

LIBRARY RESOURCES AND TECHNICAL SERVICES

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A Look At The Future Through Bifocals*

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IF WE EXAMINE the current output of our professional press—and this can be a disillusioning exercise at any time—we cannot help but be struck by the frequency with which the year 2000 or thereabouts is described in specific and rather graphic terms. In fact, so many articles dwell on the state of the art in the year 2000 that it is hard to concentrate on what are, by comparison, mundane decisions which must be made by noon today. Probably the only prediction which can safely be made about any year in the future is that it will have its share of trivial, irritating, small aggravations which those of us who are still operating will find just as frustrating as the ones which today so frequently seem to make it impossible to get on with the work of the moment.

However, it is the long view we are talking about today, and of course it is the long view which helps to keep today's minor irritations minor. You have chosen a good topic. I cannot say as much for your choice of speaker. I have not distinguished myself in the area of prophecy. Recently a young medical student heard me say that in my career I had found it necessary to run very hard to stay in the same place. "What do you mean, the same place?" he asked in a rather horrified tone. You note he was not at all horrified at the thought of all that exercise—that proves how young he was—but he was abashed at the thought that it did not necessarily lead to an improvement in the situation. I said what is certainly true, that in terms of the total body of professional knowledge today, I am not so well informed as the day I left the University of Chicago Graduate Library School. So, as one who cannot keep up with the fast-paced world of today, I am surely not the one best equipped to talk to you about tomorrow.

However, tomorrow has always been a cataloger's concern. "Sufficient unto the day is the evil thereof" was never spoken of a cataloger's day. A cataloger's decisions today will haunt him and everyone else for many tomorrows, and mistakes made 25 years ago cost a fortune to correct, or, more likely, work around, today. Catalogers are inextricably bound by past decisions, their own and those of others. They work daily in the full knowledge that the products of their labors, if used at all, may well have their greatest serviceability long after the date of their original construction. Catalogers have always had to anticipate the requirements of the

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future. They have never been able to concentrate solely on meeting the needs of the present.

But what of the future as we consider it this day in October 1964? In my instructions, I was told to be "realistic" in my appraisal of the next 20 years. This sounds like a contradiction in terms to me, but I suspect I am not to indulge in flights of fancy on a grand scale. In any case, there is quite enough said on that level today. There is no need for me to add to it.

Discussions about our professional future are indicative of two things: 1) great interest and concern for a social institution which we have considered important enough to devote most of our waking hours to; and 2) anxiety stemming from a feeling of inadequacy lest we be unable to cope with the problems facing that institution in the future.

The first, our concern for the library as an institution, crystallizes around the question of its role in a rapidly-changing society. What is changing about this society? Many things, of course, but certainly its values, its problems, its needs, and its purposes. As a social institution the library reflects these changes by modification of its own goal. The changes for the institution as a whole are in turn reflected in every aspect of its operation and in the work of every one of its departments. As librarians, we recognize this basic relationship between the library and the society of which it is a part and are challenged by the problems arising from this relationship.

But the methods which will be used in attaining our goals seem to be the source of the anxiety. This anxiety or maybe we should call it bafflement (we are usually anxious about what we do not understand) is associated with devices which have a magical and mysterious aura about them—but little charm—and appear to promise relief from arduous toil if we can only grasp the basic principles of their operation. Because of the intriguing nature of these complicated devices, there is danger that we will concentrate on the second, the means of achieving our goals before we have duly considered the first, the nature of the goals themselves. This is a real danger; we have seen signs already. We often seem to talk about "how" before we talk about "what."

I was impressed at ALA in St. Louis with the amount of time spent in explaining how we could get where we were going when it was not made clear just where it was we were going or why it was a good choice of destination to begin with. We were instructed in the fine points regarding mechanization of serial records, for example, and it was demonstrated that an array of lists could result from such mechanization. But are faculty members really going to read all the notices the library sends them regarding the most recent arrivals among the currently received periodicals and journals? Granted the idiosyncrasies of serials, most of them usually do arrive with a fair degree of regularity. Must the librarian also announce this fact with a fair degree of regularity? In this age of paper shuffling and speed reading, we do aim to be part of the solution, not part of the problem.

One librarian reports that, as a result of installing a computer-based circulation system, a record of who borrowed what can be prepared at the end of each day. Should such a record be prepared? Is there a demand for such a record? If so, is it a legitimate demand? Librarians have long prided themselves on handling all questions which come to them with the same conscientious determination to root out the answer. It has been considered heresy to suggest to the inquirer that we could make a more intelligent search if we knew why he wanted the information. The contest and quiz programs required a slight adjustment in our philosophy on the grounds of preserving our collections and our sanity, but the adjustment was not a basic one. In the privacy of my own office, I have more than once asked of myself and others, "What would you do with the information if it could be found?" This question has saved hours of time-wasting sleuthing. I do not suggest we be this tactless with our readers, but I do suggest that we cease feeling guilty when we say, "We cannot provide you with an answer to your question," especially when the question is "Who has taken out copy 5 of 'Introduction to Probability Theory' and when it is due back?"

In the machine room of a university library a number of machines were spewing forth an impressive heap of records. The noise generated by this prodigious effort was so great that I could not hear an explanation being given by the local librarian nor could I ask a question above the roar. I did observe a multiple order form held by the librarian and what looked like a sheet order form emerging from the interior of the machine. The marvels of the machine in performing this impressive task were apparent to all, but I could not understand why a sheet order was needed since a manifold had already been completed. As I neared the exit, I shouted my question in the Librarian's ear, and she shouted the answer back, "It is required by state law."

Examples may be multiplied to no purpose. Obviously, machines can be of great assistance to us, but like their human designers they can also do a great many things there is no point whatever in doing.

The big question is, "What is there point in doing?" Jesse H. Shera remarks that "the machine by its very existence, impels the library into a sober analysis of what the library was put upon this earth to do . . ." ¹ Another of our deans, Don R. Swanson, convinced of the necessity for librarians of the future to have a thorough grounding in library systems analysis, emphasizes that "the library systems analyst must . . . have a profound appreciation of the purposes and goals of libraries as well as a good understanding of the capabilities of computing equipment and other machines that might be used in libraries." ² Designing the library of the future which can meet these goals may or may not require mechanization. Again quoting Swanson, "Systems analysis can often permit irrational mistrust of machines to be replaced with sound reasons for mistrusting them." ³ In other words, the librarian of the future must know both where he wants to go and how to get there. In determining the "how" he must be in a position, by training and experience, to determine

the merits of the alternative and competing methods available to him, but he must not let the "how" dictate the "what."

Leaving the discussion of appropriate methods to others, let us consider some of the developments of the next 20 years which could determine the purposes and goals of libraries during this same period. I suggest a few. The most obvious one is a tremendous increase in information making it exceedingly difficult to find out what it is we know. Librarians are tempted to view the information explosion in terms of problems it will present to them as librarians, i.e., problems in control, dissemination, and use of the information. But this development will have other results. Neil W. Chamberlain, writing in the September *Atlantic*, says, "The 'explosion of knowledge' . . . is so fundamental that it is upsetting many of the traditional relationships in our social system: the relationship of the young to the mature, of a man to his job, of experience to knowledge, of acquired education to achievement, of hierarchical position to functional authority."⁴ Both the social impact and the institutional impact must be the concern of librarians.

With the increase in knowledge will come a growth in the specialization in knowledge, and at the same time a counter movement recognizing the interrelatedness and interdependence of all disciplines.

A second development is as inevitable as the information explosion, and that, of course, is the population explosion, and an increase in the number of people who need to know. Such is the pace of the world that there will be an increase in the number of people who need to know quickly, i.e., who need to apply the results of yesterday's research today.

Third, there will be a rise in the general level of education and greater emphasis on continuing education. Concerning the latter, Chamberlain in the article referred to above, writes:

It has now become an article of faith among manpower specialists that there is no place in the modern world for the uneducated and the untrained. But there is only a tenuous difference between the uneducated and the undereducated, the untrained and the undertrained, and once we admit that in most occupations knowledge runs ahead of the pace at which a worker can keep up with it, we are driven to find some means of providing for our continuing education throughout our lives.⁵

Fourth, there will be an increase in the speed of communication which will aid in educating this enlarged population, but it will also make that education more necessary as our world continues to shrink, and greater knowledge and understanding of one another becomes indispensable for survival on this globe.

Fifth, the availability of automated equipment will eliminate the necessity of much human labor, physical and mental.

This leads to the sixth and last item on my list, but the one which should probably be our greatest concern, the advent of the Age of Leisure. Arthur Schlesinger, Jr., quoted in the *New York Times*, says, "The most dangerous threat hanging over American society is the threat of leisure . . . and those who have the least preparation for it will have the

most of it."⁶ There will very soon be a shorter work week for some members of our society and longer work week for others, particularly those in intellectually demanding fields where shortages of competent personnel will be greatly intensified compared to the present. There will also be those for whom permanent unemployment—it will be called something else in 1984—will be a way of life.

You could all add to this list many other developments of which we are somewhat frighteningly aware. Each social institution will respond in its own way to these social, economic, and cultural changes. How will the librarians respond? Perhaps the most important question a library can answer in the years and decades ahead is "What kind of library are you?" What is your purpose? What can you do that no other organizations or institutions can do as well or better? What is your relationship to other libraries in your state, in your nation, and in the world? For some libraries these questions will be easier to answer than for others. It has always been so. But the need for answering them as honestly and realistically as we know how is indisputable, and the wrong answers may cost us dearly.

Large public libraries, for example, cannot continue to be all things to all people. Philip H. Ennis writing in the *Library Quarterly* for April 1964 on "The Library Consumer: Patterns and Trends" reports that "a careful scrutiny of library literature over the past 15 years failed to reveal any systematic awareness that the expanding array of library goals could be or should be ranked in some conscious priority system with money and staff resources allocated accordingly." The author considers it "imperative that public libraries re-examine their multipurpose situation and set clear priorities on their objectives."⁷ I could not agree more heartily. The "multipurpose situation" is one of the public library's greatest weaknesses. It is urgent that the role of the individual library be clearly delineated and delimited.

Granted the need for some libraries or information centers to provide 99.5% of all that has been written on a subject, it will be equally important that there be libraries where readers can procure the best of what has been written on a subject. Some libraries have already found it necessary to provide two approaches to the same collection: one index which would retrieve "all but not only" and another which would retrieve "only but not all."

Even a research scholar, when not reading in his own field will appreciate the thoughtful, disinterested evaluation the librarian has exercised in bringing together a selection of the best that has been written. The more there is to choose from, the more important becomes this ability to discriminate. Individual reader guidance will be a thing of the past—if it is not already—but for this reason, selection and evaluation may become more important. The acquisitive instincts of some librarians have been overdeveloped in the past, but, except for information and research centers and our national libraries, the instinct will be valued less rather than more in the future. One of the important distinc-

tions between the libraries of the future may be between the all inclusive and the selective.

A clearer definition of each library's goals and purposes will result, presumably, in less overlapping of functions and a certain amount of re-shuffling of responsibilities where these responsibilities have in the past been misplaced or unacknowledged altogether. Many school library systems, for example, seem unaware of their obligations or elect not to meet them; but colleges, particularly those located near metropolitan centers, have also frequently shirked their responsibilities or at least been more than willing that someone else assume them. Without a clear and acceptable definition of who does what, there will be needless duplication of some services and total neglect of others.

As functions are differentiated, and in some instances delimited, there will be need for greater cooperation among libraries. Cooperation is a long-honored tradition in our field, but there will be an urgency about the cooperation of the future that will make our efforts of the past seem nostalgically old fashioned.

Two developments make this so. First, there will be an increasingly greater bibliographical control over a larger and larger body of knowledge. It will not be feasible and, because of mechanization, it will not be necessary to duplicate much of this control. It is inconceivable, for example, that the MEDLARS Project in the National Library of Medicine would be developed elsewhere in the country.

Secondly, there will be more material to be housed and it will be uneconomical and unnecessary to duplicate this housing. The Farmington Plan and the Public Law 480 Program, imperfect as these may be, rest on the recognition of both these points. The success of these programs and the profitable use of the materials involved is a matter of cooperation.

Readers today have little interest in campus boundaries and city lines, and readers of tomorrow will have less. It is to the credit of librarians that they have been as generous in making material available to all comers as obligations to their immediate constituency would permit. Broader fiscal support will, in the future, underwrite the cost of services beyond the local area and give a new dimension to our service concepts.

In some instances libraries may find it easier to cooperate in the future than they have in the past, particularly when the reader served no longer needs to come into the library and the material he wishes to examine need no longer go out of the library. It has been suggested that the day after tomorrow a reader may, by placing himself at the right end of a coaxial cable select, retrieve, and have printed any material in a designated library. Cooperation may become a relatively painless procedure.

To achieve cooperation on the scale suggested requires easy access to information about libraries, their collections in general, as well as the individual items in these collections. Translated into bibliographic terms this will mean (1) more information about collections, their scope and

location, i.e., more catalogs of collections such as *The National Union Catalog of Manuscript Collections* (the location, and even the existence, of some special collections, are a matter of historical accident and even whim, and are unlikely to correspond, unless inversely, with future obligations); (2) more widely-disseminated information on the holdings of individual libraries (one step in this direction is the proliferation of book catalogs); (3) more "in-depth" analysis of professional, scientific, and scholarly journals (our best example of an "operational" system of this type is MEDLARS).

From the above we can arrive at a few generalities about the bibliographical characteristics of the coming decade or two. (1) There will be greater interest in texts than in form, and texts will be supplied the reader in whatever form is most convenient for him. (Publishers are well aware of developments in this area and have been warned that their only protection will be through a licensing system similar to ASCAP.⁸) (2) With the exception of children's literature, monographs as we define them today will, for the most part, not contain original material but will represent a reprinting, a reassembling, or a reworking of material originally published in some other form, and therefore, will be of little use to the specialist in any field. The reassembling of previously published material that appears as reference books will be issued serially to preserve a semblance of currency. (3) Books or something very like them will still be with us although awards for fine bookmaking may go begging, and eyes weary from the perusal of microfilm will prefer *Hamlet* on tape. Books will still be used even by the specialists when they are not reading in their specialties (i.e., when they are general readers), by children, and by students on their way to becoming scholars. (4) There will be a larger and larger body of information to be controlled, and it will be controlled in a greater variety of ways. (5) Bibliographical records and information regarding the holdings of individual libraries will be more widely disseminated through catalogs on microfilm, tape, and other forms which can be easily transported and consulted by the reader.

What kind of cataloging will satisfy the variety of approaches made by a conglomerate group of readers? I return to the question, What kind of a library are you? Who are your readers? and, What do they need? There was a time when libraries—at least as judged by their stated purposes, vague as they were—were more nearly alike or were thought to be more nearly alike. Standardization of bibliographical records was a commendable goal which yielded better than satisfactory results. However, as basic differences among libraries appear more clearly, and indeed are emphasized, there will likely be both more standardization and less.

As greater reliance is placed on machines for the production of library records, the work of various libraries must be compatible and interchangeable, i.e., standardized for all libraries participating in any given program. In this sense, standardization will be more thorough going and complete than in the past.

On the other hand, there will be need for more than one standard and the standard adopted by any one library will be that of the other libraries with similar purposes and serving similar clientele. Not all libraries of every size and purpose are going to find it advisable to adopt the same methods and codes of practice as the Library of Congress or the leading research libraries. Evidence of the non-serviceability of a single standard can be gained from a study of the efforts in recent years to develop a new cataloging code for author and title entries.

While our national libraries can and do ably lead the research libraries of the country today, it becomes increasingly evident that our national libraries cannot be national libraries in the sense that they can be expected to provide leadership for all libraries in the country at the same time, unless they are to develop dual or multiple personalities.

At the recent (1964) ALA Conference in St. Louis a college librarian expressed dissatisfaction with the service of the Library of Congress and stated that the Library of Congress did not trouble to learn what college libraries really wanted. If the Library of Congress had made such an investigation it would, so it was claimed, be in a better position to meet the college library's requirements.

I do not think that the needs of the college libraries of this country are or should be of pressing or any concern to the Library of Congress. The by-products of the Library of Congress's operations have served us all so well that we have grown too lazy to think for ourselves or even to remember that the Library of Congress was not created to solve our problems, even though many times it has.

Our national libraries can best perform their roles by cooperating with major universities and research libraries of the country and the national libraries of other countries. And this is precisely what they do. Let those of us who are not in research libraries not think otherwise.

Where the leadership will come from which will provide guidelines for librarians seeking to meet other needs than those of the advanced scholar or research worker is not clear, but it may come from commercial sources. A committee of professional librarians has begun preparation of a school-oriented catalog of books to be completed in 1965.* This represents a standard for a single type of library, and sponsorship for this catalog comes from a commercial firm.

Centralized processing centers growing up around the country will influence the development of catalog standards for libraries similar to those they serve. Those libraries publishing book catalogs are going to exert an influence—for better or for worse. Other guides to library holdings may be prepared on a regional or state-wide basis, perhaps aided and abetted by responsible commercial bibliographers. Small libraries in the future will become parts of larger systems, but the systems will differ in their purposes and goals, and hence in their methods of achieving these purposes and goals.

* Editor's note: This was published recently.

There is no doubt that the demands of the future will tax our ingenuity, our imagination, and our skill. The librarian of the future, whether he be Lawrence Powell's bookman or Don Swanson's systems analyst, will need above all to be adaptable. The revolutions looming on the horizon will be dramatic and swift. This librarian of the future will need to be aware of social, economic, and cultural changes and the effects these can have on the library's role. He must be prepared to handle unprecedented situations, know the ways to analyze methods, study alternative proposals, and, perhaps most important of all, he must have the courage to develop his own solutions. I wish him luck!

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8. "Copyright Revision and the Library of the Future" [Editorial] *Publishers' Weekly*, 185:36. May 11, 1964.

THE NATIONAL UNION CATALOG, PRE-1956 IMPRINTS

The Subcommittee on the National Union Catalog, of the Committee on Resources of the ALA-RTSD, has been considering for some time the desirability of publishing in book form the pre-1956 imprints in the National Union Catalog, as it earlier sponsored the publication of the 1956 and later imprints. The problems in such publication are complex because of the size of the project, because of the necessity to edit the cards for correctness and consistency, and, not least, because of the relation of such publication to the possible automation of the NUC.

The relationship between a possibly automated NUC and publication of the NUC in book form is peculiarly difficult to resolve at this time because so many factors are unknown. Whether it is even practical to automate the present NUC is uncertain because the costs of converting the cards to machine-readable form are not yet known, and the benefits not yet estimated in economic terms. Involved in determining the answers to these questions are still other problems, including the ways in which an automated NUC would be used, the adequacy of present NUC information for other automated uses, the imminence of new machine technologies; and, not least, the source of funds for converting the catalog into machine form.

The Subcommittee has been considering these problems and possible answers to them for some time. At its last meeting, on March 1, 1965, it was able unanimously to arrive at the following decisions. Most important was its conclusion that publication of the present NUC in book form was desirable for libraries even if the NUC were also available in machine form. Not only would

this be true for the many smaller libraries, and many foreign libraries, that will find this catalog essential, but probably will not have convenient access to computer facilities for many years yet, but it would be no less true for even the larger libraries with full scale computer installations. For many purposes, both of reference and of internal technical processing, the convenience and speed of book-form access will make it a valuable collateral form, and for some purposes it may well serve even to increase the speed and economy of machine use. Given this basic conclusion, the decision remained of whether to commence publication now, by established techniques or photo-offset lithography from the cards, or to wait for some indeterminate time in the hope that the NUC might ultimately be automated and the copy for book-form publication could be provided as a computer print-out. After balancing the advantages of making the NUC available in book form as quickly as possible against the advantage of an indefinite delay with uncertain results, the Subcommittee has decided to invite publishers' bids to commence publication of the catalog in book form as quickly as possible, with printer's copy to be provided initially in the form of catalog cards for photo-offset reproduction.

