 1420 A.D. to the present—from Renaissance to 20th Century)	709.04 (new number especially for 20th Century Art)
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REPLIES: 5 answered: No; 5 had other comments.

COMMENTS: Little difference in classification; would find material readily (2 comments)

OPINIONS: 3 approved of relocation; none disapproved.

<i>Subject</i>	<i>Previous Classification</i>	<i>Present Classification</i>
Art	700 (including art as a profession)	706.9 (new number for Art as a profession)
<p>REPLIES: 7 answered: No; 1 answered: Yes; 2 had other comments.</p> <p>COMMENTS: (1) It would be good to have vocational material together (in all fields). (2) Small collection, therefore no problem.</p> <p>OPINIONS: 3 approved of relocation; none disapproved.</p>		
Industrial Sociology	331.89 (including labor organization and labor disputes)	Moved to 331.15 under "Labor management conciliation"
<p>REPLIES: 5 answered: No; 3 answered: Yes; 1 had other comments; 1 had no reply.</p> <p>COMMENTS: Limited holdings, therefore no problem (2 comments).</p> <p>OPINIONS: 1 approved of relocation; none disapproved.</p>		
Automation	301.243 (including all aspects)	New subject, not mentioned in index of previous editions. Added other numbers outside the 300 category; 658.5 Business & Industry, 651.26 Office mechanization including computers, 629.8 Engineering aspects.
<p>REPLIES: 2 answered: No; 1 answered: Yes; 7 had other comments.</p> <p>COMMENTS: (1) Subject is so separated now that a new number will not add to the difficulty. Technicians will expect to find this subject in the technical field, but this means more work for the librarian. (2) Some difficulty at first, but will speed up service.</p> <p>OPINIONS: 6 approved; none disapproved.</p>		
Theory of Numbers	511.2	Transferred to 512.81—Abstract Algebra
<p>REPLIES: 6 answered: No; 2 answered: Yes; 1 had other comments; 1 had no reply.</p>		

COMMENTS: (1) There will be difficulty at first, but will be an improvement in the long run. (2) Holdings limited.

OPINIONS: 2 approved relocation; none disapproved.

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<i>Subject</i>	<i>Previous Classification</i>	<i>Present Classification</i>
Engineering	620 (including Civil engineering)	Civil engineering moved to 624 (a number formerly used for structural engineering). Change in topic (now structural engineering is a sub-topic under Civil Engineering).

REPLIES: 4 answered: No; 3 answered: Yes; 2 had other comments; 1 had no reply.

COMMENTS: (1) Some radical changes in "620" are needed as some numbers are so long that scanning of titles is necessary. (Maybe changes on the other side of the decimal point are needed.) (2) This splits up the subject, leaving electronics in the middle.

OPINIONS: 3 approved relocation; 1 disapproved.

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Electronic Engineering	621.34 (located in the middle of electric lighting and similar topics)	Moved to 621.38 with subdivisions (some have been adopted) .3815 electronic circuits (new number) .3818 electroacoustics (new number) .3848 radar
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REPLIES: 4 answered: No; 5 had other comments; 1 had no reply.

COMMENTS: (1) A good move, because it separates masses of material. Will make material more easily available to the reader. (2) This section should be expanded.

OPINIONS: 4 approved relocation; none disapproved.

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2. *Would the expansion of numbers in the 16th Edition of Dewey make it easier to locate specific information?*

*Examples of Expansion of Numbers in the 16th Edition of Dewey*

Astronautics	629.138	(Taken from DC Additions notes and decisions sheet) New subject expansion
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<i>Subject</i>	<i>Previous Classification</i>	<i>Present Classification</i>
		<p>sion due to progress of knowledge.</p> <p>629.4 extraterrestrial rockets given special new place and separated from terrestrial rockets.</p> <p>629.14353 now used for terrestrial rockets.</p> <p>REPLIES: 5 answered: Yes; 1 answered: No difficulties anticipated; 3 had other comments; 1 had no reply.</p> <p>COMMENTS: (1) All I hope in this classification is that they don't run out of numbers. (2) Separating similar topics sometimes isolates one from the other. Unless older material is reclassified, this will prove a headache, as much material lies between. (3) This section needed expansion.</p>
Judaism	296 (not broken down enough to fit needs)	<p>Greatly expanded, i.e., 296.1—Sources of Judaism</p> <p>296.3—Doctrinal theology</p> <p>296.4—Expanded to include Holy days.</p> <p>REPLIES: 6 answered: Yes; 1 answered: No problems anticipated; 2 had other comments; 1 had no reply.</p> <p>COMMENTS: (1) Will be helpful in expanding collection at a particular branch. (2) Will expedite service to patrons. (3) A good idea, but not too useful in a small library. (4) Not much use is made of this section.</p>
Absolutism	321.6 (not broken down)	<p>Expanded—i.e., 321.64 Modern dictatorship.</p> <p>321.642 Communist type of dictatorship.</p> <p>321.644 Fascist type of dictatorship.</p> <p>REPLIES: 7 answered: Yes; 1 answered: No problems anticipated; 2 had no reply.</p> <p>COMMENTS: (1) Small library not greatly affected. (2) Should be helpful to us and to the students. (3) Yes, but lengthening of digits is not always convenient.</p>

<i>Subject</i>	<i>Previous Classification</i>	<i>Present Classification</i>
Medicine	610	Expanded to make new place for 610.69— Medical profession— study and teaching.

REPLIES: 7 answered: Yes; 1 answered: No difficulties anticipated; 1 had no reply; 1 had other comments.

COMMENTS: (1) Have many requests for career information; should be helpful. (2) Small library not greatly affected. (3) Would not make much difference.

3. *Would more frequent reference to the Book Catalog be required:*

Note: Some already expressed their opinions on this—unasked—in questions on relocations and expansions.

REPLIES: 5 answered: Yes; 2 answered: No; 2 answered: Some; 1 had no reply.

COMMENTS: (1) Yes, in case of relocation; very little in case of expansion (2 comments). (2) Yes, at first, but it would not take long to become familiar with the new numbers. (3) Collection is not large, so changes are not great. There is a need for informing Branch personnel about these relocations. (4) Staff will have to rely more on the catalog instead of on pet numbers which have been memorized.

4. *Have you experienced difficulty in locating material on other subjects as a result of the relocation or expansion of numbers?*

REPLIES: 4 answered: No; 4 answered: Yes; 2 had other comments.

COMMENTS: (1) Flower arrangement—Gardening materials are in 715 and 635 both. Telescope making, formerly 535.8 now 522.2. (2) Travel books under the history number. Information is needed as to projected changes. (3) As new lists of changes have been received at the branch, the changes were noted in the author, subject and title catalogs, hand-written in ink. (4) Small changes one or two places after the decimal point make very little difference in a small branch library. Only in cases of relocation is it likely to cause confusion. (5) Relocation and expansion are of great help in this branch. We extend our heart-felt thanks.

# Further Comment on Map Cataloging

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JOHN B. WHITE, *Director*  
*Library and Archives*  
*Nebraska State Historical Society*  
*Lincoln, Nebraska*

RECENT ADVICE ABOUT map cataloging is to prefer as main entry the area shown by the map. May I offer a few comments on this subject?

For an historical library, it is important to establish responsibility for the map. Thus the identification of the "author," or cartographer, the individual or the institution, government agency or publisher responsible for the map, is an important responsibility of the cataloger.

It is often the case that maps do not show a well-defined, generally recognized, place-name area. Maps of the trans-Mississippi west illustrate this difficulty with using area for the main entry.

The term "main entry" needs to be clarified. It is often taken to mean "most important" entry. From the user's standpoint a subject or added entry may be the most important. "Main entry" should be understood as the peg on which the record is hung. It is analogous to the main clause of a sentence, which may or may not carry the significance of a statement, but is structurally basic.

Many of the remarks about map cataloging pertain more pointedly to a printed catalog, rather than a card catalog. With a card catalog, the user is not handicapped in any way by the cataloger's choice of main entry.

There also appears to be confusion between the cataloging of maps and their arrangement. Arrangement by area can be achieved regardless of the choice for main entry.

The use of the date in the main entry would present problems particularly for older maps. Date of publication may differ from the date of the information on the map.

It makes some difference whether the map catalog is separate, or whether the cards file into a general catalog containing other library items. In the latter case, subject entry under area with the subdivision MAPS still appear to be the most satisfactory. Many sample main-entry cards for areas that I have seen would not fit into such catalogs.

Entry under responsible agency or "author" permits map series to be handled with a single card set.

All the numerous differences alleged to exist between maps and books can be recorded in the form of notes on the card. This is no problem.

In short, the analogy between map and book cataloging is sufficiently useful to make the so-called author approach to maps preferable for such libraries as the Nebraska State Historical Society.

# Problems in Serials\*

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A GLANCE AT THE numerous entries in *Library Literature* under the two headings "Periodicals" and "Serials" will show that these can be vexing problems to all types of libraries. Librarians write on how to order them, how to check them in, how to circulate them, how to catalog them, and how to get rid of them. Yet the problems never seem to be solved. We all know there is no ONE BEST WAY to apply to all libraries, and it may be that there is not even ONE BEST WAY for each type of library. With the rapid rise in the birth rate of periodical publications, it seems appropriate that we should exchange our experiences, problems, and some of the solutions, as they relate to college, public, special, and university libraries.

In the papers that follow it will be seen that the definition of a serial is not always uniform. Two of the libraries distinguish between "periodicals" and "serials," chiefly on the basis of frequency. This variance is made clear in each paper and should not cause any confusion.

Solutions and methods vary widely in some respects. The College of Pharmacy has, in effect, a separate catalog for its serials which are not classified and cataloged except for certain analytics of monographic serials. On the other hand, Wellesley and Brown give full cataloging under the latest title.

## Serials in a College Library

ELAINE WALKER

*Serials Librarian, Wellesley College Library*

The Wellesley College Library is an open-stack library of some 300,000 volumes servicing an undergraduate liberal arts college of about 1700 students. Included in the collection are current subscriptions to approximately 1200 periodicals, 2000 other serial titles, 12 weekly and 9 daily newspapers. Since 1951, there has been a Serials Section within the Technical Services Division which is responsible for most serial processes.

### *Acquisition*

The original ordering of serials and all bill records are taken care of by the Acquisitions Department. Although some serial orders originate in the Library, most of them come from the college faculty. If an order is received in the middle of the year, the Acquisitions Librarian usually places it with the publisher until it can be added to an agent's subscription list the following year. Some serials continue to be ordered directly

\* From the papers presented at the April 30, 1959 meeting of the Boston Regional Group of Catalogers and Classifiers, held at Simmons College. Papers edited by Helen G. Kurtz, Brown University Library, Moderator.

from the publisher, but subscriptions for the majority are placed with an agent on a "till forbidden" basis. For a large part of our domestic order we use the F. W. Faxon Company. Many of our foreign orders go to Stechert-Hafner, except for the English titles which are with Stevens and Brown, or Sotheran. We also receive a few serials from Olschki in Italy and subscribe to Russian periodicals through the Four Continent Book Corporation in New York. The Acquisitions Department keeps two files of serials, one by title, and the other by college department. In these files one can quickly find how each title is obtained, from what fund it is purchased, and who requested it, as well as notes on temporary suspensions.