But in view of the uncertainties, the Subcommittee is making certain safeguard provisions. The first of these is that the Library of Congress investigate the feasibility of producing a machine-readable record as a simultaneous by-product of all re-typing it must do in preparing the catalog cards for reproduction, and to follow such a procedure if feasible. This will assure that maximum assistance is given to a later conversion of the entire NUC to machine-readable form, should the need occur. Second, the Subcommittee will reserve the right to provide the publisher with printer's copy in the form of a machine print-out, instead of in the form of catalog cards, at any time during publication of the NUC in book form. Should it become feasible to convert the NUC to automated form during publication of the catalog, full advantage of this conversion will be taken to aid book publication, and vice-versa. In the meantime the Subcommittee will continue to recommend and support studies designed to answer as quickly as possible the critical questions relating to conversion of the NUC to automated form.

The Subcommittee hopes that agreements can be reached with a publisher which will allow work to begin on editing the NUC by early Fall of 1965. Printing hopefully would begin about a year later, with publication of the first volume to follow in about six months. Publication of the entire catalog is expected to take about ten years, primarily because of the amount of editorial work involved.

The members of the Subcommittee are Douglas Bryant, John Cronin, Charles David, Ralph Ellsworth, Herman Fussler, George Schwegmann, Jr. Frederick Wagman, and Gordon Williams, Chairman.—Gordon Williams, March 25, 1965.

CORRECTIONS

In the Spring 1965 issue of *Library Resources & Technical Services*, 9:182-83, several articles which appeared in the *Bulletin of the Medical Library Association* were incorrectly attributed to the *ALA Bulletin*. The items cited in the last paragraph on p. 182 and the opening paragraphs on p. 183 (articles by Waddell, Rogers, Austin, and Taube) were all published in the *Bulletin of the Medical Library Association*, January 1964.

An additional error has been noted on the cover, in the table of contents, and on p. 191 of the same issue of *LRTS*: the second author of "Brieflisting" is Harry D. Williams (as cited correctly on p. 193), not Harvey D. Williams.

Two Serial Control Card Files Developed At The University Of Illinois, Chicago*

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THE FIRST SERIAL CONTROL CARD SYSTEM at the Undergraduate Division Library of the University of Illinois was started during the spring of 1959 and was intended to facilitate the preparation of subject lists of uncataloged and unclassified periodicals. The serials staff soon realized the possibility of using the same system, or a slightly modified form of it, to provide financial and binding control as well. Additional codes were developed and applied almost at once.

This first system was an edge-notched one, using Royal-McBee Keysort cards. Other kinds of cards would have done equally well, but Keysort equipment was selected because it was already available in the library for use with order and circulation records. The system was used for several years as an aid in the production of periodical subject lists and for subscription renewals, particularly those going to subscription agencies.

The second control system, which has proven to be more useful because of enlarged coding capacity and printing capability, had its roots in the Keysort system but actually came about as a sort of transitional accident. At the time this system was developed, the library had just completed a detailed systems analysis and was in the process of developing and testing a computer-based serials record. An intermediate serials record which could be arranged in a variety of ways appeared to be one method of searching out and correcting errors in the serials record, of providing missing information, and of solving entry and filing problems related to the computer record.

This second system uses IBM, or Tabulator, cards. It includes all of the information provided by the older system and a great deal of additional information as well. It is still in use and will be for several years to come, even if the computer system becomes operational. It is possible that this present system, although now considered a temporary one, will become permanent if the computer system is rejected as a final solution to the serials problem.

One of the first questions that most people have asked is, "Why did you want a control-card system for serials?" Some of the reasons have already been mentioned as attempts to solve specific local problems; other

* Revised and extended version of a paper presented during the ALA Conference, at the Serials Section Meeting in St. Louis, June 30, 1964.

reasons relate to the nature of the conventional library record and its failure to meet conventional serials problems.

The conventional record, which usually consists of some kind of card file supported by auxiliary records, can be arranged only one way at a time. If arranged for the convenience of the clerk checking in new items by title, it cannot be very useful to the person interested primarily in a subject approach. If arranged by subject, it is hard to use as a check-in file and has only limited usefulness to those who are interested in grouping materials by purchase category, expiration date, vendor, or in some other useful order. Therefore, auxiliary records are developed and arranged in a manner that will make them useful. These are expensive to develop and maintain, and a change in one record usually requires a change in several others. Sometimes, unfortunately, not all of the changes get made.

The conventional kinds of records described above are what we may call fixed-grouping files, all arranged to serve one purpose or to provide one kind of information and difficult to rearrange to serve some other purpose. Both of the control-card systems discussed in this paper are multiple-grouping files which can be changed from one kind of arrangement to another with comparative ease, depending upon the requirements of the moment. This means, therefore, that one auxiliary file can take the place of several, and changes and corrections are required in fewer places.

The first, or edge-notched, system was designed to use a Royal-McBee hand punch, Keysort card number K5S371A, and standard sorting needles. Since the file was to be small and frankly experimental, the serials staff decided to adapt a standard card rather than pay for the printing of a special card which might be abandoned. As purchased, the cards are $7\frac{1}{2}$ by $3\frac{1}{4}$ inches in size, but for this application they were cut to five inches in length so that they would fit into standard card trays. The same basic codes apply to either sized card, but the additional fields on the larger card would permit more kinds of control information.

As can be seen by Figure 1, coding along the top of the card is used primarily for the first four significant letters of the title. Financial codes occupy the three fields on the right edge of the card, and subject and binding codes occupy the bottom. In addition, there are five kinds of special information which can be given by punching single holes set aside for that purpose: (1) the title is to be included on subject lists; (2) the title is cataloged and classified; (3) the card is a see reference; (4) the card is for an added subject entry and may be eliminated when doing financial or binding work; and (5) this title is no longer active and, as in (4), can be disregarded for certain operations.

The only equipment or supplies required, in addition to the cards themselves, are a hand punch, sorting needles, and card-saver strips which can be pasted over a field to allow re-punching. A sorting tray, a Keysort selector, and a card groover are useful but not absolutely necessary.

Although a great many types of coding are possible on edge-notched

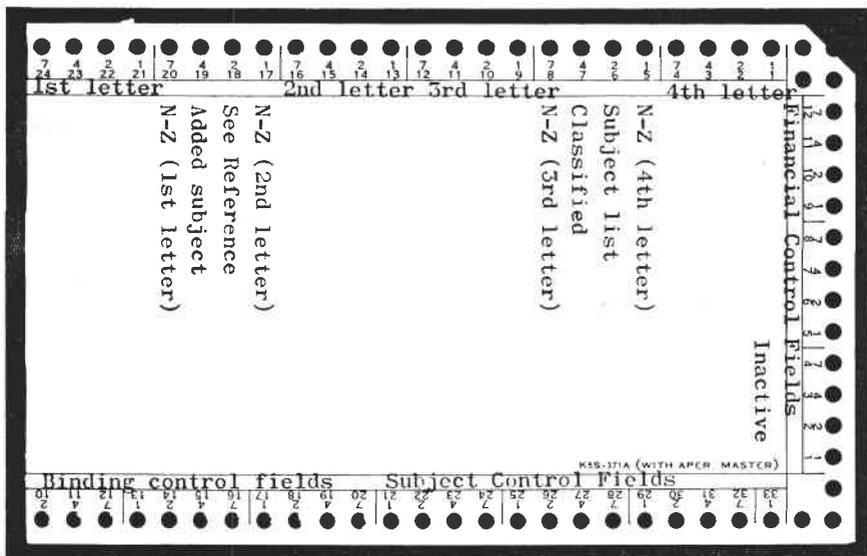


FIGURE 1. Field layout for edge-notched control cards.

cards and a great many kinds of information could be coded into these cards, this paper will concentrate on the kinds of information and control codes used in an actual working situation. It must be understood that these codes reflect local conditions, both geographic and administrative, and that they would have to be modified for use in other libraries. It should also be clearly understood that the codes developed at UIC are not necessarily the best that could have been developed and that many things would be changed if the system were to be re-designed.

As already indicated, the fields at the top of the card allow punching of four letters of the title. These are ordinarily the first four letters of the first significant word, but some standardized abbreviations are necessary. The UIC (University of Illinois, Chicago) coding disregards all articles as well as punctuation and spacing, and abbreviates as follows:

American	punch A M,	1st two letters of following word
Chicago	punch C H,	1st two letters of following word
Illinois	punch I L,	1st two letters of following word
Illinois University	punch I L U,	1st two letters of following word
Journal	punch J O,	1st two letters of following word
Proceedings of	punch P R,	1st two letters of following word
Quarterly	punch Q U,	1st two letters of following word
Review of	punch R E,	1st two letters of following word
Transactions of	punch T R,	1st two letters of following word
United Nations	punch U N,	1st two letters of following word
United States	punch U S,	1st two letters of following word
United States Dept.)	U S D)	
Office)	punch U S O)	plus first letter of next word
Bureau)	U S B)	

The code used to indicate these four letters of the title is a standard alphabetic one requiring a field of four holes to indicate the letter itself and a fifth hole which is punched if the letter falls in the second half of the alphabet:

A	1	N
B	2	O
C	3	P
D	4	Q
E	5	R
F	6	S
G	7	T
H	8	U
I	9	V
J	10	W
K	11	X
L	12	Y
M	13	Z

The four holes of the alphabetic field have values of 7, 4, 2, and 1. Other numbers are created by punching combinations of these four. Letters of the alphabet are translated into their numeric equivalents: H, being the eighth letter of the alphabet, is indicated by punching the 1 and 7 holes to create 8; L, the twelfth letter, is indicated by punching the 7, 4, and 1 to create 12. The third letter in the second half of the alphabet, P, is punched as 2 and 1 plus the 5th (or N-Z) hole. Without this additional punch, the letter would sort as a C, which is the third letter in the *first* half of the alphabet.

Cards are alphabetized by sorting on each hole in the title field, working from right to left (1 through 7) and then on the N-Z hole, placing the cards that drop down at the rear of the deck before sorting on the next position. As is usual with a Keysort system, filing proceeds from the

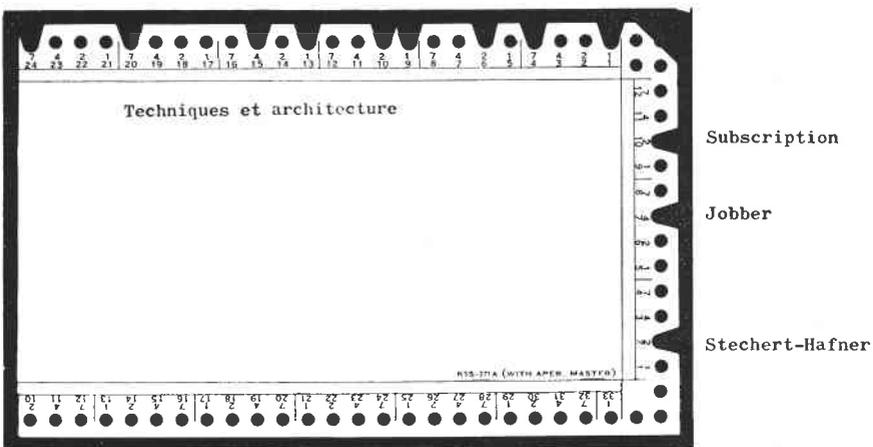


FIGURE 2. Edge-notched control card showing method and source of acquisitions.

fourth letter to the first, one field at a time. At UIC there was little attempt to keep the file in closer array unless the cards were to be used as the basis for typewritten lists. In those cases, cards were hand revised into absolute order after mechanical sorting; but for ordinary working purposes, the first four letters will put a file of not more than two thousand cards into close enough order for easy finding.

Financial data is punched into the three fields on the right edge of the card (see Figures 2-3) as indicated by the following table:

UPPER FIELD:	METHOD OF ACQUISITION
	1. Membership
	2. Subscription
	3. Standing Order
	4. Item-by-item order
	5. Deposit or open account
	6. Depository arrangement
	7. Gift Subscription
	8. Gift (non-subscription)
	9. Exchange agreement
	SOURCE OF ACQUISITION
MIDDLE FIELD:	1. Direct from a Commercial Source
	2. Internal Sources
BOTTOM FIELD:	1. Librarian's Office
	2. Reference Department
	3. Documents Room
	4. Faculty Member
	5. University Department or Office
	6. University Publications
	7. Acquisitions Department
MIDDLE FIELD:	3. External Sources
BOTTOM FIELD:	1. Superintendent of Documents
	2. State of Illinois
	3. City of Chicago
	4. Metropolitan Boards or Agencies
	5. Library of Congress
	6. Other Universities
	7. Other state governments
	8. Other cities
	9. Corporations and/or foundations
	10. Foreign governments
MIDDLE FIELD:	4. Jobbers (Include subscription agencies)
BOTTOM FIELD:	1. Hanson-Bennett Agency
	2. Stechert-Hafner
	3. H. W. Wilson
	4. Bowker

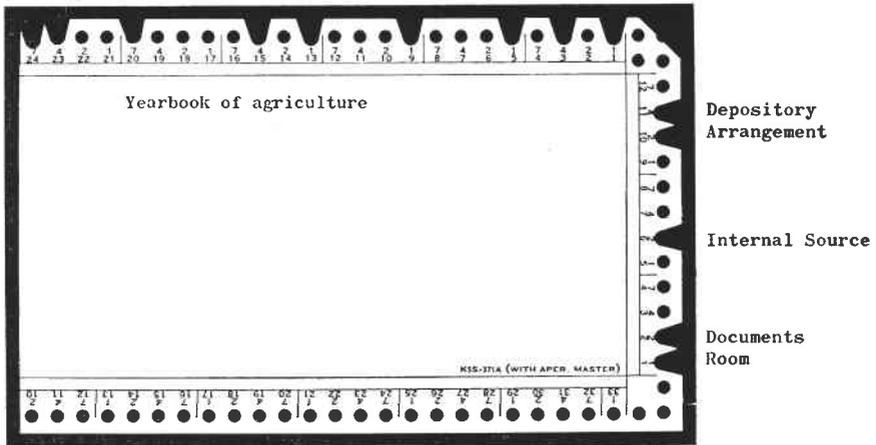


FIGURE 3. Edge-notched control card for a depository document.

Subject codes are punched into three fields at the bottom of the card, working from right to left. The single hole at the far left edge of the card is used to indicate that a title is no longer active. (Figure 4)

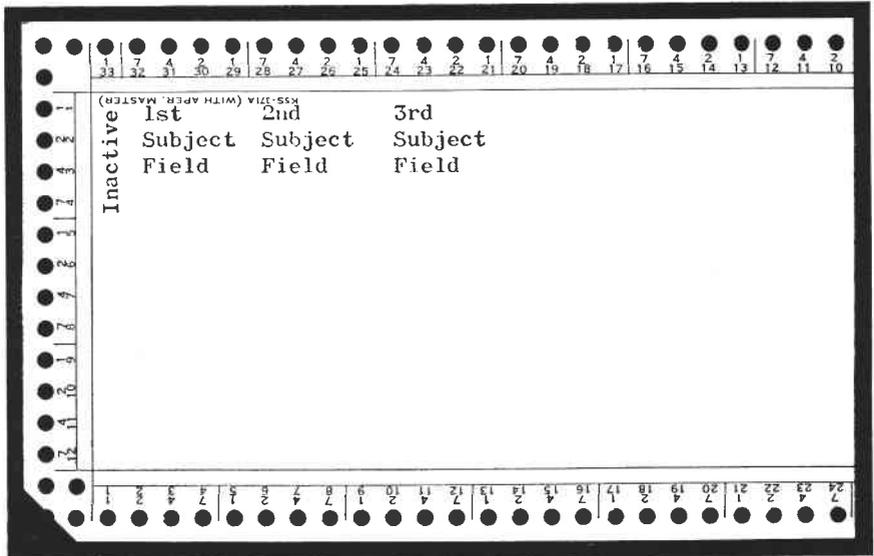


FIGURE 4. Layout of subject coding on edge-notched cards.

The subject codes developed at UIC were designed to create a three-place table. The subject list consisted of seventy headings chosen by the reference staff on the basis of local request patterns:

010	Bibliography	550	Geology
020	Libraries and Librarianship	551	Meteorology
028	Indexing Services	570	Biology
029	Abstracts	572	Anthropology
050	General Periodicals	576	Bacteriology
070	Journalism	580	Botany
071	Newspapers		
090	Books	610	Medical Sciences
		620	Engineering (General)
100	Philosophy	621	Electrical Engineering
150	Psychology	622	Civil Engineering
		623	Mechanical Engineering
200	Religion	629	Aviation
		630	Agriculture
300	Social Sciences	640	Home Economics
310	Statistics	657	Accounting
320	Political Science	659	Advertising
327	International Relations		
330	Economics	711	City Planning
331	Labor and Industrial Relations	720	Architecture
340	Law	749	Interior Decoration
355	Military Art and Science	750	Art (Incl. Sculpture, Techniques)
370	Education	770	Photography
371	Occupations	780	Music
372	Visual Aids	790	Dramatics
377	University of Illinois Publications	794	Chess
378	Universities and Colleges	796	Physical Education and Recreation
380	Commerce		
		800	Literature and Philology
430	German Language	805	Literary Periodicals and Reviews
440	French Language	807	Humor
460	Spanish Language	808	Speech
		809	Radio and Television
500	Science (General)		
510	Mathematics	900	History
520	Astronomy	910	Geography
530	Physics	914	Travel
540	Chemistry	920	Biography
		977	Chicago

Subject headings are typed on the Keysort cards as indicated by the examples in Figures 5 and 6: Primary headings are always typed in full capitals; the heading indicated as number "1" is always the one coded into the subject fields. Added subject entries have an added punch on hole 19 at the top of the card, and both binding and financial information are ignored when preparing added cards. By needling on hole 19, all added entries may be removed from the file before sorting for work with order or binding records.

Two four-hole fields and one three-hole field are used to indicate binding codes. The field closest to the subject fields is coded to show index information:

1. In the last issue of the volume
2. Loose and free without request
3. Loose, request each time

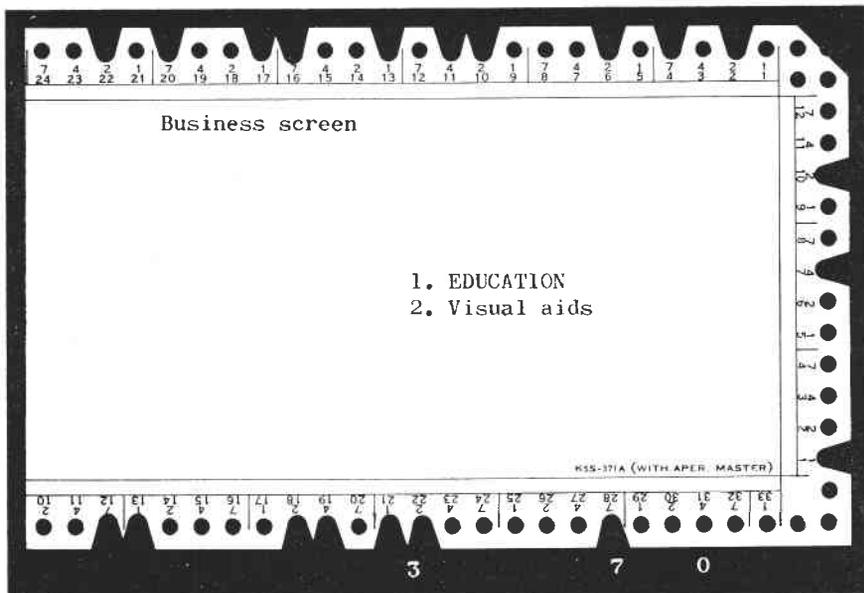


FIGURE 5. Edge-notched card for main subject listing.