The Serials Cataloger notifies the Acquisitions Department of any replacements needed, and they try to obtain these from back-number dealers, or, in some cases, directly from the publisher. Serials available by gift or exchange are usually requested directly by the Serials Cataloger. The Serials Section is able to secure a considerable number of missing issues through the Duplicate Exchange Union of which Wellesley is a member. In this way we also get rid of many of our own duplicates.

### *Checking Records*

Rather than having one large checking record, we have divided our serials into two categories. On a Remington Rand Kardex we have the check cards for periodicals and newspapers received *more than twice a year*. The remainder of our serials are checked in on cards located next to the Kardex in a file called the Check List. There are exceptions to this division, the most notable being that titles going directly to the stacks rather than the Current Periodicals Section, are usually listed on the Check List no matter how frequently they appear. Titles added to the Check List are immediately cataloged and classified, while those on the Kardex are not cataloged until we have received at least one complete volume, at which time the decision on binding is also made. Meanwhile, the magazines are kept in the Current Periodicals area with one of the multiple order slips filed in the public catalog giving the location.

In both the Kardex and Serial Check List, we use Library Bureau 6 x 8 inch checking cards. On these cards, in addition to the current issues and the date received, we note the receipt of title pages, indexes, and supplements, and keep a record of the last volume bound or tied in the stacks. Volumes currently at the bindery are also charged on these cards. Filed with the check cards on both the Kardex and the Check List are the current invoice cards with the bill records, the publisher and latest address, and source. These records are located close to the public catalog and the Current Periodicals Section, and are easily reached by the Reference Department. Students insist on using the Kardex as a complete periodical catalog instead of simply a list of those currently received, but the Reference Department feels that the convenience of having these records here outweighs any confusion they may cause. In the Reference Department, on the table with the most heavily-used periodical indexes, we have a

visible index listing the current periodical titles. This list gives only the title with location of the back file and current issues.

The daily mail is opened in the Serials Section and brought out to the Kardex to be checked in and shelved. Check List material is added once or twice a week within the Serials Department. At the time of checking in, any missing issue are noted and claimed; and about three times a year, a more thorough search is made of both records to find any titles that may have stopped coming. Claims are sent by the Serials Department; we find that it is usually more satisfactory to claim issues from the publisher than through the agent.

### *Cataloging*

With the exception of a few periodical titles of only temporary interest which are discarded at regular intervals and receive only simplified cataloging, all serials at Wellesley are fully cataloged in the public catalog. We generally enter under the latest title with references from earlier ones. When they are available, we use Library of Congress cards, sometimes adapting them to our needs. Otherwise we prepare our own cards following Library of Congress rules. Usually we omit editor entries but do make any necessary subject headings and entries for sponsoring bodies. For "dead" serials we use the unit card system with holdings on all the cards, but for titles currently received we use a form of reference card for the added entries referring to the main card for holdings. These references do, however, include call numbers. On the main card, the holdings read "to date" with a stamp indicating whether the checking card is in the Kardex or the Check List.

The Reference librarians make extensive use of serials in their work, and we try to cooperate with them in every way possible, sometimes adapting our usual routines to fit their needs better. Our Reference Librarian is much opposed to any simplification in serials cataloging. She maintains that if the bibliographical history of a serial publication is recorded in the catalog, it saves much work for the Reference Department as it would otherwise have to do the same work over each time a question is asked.

At Wellesley we continue to accession all bound volumes and some unbound ones. Accession books were discontinued in 1942, and since that date the accession numbers have been recorded on the shelf list cards. Serials such as annuals are accessioned when checked in; other serials which bind more than one issue to a volume are accessioned when returned from the bindery.

### *Binding*

When a periodical is cataloged, the decision whether or not to bind is made. This is based on the title's importance in its field and the use it is expected to receive. The majority of our periodicals are bound in Class A bindings. Small loads of binding are prepared and sent at various times during the year, but by far the largest amount waits until June. Heavily

used titles are never sent during the school year unless they can be done "rush" during the Christmas holidays. Lesser used material is preserved by tying, putting in pamphlet boxes, or Class B binding.

Backfiles of the *New York Times*, the *London Times*, and *Le Monde* are kept on microfilm, but so far we have not attempted to substitute microfilm for back periodical files. Recently we acquired the complete run of *Annalen der Physik* on microcards and were able to discard the bound volumes, but this is the only serial we have in this form.

### *Organization*

If having only one complete record of serials holdings is the goal to be worked for in serials, then we have reached this only in our treatment of unbounds. However, our changes have been in this direction; we have questioned the need of accessioning bound volumes, and it may be that this process will be discontinued at some time.

## **Serials in a Special Library**

BARBARA M. HILL,

*Associate Librarian, Massachusetts College of Pharmacy*

The procedures for handling serials in many special libraries are somewhat different from procedures followed in other types of libraries. The Sheppard Library of the Massachusetts College of Pharmacy is chiefly a college library of some 20,000 volumes. Our aim is to meet the needs of the faculty and students; that these needs are largely in a specialized subject area, making the library also a special library, is somewhat incidental. Probably procedures followed here are closer to those of other college libraries of our size than to special libraries attached to industrial concerns.

While we retain indefinitely most titles of scientific or historical interest, most company libraries are not able to do this. Storage space is at a premium, and a company's field of interest may change. Many company librarians find that discarding on a time schedule, then borrowing, photocopying, or buying issues as needed allows their collection greater flexibility in adapting to changes in company activities, without costs of storage and binding. This means that they depend on research collections, of which we are one, for much of the older material which they occasionally need. When such a policy is followed, serials records can be greatly simplified, and usually are. For this reason, the discussion which follows, while outlining procedures followed in our Library, does not necessarily show those of a typical special library—if a special library which could be called "typical" exists.

### *Acquisition*

We receive about 150 periodicals and 50 serials by subscription, and about the same number of each by gift, making a total of slightly over 400

titles currently received. Titles which are added by subscription are selected cooperatively by the Librarian and the faculty. If the title is a relatively new one, we attempt to start with volume one. If not, a decision is made, again cooperatively, on how much we should attempt to acquire in addition to the current volume. Titles offered as gifts are received by the Associate Librarian, who decides whether to add them, whether to try to secure back files, and how long they are to be retained. Advice is sought from the Librarian and from faculty members when necessary.

In placing subscriptions, we use an agent whenever possible. Subscriptions are placed on a "till forbidden" basis, and the agent is instructed to take advantage of all long-term subscription rates. In practice, this means that each year some titles do not need renewal, so that bills cover about the same number of titles each year. At present we use Bay State Periodical Service and F. W. Faxon Company, both of Boston, for domestic and some foreign subscriptions. Swets & Zeitlinger, Amsterdam, handles some of the European titles. We purchase some annual publications through the Massachusetts College of Pharmacy Bookstore.

We try to place orders for changes in the next year's subscription list in the late summer just before the agent is ready to bill us for the following year. Titles are occasionally added during the year.

#### *Checking Records and Cataloging*

We have not quite managed the ideal of one record for serials; at present we maintain four: Visible Checking Record, Serials Holdings File, Standing Order File, and Bindery Card File.

*Visible Checking Record.* This is a Demco Visible Periodicals Checking Record, and is maintained as a temporary file of titles currently received. Two cards are used for each title. The checking card is in a flat position when the file is opened, with the second card, which is used for business information, placed on the back of the previous pocket so that both may be seen at the same time. All information concerning the subscription or gift sources is entered on this second card. Our secretarial assistant checks in periodicals. This is done by entering the date received. If the numbering is unusual, the issue number is entered also. When an issue is received and the previous number has not arrived, it is claimed at once. (Foreign titles are claimed in two weeks.) Subscription items are claimed through the agent. We use a form letter for requesting missing issues of gift periodicals. Signals are moved along the visible edge of each checking card, indicating month received. The file is scanned every two months for titles no longer being received, and for missing issues, and appropriate action is taken.

*Serials Holdings File:* Since we do not classify and, with few exceptions, do not catalog serials, the Serials Holdings File is our permanent record. This file occupies drawers adjacent to the Card Catalog and is thus available to the public at all times. We follow the *Union List of Serials* type of entry, using latest title, with references from earlier titles.

Each card carries the title or other entry, and a statement of the library's holdings as an open entry if the title is regularly received. (Example: Shepard Library has: v. 2 (1957)—date) The word "date" is in pencil. If we cease to receive a title, the word "date" is erased, and the closing volume, number, and date added. If the serial ceases publication at the same time, the *Union List of Serials* double slant line symbol is added. Title variations, multi-volume indexes, and any lacking volumes or issues are noted, the latter in pencil.

When a serial is kept for a limited time, this is usually decided when the title is added to the Serials Holdings File, and the card states this time limit rather than listing holdings.

Occasionally, if we think that our consideration of an item as a serial might be confusing to the public, we place a reference in the Card Catalog. This is done sparingly, and such reference cards are traced on the back of the Serial Holdings File card.

If a series is monographic (*Chronica Botanica*, U. S. National Herbarium *Contributions*, etc.) contents cards follow the first card and list individual numbers, with title, author, and date. Certain numbers in such a series are an exception to our practice of not cataloging serials. If the subject of the number is of importance to us, an author analytic is made for the Card Catalog. Subject analytics, if made, are traced on the author analytic. An asterisk opposite the number on the contents card in the Serials Holdings File indicates the presence of an author analytic in the Card Catalog. With the exception of these monographic series, we do not have to make changes or additions to cards in the Serials Holdings File unless the serial itself changes.

Following the main part of the Serials Holdings File are two auxiliary files maintained for our convenience. One contains a card for each currently received foreign title arranged under the country of origin. The other is a record of currently-received pharmaceutical house organs arranged by name of the company. Users of either one of the auxiliary files must consult the main body of the Serials Holdings File to determine holdings, earlier titles, etc.

United States government serial publications, if acquired as a series on a continuing basis, are treated like other serials (checked in the Visible Checking Record, entered in the Serials Holdings File, and shelved with other serials). If acquired as separates, they are either placed in the pamphlet file or classified and cataloged as books. A United States government documents section of the Serials Holdings File, arranged first by department, then agency, then series and number, contains a card for each of these selectively-acquired and preserved items. Call number or Pamphlet File subject heading used is noted on each card.

*Standing Order File:* This section of our order file is in the workroom and contains a slip for each "annual," giving source and date the standing order was placed. This record is of use mainly to the library staff, because these titles are procured through our college bookstore which does not perform all the functions of a commercial jobber. These "annuals"

are checked in the Visible Checking Record along with the other regularly-received serials.

*Bindery Cards:* This file, kept in the workroom, contains a card for each title bound, with pertinent information recorded. It aids in the collection and physical preparation of material to be sent and in inspection of material when it is returned. It shows what is at the bindery and is a basis for estimating possible date of return.

Unfortunately, a rather small percentage of the titles which we preserve is presently being bound. In spending the money presently available for binding, we consider titles on the basis of scientific value, expected degree of continued use, and closeness to our subject field.

Material is sent several times a year, generally as soon as title pages and indexes are received, but taking into consideration any seasonal peaks of use for certain titles, and also of the bindery's work load. F. J. Barnard does our binding, and since they take and store rub-offs for titles we bind regularly, instructions to accompany shipments need not include detailed instructions.