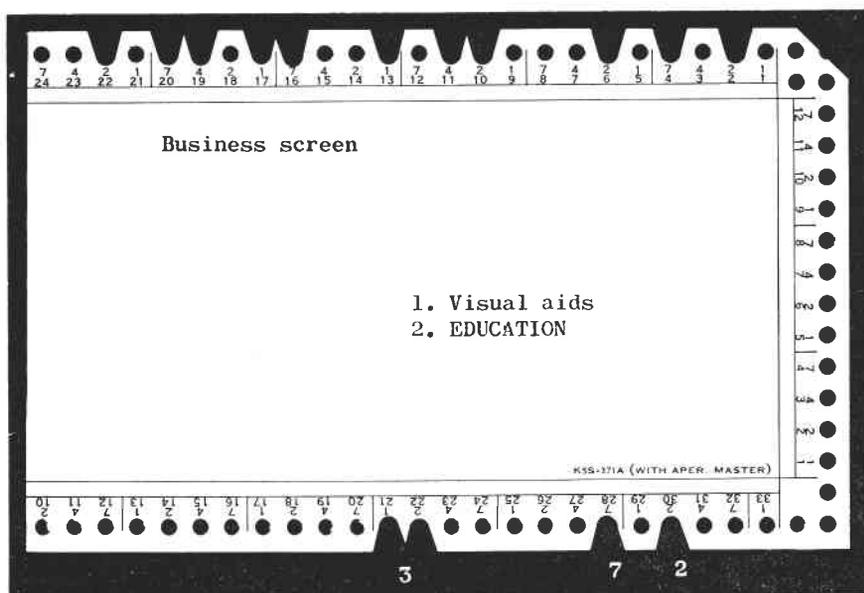


FIGURE 6. Edge-notched card for added subject listing.

4. Loose, purchase each time
5. In an issue of the next volume
6. No index published
7. Stub for index and bind without
8. Bind index separately
9. Bind without provision for index

The remaining four-hole field is used to indicate binding categories:

1. Class A
2. Class B
3. Class C (Uniform, or Criterion)
4. Class D (LUMSPECS)
5. Keep current year only
6. In publisher's binding
7. Microform
8. Replaced by hardbound cumulation

The cost of installing an edge-notched system such as the one outlined above would depend a great deal on the amount of information already available in the present serials record. If file creation is mostly a matter of typing titles and subject headings and of punching title, financial, subject, and binding information, a clerk-typist should be able to average about one title every five minutes, even with added entries. If, however, much of the required information is not available and must be searched out or decided, the cost would be much greater and would depend on the extra staff time needed. The following figures assume that all information is available, and that file preparation will be carried out by a clerk earning \$4,000 per year.

Cards	\$ 10.00 per thousand
Hand punch	8.00 each
Sorting needle	4.00 each
	\$ 22.00

Salary costs 160.00 (12 titles per hour)

Approximate Total \$182.00 for a file of 1,000 titles

Equipment and salary costs for a file of two thousand titles would be about \$350. A Keysort selector would cost another \$125 but would be well worth the price if the file is a large one, because it allows very rapid sorting on multiple fields without the danger of spilling cards.

The primary advantage of an edge-notched system is that it does allow a considerable degree of control for a comparatively low price. Neither the cards nor the minimum equipment are expensive, and the basic techniques of coding and punching can be learned very quickly. Alphabetizing can easily be left to students after a short training period. While the system outlined above is a very simple one with relatively unsophisticated coding, a considerably more elaborate structure could easily be developed if required.

In spite of the advantages of an edge-notched system, there are disadvantages as well. Such a file is relatively slow to rearrange in a new order, especially if sorting on several fields is involved. Since five passes of the needle are required for each letter of the alphabet (twenty passes for the entire title code), it is often faster to alphabetize small decks of cards by hand. Perhaps the most serious disadvantage is that there is no printing or accounting capability; listing must be done by hand, even after the cards are properly arranged. But if the primary purpose of the file is to allow the easy rearrangement of one kind of information at a time, the edge-notched system would be extremely useful and could be appropriately applied to even fairly large library situations.

As has already been indicated, the Keysort system at UIC was replaced by a tab card system which allows greater flexibility of coding and has the added advantage of printing capability. In this system, one operation produces both man-readable and machine-readable records.

The system uses one card for each title and an additional card for each added subject entry, as was the case with the Keysort system. Financial and binding control information is ordinarily not punched into the added subject cards or into cards for those titles which had already ceased current publication at the time the file was created. There are additional sets of cards for subject headings and subject cross references which are inter-filed with the control cards when printing subject lists.

The card file may be rearranged very rapidly by completely mechanical sorting and can be arranged in any of the following orders:

1. By Title
2. By Method of acquisition
3. By Source of acquisition
4. By Month of volume change
5. By Month of index arrival
6. By Month of binding pick-up
7. By Year of binding
8. By Type of index situation
9. By Shelf or gathering location
10. By Type of binding
11. By Subject
12. By Special categories: Dead title, Title changes, Not checked in, Subscription discontinued, Etc.

Thirty-five of the eighty columns on the tab card are set aside for the title, which is abbreviated if necessary to make it fit that space. Alphabetizing is carried out by sorting on an eight-digit sequence number punched into columns 40-47. Columns 66-75 are used for bibliographic, financial, binding, and shelf control. Subject codes occupy columns 77-79, and the final column is used for various kinds of elimination codes. (Figure 7)

Sequence numbers are assigned after the card file has been arranged into the desired alphabetical order; the sequencing interval is deter-

mined by dividing the number of combinations possible (with an eight-digit number, 99,999,999) by the number of titles in the file at the time sequencing takes place. At UIC, about two thousand titles were involved and the sequence interval was established at forty thousand. New titles are inserted by assigning a sequence number which falls between the numbers assigned to neighboring titles.

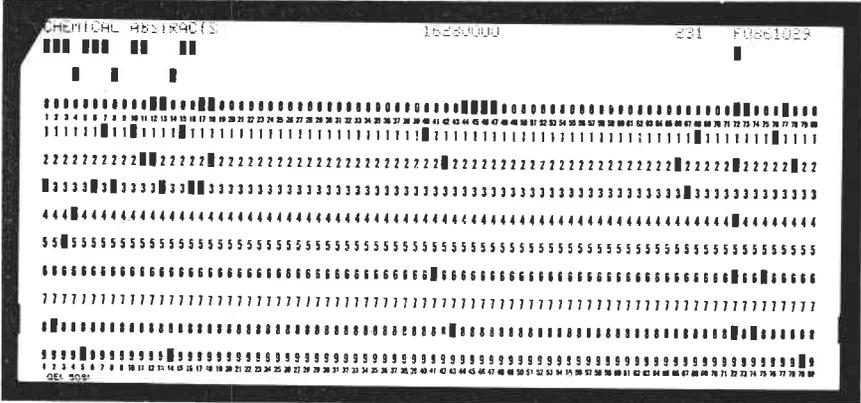


FIGURE 7. IBM control card, all fields coded.

The card (Figure 8), also for CHEMICAL ABSTRACTS, is an example of an added subject card on which all financial, shelving, and binding codes are left unpunched. The sequence number is 16,280,000; the added subject, CHEMISTRY, is punched into columns 77-79; and the 3 punched into the final column is used for elimination of added cards when other kinds of work are being done.

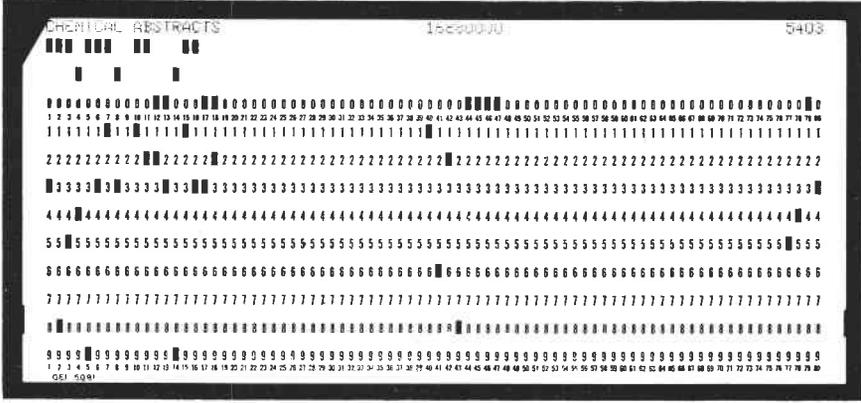


FIGURE 8. IBM control card for added subject listing.

The card for AMERICAN ARCHITECT is an example of a control card prepared for a title which had already ceased publication by the time the control file was punched. The 1 in column 80 indicates that the title is dead; the 720 in columns 77-79 is the subject number for Architecture; the 9 punch in column 76 indicates that binding questions are to be disregarded. (Figure 9)

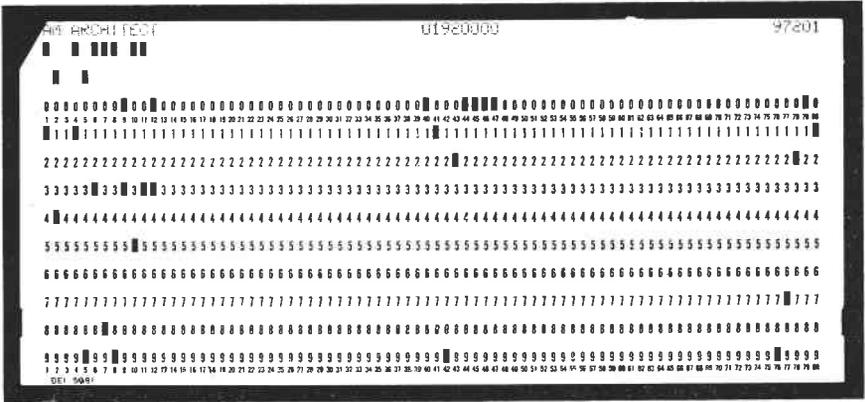


FIGURE 9. Control card for inactive title.

Control fields are coded on the basis of the following guide:

COLUMNS	FIELD
1-35	Short title
40-47	Sequence number
66	Method of acquisition:
	1 Membership
	2 Subscription
	3 Standing order
	4 Item-by-item order
	5 Deposit/open account
	6 Depository arrangement
	7 Archival deposit
	8 Exchange
	9 Gift subscription
	10 Gift of publisher
	11 Gift of faculty member or academic department
67-68	Source of acquisition:
	00 Commercial direct
	1 Internal sources:
	1 Library Office
	2 Reference Department
	3 Documents
	4 Faculty member
	5 Academic department
	6 Publications
	7 Acquisitions Department

COLUMNS FIELD

- 2 External sources:
 - 1 Superintendent of Documents
 - 2 State of Illinois
 - 3 City of Chicago
 - 4 Metropolitan boards and agencies
 - 5 Library of Congress
 - 6 University exchange
 - 7 Non-university exchange
 - 8 Other cities and states
 - 9 Corporations and foundations
 - 11 Foreign governments
- 3 Jobbers, Including Subscription Agencies:
 - 1 Hanson Bennett Agency
 - 2 Stechert-Hafner
 - 3 H. W. Wilson
 - 4 Bowker

70 Volume change month (Ja = 1, Dec = 12, etc.)

71 Index publication month

72 Binding schedule by number of month of gathering or combinations thereof—Ja = 1, Dec = 12, etc.

73 Year of binding

- 0 Every year
- 1 Odd numbered years
- 2 Even numbered years
- 3 Every three years
- Etc.
- 9 Disregard

74 Index variations:

- 0 Index status unknown
- 1 In last issue of volume
- 2 Loose and free without request
- 3 Loose, request each time
- 4 Loose, purchase each time
- 5 In an issue of the next volume
- 6 None published
- 7 Stub for index and bind without
- 8 Bind index as separate
- 9 Bind without provision for index

75 Shelving/gathering location

- 0 Storage area
- 1 Open shelves, Main Reading Room
- 2 Main stacks
- 3 Fine Arts Reading Room, uncataloged
- 4 Fine Arts Reading Room stacks
- 5 Reference, uncataloged
- 6 Reference stacks
- 7 Library Office
- 8 Technical Services
- 9 Binding duplicate shelves
- 11 Faculty Office
- 12 Library Data Processing Division

COLUMNS	FIELD
76	Type of binding <ul style="list-style-type: none"> 0 Net yet decided 1 Class A 2 Class B 3 Class C (Criterion) 4 Class D (LUMSPECS) 5 Current year only 6 In publisher's binding 7 Microform 8 Replaced by hardbound cumulation 9 Disregard
77-79	Subject coding—see separate subject code schedules
80	Elimination codes <ul style="list-style-type: none"> 0 Staus uncertain 1 Dead title 2 Not checked in 3 Added subject card 4 Title changed, new title still current 5 Title changed, new title dead 6 Subscription discontinued by Library 7 Subject heading 8 Subject SEE reference

The subject heading list is essentially the same one used with the earlier Keysort system. A separate deck of subject-heading cards is punched and is used in two ways: (1) to allow mechanical printing of the subject heading list, and (2) as heading cards when the control cards have been sorted into subject order and are being prepared for printing of subject lists. Since these cards are coded in column 80 as a seven (subject heading) or an eight (subject SEE reference), they are easily sorted from the control file after printing has been completed.

In addition to the subject code and elimination code number, the subject heading cards carry their own sequence numbers. The final digit in the sequence allows the arrangement of multiple-line entries into proper internal sequence as well. When preparing subject lists, the heading cards are ordinarily kept in alphabetical order, and the control (title) cards, after being sorted by subject, are placed behind the subject heading card with blank cards used to provide visual separation of subject groups.

The example (Figure 10), prepared for staff use, was printed without subject headings or cross references. The first public lists were single-spaced versions of such a print-out, with headings and cross references at the beginning of each subject group. They included all of the information punched into the cards, on the theory that such information would be helpful to the public services staff. In actual use, however, the printed sequence numbers and control codes caused confusion on the part of the patrons. Subsequent editions are printed with a modified control board

to suppress printing of everything except subject headings, cross references, and titles. Lists for the use of the library staff continue to include all coded information and are usually double-spaced to allow room for notes. Special lists of all kinds are prepared on demand, and the master lists are updated at frequent intervals.

The file is updated by means of a special, printed form filled out by the serials clerk whenever any of the coded information about a title is changed, or whenever a title is added to, or removed from, the serials file.

AM JNL OF PHYSICS	03680000	231	30111530
ANNALS OF PHYSICS	06920000	231	90111530
BULL OF THE ATOMIC SCIENTISTS	13880000	231	10111530
CURR CONT OF SPACE ELEC + PHYS SCI	22260000		5303
ELECTRONICS	26320000	231	P01/1530
JNL OF APPLIED PHYSICS	45520000	231	*0111530
JNL OF CHEMICAL PHYSICS	46040000	231	*0111530
JNL OF FLUID MECHANICS	46700000	200	11530
JNL OF GEOPHYSICAL RESEARCH	46930000		5303
JNL OF MATHEMATICS + PHYSICS	47120000		5303
JNL OF THE OPTICAL SOC OF AMERICA	47756000	231	90111530
NUCLEAR SCI ABSTR	57480000		5303
NUCLEONICS	57520000	231	=0111530
OPTICS + SPECTROSCOPY	59040000	231	70111530
PHYSICAL REV	60800000	231	*0111530
PHYSICAL REV LETTERS	60840000	231	0011530
PHYSICS ABSTRACTS	60920000		5303
PHYSICS OF FLUIDS	60970000	200	10530
PHYSICS TEACHER	60980000		5303
PHYSICS TODAY	61000000	231	20111530
REVIEWS OF MODERN PHYSICS	65280000	231	40111530
SOVIET PHYSICS (AM INST PHYSICS)	69080000		195306

FIGURE 10. Example of a printed subject list.

As is the case with the Key-sort system, the cost of file creation will depend a great deal on the accuracy and completeness of the record on which punching is based. At UIC, keypunching and coding were carried out simultaneously by a librarian who was trained in the use of a keypunch, at the rate of approximately fifty cards per hour. But this was an unusual situation and the normal procedure would be to prepare code sheets in the serials department and then transmit them to the key-punch station for punching by a trained operator.

Assuming that a trained clerk could prepare code sheets at the rate of one every five minutes and that a keypunch operator can punch the necessary cards at the rate of fifty titles per hour, the cost of file creation would be about twenty cents per title or \$200 per thousand titles, exclusive of machine rental or supplies.

IBM card stock is much cheaper than Keysort cards, especially if stock cards are used instead of specially-designed ones. In lots of ten thousand, cards cost about \$1.00 per thousand. Special cards are not much more expensive, but a special template will cost about \$40, and delivery time on re-orders will be slower than for standard cards.

Unlike the Keysort system, the tab card system requires a considerable outlay for equipment. Although equipment can be purchased outright, most organizations prefer to rent because the rental fee includes service. Educational institutions commonly receive a discount of twenty per cent on the normal rental fee. After discount, rental of an o26 (printing) keypunch and a sorter would be \$80 per month, or \$960 for an entire year. Rental for a keypunch, sorter, and 407 Accounting Machine would be \$400 per month, or \$4,800 per year. This is obviously much more than most small, or even medium sized, libraries would be prepared to pay, especially since another \$4,000-\$4,500 would have to be added as salary for a keypunch operator.

It is entirely possible that a university or college library would find that such equipment already is available on campus and that arrangements could be made for library work to be done during slack periods. All of the work described above can be accumulated and taken to the equipment in batches without disrupting working files or interrupting library service. At UIC, the library does have its own keypunch, sorter, and keypunch operator because there are other requirements as well. But since keypunches, sorters, and accounting machines are available in the University Computer Center, the system could still function well, if not quite so conveniently, if the library gave up its own equipment. A library clerk with average typing ability can soon learn to keypunch well enough to prepare punched cards and code changes.

In conclusion, both of the control systems discussed in this paper are potentially useful for serials work in small and medium-sized libraries. The second system would be useful in large libraries as well. All other factors being equal, choice of one system over the other should depend on the objectives of the system. If, for example, one of the primary purposes of the system is the frequent production of printed lists arranged in various ways, the second system is clearly superior to the first, regardless of the size of the file; the tab card system has a printing capability, but the Keysort system will arrange cards simply for the typist. If, however, the main use of the file is to group subscriptions by jobber for inspection and order preparation, or to tell how many cataloged government documents are currently being recorded on the serials record, the Keysort system would be entirely adequate, and the convenience of having the file immediately at hand might offset the advantages of a tab card sys-

tem, especially if cards have to be transported to a central point for sorting or listing. Cost is certainly a major factor and neither system should be installed unless the system will provide a kind of information or control that cannot be provided in any other way. At UIC, the tab system has already saved enough staff time to justify the cost of operation. In addition, it is able to systematize categories of problems that must be solved if efficient serials handling is to be achieved, either manually or by computer.