Unbound periodicals are tied by volumes and tagged, giving title, volume, and year. These are stored flat on open shelves.

*Shelving and Circulation:* Current issues are on shelves in the reading room, five years plus the balance of the current year are in the first floor stack, and older issues are on the second and third floor stacks. In all cases, they are alphabetically arranged just as they are in the Serials Holdings File. Certain titles acquired for reference use (abstracting and indexing services, etc.) are shelved in the reference area.

All periodicals, bound and unbound, except those which are for reference, circulate. They are loaned to undergraduates overnight, and to graduate students and faculty for an indefinite period. They are available for interlibrary loan.

*Disposal of Duplicates.* The library, as an institutional member of the Medical Library Association, participates in the exchange operated by that association. Each offering library lists its duplicates at least once in two years. The lists are mimeographed and circulated by the Association, and libraries send their wants to the exchange headquarters. We send non-medical duplicates to the U. S. Book Exchange. The advantage in using this exchange is that no listing of materials offered is necessary, but it is expensive to send the materials to Washington, D. C.

The above is a resumé of methods which have worked for us. Perhaps we can streamline our procedures still more. We're still trying.

## Serials in a Public Library

KATHERINE C. DWYRE

*Head, Processing & Personnel, Free Public Library,  
Worcester, Mass.*

Serials have been called hard names by many people; they have been called dirty, messy, frustrating, diabolical. But I do not remember ever

hearing them called dull. If you work with serials, who knows what may come up? I can illustrate from personal experience. At Worcester the Serials Division is a part of the Processing Department, and the Magazine Room is a part of the Serials Division. The only space in the Library which would take the phonograph record collection was in the Magazine Room, so that recordings became a part of the Serials Division. So, very logically, one of my first duties in Worcester was to purchase a record player with earphones!

Since I am following a college librarian on the panel, and since I have had experience in both types of libraries, I thought I might mention the principal differences which I have noticed. Serials are not nearly so serious a problem in public libraries; to begin with, the proportion of serials to books is much smaller. Most of the titles are published in the U. S., and most of them in the English language. Many titles are kept for one year, or five or ten years, and thus there is less emphasis on buying back numbers. Most of the use seems to be from the periodical indexes, and fairly current references at that. Because of these differences, much of serials work in the public library may be done very satisfactorily by good clericals. Our Serials Division is manned by clericals, and they do all the ordering, checking in, and preparing for binding. Only the actual cataloging is done by professional librarians.

The Worcester Free Public Library has a total of 505,776 volumes and currently receives about 782 periodical titles, plus 376 additional copies, giving a total periodical subscription of 1158.

### *Acquisitions*

One problem which the public library may face is the necessity of letting its subscription list out for bids. From bitter experience, I say, fight it off as long as you can. Any saving which you may make from a low bid is more than offset by the staff time involved, even if the same dealer gets the bid, and if the dealer changes, the disruption of service is appalling. Many good dealers do not wish to take time to prepare a bid, and others do not wish to post the bond which is required.

If you must seek bids, draw up your specifications very carefully. It is possible to break a contract if one specification is not met, but you have no legal right to any service, however customary it may be, if it is not in the specifications. One specification should be that the dealer be presently handling library accounts of a size comparable to yours. This will keep out well-intentioned amateurs who might make an impossibly low bid. We have been able to place a three-year contract for subscriptions, because the savings involved was \$1,200.00. We are eagerly looking forward to two summers without magazine renewals. We are satisfied with our dealer, Herman Goldberger of Boston.

Titles which come in successive volumes or editions, and which are billed after delivery, instead of billed in advance like subscriptions, we call standing orders. These are more satisfactorily handled directly with the publisher. We have tried periodical dealers, and we have also tried

the regular book dealer for titles issued by trade publishers. The volumes come through more quickly from the publisher; the bill comes more quickly, and the follow-up correspondence is less. We lose a few discounts, but the speed in delivery is important to us. When we had to seek bids, we made two separate lists for the periodicals and the standing orders. The periodical dealers reported to the Purchasing Agent that they could not quote on the standing order titles, so that left us free to get them from the publisher.

### *Checking Records and Cataloging*

We do not have a central serials record. Our periodicals are checked in the Magazine Room; all record work is done there and the complete record kept there. The bound volumes are kept in a Periodical Stack, alphabetically by title. The record for the bound volumes shows title, holdings, publisher, frequency, and notes for "preceded by" and "continued as."

We have a subject divisional library organization, and each of the three divisions have a visible "whirligig," officially the "Magazine Finding List." This gives the location and inclusive holdings, with a dash to indicate current receipt. Many titles, instead of actual holdings, say "current volume only," "last five years," "last ten years," etc. We rarely find it necessary to change holdings, because we add and discard few old volumes, and the gaps show only in the Magazine Room. However, we are constantly adding new titles and closing entries.

In general, we treat as periodicals those titles published quarterly or oftener, and as "serials" those publications issued less frequently, or irregularly. These are checked in the Processing Department Offices and cataloged on receipt. New volumes are added only to the shelf list and main catalog card; the shelf list card is pulled out for typing, but the Serials Cataloger adds the volume to the catalog in pencil.

Whereas we have changed to successive title entry for our periodicals, our cataloged serials are entered under the latest title which we have, with added entries for any earlier title which we have. Some years ago we started recataloging serials in a simpler form, cutting out subtitles, notes for volumes which we did not have, editor notes, etc. As new volumes came, we recataloged, and now we have redone practically every title for which we have received a volume in the last four years. As we recataloged, the decision was made on how long to retain.