ABSTRACTING AND INDEXING SERVICES

Representatives from major U. S. information services met in March in Columbus, Ohio, to analyze indexing services, with major emphasis on biology and chemistry. During a panel discussion moderated by Verner Clapp, Bernard Fry, Director of the Clearinghouse for Federal Scientific and Technical Information of the National Bureau of Standards, presented a plan for the creation of four clearinghouses for distribution of abstracts. These would be: (1) agricultural sciences, (2) engineering, (3) physical sciences and chemistry, and (4) biomedical sciences.

Plans were also made for reorganizing the National Federation of Science Abstracting and Indexing Services.

RENEWED SUPPORT FOR SLA TRANSLATIONS CENTER

The National Science Foundation has granted \$48,930 to Special Libraries Association for partial support of its Translations Center operation. The Clearinghouse for Federal Scientific and Technical Information (formerly Office of Technical Services), National Bureau of Standards, U. S. Department of Commerce, and the Association have also concluded a contract by which the Center will provide bibliographical information about unpublished translations to CFSTI for a one-year period in return for an amount not to exceed \$27,600. These two sources of financial support will enable the Center to continue its program of collecting unpublished translations from universities, industry, research institutions, and other non-government agencies in the United States and abroad and making them available to scientific and technical personnel.

The SLA Translations Center is located at The John Crerar Library, 35 West 33rd Street, Chicago, Illinois 60616, and is under the direction of Mrs. Ildiko Nowak. The Chairman of the Translations Activities Committee is Mrs. Irma Johnson, Charles Hayden Memorial Library, MIT, Cambridge, Massachusetts. All translations received at the Center are cataloged and assigned broad subject classification headings. This information is transmitted to the Clearinghouse for Federal Scientific and Technical Information for listing in its semi-monthly publication, *Technical Translations*. CFSTI collects translations from domestic and foreign government sources and supplies copies to the Translations Center. This cooperative collection and dissemination operation has been in progress for the past six years, and at present almost 100,000 translations from all languages into English are available from both centers.

AID TO SMALL LIBRARIES

Simplifying Work in Small Public Libraries, a manual describing practical ways for effecting economies and increasing efficiency of service in libraries serving 25,000 or fewer persons, has been published by the Drexel Institute of Technology. Donald D. Dennis was general director of the study and prepared the text.

The first section discusses work simplification as a general program to accomplish economies; the second discusses the day-to-day operation of the library, including such facets as book acquisition, organization of the collection, circulation of books, the handling of periodicals and pamphlets, and such household tasks as weeding and taking inventory. The third part discusses the simplification of finances and statistics. Two appendices deal with cataloging cost and with book preparation costs. A third comprises a library buying guide.

Arrangements have been made by the Institute to send copies to small public libraries throughout the country through state library agencies. Additional copies may be obtained from Drexel Bookstore, 32nd and Chestnut Streets, Philadelphia, Pa. 19104. (\$2.50)

NEW SEWING MACHINE FOR BINDING?

A grant of \$24,000 has been made by the Council on Library Resources, Inc., to the American Library Association to permit its Library Technology Project to sponsor development of a sewing machine which would appear to offer certain advantages in the rebinding of library books. Among these advantages would be the ability of re sewn books to lie flatter than at present and the ability to machine-sew many books now requiring hand-sewing. A working model of the machine, designed and manufactured by the James H. Jones Company of Chicago, is expected to be completed about October 15th.

LJ BOOK PROCESSING KITS

Library Journal Cards, Inc., a new book cataloging and processing service from the R. R. Bowker Company, has announced that it is in full operation with two million Book Processing Kits in stock as of April 15, representing some 10,000 titles available in library bindings. These 11-part kits (priced at 29 cents each) contain an author card, a title card, subject cards, a shelf list card, extra unheaded cards, a reinforced book pocket, a book card, and a peel-proof vinyl spine label.

Under this program, kits are provided for all titles listed in the Bowker catalog, *Publishers Library Bindings in Print*, except for those published by Random House, Knopf, and Pantheon. Eventually, kits will be available also for titles listed in *Best Books for Children*. Special ordering arrangements are also available.

For further information, write: Library Journal Cards, Inc., 740 Broadway, New York, N. Y. 10003.

The State of Automation? A Survey of Machinery Used in Technical Services Departments in New York State Libraries

RUDI WEISS
*Chief of Technical Services
Westchester Library System
Yonkers, New York*

MUCH HAS BEEN HEARD lately about mechanization and automation. How does it affect libraries, technical services in particular? To provide at least a partial answer the Committee on Mechanization¹ of the New York Library Association Resources and Technical Services Section decided to make a survey of the equipment used in technical services.

Lack of time and resources made limitations necessary. Results of a survey of New York State libraries might not be applicable nationwide, but at least such a survey could be considered as a pilot project. Moreover, the members of the Committee were more familiar with the New York libraries and expected a good response from them. Size and type of library, it was held, would influence the kind and amount of equipment used. But small libraries were not included in the survey, because it was assumed that the little equipment they might have would be simpler and less costly than that owned by their larger brothers. The final decision was to survey the following groups of libraries: 21 school libraries,² 23 public library systems,³ and 36 college and research libraries with a book budget of \$25,000.00 or more.⁴

The survey was made by means of a questionnaire with the realization that this method of collecting data would not provide for a depth analysis. The following were sent out:

1. A letter explaining the purpose of the survey (Appendix 1)
2. A list of kinds of machines available (Appendix 2)
3. A questionnaire about the library (Appendix 3)
4. A questionnaire on equipment (Appendix 4)

The response, prompted by a personal follow-up letter, was good. (See Table I)

The book budget, number of agencies served, degree of coordination of book purchases, and the ratio of number of copies to number of titles bought determine the method of operation and procedures. Table II furnishes this information. It should be noted that not all libraries answered these questions. For instance, the question "Do you coordinate

your book orders" (Appendix 3, question I) was interpreted and answered in a number of different ways. The figures except for the public libraries, are therefore not conclusive. Table III shows the machines owned by or

TABLE I
Replies Received

QUESTIONNAIRES				
TYPE OF LIBRARY	Sent	Returned	Not Returned	LETTER ^a
School	21	11	8	2
Public	23	19	4	
College & Research	36	19	14	3
Total	80	49	26	5
Per cent		61%	32%	6%

^a Wrote letters reporting that they have no machinery.

TABLE II
Information About Libraries

	SCHOOL	PUBLIC	COLLEGE
Number of agencies			
Number of libraries answering	11	18	16
Total number of agencies	115	727	46
range	1-40	5-84	1-16
mean	10	40	3
median	6	36	1
mode	6	36	1
Number of books purchased			
Number of libraries answering	10	15	18
Books purchased annually	87,000	1,445,000 ^a	409,500 ^b
range	2500-30,000	15,000-490,000	2000-135,000
mean	8700	96,000	22,000
median	6000	33,000	10,000
mode	6000	33,000	14,000
Number of copies per title			
Number of libraries answering	6	16	17
range	1-7	1-20	1-2
Coordination of orders			
Number of libraries answering	12	17	—
Coordinate orders	4	13	—
Do not coordinate orders	8	4	—

^a Neither the New York Public Library nor the Nassau Library System indicated their acquisitions. This is mentioned because their acquisitions would add significantly to the total. These libraries answered all other questions.

^b The total number of books by all the thirty-six libraries polled is in the neighborhood of 750,000 for 1961.

available to the libraries surveyed. The machines reported were first grouped by function and then subdivided by process. The general groups and sub-groups are listed on the left side of Table III. In some cases only the machines manufactured by one firm are entered on one line as in the case of the Thermofax and Xerox equipment, whereas the products of a number of manufacturers are lumped together on other lines such as that for offset duplicators.

The amount of machine information supplied by the libraries varied considerably. Some libraries reported on all machines they own, even if the machines are used outside of the technical services departments. While such information is useful, it was not included in Table III. Some libraries filled out reports about every machine owned, while others gave reports about some machines and indicated ownership of other machines. More often than not, in the latter category manufacturer's name and model were omitted. In order to show these variations, the machines owned or available were entered in one of the four columns under each type of library.

Column (1) Indicates machines for which a report was submitted.

Column (2) Indicates machines owned when both manufacturer and model was given.

Column (3) Indicates machines owned and no name given.

Column (4) Indicates machines available to the library although owned by some other agency of the institution.

In column (4) all machines available are entered regardless of whether manufacturer's name and model were made known or not. The total in the last column to the right includes figures in column (1) through (3), but not those in column (4). It should be noted that only one entry was made for each machine owned by a library even if the library owned more than one machine of the same model. Had each machine been entered separately, the total would have been increased by less than ten.

Table IV shows total number of machines about which a report was submitted as well as the number of manufacturers and models for each machine submitted. One can easily see that no manufacturer dominates the library market. Machines owned most often are listed below:

Cardmaster	7
Xerox 914	7
Potdevin pocket pasting machine	7
Altair stamping machine	6
Multilith offset duplicator—1250	5

Frequency of ownership is not considered an endorsement, of course. Typewriters, manual or electric, are not included. One can assume that the Committee did not list typewriters on the check-sheet, thinking that at least manual typewriters could be taken for granted as well as the ball-point pen. Consequently only a very few libraries mentioned typewriters. The inclusion of some other types of machines such as binding or collat-

TABLE III

Machine Ownership and Availability

	SCHOOL ^a				PUBLIC ^a				COLLEGE ^a				TOTAL ^b
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	
A. Automatic typewriters					I		I		4				6
B. Binding machines					I				2		I		4
C. Collating machines			I	I	2		I		I			I	4
D. Copying machines				I									
1. Ektalith					3	I							4
2. Thermofax			I	I	I		2				I	I	5
3. Xerox					4				8			I	12
4. Photocopiers	I	I		2	3	2			7	2			16
5. Photoclerk					I								I
6. Cameras					I				I				2
7. Photostat					I								I
E. Duplicating machines													
1. Addressing machines	2	I	I	I	4		I		2				11
2. Mimeograph	I	2		I	3		2		3			2	11

TABLE IV
Number of Manufacturers and Models of Machines Reported

	Number of Machines	Number of Manufacturers	Number of Models
A. Automatic typewriter	5	3	3
B. Binding machines	3	2	2
C. Collating machines	3	2	2
D. Copying machines			
1. Ektalith	3	1	1
2. Thermofax	1	1	1
3. Xerox	12	1	4
4. Photocopiers	11	6	7
5. Photoclerk	1	1	1
6. Cameras	2	1	1
7. Photostat	1	1	1
E. Duplicating machines			
1. Addressing machines	8	2	4
2. Mimeograph	7	2	2
3. Cardmaster	7	1	1
4. Chiang Duplicator	2	1	1
5. Offset machines	16	4	6
6. Spirit duplicators	2	2	2
F. Electric erasers	14	7	7
G. Folding machines	3	3	3
H. Heavy duty cutters	6	4	4
I. Labeling machines	13	4	4
J. Numbering machines	7	2	3
K. Pasting machines	18	5	7
L. Sorting machines	3	1	1
M. Stapling machines	6	5	5
N. Computers	1	1	1

ing machines is questionable. They are included because the functions of technical services departments vary considerably.

Not included in the survey are "other people's" machines. Some of the libraries have their work done outside. One of the public library systems purchases its books fully processed, another system has its cards reproduced commercially, and one of the college libraries has its cards done by another agency within the college. It would be fun to report some startling new discovery about the use of the various machines surveyed; instead we have to be satisfied with the indication of certain trends, oddities, observations often of a negative nature, and important general conclusions. It could not be otherwise with such a variety of machines with different applications observed by so many people. Indeed the nature of the reports submitted makes detailed analysis impossible. The reports run the gamut from the very sketchy to the all inclusive, the majority lying somewhere in the middle. Since the libraries were given only a short time in which to answer the questions, the replies for the most part were not based on scientific but on general observation not previously recorded. In many instances the reporter, it seems, was not the operator and therefore not always too familiar with the machine. This method of reporting makes it seem advisable not to mention advantages or disadvantages of individual machines. However, trade or generic names have been or will be indicated when talking about non-operational information such as service contracts, rental features, or hours operated. No attempt was made to verify the information given.

Starting with the age of the machines, we can report that most of them are new, about half of them being acquired in 1961 or afterwards and two-thirds of them after 1957. The influence of the public library systems established 1960 or later is felt here. While practically all machines are used as manufactured, more often than not they are turning out a library product rather than a standard item. A small number of libraries add auxiliary equipment to facilitate use for library purposes. This equipment together with special procedures apparently enables some libraries to do what others would like to do. One library, for instance, worked out a satisfactory method of reproducing catalog cards with the Xerox 914; another library is using a photocopier for the same purpose.

By far the greatest number of machines were purchased outright. Only the Xerox machines, the Keytronic Sorters, the equipment to make offset masters, and one offset duplicator are leased, although a number of other machines are available on a lease plan which includes service. Service contracts were taken almost uniformly for large equipment such as offset, mimeograph, and photostat equipment. No such contracts were noted for simple machines like the Cardmaster, photocopiers, pasting and labeling machines, either, one may assume, because service contracts are not available or because libraries did not think them necessary. Understandably, there were more breakdowns reported for the heavy machinery, hardly any for the light machinery. Only rarely did breakdowns

lead to expressions of dissatisfaction. Most libraries reported repairs within a day. The absence of a service agency in the locality seemed to cause hardship to only one library.

Number of hours of operation depend on type of machine, size, and kind of operation and vary therefore from institution to institution. Photocopiers, collators, staplers, mimeograph machines are used only occasionally as demand arises. Weekly hours of operation vary from one to ten. It is surprising, however, that the small catalog card reproducing machines, the Cardmaster and the Chiang Duplicator, are not used more than five hours a week, some libraries even reporting fewer hours. The range for offset duplicating equipment used for cards and sheets goes from three to forty hours with an average of twenty-three hours per week. Most libraries seem to get good mileage out of their Xerox equipment, only three reporting fifteen hours or less of usage, three about twenty hours, and the remaining five between thirty and forty hours. Both pasting and accessioning machines are reported idle about half the time. Automatic typewriters and photostat machines are kept in operation the whole working day. A summary of hourly output figures presents great difficulties. Obviously only output of like machines can be compared and then only if all the necessary data are given. Unfortunately this is not the case, and a meaningful comparison can therefore not be made. Hourly output of duplicating equipment increases with the number of copies per master or stencil. Output of an automatic typewriter varies according to length of text on each card. The dexterity and application of the operator is another determining factor. Further difficulties arise because some libraries gave the manufacturer's figures which usually indicate the rate of speed but not the output under normal conditions. Other libraries omitted output figures completely. Nevertheless, some hourly output figures are jotted down below; they should be taken with the proverbial grain of salt. There may, of course, be explanations for a low or high hourly output, but whenever output figures depart significantly from the norm, there is cause for an investigation. Output for catalog cards on automatic typewriters varies from 40 to 68. Production of masters on either Ektalith or old models of Xerox hovers around 12. On the Xerox 914, output varies between 50 and 150 for sheets and 50 and 60 for catalog card stock. The range for the Cardmaster is 50 to 300, that for the offset machines from 400 to 2000. Figures given for pasting of pockets run from 50 to 225.

In most cases the library's staff trains new operators. Only fifteen libraries report training by the manufacturer or jointly by the manufacturer and the library staff. The rented machines and some offset duplicators fall in this category. Only one library feels that special training is necessary. Six libraries consider the operation of the machine difficult even after adequate training; four of the machines in this group are offset duplicators. When it comes to time needed for training new operators, we face again a range of seemingly conflicting statements. Reasons for variations are easy to give. Ability to learn depends on previous ex-

perience, suitability for the job, and quality of teaching. Last but not least, we would have to know if we are talking about training for a beginner or an experienced operator. Time needed to learn master-producing equipment varies from half a day to two weeks, for the old models of Xerox equipment from one day to a week, for the 914 model from half a day to a week. Thirty-two libraries indicate a training period of less than half a day for the Chiang Duplicator, the Cardmaster, photocopiers, mimeograph, simple addressing and pasting machines. Six libraries differ, giving from one day to four weeks for the same type of machinery. There is even less of an agreement for the offset machines: four libraries report a minimum of three days or less, three a minimum of seven days, the remaining six, periods of from two weeks to one year. Knowing the complexity of these machines and the various uses makes the variations in the estimates understandable.

There is little to be said about either cost of supplies or cost data. Only two libraries were able to give cost figures. No special supplies are listed; most libraries indicate standard supplies. No attempt was made to compare the cost of these items.

Only one library rents IBM equipment for technical services. This equipment varies so much from all other machines, that it is mentioned separately. It is satisfactory, rented, operates about 35 hours a week, and requires specially trained staff members who in turn can train assistants. After the close of the survey, another library system decided to rent computer equipment manufactured by another firm; they are still in the experimental stage.

We now come to the crucial question. Are the librarians satisfied with their purchases and would they buy the same equipment again? Of the 157 machines reported, 113 were considered satisfactory although some librarians hedged, saying "if at time of purchase no better machine was available." On fourteen machines no comment was received. Sixteen reports show qualified yes or no; comments read "machine too complicated," "service agency too far away," "machine is fine, but cost of supplies is too high," "quite satisfied, but would not buy again," "the machine is fine, but not made for our purposes." Finally fourteen machines give dissatisfactory service and would not be bought again. No low-priced item such as erasers or Cardmasters is included. In price they range from about two hundred dollars to several thousand. In two instances the same machine was rejected by more than one library. Reasons for dissatisfaction vary; in general we can say unsuitability for purpose or inability to make machine work satisfactorily, with the emphasis on the first reason. We must realize that the expression of satisfaction or dissatisfaction is based on the opinion of individuals or groups of librarians. We do not know to what extent these librarians knew other machines, worked with them, and made comparison studies.

In summary, what does the survey show? The public library systems buying the most books, having the most agencies, coordinating their purchases the most, have also the most and best equipment. The school li-

libraries have the lightest load and the least equipment, although only the centralized school processing centers were included in the survey and not any individual schools. Considering the volume handled, both the range and number of machines used is rather small. No "library" machines were mentioned. While a minority of our libraries are standing on the threshold of automation, the majority have just reached the "Industrial Revolution" stage, starting to use machinery and dividing labor. The usefulness of the machines varies, it depends on needs, librarian's inventiveness, and operator. Most people seem satisfied with the machines, yet costly mistakes are being made. Practically no cost data were submitted, nor was there any indication that libraries made studies to compare machines or to test their efficiency.

Before we state the conclusions reached on the basis of the data submitted, we must say a word about the questionnaire. The request for library data seems justified. More precise information might have been obtained through tighter construction of the questionnaire. Definitions of "breakdowns," "hourly output," "training" should have been given. The question about the cost of supplies might have been omitted. One question, "On what basis, recommendation, did your library purchase the machine?" should have been included. There are other shortcomings. While there are different problems in the three types of libraries, all but the very largest share one problem: the libraries are too small to afford the equipment which does a good job efficiently. They have to be satisfied with second or third-rate equipment. Nor do they have the man power or skill for heavy machinery. Heavy equipment requires special training regardless of where given. One wonders if the type of person who becomes a librarian is the type who has the mind for machinery; for if the unit is too small, it is the librarian who must concern himself with the machinery. It would also seem that librarians as a group are not yet machine-conscious or too concerned about cost data, production figures, and training required. If there were such information, it would have become obvious through the questionnaire.