At the point where we are now, it is simple to recatalog when a title changes. We decided long ago not to re-Cutter unless we changed the classification number. First, a page pulls the catalog cards. Then the cataloger takes one of the old cards, crosses off the old title and writes in the new title, adds the old title to a note, and indicates an added entry. Then the clericals take over, type the stencil, run off the cards, add the heading, and file the new cards. It is not even necessary to hold the new volume while the cards are run off. It can be added to the old shelf list and sent along. As you can see, there is little professional cataloging involved;

however, the process is simple only if you reproduce your own cards, and have enough clerical help.

For corporate headings, we recatalog under the latest form of the new name, with added entries for all other forms of the name for which we have holdings. If the catalog cards do not explain the relation of the different forms of the name, or if we have a monograph under one heading, we are using history cards, ending them with the note: "Publications are entered under the name used at the time the publication is issued."

Our Serials Cataloger has spent her spare time in the last year recataloging the Massachusetts Public Documents. As many of you know, it is not easy to chart the course of development of the departments and divisions of the Massachusetts state government. Ordinarily we put history cards in the catalog only where there are entries, but for the Massachusetts serials we put history cards under the forms of the names whether we had entries or not, in order to lead the public, and the staff, to the material which we do have.

We have gone heavily into serials cataloging for books which come out in successive editions, what Dr. Osborn calls pseudo-serials. We recently put on open entry cards the automobile handbooks issued by car manufacturers. Provided there is no change in entry, new editions of this sort do not go to a cataloger until they are ready for final revision. For some titles on standing order for which we keep only the latest volume, the catalog says "Latest vol. only." Some of these are added to the shelf list, and twenty or so titles are not even added there.

One problem in college libraries is whether or not to analyze monographic serials. Because of the lessened importance of complete sets in public libraries, we place few standing orders for monographic series, but purchase the ones we need and catalog them as separates. In some cases where we do have a standing order or subscription, we catalog only selected titles. This means that we have few analytics for this type of serial.

One piece of equipment which Dr. Osborn barely mentions is the Magne-dex. We use metal card trays which hold 4 x 6 inch cards which have a piece of metal at each end. The cards are supposed to fan out by magnetism, so that you can see a section of cards spread out as they would be in a visible file. Our cards do not fan, possibly because the file is too full, possibly because we insist on clipping notes to the cards. However, the trays take up less space than the old Kardex, costs less than a new Kardex, and we like it because it is easier to get the card out and use the back. We still use a Kardex in the Magazine Room, but we use the Magne-dex in the Processing Office.

### *Binding*

We are also obliged to send our binding out for bids. Again, I do not recommend it. We had to break one contract; it was hard to do, and it held up all binding for three months. We like our present contractor, Wesby of Worcester. The titles which we intend to keep indefinitely, we

bind in Class A. Those which we keep for five or ten years, we bind in a cheaper binding, the specifications for which we worked out with Wesby years ago. We do not have unbound back issues in the stacks, except for a few volumes which we are trying to complete for binding. After a reasonable attempt to buy the missing issues, we bind the volumes without them.

We keep a separate binding record in the Magazine Room. For volumes which are taken from a subject division, we leave a charge slip. Thus if the "whirligig" says "Last five volumes in Social Science," the volumes are either there or charged to the bindery at the Social Science desk.

We are trying a time-saving device which would never work in a university library. We have decided to bind the titles which are indexed in the Wilson indexes without waiting for the volume indexes. This means faster service, and also fewer losses of unbound issues which we wait for indexes. It is too soon to tell how many complaints we will get. We should be glad to know if anyone else has done this, and what their experience has been.

### *Organization of Serials Work*

There are as many different plans of organizing serials as there are libraries with serials in them. I do not recommend our plan, which is dictated partly by our decrepit building. Our Magazine Room has only the latest issue of a title, the earlier ones are sent either to a subject division or to the Periodical Stack. Our present plan for a new building envisions no Magazine Room but rather subject divisions which will be large enough to take the current magazines in their fields, and a Popular Library which will be large enough to take the general magazines. At that time we expect the records to come to the Processing Offices and hope to have room enough to handle them. Then we might be able to go into a central serials record.

## **Serials in a University Library**

EDITH CLITHEROE,

*Serials Cataloger, Brown University Library*

The simple and easy treatment of serials at Worcester calls forth only envy from a university serials cataloger harrassed by the bulk and complexity of material largely in foreign languages.

To give you an idea of our size, Brown has at present an enrollment of 3668 students and a book stock of over 900,000 volumes. Technically we are a closed-stack library, although there is in operation a liberal stack privilege system. We handle between eight and nine thousand serials plus several hundred serial documents. We analyze about 500 and do cooperative cataloging for a half dozen for the Library of Congress. Our conception of a serial encompasses anything which is issued with any degree of periodicity.

At Brown four separate units share the processing of serials and documents.

1. Serials Division which acquires, checks-in, and claims material.
2. Serials Cataloging Division which catalogs and is responsible for listing material in various union lists.
3. Binding Division which handles the binding of material both with commercial binders and within our own bindery.
4. Documents Division which acquires, checks-in, catalogs, and gives reference service for its own type of material.

All these units are a part of the Technical Processes Department which is physically apart from the public catalog.

*Acquisition:*

This work is done in our Library by the Serials Division. It buys from dealers and often directly from foreign agents. We have a flourishing exchange program with Russia and East European countries. With the Far East the exchange is more or less limited to Brown's special interest of mathematics, engineering, and science. For documents, other than U. S. and U. N. depository items, money is placed on deposit with the U. S. government for its documents and with the Queen's Printers for British and Canadian publications. We use dealers for other governments and buy directly from most international organizations.

*Checking Records:*

A Kardex and a Wheeldex decision file are used for checking the mail. All serials that are retained are checked in the Kardex where business information is recorded. Titles discarded have a card on the Wheeldex decision file giving the desired information.

*Cataloging:*

The Serials Cataloging Division receives each new serial with a blank decision card.

CONTIN Yes No

Kardex Card # DESTINATION	SOURCE	CATALOGING
Ser. Cataloger	Fund	Cat memo
PRR	Gift	Rotary file
Biol. Sci.	Exchange	N.S.T.
Pemb.	BINDING	Class as set
Phys. Sci.	Bind out	Class sep.
Box	B.U.B.	Brief cat.
Sample	Bundle	Anal. for Main
Storage	Red rope	Anal. for Dept.
Discard	Cardboard	Standing LC
Other	Portfolio	

Date \_\_\_\_\_ By \_\_\_\_\_

On this card the Serials Catalogers established the correct title. The serial with the decision card is routed to Acquisitions and Binding insuring the uniformity of the title in all divisions.

When a serial is ready for cataloging, it bears a dated routing slip which may be one of three colors: white for purchase, pink for gifts, or yellow for exchange. These slips stay with the volume and have the following uses:

1. The colored slips aid in quick sorting of material for priority.
2. The date tab keeps material in chronological order as received.
3. Notes for the cataloger are quickly added to the slip and are read easily by the cataloger.
4. The slip becomes a destination slip for the serial until it is marked and shelved.

Because of the distance from the public catalog, a certain duplication of records in the Serials Cataloging Division is necessary. We give a full record of bound and current material to the public and keep a duplicate working file in the Processing Department. The public has the use of full-form cards in the catalog for bound material and the use of a Rotary File for current volumes. We give location and call numbers in part on the Rotary File.

We use the travelling card system at Brown, because we believe the cataloger can see the piece and the records together and is personally responsible for checking the record which the public interprets. The disadvantage of this system is that the housekeeping of the record is very time-consuming.

Our serials are cataloged by latest title because we believe this gives the best service in the following ways:

1. All information about a serial is in one place. We give the history of the serial and make the appropriate cross references. We include the call number on the cross-reference as a time-saving device for the public.
2. Duplication of cards under subject is avoided.
3. The searcher's life is made easier by not having to trace a serial through changes of title.

The above reasons also show why we question Mr. Lubetsky's suggestion of cataloging by subsequent title.

#### *Documents Division:*

New documents serials are sent to the persons concerned for decision. The Documents Division claims missing numbers on notification from the Bindery. The documents periodicals which are given full cataloging are checked in on Kardex and routed to the Periodicals Reading Room or the various departments which send them to the Bindery when completed. They then come to the Documents Division for cataloging, which is the same as for other serials. Some U. S. documents check in on 3x5 cards; some are arranged by the Superintendent of Documents classification and

sent directly to the stacks. Several are bound together in the cheapest binding.

### *Binding:*

Most of our serials are bound commercially in a Class A binding. Brown, however, has its own bindery and has developed a Brown University Binding (BUB) which is durable, less expensive than a class A, and can be made with a minimum of equipment. We employ a Red Wallet paper binding for ephemeral or little-used material. We also use a box made locally by hand in any size, very inexpensively.

### *Organization:*

Our problems are lack of space, duplication of records, and too much handling of volumes.

We hope that as we relieve the over-crowding of our Division and in the future move nearer to the service point of dispensing information, many of our problems will be solved.

We asked our Head of Readers Service for Reference Department reaction to our type of cataloging serials, and the answer was "completely satisfactory." This is reassuring but at the same time we feel the need constantly to examine techniques and routines to insure the best service.

## REVIEWS

The National Library of Medicine Index Mechanization Project, Washington, National Library of Medicine, 1961. 96 pp. (*Bulletin of the Medical Library Association*, v. 49, no. 1, pt. 2, January, 1961).

Subject control of medical literature is one of the most serious problems facing the medical and library professions today. As more and more research is being done, knowledge becomes increasingly fragmented and the volume of scientific reports accelerates, as indicated by estimates that approximately 220,000 articles are now published annually in medical and allied scientific periodicals. For many reasons the National Library of Medicine was the natural agency to tackle this problem since it has published medical indexes since 1879. Recently the N.L.M. has been under increased pressure to improve coverage of the medical periodi-

cal literature as well as to produce a current index more rapidly, and as a result an investigation was made of the feasibility of mechanization.

In 1958 the "Outline of a Proposal to the Council on Library Resources, Inc." was prepared with the "Specific aims (of) develop(ing) and demonstrat(ing) in the field of medicine improved methods for the rapid and efficient publication of comprehensive indexes to the literature of broad scientific fields with simultaneous provision for meeting the requirements of specialties within these fields, making use of hitherto unutilized mechanical applications. The Council on Library Resources agreed to make the sum of \$73,800 available to the National Library of Medicine over a period of two years (July 1958—June 1960) for undertaking this project . . ."

In carrying out the project new composition methods were employed based

on the integration of photographic and data-processing equipment, a system built around the Listomatic camera which photographs one-, two-, and three-line entries at high speed to produce a negative suitable for the preparation of offset plates. Punched cards were used, and statistics indicate that approximately 25,000-30,000 subject and 15,000 author entry cards are involved *each month*, a prodigious expenditure of time and money. At the end of each year the cards for the 12 monthly issues are interfiled and filmed for the *Cumulated Index Medicus* which is published by the American Medical Association.

Following a presentation of the historical and technical background, this report gives the actual operational picture and details of cost of the project. Management aspects are described in detail, including the frustrations caused by the accumulation of static electricity in carbon ribbons, "chewing up" of the punched cards, and frequent machine breakdown. The reader is left with a reverent feeling of awe for the dedicated group of people who have produced the new series of the *Index Medicus*, published monthly since January 1960.