Much is being done presently to let librarians know more about machines and how they can help to improve the library service. Yet there is room for more. Two general recommendations are made, one calling for more research, the other for more information sharing. We would like to call for a study on optimum size. This study would establish when the library should set up its own production line, when and how much to have performed outside, either by another agency of the institution or commercially, or when to combine with other libraries to set up a service center. Other studies would look into performance standards, output, versatility, cost data, and training. A second appeal is being made for more information sharing. The ALA Library Technology Project is making a great contribution, but with its present resources, it is doubtful if it can do the whole job. Each library must spend long hours before investing in a particular piece of equipment. Would it not be helpful to know that some other library already owns or has rejected the equipment? This

again would be subjective information, but several such opinions should give at least a general idea about usefulness.

To make such information sharing possible on a large scale, procedures would have to be set up. The first need would be for an agency to administer the project on a self sustaining basis. The agency would receive and file information submitted by libraries on their machines. Special forms would have to be devised. The information seeking library would request information from the center and receive photostatic copies of information submitted by other libraries. They might then wish to contact these libraries for further information. The information seeking library would pay a fee to carry the cost of the service. Libraries owning equipment would support the project by filing their information. Probably the project would have to be restricted to expensive equipment. If enough libraries showed interest, maybe the Library Technology Project could be persuaded to administer the project. Perhaps manufacturers could be asked to contribute to the information sharing, by including library applications, adaptations, and procedures in their literature, as some do already to their great advantage. But somebody with authority would have to ask them.

Machines are not a cure-all. Very often, especially in the beginning, they add problems. They make adjustments in staffing, procedures, and products necessary. Machines, like people, have to be understood; they have their strong as well as their weak points. Selected intelligently, machines can help us. Let us put them to good use.

REFERENCES

1. The members of the Committee are listed in Appendix 1.
2. The Board of Cooperative Educational Services, Monroe no. 1, Penfield, New York, plus the libraries listed in New York Library Association. School Libraries Section. Central Processing Committee. *An Information Survey of Twenty Central Processing Systems in Public Schools of New York State*. October 1962.
3. The library systems included in The University of the State of New York. The State Education Department. The New York State Library. Library Extension Division. *A Directory of New York State Public Library Systems*. July 1962.
4. The list was compiled from the 22nd edition of the *American Library Directory*. Included with the college libraries were the New York State Library in Albany and the New York Historical Society Library. After return of the questionnaires, it was found that the book budget of some of the libraries was less than \$25,000.

APPENDIX 1

NEW YORK LIBRARY ASSOCIATION RESOURCES AND TECHNICAL SERVICES SECTION

Committee on Mechanization

April 29, 1963

The Committee on Mechanization of the NYLA Resources and Technical Services Section is making a survey of the mechanical devices used at present in the technical services departments of New York State libraries as well as those which were tried and rejected as unsatisfactory.

We hope you will find it possible to participate in the survey. If enough replies are received, we should have a wealth of useful data. Prior to mailing the questionnaire we submitted a draft to Mr. Frazer G. Poole, Director of the Library Technology Project. He would be interested in seeing a report if based on sufficient data.

Some of the types and kinds of machines in which we are interested are listed on attached sheet. We include also a few questions about your library because type and size of library influences selection of equipment. We would appreciate any comments you care to make even if not specifically asked for.

Significant findings of the survey will be either published or communicated to you.

Please complete questionnaire and return to Rudi Weiss, Chief, Technical Services, Westchester Library System, 1500 Central Park Avenue, Yonkers, N. Y., by May 31, 1963.

Thank you for your cooperation.

Sincerely yours,

Kenneth Brown
James P. Gregory
Leon Karpel
Esther Kramer
Catherine M. McIntyre
Morris Schertz
Rudi Weiss, Chairman

APPENDIX 2

Below we list a number of machines or types of machines. The list is not intended as an inclusive one. Please report about any other machine or device which you might use. We are especially interested in machines which we do not know.

Automatic typewriter	Electric eraser
Binding machine	Folding machine
Collating machine	Heavy duty paper cutter
Copying machine	Labelling machine
Ektalith	Numbering machine
Thermofax	Pasting machine
Xerox	Sorting machine
Duplicating machine	Stapling machine
Addressing machine	
Hectograph	
Mimeograph	
Offset	
Spirit duplicator	

APPENDIX 3

I. INFORMATION ABOUT LIBRARY

- A. Name of library
 Address
- B. Type of library (public library, college, university, high school, elementary school, other)

- C. Number of branches, agencies, affiliated libraries for which you perform work
- D. Purchasing
1. Purchase for your organization only yes_____ no_____
 2. Purchase for (indicate number) _____ agencies, branches, affiliated libraries
- E. Cataloging
1. Catalog for your organization only yes_____ no_____
 2. Catalog for (indicate number) _____ agencies, branches, affiliated libraries
- F. Processing (pasting pockets, applying Plastikleer jackets, etc.)
1. Process for your organization only yes_____ no_____
 2. Process for (indicate number) _____ agencies, branches, affiliated libraries
- G. Number of books acquired annually
Average number of copies per title
- H. Type of catalog cards used (Library of Congress, H. W. Wilson, own, combination of several)
- I. Do you coordinate your book orders?
To what degree? Please explain.
- J. Approximate number of cards produced annually
1. Catalog cards
 2. Book cards

APPENDIX 4

II. QUESTIONNAIRE ON MECHANICAL DEVICES

Please use separate questionnaire for each machine. If you do not have enough pre-printed questionnaires, use plain paper and precede your answer by the corresponding number of the question.

If the figures we ask are not readily available please give us approximate figures followed by "est" (estimate). Use verso of page for additional comments.

All replies will be treated confidentially.

Name of Library _____

- A. Machine or device
1. Name of machine
 2. Name of manufacturer
 3. Name of model
 4. Date of purchase
 5. (a) Do you use machine as it was manufactured? yes_____ no_____
 - (b) If machine was modified to suit your requirements, please describe.
 6. What attachments and auxiliary equipment do you use?
- B. Usage
1. (a) What is the primary purpose for which machine is used?
 - (1) Catalog card reproduction
 - (2) Book card reproduction
 - (3) Sheet reproduction
 - (4) Other, please specify

(5)

(6)

- (b) How many hours a week is machine used for this purpose?
- (c) Indicate average number of units (cards, pockets, sheets, etc.) produced in an hour.

C. Maintenance

- 1. Do you have a service contract?
- 2. Do you have breakdowns?
 - (a) Approximately how often?
 - (b) How long does it take usually to have machine back in operating condition?
- 3. Do you have a service agency?
 - (a) In your locality?
 - (b) If not in your locality, how far is the next service agency?
- 4. Is there any problem with replacement of parts?
- 5. (a) What is cost of annual service contract?
 - (b) What is cost of service calls per year (if you have no service contract)?
 - (c) What is cost of replacement parts annually (mention only if not included in a or b above, do not include supplies necessary to operate machine)?

D. Supplies

- 1. What is cost of supplies such as masters, stencils, photo copying paper, catalog cards, paper, etc.?
Indicate price and quantity, such as ream, package of 100, box of 1000.
- 2. How much does cost of operating supplies, such as ink, cleaning material, blankets, developer, etc. add to cost of unit produced?
- 3. If you made a cost study, please submit figures and explanatory notes.

E. Operation

- 1. How many people are trained to operate the machine?
- 2. How long does it take to train a new operator (indicate *minimum* and *maximum*)?
- 3. Who trains new operator?
 - (a) Your staff
 - (b) Agent of manufacturing firm
- 4. Is special training necessary (schooling)?
- 5. Do you consider it difficult for the average person to operate the machine with good results after adequate training?

F. Comments

- 1. Would you buy the same equipment again (same equipment includes new model)?
- 2. Would you buy the same type of equipment again but select a machine manufactured by a different firm?
- 3. Would you recommend purchase of the machine?
- 4. On balance are you satisfied (consider quality, speed, cost, and versatility)?
- 5. Describe in your own words the advantages and disadvantages of the machine for the purpose for which you use it.

G. Miscellaneous

Would you like to have other machines to perform (fill in product or activity)?

Processing Center for California Junior College Libraries — A Preliminary Study

EVERETT L. MOORE
College Librarian
College of the Desert
Palm Desert, California

AN EARLY ESTIMATE of an interest in the costs connected with the addition of a book to a library collection appeared in the initial volume of the *Library Journal*.¹ Such a concern has continued to challenge the imagination of enterprising librarians from this early calculation by Cutter to the present day. In an attempt to establish useful, valid cost figures, numerous studies and tests have been made. These have ranged from the most simple time and cost studies to the most intricate cost accounting methods and statistical treatments. These investigations have often resulted in the establishment of centralized cataloging and processing centers for county, public, and school libraries. However, such cooperative endeavors have not been attempted by college or universities with the exception of the centralization of technical processes on a single campus or for a multi-campus institution. College and university librarians generally believe that their need of detailed and more complete cataloging is a strong argument against centralized cataloging and in favor of custom cataloging by each library.

Statement of the Problem

This investigation tested the hypothesis that it is advisable from a practical and financial consideration for public junior colleges in Southern California to establish a centralized cataloging and processing center.

Importance of the Study

At least three reasons demonstrated the need and importance of this investigation: (1) no centralized cataloging and processing centers for college and university libraries have been established despite the apparent success of such endeavors by county, public, regional, and school libraries;² (2) no research studies have investigated the possibility and wisdom of establishing such a center for academic libraries; and (3) within the past five or six years commercial centers have been established for the successful cataloging and processing of books for diverse types of libraries, including college libraries. If such commercial centers can be so organized as to perform these technical services at a profit to the investor, the writer of this study would suggest that similar services

could possibly be performed more economically by a center formed by cooperating junior college libraries.

Related Investigations

An intensive literature search failed to unearth any research projects which investigated the desirability of establishing such a center. The most complete historical summary of the numerous attempts to determine the costs of cataloging was presented by Reichmann.³ However, his survey from 1877 to 1953 needs to be updated and was written before the impetus to the creation of processing centers was made by the Library Services Act of 1956.

Wynar⁴ has written a detailed, up-to-date study of the cost of placing a book on the shelves of the University of Denver Libraries. His inclusion of the time and cost studies of the numerous steps involved in the selection, acquisition, cataloging, and preparation of books is most helpful. However, this presentation is limited to the findings of a single university and is not directed to the consideration of a center.

Another valuable time and cost study was summarized by MacQuarrie.⁵ Her investigation of the cost of adding a book to the collection of city, county, college, and university libraries in Southern California concluded that it was questionable whether a library could justify purely on a financial basis the use of a commercial processing center. However, she stated that such factors as space, staff, and promptness in cataloging and delivery of books to the service outlet might outweigh the additional cost.

Centralized processing with mechanized card reproduction has been suggested by Hellum and Biggins as a means by which public libraries can achieve substantial savings, especially in salary costs.⁶

The Scope of the Study

The primary concern of this study was to determine the answers to these questions:

1. Is there any meaningful similarity between the books purchased by one public junior college in Southern California and the other public junior colleges in this area?
2. Will the librarians of these junior colleges be willing to have their books cataloged and processed outside of their own libraries if it can be demonstrated that such a practice is feasible and economical?
3. What is the direct cost of adding a book to a public junior college library by two cooperative methods: (a) when the book is cataloged within the individual library; and (b) when the book is cataloged by a commercial processing firm?
4. What would be the cost per book to the individual library if a centralized processing center were established by the junior colleges in Southern California?

Centralized processing has been defined by Hunt:

... those steps whereby library materials for several independent libraries, either by contract or informal agreement, are ordered, cataloged, and physically prepared for use by library patrons, these operations being performed in one location with billing, packing, and distribution to these same libraries.⁷

For the purpose of this study of centralized processing envisioned for the junior college libraries of this area, this definition was determined to be satisfactory with the possible exception that the ordering of the books may be done by the individual libraries and not by the center. However, greater economies would undoubtedly result if the ordering were done by the center or if an ordering timetable were established.

Method of Procedure

Five major methods of procedure for the gathering of data were used in the writer's preparation of this study. First, the historical method of research was used in securing information from the literature of library science for the past century. Especially helpful in reviewing the numerous attempts to determine valid cataloging costs was the historical survey by Reichmann.³ Specific studies of great value although separated by almost thirty years were the investigations by Rider⁸ and Wynar.⁴ Secondly, the writer sent a check list of one hundred titles to thirty-five public junior college libraries in Southern California. These titles were selected from the first six issues of volume one of *Choice*, the new American Library Association publication directed toward college libraries. The selected titles were chosen from the titles from *Choice* already marked for purchase by the College of the Desert Library.⁹ Selection was made by following this procedure: (1) the first checked title under each section and sub-section comprised the initial list of titles; (2) since the number of titles was more than desired for the study, one hundred titles were determined by random choice. It was anticipated that this check list of titles would reveal if there was a meaningful relationship between the books being currently purchased by the junior colleges. That such a relationship did exist was suggested by University of Colorado librarian, Ralph Ellsworth, at a recent library conference.¹⁰ Thirdly, a questionnaire was sent to these libraries to ascertain specific characteristics of the libraries and to find the attitudes of the librarians toward their participation in a centralized center if one were established. Fourthly, cost accounting forms for the determining of direct and indirect cataloging costs were sent to the libraries; however, the returns were fragmentary, incomplete, and inconclusive. Fifthly, cost and time studies were conducted in the College of the Desert Library in order to determine the comparison of costs of cataloging by a library which uses Library of Congress cards and a library which uses the services of a commercial processing firm.

Brief Review of the Literature

This review is limited specifically to that literature which is most directly related to the history of cataloging costs. Much of this is directed toward the determination of the approximate or exact cost of cataloging

and processing a book. Usually allied with this goal was the objective of the reduction of these costs. Although all processing centers in operation at the present time are composed of only city and county or regional libraries, the writer believes that many of their experiences will be instructive to those interested in the establishment of a similar center for junior college libraries.

History of cataloging costs. The numerous endeavors to determine, estimate, or lower the costs of cataloging have been summarized by Reichmann.³ Although his historical survey was printed in 1953, it is the definitive study and needs only to be updated. In summary fashion Reichmann presents scores of attempts and discussions to solve the problem of cataloging costs from Cutter's estimate of fifty cents per book in 1877¹ to the use of simplified cataloging by Williams College¹¹ as it processed a large number of books with a minimum of staff.

The study by Rider at Wesleyan University in 1936 is a classic in the use of the cost accounting technique in libraries.⁸ Prior to the summarization of his findings Rider overthrew some of the common misconceptions concerning cost accounting: (1) that it is not applicable to library routines; (2) that it is as confusing as statistics; (3) that it is so complex that the ordinary librarian cannot understand it; and (4) that it is too expensive to be used by the library. In his attempt to determine the total cost of placing a book on the shelves of Wesleyan University Library, Rider included all direct and indirect costs such as labor, raw materials, and overhead. His final unit figures were these: (1) to order and purchase a book—\$0.26; (2) to accession a book, including all physical preparation of the book—\$0.19; and (3) to catalog a book—\$0.92. Thus the total cost per book was \$1.37.¹²

The usefulness of cost accounting in libraries was studied by Miller¹³ in 1936. This pioneer investigation attempted to determine if the use of cost accounting in the analysis of library costs was feasible. After substantiating the use of cost accounting techniques in libraries, Miller proceeded to describe the specific measures he used in order to accomplish the task, e.g., the use, tabulation, and analysis of time sheets.

Much different from the cost accounting techniques used by Rider and Miller was the cost survey described by MacQuarrie.⁵ This investigation was based upon the return of questionnaires which were sent to libraries in Southern California. The information entered on the questionnaires was derived, not from time and motion studies or cost accounting methods, but from the 1959/1960 annual budgets of the participating libraries. From this study it was ascertained that college and university libraries spent the following monies for the ordering, cataloging, and physical preparation of their books: (1) college libraries ordering less than 3,000 titles per year spent \$3.76 per volume; and (2) university libraries ordering 7,000 or more titles per year spent \$4.33 per volume.

Using carefully-planned and administered time and cost studies of the numerous steps involved in adding a book to a library collection,

Wynar⁴ determined in 1961 that it cost the University of Denver Libraries \$4.33 to add the average non-fiction title to its collection. This cost analysis study is particularly valuable since it was undertaken over a period of several months.

Processing centers. Although no processing centers have been established through the efforts of college libraries, the experiences and techniques developed by processing centers which serve public libraries should be evaluated in the light of the needs of college libraries in specific geographic areas with similar educational objectives. Hunt closes the consideration of the historical development of processing centers in the United States with the observation that there are some general principles for standardization which are necessary if processing centers are to grow. He observes:

This necessary standardization . . . does not destroy any of the basic principles of good cataloging techniques. Good cataloging, classification, and book handling always standardize those things which can be standardized, eliminating vast amounts of wasted duplication of effort. . . . It makes those who supervise processing centers become good managers—it makes them see the total library picture.⁷

A study of the operation of the various processing centers can be of great help to libraries and librarians who are interested in the establishment of such centers for junior college libraries. Adcock¹⁴ describes three types of processing centers: (1) one that is operated completely by a state library or commission; (2) one that is operated within the framework of a public library system; and (3) one that is operated by an association of libraries formed primarily for the purpose of establishing a processing center. Although a comparison of centers reveals many variations, there seems to be one consistent ratio: cost goes down as the volume of business goes up.

Books Purchased by Junior College Libraries

The writer assumed that there is a positive correlation between the educational emphasis of a college and the books purchased by its library. If this premise is true, public junior college libraries in Southern California should purchase many identical titles.

Inasmuch as there was a limitation of time and finances, no attempt was made to compare all the book purchases of the junior college libraries being studied. Therefore, a decision was made to obtain a sample of the current acquisitions of these libraries. College libraries have desired and anticipated a publication which would continually and systematically update the Shaw list.¹⁵ For current publications this purpose has been admirably fulfilled by *Choice*, the new publication of the Association of College and Research Libraries. Although many of the titles reviewed in *Choice* are either upper division or graduate level and therefore not generally needed by the average junior college library, the writer has discovered through intensive use of this book selection tool that many of the titles reviewed are appropriate for junior college li-

braries. Therefore, *Choice* was decided upon as the means by which to secure a sample of book titles to be tested for this study. The selection of this book selection aid seems to be well substantiated in Table I. Although this publication had been in existence less than one year at the time of the study, sixteen libraries indicated that it was either their first or second choice as a selection aid for current books. Fifteen libraries gave either their first or second choice vote to the *Library Journal*. However, *Choice* received eleven first place votes as compared with nine first place votes for the *Library Journal*. It was only because the *Library Journal* received so many third choice votes that it amassed the highest total score when all rankings are included. (See Table II)

Since the College of the Desert Library had used *Choice* as a book selection aid, the decision was made to use the checked issues of this publication in selection of the sample of one hundred titles. The author proceeded to select the first checked title under each section and subsection of the first six issues of *Choice*. Inasmuch as this procedure resulted in more than the desired number of titles, the quantity was narrowed to the sample size by random choice. A check list of these titles was sent to the public junior college libraries in the Southern Section of the California Teachers Association.

The writer believes that the results of the test are most valuable and tell much concerning the buying habits of junior college libraries in this section of the state. Returns were received from twenty libraries. Of the one hundred test titles, ninety-nine were checked by at least one library for a total of 828 volumes.¹⁶

TABLE I
Vote Tally on Use of Current Book Selection Aids
by Twenty-one Junior College Libraries

Rank #1-Highest #9-Lowest	<i>American Book Publishing Record</i>	<i>Book Review Digest</i>	<i>Booklist and Subscription Books Bulletin</i>	<i>Choice</i>	<i>Library Journal</i>	<i>New York Herald Tribune Books</i>	<i>New York Times Book Review</i>	<i>Publishers' Weekly</i>	<i>Saturday Review</i>	<i>Standard Catalog for Public Libraries</i>	<i>Times Literary Supplement</i>	<i>Wilson Library Bulletin</i>
#1	2	0	7	11	9	2	2	1	1	1	0	0
#2	2	3	5	5	6	1	3	4	3	1	1	1
#3	1	0	0	0	5	1	6	3	2	1	0	3
#4	3	3	4	1	0	0	2	0	5	1	0	0
#5	0	3	0	0	0	1	1	2	4	2	1	4
#6	1	1	0	1	0	2	2	1	2	0	3	3
#7	2	2	0	0	0	2	2	1	1	1	0	2
#8	1	1	2	1	1	2	0	1	1	0	2	0
#9	6	5	2	2	0	7	1	6	0	8	10	3

TABLE II

Score Sheet on Use of Current Book Selection Aids
by Twenty-one Junior College Libraries^a

Name of Periodical	Score
<i>Library Journal</i>	166
<i>Choice</i>	153
<i>Booklist and Subscription Books Bulletin</i>	133
<i>New York Times Book Review</i>	116
<i>Saturday Review</i>	110
<i>Publishers' Weekly</i>	87
<i>American Book Publishing Record</i>	77
<i>Book Review Digest</i>	74
<i>Wilson Library Bulletin</i>	70
<i>New York Herald Tribune Books</i>	53
<i>Standard Catalog for Public Libraries</i>	51
<i>Times Literary Supplement</i>	39

^a Based on the following scale:

Rank	1	2	3	4	5	6	7	8	9
Weight	9	8	7	6	5	4	3	2	1

Titles were checked in the following quantities by the libraries: (1) thirty-six titles were checked by ten to eighteen of the libraries; (2) twenty-eight titles were checked by seven to nine of the libraries; (3) fifteen titles were checked by five to six of the libraries; (4) eleven titles were checked by three to four of the libraries; and (5) seven titles were checked by two or less libraries. The detailed relationship between the titles and libraries can be seen in Figure 1. It is a reasonable assumption that the number of libraries which have these titles would normally be higher than the test indicates. Two of the libraries noted that their subscription to *Choice* began with issue number four instead of number one as requested on the instruction sheet. Also, seven libraries did not complete the form by checking those titles which they planned to order.

Of the nine libraries which owned forty-three or more titles (Table III) one owned seventy-four titles and another owned seventy titles. No correlation was noted between the number of volumes added annually by the library and the number of titles owned on the check list. Although all except two of the libraries indicated that their colleges included an academic interest among their objectives, seven indicated other objectives, i.e., adult education and vocational education. The only college which checked adult education as its chief objective had only sixteen titles from the list.

This study indicates that there is a positive correlation between the books purchased annually by several public junior college libraries in Southern California. Particularly important is the fact that eighty titles were owned by five or more libraries. Many processing centers believe that they must handle a minimum of five copies of a title at a time in order to catalog books at optimum efficiency. If the processing center for junior college libraries as envisioned was established, a crucial problem would be the creation of an ordering schedule that would result in a maximum number of copies of a title being ordered at the same time.

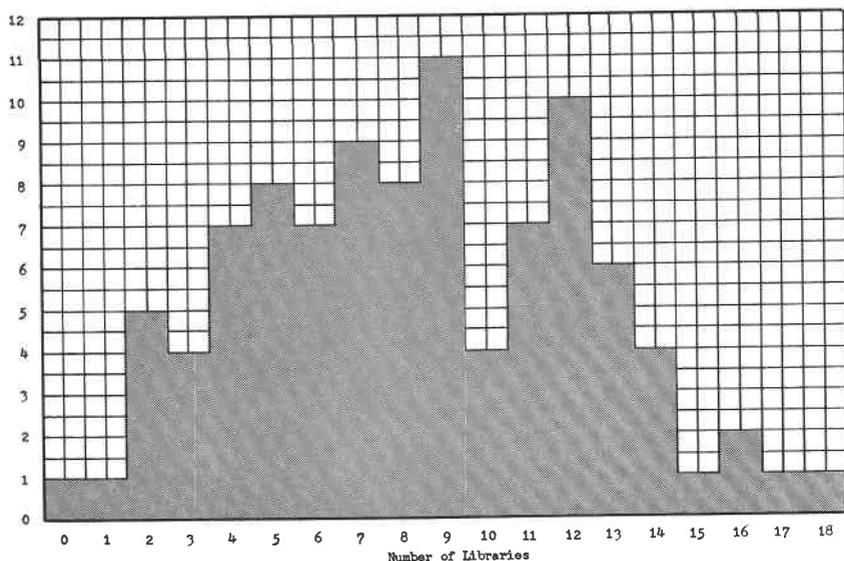


FIGURE 1

Attitudes of Junior College Librarians

Although it may be possible to demonstrate beyond doubt that there is a correlation between the book purchases of the several junior college libraries, the successful establishment of a centralized processing center depends upon the cooperation of these librarians and their willingness to have books processed by such a center.

In order to learn the attitudes of these librarians a questionnaire was mailed to the thirty-five libraries in the Southern Section of the California Teachers Association. The questionnaire was completed and returned by twenty-two of the librarians.

It was learned that fifteen of the libraries catalog and process their books while five libraries have these services done by a commercial processing firm. However, seventeen of the twenty-two libraries indicated that they would consider contracting for the services of a processing center for junior college libraries of the region if such a cooperative effort could provide satisfactory service at a cost less than their present arrangement for cataloging and processing books. Those libraries which took a negative attitude toward such a centralized endeavor objected primarily for these reasons: (1) the processing center would need each library's shelf list and/or subject authority file in order to render satisfactory service;¹⁷ (2) the individual library could perform these services faster and cheaper than the center; and (3) the quality of the cataloging would be unsatisfactory and would not meet our needs, e.g., many libraries will not be satisfied with anything but distinctive, unique call numbers for each book in their collections. One librarian suggested that

he did not believe that the libraries could agree upon specifications. Those libraries which had formerly contracted for the services of a commercial processing firm indicated dissatisfaction with the quality of the cataloging.

TABLE III
Comparison of Educational Emphasis, Annual Acquisitions,
and Titles Owned from Test List

<i>Educational Emphasis of College</i>	<i>Number of Volumes Added Annually</i>	<i>Number of Titles Owned or Ordered</i>
Academic	4000-4999	74
Academic, Adult, Vocational	2500-3999	70
Academic, Adult, Vocational	2500-3999	68 ^a
Academic	Over 5000	67
Academic	2500-3999	64
Academic	1000-2499	52
Academic, Vocational	Over 5000	50
Academic	Over 5000	48
Academic	4000-4999 ^b	48
Academic	2500-3999	43
Academic, Vocational	2500-3999	39
None indicated	1000-2499	35
Academic	4000-4999	34
Academic, Adult, Vocational	4000-4999	34 ^a
Academic, Adult, Vocational	Over 5000	31
Academic	Over 5000	26
Academic, Vocational	Under 1000	23
Adult	1000-2499	16
Academic	Over 5000	10

^a Selection made from *Choice*, I, Nos. 4-6 only.

^b This is a new college; 8,000 volumes were added the first year and over 4,000 volumes the second year.

Twelve of sixteen librarians expressed their belief that a centralized processing center with qualified catalogers who made intelligent use of Library of Congress cards would be able to meet the needs of those junior college libraries in Southern California which have an academic educational emphasis. Similarly, fourteen of eighteen returns indicated that their cataloging needs could be met if the processing center used Library of Congress cards without major change for current books.¹⁸

All eighteen librarians who responded to this question were unanimous in their belief that a similar processing center for the entire United States would be less satisfactory than one established on a regional basis. The majority of those who commented on this question suggested that such a center would be too large and would not be able to meet the particular needs of the several regions of the United States.

Cataloging Costs

When this study was initiated, the writer had hoped to receive a limited number of returns of the cost accounting forms which he had

mailed to the cooperating junior college libraries. In this way he had hoped to determine the average cost of adding a book to the collection of a California junior college library. However, only two libraries attempted to complete the detailed, time-consuming forms: (1) one library furnished data which had been gathered in a study of cataloging costs in 1963 and did not meet the needs of this investigation; and (2) another library furnished figures which were so extreme as to be unusable.¹⁹

Therefore, the College of the Desert Library conducted cost and time studies to determine the direct cost of adding a volume to the collection. Two studies were made: (1) the direct cost of technical services for one hundred volumes (ninety-five titles) which are cataloged with the use of Library of Congress cards; and (2) the direct cost of technical services for one hundred volumes (ninety-five titles) which are cataloged by a commercial processing firm. In both cases all indirect costs are omitted. In the cataloging of books with the use of the Library of Congress cards, no original cataloging was necessary. Although in the normal operation of the library, it is sometimes necessary for professional librarians to perform clerical tasks, during the study all clerical tasks were figured at current clerical salaries.

Books cataloged and processed by the Library. Time sheets were kept for each operation in ordering, cataloging, and processing the one hundred books. Each task was classified as clerical or professional and the hourly salary of the person performing the operation was indicated. A summary of these costs and the time for each technical service is indicated on Table IV. The direct cost for adding each volume to the library collection when all technical services are performed in the library is \$1.76.

Books cataloged and processed by a commercial firm. As in the test just described, time sheets were again kept for each operation necessary to be performed in the ordering and handling of books received from a commercial processing firm. Some librarians and college business managers have mistaken opinions concerning the fees charged by commercial processing firms: (1) some believe that this fee is less than it takes a library to catalog and process its books by itself; and (2) this fee represents the total cost of cataloging and processing a book into the collection. Of course, such conclusions are invalid since many routines must be performed prior to the placement of the order and subsequent to the time that the books are received from the commercial firm, supposedly ready for immediate shelving. A summary of the costs within the library can be found on Table V. This amount is \$0.68. To this figure must be added \$1.96; this is the average cost per volume paid to the commercial processing firm. Therefore, the total direct cost for adding each volume to the library collection when the book is ordered through a commercial firm is \$2.64.

The author wishes to emphasize that the actual cost of adding a volume to his library is much higher than these figures would indicate. No

time was allowed for such factors as: interruptions, coffee breaks, rest periods, sick leave, vacation periods, and the like. When these items are included, the cost per book is much higher. The study was conducted as described above in order to determine if a library could process its books cheaper by itself or with the services of a commercial firm.

This study has demonstrated that a library which is large enough to make exact job classifications can process its own books cheaper than it can contract for such services from a commercial processing firm. However, other factors might outweigh the additional cost, and a library might be able to justify the resultant higher expenditure. Sometimes, it

TABLE IV

Technical Processing Costs by College of Desert Library Without a Commercial Firm

<i>Technical Services</i>	<i>Personnel</i>				<i>Supplies</i>
	<i>Professional</i>		<i>Clerical</i>		
	Salaries	Hours	Salaries	Hours	
1. Ordering					
a. Searching, verifying, typing orders, receiving, follow-up	\$ 4.14	1 1/4 hrs.	\$26.01	18 1/2 hrs.	\$ 2.70
b. Bookkeeping	7.07	1 1/12 hrs.	...	...	0.03
c. Total ordering cost	\$11.21	2 1/3 hrs.	\$26.01	18 1/2 hrs.	\$ 2.73
2. Cataloging					
a. Descriptive cataloging, classification, subject headings, authority files, recataloging, etc.	\$41.40	7 1/2 hrs.	\$ 4.69	2 1/2 hrs.	
b. Preparation of catalog cards	...	...	20.19	10 1/4 hrs.	32.00
c. Catalog Departments files	0.93	1/6 hr.	0.63	1/2 hr.	
d. Shelf listing	0.93	1/6 hr.	0.98	1/2 hr.	
e. Filing & withdrawing of catalog cards and shelf list cards	...	...	\$ 8.13	7 1/2 hrs.	
f. Cross references	...	...	0.10	1/20 hr.	
g. Total cataloging cost	\$43.32	7 5/6 hrs.	\$30.45	21 3/10 hrs.	\$32.00
3. Processing					
a. Lettering, marking in book, pasting, plastic book covers	...	...	\$15.43	7 5/6 hrs.	\$12.57
b. Preparation of book cards and pockets	(Included in 2b)		(Included in 2b)		1.86
c. Repairing and/or bindery	\$ 0.46	1/12 hr.	0.21	1/6 hr.	0.05
d. Total processing cost	\$ 0.46	1/12 hr.	\$15.64	8 hrs.	\$14.48
Total Direct Cost	\$54.99	10 1/4 hrs.	\$72.10	47 4/5 hrs.	\$49.21
Grand Total	\$176.30	:	58 1/20 hrs.	:	:

is easier to secure funds for the payment of a commercial processing firm than it is to have a comparable amount approved for additional staff. In some cases, space for additional personnel is non-existent; therefore, the only alternative is to employ the services of a commercial firm. The use of a commercial firm often frees the staff for other duties.

TABLE V

Technical Processing Costs by College of Desert Library with a Commercial Firm*

Technical Services	Personnel				Supplies
	Professional		Clerical		
	Salaries	Hours	Salaries	Hours	
1. Ordering					
a. Searching, verifying, typing orders, receiving, follow-up	\$ 4.14	1 1/4 hrs.	\$26.01	18 1/2 hrs.	\$0.13
b. Bookkeeping	7.07	1 1/12 hrs.	...	...	0.03
c. Total ordering cost	\$11.21	2 1/3 hrs.	\$26.01	18 1/2 hrs.	\$0.16
2. Cataloging					
a. Descriptive cataloging, classification, subject headings, authority files, recataloging, etc.	\$17.70	3 11/60 hrs.	\$ 0.52	5/12 hr.	...
b. Preparation of catalog cards	...	...	...	...	...
c. Catalog Departments files	0.93	1/6 hr.	0.63	1/2 hr.	...
d. Shelf listing	...	...	...	...	...
e. Filing and withdrawing of catalog cards and shelf list cards	...	...	8.13	7 1/2 hrs.	...
f. Cross references	...	...	0.10	1/20 hr.	...
g. Total cataloging cost	\$18.63	3 7/20 hrs.	\$ 9.38	8 7/15 hrs.	...
3. Processing					
a. Lettering, marking in book, pasting, plastic book covers	...	...	\$ 2.35	1 1/4 hrs.	...
b. Preparation of book cards and pockets	...	...	0.44	7/30 hr.	0.10
c. Repairing and/or bindery	...	...	...	...	...
d. Total processing cost	...	...	\$ 2.79	1 29/60 hrs.	\$0.10
Total Direct Cost	\$29.84	5 41/60 hrs.	\$38.18	28 9/20 hrs.	\$0.26
Grand Total		\$68.28	:	34 2/15 hrs.	:

* To total on table must be added the charge by the commercial firm, \$196.00.

The Establishment of a Processing Center for Junior College Libraries

The suggestion is made that the formation of a processing center for junior college libraries in Southern California be initiated immediately. Libraries could avail themselves of the services of such a processing center without increasing their costs for technical services. During the first few years of the center, there would probably be no savings to the cooperating libraries. However, after the initial outlay for furniture, equipment, and miscellaneous expenses connected with a new organization, the center should be able to cut the fee charged for each book processed for a member library. This will be especially true as the center increases its workload; as the volume of business goes up, the charge for services should go down.

The twenty libraries covered in this paper purchase approximately 70,000 volumes annually. If the additional junior college libraries in Southern California are included, the annual volume for all libraries in the region would be over 125,000 books. An excellent processing center could be established if enough junior college libraries joined in a cooperative endeavor to guarantee that the annual number of books processed by the center would total 60,000. If a sufficient number of libraries in Southern California did not cooperate in the project, the junior college libraries in the northern part of the state should be urged to participate. As the center gains experience, the annual output could be increased.

Two catalogers and six clerks should be able to catalog and process 12,000 titles and 60,000 volumes per year.²⁰ During the first year of the operation of the center each cooperating library would pay \$1.50 for each volume processed.²¹ This would provide an operating budget of \$90,000 for the year. This unit cost could undoubtedly be lowered in subsequent years.

A suggested budget for the first year's operation of the center might be:

Salaries, payroll taxes, health and life insurance and pensions	\$45,000
Insurance	250
Utilities	1,500
Rent	3,000
Legal and accounting costs	300
Administrative and bookkeeping services	4,000
Other contractual services	1,500
Janitor services	400
Library, office, and other materials and supplies	15,000
Postage and freight	1,000
Maintenance and repairs	500
Books, Library of Congress catalogs, and periodicals	5,000
Furniture and fixtures	12,350
Travel	200
	<hr/>
Total	\$90,000

Conclusions

This study seems to support the following conclusions:

1. The majority of junior college librarians in Southern California use the same book selection aids in their current acquisitions program.
2. There is a significant correlation between the books currently purchased by these junior college libraries.
3. Each junior college library is developing its own unique library collection; none is a duplicate of another.
4. The majority of these librarians would look favorably upon the establishment of a high quality processing center for the junior college libraries in this region.
5. The librarians were unanimous in their affirmation that a regional processing center would be more satisfactory than one which attempted to serve the entire United States.
6. A junior college library can catalog and process its books at less cost than it can contract for such services through a commercial processing firm.
7. There are varied considerations which may justify the use of a commercial processing firm in spite of the additional cost.
8. Initially, little or no savings would accrue to libraries which cooperate in the establishment of a processing center.
9. Ultimately, a processing center for junior college libraries would be able to serve its members for less cost than any other method.

Recommendations

On the basis of the findings and conclusions of the investigation, the following recommendations are offered:

1. That a processing center for the junior college libraries in Southern California (or the entire state) be implemented through the California Junior College Association and/or the Junior College Round Table of the California Library Association.
2. That a study be made to determine whether there should be processing centers in both Northern and Southern California, or whether there should be but one center to serve the entire state.
3. That a further study be made to determine the feasibility of having all books ordered through the center as a part of the center's service.

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16. This total is secured by adding the following columns on the check list: (1) library owns title or it is on order; and (2) library plans to order the title.
17. This would be custom cataloging and would defeat the purpose of a processing center.
18. One librarian indicated an affirmative answer for subject headings but a negative answer for call numbers.
19. The total direct cost of cataloging a book was reported as \$26.32, including \$1.70 paid to a commercial processing firm.
20. This estimate is based upon the writer's experience at the North Coastal Regional Library, Tillamook, Oregon, and knowledge of the operation of other processing centers.
21. This amount is suggestive and perhaps could be lowered.

MAGAZINE INDEX

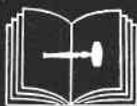
As of October, the *Agricultural Index* expanded its coverage in the biological sciences, changing its title to *Biological & Agricultural Index*. It is published by the H. W. Wilson Company.

PRESIDENT-ELECT SUBMITS RESIGNATION

Because of illness, Jane Ganfield, Vice-President and President-Elect of the Resources and Technical Services Division, has submitted her resignation. Her loss as an able officer of the Division will, of course, be felt by all RTSD members, especially in view of her service to the Division during the recent illness of its President, Paul Dunkin.