Among the objectives of the project, in addition to increased coverage over previous medical indexes, were the reduction of the time lag between the original publication of journal articles and the publication of the *Index*, the improvement of legibility and of arrangement of citations to make consultation easy, and the demonstration of methods and techniques which might be valuable to scientific indexing in general. These—and other objectives—have been met more than adequately, and there is no doubt that the experience and education acquired by the staff of the Index Mechanization Project will be important in further investigations of automation techniques.

Criticisms may be made of the prac-

tice of translating foreign language titles into English, and that some technical problems have not been solved completely. The printing is too often uneven, and entries in the *Index Medicus* are sometimes illegible; parts of lines and even whole lines are not printed causing the entry to be unusable, and entries are not always strictly alphabetical in arrangement. However, no one can deny that the project has been a monumental achievement as a successful experiment, and one is left with the sobering thought that "The printed index is a necessity for a long time to come."—*Eleanor G. Steinke, Librarian, Vanderbilt University School of Medicine*

Aslib Cranfield Research Project. *Report on the First Stage of an Investigation into the Comparative Efficiency of Indexing Systems*, by Cyril W. Cleverdon. Cranfield, England, The College of Aeronautics, 1960. 166 p.

———. *Interim Report on the Test Programme of an Investigation into the Comparative Efficiency of Indexing Systems*, by Cyril W. Cleverdon. Cranfield, England, The College of Aeronautics, 1960, 80 p.

The difficulties of comparing efficiencies of various indexing systems and of interpreting results are so great that very few such studies have been completed. In this country, the disputed and inconclusive contest staged in 1954 between the ASTIA Reference Center and Documentation, Inc. to prove or disprove the superiority of coordinate over alphabetic subject indexing may have discouraged would-be investigators. Now the British have tried it. Final results are not in, but in two reports from this project there is evidence that the rules of the game are well in hand. The first report is a definitive work on how to make such a study and provides valuable comparisons on

the ease of indexing under various systems. In the second, an interim report on the test program of reference use, there is promise that meaningful results will be forthcoming later.

The research project was devised to test four methods of indexing: the UDC, an alphabetical subject index, a faceted classification scheme, and a uniterm index. Supported by grants from the National Science Foundation in Washington, the work was done at the College of Aeronautics, Cranfield, England, under the direction of Cyril W. Cleverdon.

The report of the first part of the investigation, which involved the indexing of 18,000 research reports and periodical articles in aeronautical engineering, includes excellent summaries of the problems recognized or discovered by the investigators and describes their solutions. For example, the question of how much time to allow for indexing a report was made a part of the study of the efficiency of the various systems by allowing varying times (16, 12, 8, 4, and 2 minutes) for indexing individual documents. The interim report on the use of the four indexes indicates some drop-off in retrieval efficiency for shorter indexing time, but not much. The question of trained or experienced indexers vs. scientifically trained personnel was introduced into the study by using indexers with different subject knowledge and experience. To check the work of these indexers, a supplementary indexing of nearly 4,000 items was done by volunteers. Comparisons showed that indexing under the uniterm system was the most uniform, alphabetical indexing the least uniform.

The reader of these reports will find

many useful by-products; for example, an excellent description of a faceted classification scheme and chain indexing, the problems of constructing such a scheme, and how it is applied. There are also good discussions of the problems met in the application of the UDC and in devising an adequate subject heading list.

The interim report describes the techniques used in testing the indexes and gives some preliminary results. The intent is to test each of the four indexes with 1400 questions. A major problem is to determine when or whether a reference question has been answered successfully. This problem has been dodged by limiting the test to questions which lead to a specific report or reference. A search is not considered successful unless it produces that report. While this makes for ease in statistical analysis of results, it would seem highly desirable to devise some scheme which would provide an evaluation of reference efficiency based on retrieval of specific information, rather than on finding a specific report. However, the results, even under these rigid controls, should go far beyond anything available heretofore in analyzing the merits of different indexing systems. The preliminary results described include a test using one hundred questions on 6,000 of the indexed reports. The wanted report was produced in eighty to eighty-five cases using the uniterm, alphabetical, and UDC indexes, and in seventy-one cases using the facet index. Ninety-seven documents were found by at least one system, but only forty-three were found by all four.—*Melvin J. Voigt, University Librarian, University of California, San Diego, La Jolla, California*

### BACK ISSUES OF LRTS

The following issues of *Library Resources and Technical Services* are now out of print and are not available from the Division: Vol. 2, nos. 1 and 4; Vol. 3, nos. 1 and 2; Vol. 4, nos. 1 and 3.

## CLASSIFIED CATALOGS

How many libraries have classified catalogs? The Classification Committee, Cataloging and Classification Section, Resources and Technical Services Division, American Library Association, is making an informal inquiry to determine whether the time has arrived to begin work on developing a code for classified catalogs. We want to know which libraries have classified catalogs and what kind they have. Standard unit card catalogs, punched card catalogs or book catalogs are all acceptable provided they are designed as classified catalogs. We are not interested in classified subject indexes to ordinary alphabetized catalogs. Write: Mrs. Phyllis A. Richmond, Chairman, ALA RTSD CCS Classification Committee, University of Rochester Library, Rochester 20, N. Y.

## FILING RULES

The University of Toronto Library School has published a 27-page list of simplified rules entitled "Basic Filing Rules for Use in the Course on Library Records." It was compiled by Margaret E. Cockshutt, Lecturer in Library Science. It may be obtained for \$1.00 from the University of Toronto Press, Toronto 5, Canada.

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