Since Miss Ganfield resigned before she succeeded to the presidency of the Division, the Bylaws Committee (Alex Ladenson, Chairman) has ruled that the new Vice-President will, upon election, assume the office of President and continue to hold that office for two years. This ruling is based upon the order of succession as prescribed in Article VII, Section 3(b) and Article VIII, Section 2(b) of the RTSD Bylaws.

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Notes Toward a Code for Computer-Produced Printed Book Catalogs

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and

VIRGINIA GEORGE
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Seattle, Washington*

General

THE PRESENT LIBRARY CATALOG CODE is a product of evolving practice, firmly based on the unit entry catalog card, and is modified to meet changing demands and conditions. Printed book catalogs produced by photographic or similar means reflect the same body of practice and require no substantial reappraisal of the basic process. It is only in the final step, reproduction of a page of main entry catalog cards, that these catalogs differ from conventional card catalogs. Production of printed book catalogs using current versions of large computers, however, requires a reappraisal of catalog content and practice, inasmuch as a major new element is included within the chain. This new element, the computer, provides unique high speed organizational abilities but sets special requirements for producing a catalog. Needless to say, the realized advantages of this high speed are the primary reasons for its use. Although changes in catalog content must be made to use the computer, its high speed and subsequent benefits of utility and easy dissemination should overbalance any concessions made as to catalog content.

In a recent paper,¹ Simonton has outlined some vital questions concerning computer-organized book catalogs. These questions, or problems, are of central concern, and this paper presents some workable solutions. In some respects, our title is presumptive since very little actual experience has accrued in this medium. Truly computer-produced catalogs worthy of the label are still rare if we exclude proposed systems and the plethora of special-purpose indexes which have only limited meaning in the present context. However, we must emphasize the importance of pooled experience in this vital area, for only from the sum of such experience can a commonly useful guide or code be derived, though a code may never exist in the forms represented by the present Library of Congress or ALA rules. The great flexibility of content permitted in a computer-organized book catalog encourages variations designed to fit local needs to such an extent that a functional code must denote heuristics rather than rules. Elements of bibliographic data, however, will still require correct and consistent definition; the change in emphasis wrought by the new medium applies to the physical placement, or visual sequence, of these elements. Given the present comparative lack of experience and

the variety of possible, though unexplored, approaches to this new medium, the plea registered by Hines² that an appropriate code be developed based on principle rather than codified practice seems premature.

Book catalogs produced by computer are a recent phenomenon. Although such catalogs bear surface resemblance to book catalogs which have been for some time produced by unit record, or EAM equipment, a careful distinction must be maintained. The problems and suggestions presented here apply solely to book catalogs which are the result of deliberate computer choice and, for simplicity, assume the use of no more than the standard FORTRAN character set. The most important factor to be considered in computer handling of bibliographic data is the functioning of the machine itself, the new element in the chain. Punched data, bibliographic or otherwise, on being "read" by the machine is reduced to a string of binary code patterns which have "weight" but no conceptual or unique significance. The importance of this apparently innocent mechanical process emerges only when one considers, in distinction, the reading of bibliographic data by a library worker. The human role in organizing bibliographic data involves many assumptions and recognitions which conform to a scale of meanings. These assumptions and recognitions are triggered by such elements as punctuation, capitalization, arrangement, and the particular contexts of the discrete basic elements. Furthermore, the human worker is influenced by past experience not available to a machine. Although this comparison may seem a labored statement of the truism "computers can't think," it cannot be over-emphasized in a process that requires the machine to perform several simple analogs of human concept recognition. When we use the computer to assemble and organize our bibliographic records, the end products may be very similar; the methods only remotely so.

Forms of Entry

Printed book catalogs produced with unit record equipment, typically an IBM 407 accounting machine, in practice tend to be limited in output format. The one-to-one, punched card/printed line relationship, and line-length/field-length compromises, all encourage brevity of entry. As a result, the products tend to be abbreviated form finding lists. Use of a computer allows entry forms of unlimited length and, of equal significance, forms in which the bibliographic elements may be combined in preselected orders. Likewise, elements may be dropped to shorten entry forms on particular lists. The unit entry library card, typically that of the Library of Congress, requires the use of complete entry as a result of simple economics and therefore results in a series of entries based on the main entry concept. The same simple economics apply to the common short form. This main entry concept is of dubious value in the formulation of a printed book catalog assembled and printed by computer, since the original economics no longer apply.

The type of printed book catalog under consideration demands no single, basic, correct entry. Rather, what is required is an initial set of

correct bibliographic elements which can be combined to satisfy the requirements of a particular list or catalog division. In a collection of technical reports, application of the minimum of elements to satisfy this principle produces a double look-up form in which entries would consist of no more than a report series number and an accession number. Since this example may be too remote from the main entry concept in ordinary use to validate our attack, an example from common practice will be more appropriate. As the initial condition, consider a computer-produced printed catalog divided into two sections, a personal-corporate author list and a subject/title list. A prime entry sample, nicely containing all bibliographic elements which conflict for choice of entry, is a conference or symposium. Typically, choice lies between the name of the sponsoring body, the conference title, and to a lesser degree, the editor. These elements are usually in random order on the title page, and often additionally confused by a distinctive title. At best, to create a standard main entry, the cataloger must derive an overall form from these random elements which is within the context of our changing codes. The computer-produced split catalog defined above must permit entry under each of these elements, yet can avoid redundancy of elements through avoidance of a fixed main entry form. As can be seen in Figure 1, title elements are entered on the subject/title list and author elements on the author list, each element attaining an equal prominence. Were main entry the basic form, main entries would appear, randomly, on either list. Or were the author list dedicated as the main entry list, it would of necessity contain title main entries. Additionally, if main entry were the basic form, visual repetition or redundancy of elements would occur, increasing the number of characters per entry and therefore printing costs. These conflicting requirements, indeed absurdities, are avoided in the example, Figure 1. To summarize, in opposition to a fixed main entry form, the machine-produced catalog permits a variable format which can be defined in terms of a particular application. Because of the possibilities offered by this variable format, extrapolations from average characters-per-card to needed computer storage facilities are misleading approaches to feasibility.

Filing Rules and Machine Sorting

In considering the problem of filing rules, it is again necessary to distinguish between the use of unit record equipment and computers. In producing a book catalog via unit record equipment, the punched card deck used is a direct analog of the card catalog. It requires precisely the same filing decisions, done by hand, and is similarly maintained. Using a large computer as the entry generation and ordering medium, and ideally accepting input entries in random order, human decision is largely confined to the preparation of input. Two levels of consideration apply to this problem. The primary level, stated earlier, involves consistency. As data processed by the machine is reduced to a string of coded values, absolute accuracy and consistency of input must be attained and maintained

so that like matter will associate with like. Slight variations, say in articles, prepositions or punctuation, are easily accommodated by the human filer; none can be accommodated by a computer system. Unless recognized, this becomes an endless source of small difficulty and irritation in a machine system; the care required cannot be overemphasized.

TITLE/SUBJECT LIST

- MATHEMATICAL STATISTICS- CONGRESSES**
CALIFORNIA. UNIVERSITY. LOS ANGELES..
HOFFMAN, WILLIAM C., ED.. SYMPOSIUM ON
STATISTICAL METHODS IN RADIO WAVE
PROPAGATION, 1958. PROCEEDINGS N.Y.,
PERGAMON, 1960.. QC665.C3.58
- RADIO WAVES- CONGRESSES**
CALIFORNIA. UNIVERSITY. LOS ANGELES..
HOFFMAN, WILLIAM C., ED.. SYMPOSIUM ON
STATISTICAL METHODS IN RADIO WAVE
PROPAGATION, 1958. PROCEEDINGS N.Y.,
PERGAMON, 1960.. QC665.C3.58
- STATISTICAL METHODS IN RADIO WAVE PROPAGATION,**
1958. PROCEEDINGS ... SYMPOSIUM ON
CALIFORNIA. UNIVERSITY. LOS ANGELES..
HOFFMAN, WILLIAM C., ED.. N.Y., PERGAMON,
1960.. QC665.C3.58
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- HOFFMAN, WILLIAM C., ED.**
SYMPOSIUM ON STATISTICAL METHODS IN RADIO
WAVE PROPAGATION, 1958. PROCEEDINGS
N.Y., PERGAMON, 1960.. QC665.C3.58

FIGURE 1

The secondary level of the filing problem concerns the intellectual structure, the overall filing order, to be achieved by a computer system. Filing, or sorting, will be accomplished by the computer in two phases. The first phase is that accomplished by the processing and core storage facilities of the computer. The second phase is strictly a collating process, typically involving a dedicated core storage area, or buffer, and magnetic tape units. The former is of primary importance, as the significant structuring of the file must be accomplished while processing is at this stage. In this regard it must also be clearly understood that standard "sort" and "merge" computer routines, developed for dissimilar applications, are not of much use in the processing of bibliographic data in quantity. Such processing, if machines are to be used at all efficiently, must be based on storage and processing concepts involving an absolute minimum of data movement. If this necessity is accomplished, sorting in depth can proceed without incurring a costly time penalty.

The Library of Congress filing rules can be considered a typical filing procedure which allows for local variation. From the standpoint of a computer application it is a highly intellectualized system, in that much of a conceptual nature must be recognized by both filers and users which cannot, seemingly, be interpreted by machine without auxiliary coding. This problem has impressed many with its difficulties; however, it yields somewhat under closer scrutiny. First, dividing the catalog resolves many problems which afflict, uniquely, the single-order dictionary catalog. Given the inordinate complexity of the typical large card catalog, this is in itself a good argument for division. Second, having divided the catalog to remove conflicts between author and title/subject rules, the title/subject rules are amenable to approximation by changing the "weight," or internal machine representation, of some key characters such as commas and dashes. This is a readily-accomplished program function. In order to avoid a sorting conflict between, for example, inverted form subject headings and titles which contain commas, the computer program must distinguish between these during the appropriate part of the processing cycle. The degree of approximation to current filing practice that can be attained depends on both ingenuity and compromise. In the area of compromise, however, one is aided by the "consultability" of the printed catalog, which inherently requires a lesser degree of filing elaboration. Admittedly, this is an intuitive, rather than proven, distinction, subject to the test of a particular application. We support the assumption, however, that from the users' standpoint, the less elaboration the better.

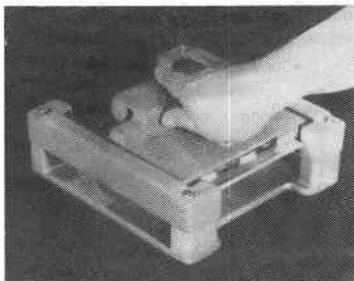
Conclusion

Present capabilities for assembly and generation of printed book catalogs by computer provide librarians with myriad opportunities. In addition to the opportunity, indeed the necessity, to reconceive the basic unit of the catalog, the entry, the applications of the medium are restricted only by imagination and printing costs. Printing costs, considered re-

cently in some detail without regard to basic content,³ must be offset by an increased service factor. Correlative to cost data, however, is the salability of the printed catalog. In the present transitional or exploratory stage, and in the absence of much recorded experience, reconception is hampered by the ubiquity of standard forms. Our experience is of necessity based on the machine system we are now operating;⁴ however, it is obvious that entry forms and filing order will be the most consequential factors relative to the emergence of code-like guides for machine produced printed catalogs. The present level of interest and activity indicates that experience will accrue rapidly in this medium. It is to be hoped that the forum of catalog code discussion will enlarge to accommodate the new necessities of this oldest form of catalog.

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The Computer and Catalog Filing Rules

JEAN M. PERREAULT, *Head
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Associate Professor of Philosophy
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Means and Goals

IT IS HELD by some that the light that flows from the computer upon the minds of "automatic librarians" is no beneficent glow but rather a garish and unhealthful glare. It is held by others, who have perhaps been told, "Go out and get some (artificial) sun," that its light might burn them, and they accordingly hesitate.

The newness of the computer as a tool for librarians can be viewed as an illusory dazzle, unless, in a disciplined manner, librarians seek to assess those of their traditions that will be affected by the use of the new tool, seeking by such assessment to re-define their goals.

It can be rightly said that what has been done in the past must, indeed, continue to be done, but we must introduce a small but all-important distinction: that which has been done and must persist, whatever the system of tools used, is the *goal* of the library, or of any part of it. The system of tools is *not* what must persist; it is not itself the purpose of the library.

From this last point we can go on to this: *if* better service is to be accomplished, it seems at this stage that the computer will have to be used; *not*: we *must* use the computer (or any means as such, new or old) to improve service. Thus, I do not say that filing rules adaptable to a computer are better because they are so adaptable, but conversely: the rules that would provide better service are those that can be adapted to the computer just because they are simpler, clearer, and less ambiguous.

I maintain that the goal of filing rules has been sadly obscured by consideration for a system that need not persist, since it is no real servant of the library's global goal: intelligible order.

But, even if the problem of use of the computer in catalog filing is not violently over-simplified by arguments against (a) false economy, (b) fascination with a new toy, or (c) disregard for tradition, opposition and hesitation can arise from alleged lack of usefulness: what is used-to is (at least virtually) useful. I feel myself that this would be the only valid objection if it *were* an objection. The point of most of what follows is to show that in fact it is not an objection, and that thus, without it, none of the others has any real weight.

Let us draw another distinction, which I would label a "legalistic" one: that which does not substantively affect the legal validity of an act

can be insisted upon only as a courtesy. For instance, if the validity of a religious rite is not always vitiated by improper vestments, the presence of the proper ones is little more than a courtesy to the believers and a mark of respect to the deity.

Applying this distinction to the problem at hand, note that the basic difficulty of the traditional filing "rules" is that they are actually just a body of exceptions to the really ruling principles. But if there are *some* exceptions, there could be *all*; and if there are exceptions to the exceptions, we begin to annul precisely what the file was created for: order. For example, the exception that allows interfiling of "by period" and style comma-divisions (e.g., under "Art") should logically also allow interfiling of "by period" and form double-dash divisions, or form and subject, or even comma *and* parenthetical *and* double-dash divisions.

All in all, then, an objective reading of the traditional rules will lead to one overriding conclusion: this was all set up thus *not* because of the desire or ability to produce a hierarchical organization (which in any case would have called for a classed catalog, if logical groupings were allowed fully to prevail), but either (a) because it was pretty much that way and it would cost too much to change it, or (b) because that was just the way "they" wanted it: *arbitrarily*, in a word.

There is another general point: hierarchical sub-arrangement may be advantageous when the need is for the whole division of which one subdivision is a member; but when the need is for one subdivision belonging to one of a great many divisions, it is difficult—without full awareness of the division to which it belongs—to find that subdivision. This difficulty does *not* obtain when the divisions and subdivisions are arranged, not hierarchically, but alphabetically.

For example, the user may want all the "by period" subdivisions of the whole division "by periods," and, when he finds it, he wants them arranged chronologically rather than alphabetically—assuming that he intends to scan through them on a large scale. But if he wants a "by period" subdivision by name and does not have a clear idea of its chronological position, a linear scan must be made through all period subdivisions, assuming that the "by period" division can be located among the others on a level with it—which is an even larger linear scanning operation for the user.

File Organization: The Blank and the Alphabet

The basic logic of file order is positionality: 003 before 020, despite the priority of 2 to 3. The same holds for the alphabet, the characters of which are, by convention, in a similarly stable order among themselves. Thus, the order of words can be made numerical by turning each entry into a number corresponding to its alphabetical position. But this means two things: (a) the cataloger must check every entry to see if it has its number assigned (and, if not, assign it a new one), and (b) dependence on some file-order *not* computer-generated but set up in imitation of the present confusion. Such a system would be less strain on those users who

do manage to find their ways now, but would not serve the main purpose of the filing reform under discussion here, namely elimination of the present hodge-podge in favor of consistency.

(While such number-assignment might suffice for authors and subjects, which normally recur often enough to prevent having to assign a new number every time they do occur, it is clear that for titles just the opposite would be the case; that is, recurrence would be so seldom as to matter little. Thus, to avoid constant new numbers for the title file, some other system would need to be devised to avoid ridiculous costs. And, therefore, *if it can be made to work there, why not throughout?*)

Much is made of the difference between word-by-word and letter-by-letter filing. But the distinction can be stated in a fashion much more akin to the alphabet's own file-origivative order. Letter-by-letter filing is filing A through Z, whereas word-by-word filing is filing *blank* through Z. To go even beyond this distinction and achieve phrase-by-phrase filing (which is what most librarians really intend when they say "word-by-word"), it is only necessary to add to the file-origivative order certain punctuation symbols. Thus, "London. University" necessarily precedes "London last year" because the punctuation inserts an internal phrase-point—and of course a short phrase ("London.") comes before a long phrase ("London last year"), despite the fact that "I" is alphabetically earlier than "U."

"Nothing comes before something" can then be taken as another (more traditionally "library") way of saying "blank through Z." The two most general principles of file-organization thus are these: (a) positionality and (b) conventional order (A through Z) + "nothing before something"; the first generates the possibility of order between compound symbols, the second generates (1) letter-by-letter, (2) word-by-word, and (3), as "double-nothing before something," phrase-by-phrase order.

This order is *order-for-one-purpose*: to help find what, in disorder, would be quite unfindable. And it is the user's awareness of the pre-arrangement of the file that "finds" items within the file for him. There is no metaphysical reason at all why this order should be as it is; the order is quite arbitrary, but it is inflexible: K never comes after L, L never comes after M. Metaphysical order, on the other hand (even though, as in a classification schedule, it uses arbitrary order such as numerical or alphabetical), is order among ideas or concepts: it is classification—or it tries to be. But, leaving the classed (metaphysical) catalog aside, we instead arrive at—the alphabetical catalog, as an index¹ to the classification. But the constant need (Kant would certainly agree) for a higher synthesis pushes librarians to a mixing of the two types of catalog—to the confusion of the purpose of both. (The "higher synthesis" as found in the pseudo-hierarchical alphabetical subject catalog is a harmful attempt, in other words, unless it is allowed full freedom to become a classed catalog.) Such a mixing is exemplified in the intrusion of pseudo-hierarchical principles which are *not*, as is alphabetical order, inflexible—and which,

therefore, and of necessity, vitiate the whole and single purpose of file order: to help find.

It is true that we have gradually acclimatized not only ourselves but the patrons as well to acceptance of some of these pseudo-hierarchical principles; but the most cursory glance at a traditionally organized file shows the breakdown of this acceptance, in that the user (not only the patron, but the file clerk too, and even the librarian) must be constantly reminded of exceptions to alphabetical order by guide-cards or (in a book-catalog such as the *NUC*) by explanatory headings. Prescinding for the moment from the question of computer-utilization, we must still ask ourselves what useful purpose all this exception-explaining paraphernalia serves, if the data in the entries themselves could accomplish the same purpose as efficiently or even more so—even if it meant re-education to a simpler mode of use?

File Organization: Special Characters

But to return to the possibilities of the computer, note that what generates file-order for the traditional file (albeit loaded with a stultifying weight of exceptions) is the idea which the computer-aficionado calls "collating sequence." Now the core of the collating sequence is the alphabet, and in this regard the file-clerk and the computer work similarly, matching the sequence against the position as in the numerical example above. However, the computer, in order that there be no ambiguities around to slow it down or even gum it up entirely, has built into it an additional collating sequence to handle every character that could be used within it. This total sequence includes all the available special characters, followed by the alphabet, finally followed by the numerals—all preceded, of course, by the blank. And, just as between the segments of the whole collating sequence there is an order (e.g., letters before numbers), there is also a pre-set order among the special characters, analogous to the alphabetical order within the alphabet-segment.

The special-character order is not one that can be considered to be helpful in catalog filing, since (e.g.) the position of the period (.) in the sequence is earlier than that of the comma (,); this would cause "London. University." to file before, not after "London, Jack," with "London; its history" between (since the semi-colon is between the period and the comma in the pre-set order).

Provision for a divided rather than a dictionary catalog can suppress some of such problems,² and the use of "double-nothing before something" enables phrase-by-phrase filing. But this involves computer recognition of certain special characters as blanks—dropping others from the sort-tag entirely. However, this phrase-by-phrase filing could follow the pre-set collating sequence of the special characters. The first device (substitution of blanks in the sort-tag for certain special characters) is imperfect in that there cannot be differentiation between the various types of phrase, however, but only (in general) a collating sequence that stands thus: triple-blank, double-blank, single-blank, A, B, . . . Y, Z, 0, 1, 2, . . .

8, 9. Triple-blank is generated by period-comma-space and period-double-dash; thus single-letter inverted pseudonyms are placed ahead of acronyms beginning similarly (acronyms, to be filed as phrases, must be internally "blanked"; thus A S T M or A.S.T.M., not ASTM). Double-blank is generated by double-dashes (as between sections of subject headings) and by a space contiguous to a blank-generating special character. Single-blank is generated by a period (in acronyms), by the hyphen, by the space, etc.

The Results

The basis of such a system of filing can be called *explicit symbolic order*. It goes beyond "alphabetical" order in that it includes blanks, pseudo-blanks, and numbers in its purview; it is explicit in that it presupposes no implicit re-organization of a field of data into sub-fields, nor the treatment of any character or sub-field as in any other position than as printed.

For instance, names of sovereigns, according to traditional rules, are broken up into such sub-fields as "name," "ordinal number," "rank," "area of sovereignty," "sobriquet," "dates," and these are arranged in an order (pseudo-hierarchical) of importance or precedence independent of their printed order. Explicit-symbolic-order filing treats each such sub-field as a phrase in straight (and far more easily-explainable) phrase-by-phrase filing.

Sorting by computer is done either on the basis of each entry entire, or by initial creation and subsequent scanning of a sort-tag. Such a tag can be created by the cataloger or by the computer. For instance, (a) the computer program can change each unlauted letter in raw text to "letter-e" in the sort-tag, (b) the cataloger can ignore the printed form and transcribe as he wishes the entry filed, or (c) the cataloger can both transcribe the text and create a sort-tag—thus making possible distinction between umlaut and diaeresis, if felt necessary.

Sorting by computer should also imply an even larger unit of file precedence, for instance in the filing of author-title entries. Thus we see that, when librarians say "word-by-word" and mean "phrase-by-phrase," this meaning can in fact be extended to imply "field-by-field" filing. An author-title tracing, being longer than the author included in it, must be arranged so as to prevent its filing *after* all the main-entry uses of the same author. Sort-tag fields can accordingly be arranged so that the main entry itself is the primary field, the (conventional) title the secondary, and the publisher's title (with conventional title present) or other information (e.g., publication date) as the tertiary field. For author-title-tracing filing to agree with the practice for similar author-title main entries, a convention must be established for placing an articulation between the traced author and his accompanying (conventional) title, equivalent to the separation between fields in main-entry author-title filing.

For tracings of responsibility (editor, joint author, etc.) a discrimination should be established indicating to the computer whether the

secondary (or, when the tracing has a secondary field already, the tertiary) sorting field is to be the main entry or the (conventional) title. For instance, a conductor traced over Beethoven's Symphony no. 3, Mahler's Symphony no. 2, and Schubert's Symphony no. 1, should file (a) conductor, (b) composer, (c) title, *not* (a₁) conductor, (b₁) title, (c₁) composer—even though, it may be statistically true that the three fields for added responsibility preponderantly are organized in the latter order.

Three-field sorting for subjects is also necessary: (a) subject, (b) author, (c) (conventional) title; this too is implied in the traditional dictum "word-by-word."

Considerations for the Future

This is not a perfect system. There are many divergencies between it and traditional filing, especially in those areas where the pseudo-hierarchical principle can be of some use (e.g., among the various types of single-letter abbreviations of personal main entries, or among the various forms of "Mac"). But it operates according to simple principles, principles which are basic to the traditional order *without its exceptions*.

However, there is no metaphysical reason why a perfect system could not be devised. I do not propose to outline all the details of one here. Instead, I would indicate that the primary drawback to the improvement of the computer filing system outlined above would *not* be the (almost) incredibly complex program necessary to absorb the (truly) incredible bulk of exceptions that constitute the body of the traditional filing rules. The primary drawback is rather a physical one: the pre-set hardware at present in use in the implementation of the computerized library. If the order implied by the hardware could be designed to be variable rather than pre-set, the different orders appropriate to the different types of entry could be programmed fairly economically. And, far more important, this structure could create an order not only superior to what we now have in computer-filed catalogs, but superior to the less-than-useful traditional files in use in card catalogs. Users can reason, but they cannot remember endlessly-complicated exceptional particularities; principles as bases for such reasoning should thus be re-established to replace the "rules" traditionally employed.

And, as mentioned above, changes in our structuring of input to the catalog could result in pseudo-hierarchical filing that is at the same time symbolically originated (triple-blank through 9). For instance, "by period" subdivisions could begin with dates, with leading zeroes for numbers under 1000; this would effectively put the "by period" division after all others, which could be ordered among themselves by the use, for each, of a different connective punctuation (e.g., period-space, comma-space, space-parenthesis and parenthesis-space, double-dash, colon-space, semi-colon-space; and even, if enough divisional discriminations are required, such things as space-asterisk, space-virgule, or repeated periods, commas, or colons).

The almost insuperable problem, of programming the computer to make these inter-divisional decisions on the basis of the (implicit) class-membership of the words themselves, would thus be avoided by putting the burden on the cataloger himself.

Both this device and that mentioned above (filing numbers), however, are only quasi-programming of filing rules, and both share two defects: (a) they are static rather than dynamic, forcing every decision to be made in advance of the actual operation of the computer, and on an individual basis (any entry not thus pre-decided—how would *it* file?); and (b) they do not accomplish one of the most essential factors in computerization of libraries, they do *not* reduce but raise costs—unless, that is, such discriminate indications are centrally input (e.g., as part of the record created for distribution by the Library of Congress).

Retrospect

Just as unnecessary as is much of the complication of many parts of the class-schedules, when we examine these in the light of their ultimate purpose;³ just so unnecessary is much of the filing-rule complication into which we have somehow wandered. Just as the lack of explicitness is a constant defect of filing rules and especially of the filing of title entries;⁴ just so is the lack of conformity to basic principles of filing order a defect of traditional filing, one that can be eradicated with or without the computer, but assuredly *can* be with the aid of the underlying principle of order which comes to light when we undertake to see whether the computer can perform the task of filing catalog entries at all.

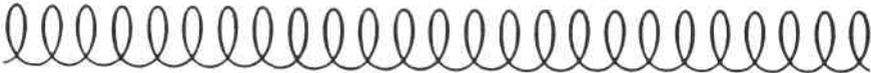
Docility can be pathetic—even in the face of the advance of the modern-day juggernaut, the computer—but it is not pathetic if our docility is understood as humility and as a willingness to examine a mere machine to see whether its very mechanicality constitutes an arbitrariness preferable to that of the traditional rules for filing.

REFERENCES

1. See my papers "The Conceptual Level in Bibliography" and "Bibliography and Information Retrieval" (*Libri*—in prep.).
2. See my paper "Computerized Cataloging." *Library Resources & Technical Services*, 9: 20-34. Winter 1965.
3. See my paper "The Classification of Philosophy." *Libri*, 14: 32-39. 1964.
4. See my paper "An Example of Conventional-Title Cataloging." *Library Resources & Technical Services*, 6: 40-47. Winter 1962.

STANDARDS FOR CARE OF ARCHIVES

American State Archives, by Ernest Posner, was published October, 1964, by the University of Chicago Press. A comprehensive study of archival practices in the 50 states and Puerto Rico, the work is intended to provide standards for the care of records. The Council on Library Resources, Inc., has made a grant of \$1,000 to the American Society of Archivists, sponsors of the Posner survey, to enable him to prepare a report on such improvements in archival practice on the state level as have occurred since publication of the book.



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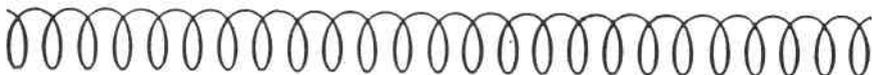
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A Filing System for the Machine Age

JOSEPH T. POPECKI
Assistant Director of Libraries
The Catholic University of America
Washington, D. C.

FOR YEARS, librarians and their clerical assistants have been seen standing in front of banks of catalog drawers trying to figure out, guidebook in hand, just where to put a particular catalog card. To the user of the library, this ritual might seem strange, having read in the manual of library use that the cards in the catalog were filed "alphabetically."

It has further impressed the administrators of some libraries that, if an experienced cataloger, with his filing manual and graduate degree in library science, cannot find his way around the catalog, how can the uninitiated? In fact, some close observation of students using any large catalog (and any such undertaking of this kind must be approached with a certain respect) will reveal that the typical method of information retrieval is to select the drawer that brackets the name or subject heading the user has in mind; he then proceeds to thumb through all the cards in the drawer because he doesn't comprehend the order of the cards. This wastes time, wears out cards, and frustrates the effort that some cataloger spent in carefully determining a logical entry for the work sought.

Bibliographers generally have a passion for organization. It might well be the premiere quality that separates the men from the boys in this area of work. It is this same passion, however, that becomes the cataloger's Achilles' heel. He has devised various logical plans and hierarchical arrangements which are not known to the catalog user, and who, if he did know them, might soundly disagree with them. For example, in most filing systems in current use, a John who is a saint would file ahead of a John who was a mere monarch. Would the agnostic expect and agree with this Christian approach? Most unlikely.

The alphabetical catalog or bibliography is not unlike a telephone book, just as a classified catalog or shelf list is very much like a city directory. Why the analogy? We must keep in mind that there is but one great virtue possessed by the alphabet: it is a non-logical but *universally-known* code. It does not tolerate logic and is graceless when made to include it. A single entry bibliography has but one main purpose from the standpoint of arrangement: to bring together the works of an author and to consolidate those things which are, in reality, the same things, despite the initial impression they may convey.

Another observation that might be made of the users of the American library card catalog is that most of them do not consciously allude to the difference between a title and a subject heading while making a search. Thus derives the principle of intermixing all forms of entry; but one obligation rests upon the catalog user: to be able to express his mental images in reasonable language, spelled correctly.

Finally, many dyed-in-the-wool conservatives in the filing arrangement debate have been shaken by the implications of the machine's encroachment in the bibliographic field. Today, the book catalog is a stranger to practically no librarian, and neither is the simple-minded, but reasonable view of life of its machine-arranged entries. The following filing system, worked out over a period of four years of use in contract work and classroom teaching, lends itself well to machine programming. Even more important, it is well oriented to the simple approach of the user who expects to find the catalog "alphabetically arranged."

BRASS

(BASIC RULES OF ALPHABETICAL SEQUENCE SIMPLIFIED)

Note: In accordance with the practice in most library card catalogs, subject headings are distinguished in the following examples by being written entirely in upper-case letters, e.g., LABOR.

1. Arrange all entries letter by letter to the end of each word *throughout* the entry, *ignoring all punctuation*. The order used is that of the English alphabet.

1 2 3 4 5 6 7

Example: Charles Louis de Bourbon, duke of Parma
and because nothing files before something, note that
NEW YORK files ahead of NEWARK.

2. Interfile all entries, regardless of kind, in the manner of the telephone book.

Example: Green, Winifred
The green years
Greenaway, Kate, 1846-1901, illus.
GREENBACKS
Greenbaum, Joseph, joint author
Green, Mrs. Eunice (Chace)
see Chace, Eunice
GREENE, NATHANIEL, 1742-1786

3. File all letters as you see them, disregarding all letter *modifications* such as the *umlaut, cedilla, tilde, etc.*

Thus: ä files as a, ç files as c, ñ files as n, etc.

4. All signs and symbols *not* letters or numbers arrange before numbers, initials or words. In general, numbers file before alphabetical characters. Signs, symbols and numbers are subarranged by the first word following.

5. Arrange initials before a word beginning with the same initial letter.

Example: A., A

A.A.A.

ABC of the NRA

A.L.A. *see* American Library Association

A.S.M.E. News

Aa, Cornelis van der

Ambach, E L

6. Arrange initials meant to spell out a word as a word. (Acronyms)

Example: UNESCO Make a cross reference from the word filed as initials.

7. Arrange abbreviations as if spelled out.

Example: Col. files as Colonel

Dr. files as Doctor

U.S. files as United States. (*NOTE: abbreviations of geographical names are never considered initials*)

8. File elisions, prefixes and contractions as seen. File as a separate word when separated from another word by a space or a punctuation mark. File the ampersand (&) or similar conjunctive marks as if spelled out in the language being used.

Example: Bibliotheque d'histoire is filed Bibliotheque d¹ histoire² HOWEVE³R,

When an apostrophe or other mark is used to signify an elision or dropping of a letter *within* a word, the word is not divided for filing purposes. Thus, isn't is filed as spelled, and as one word: isn't.

9. Ignore the initial article in filing in all languages when it is in the nominative case. In foreign languages, the following initial articles may be disregarded:

Dutch: de, het, 't, een, eene

French: l', le, la, les, un, une

German: der (masc. nom. only), die

das, ein, eine

Hungarian: a, ez, egy

Italian: il, lo, i, gl', gli, la, le, l', un,

uno, una

Norwegian: den, det, de, dei, en, ein,

et (ei, e, eit)

Portuguese: o, a, os, as, um, uma

Rumanian: l, le, un, o

Spanish: el, los, la, las, un, uno, una,

unas

10. Initial numerals (e.g., numerals occurring at the beginning of the entry) are filed as if spelled out, in the language being used. The bibliographer should provide the filing word in brackets following the numeral.

Example: 2 [Zwei] Knabentagebucher.

Numerals which occur within the entry are filed as numerals, and ahead of words (nothing before something).

Example: Charles
Charles V
Charles VIII
Charles VIII, Emperor of Germany
Charles X

11. When names or words are spelled in two or more ways, file as spelled and make a cross reference from the word to variant forms of the word:

Example: O'Neill *see also the name spelled* O'Neal, O'Neale, O'Neil
McFarland *see also the name spelled* MacFarland

12. File first the latest edition of several editions of the same work. (i.e., in inverse chronological order).

13. Sub-filing arrangements (i.e., arrangement of several works which have identical entries).

a. Main entry is an author

Subfile by the filing title (if there is one), then by title.

Example: 1 Cervantes Saavedra, Miguel de, 1547-1616

2 [Don Quixote. English. 1960]

3 The adventures of Don Quixote de la Mancha . . .

- b. Filing titles are used to bring together things that are, in reality, the same thing. Most filing titles represent no special problem, but when this device is applied to classic, voluminous and often-reprinted authors the following special order of titles should be observed:

- 1) Complete works in the original language, subarranged by editor, series or date.
- 2) Complete works in translation, subarranged alphabetically by language, then by translator, then by date.
- 3) Selections of two or more works in the original language, subarranged by title.
- 4) Selections of two or more works in translation, subarranged alphabetically by language, then by translator, then by date.
- 5) Single works in the original language. The conventional (standard) title is subarranged by date.
- 6) Single works in translation. The conventional title is subarranged alphabetically by language, then by date.

c. Main entry is a title.

Subfile identical titles by date, latest date first.

d. Added entry is an author.

Subfile by the filing title (if there is one), then by title.

Example: 1 Campbell, Robert Jean, joint author

Hinsie, Leland Earl, 1895-

2 Psychiatric dictionary . . .

- e. Added entry is a title.
Subfile by the main entry.
- f. Added entry is a form or subject entry.
Subfile by the main entry.
- g. Added entry is a subject heading consisting of an author and a title. Subarrange the author's name by the title in the added entry and subfile by the main entry. Intermix these entries with main entry (author) subarranged by title.

1

AUGUSTINE, SAINT, BISHOP OF HIPPO,

2

354-430. CONFESSIONES.

- Example:* 3 Guardini, Romano, 1885-
 4 [Die Beherung des Aurelius Augustinus]
 5 The conversion of St. Augustine . . .

Does Dividing the Catalog Relieve Congestion? A Reply

PHILIP D. SHORE, *Associate Librarian*
Lilly Library, Earlham College
Richmond, Indiana

THE ARTICLE by Fred Heinritz in the Summer 1964 issue of *LRTS* has prompted me to share the experience of Earlham College Library in this matter. We divided our catalog just one year ago, after moving into a new building. We had the usual reasons for trying a divided catalog, with different staff members stressing different supposed benefits. Chief among them were the ease of use by the students, expected ease of maintenance, and less congestion. Our decision was to adopt a strict division with all subject cards in one file and all other cards in the other. After one year of use we are very happy with the result.

As to specifics: We have found from a small sampling we took that our catalog maintenance time saved closely approximates that which was reported by Flint College of the University of Michigan. (Nitecki, André. "Costs of a Divided Catalog." *LRTS*, 6:351-355. Fall, 1962). We have no figures as to ease of student use. I, at least, have not seen any evidence that people are any more mystified by the divided catalog than by the dictionary one; but I wouldn't say they are any less so, either.

My main point in this reply is concerned with the question of congestion. Is it relieved? Yes and no. There seems to be no more waiting for individual drawers than before. However, there is increased congestion in the number of users in a specific area. There seem to be fewer users per square foot of area in the subject half of the divided catalog than in the old combined catalog. There seem to be definitely more in the author-title half. This is due primarily to one variable which I have not seen mentioned in any article on the subject—the library staff.

It is our experience that the staff spends a good bit of time at the catalog, checking bibliographies, verifying entries, etc. Almost all of this time is spent at the author-title catalog. We quite often have one person, and sometimes two, working at the catalog. When that many staff members park themselves in front of a case which consists of three 72-tray units, things begin to get a bit thick as soon as even one patron tries to get in to the same part of the catalog. Often the staff members spend quite some time there at one stretch, also. Filing or revising also puts staff there, and we try not to have both kinds of staff work going on at the same time, both for our own convenience and that of our patrons; but we sometimes overlap. In spite of this, we have not the least intention of returning to the dictionary catalog.

The more work the staff does at the catalog, the more crowded the author-title part will be, in relation to the subject part. Such conflicts can be minimized by scheduling the staff use of the catalog for the mornings or other times when the catalog is least used by the public. If this can be done easily, there need not be any added congestion. If not, the library considering dividing its catalog needs to consider other alternatives which might achieve the same result.

DOROTHY BEVIS HONORED

Dorothy Bevis, formerly Assistant Editor for Acquisitions of *LRTS*, was chosen one of Seattle's six "Women of Achievement" for 1965 by Theta Sigma Phi, national fraternity for women in journalism and communications.

The award was made April 6 at the annual Matrix Table. She was cited for her activities in librarianship and for her work as Associate Director of the Graduate School of Librarianship at the University of Washington. In the School she has supervised curriculum changes and the \$100,000 remodeling of the School's physical plant.

She is an authority on rare books, is currently President of the Association of American Library Schools, and active in the ALA, the Washington Library Association, and the Pacific Northwest Library Association.

Experts Discuss Subject Headings For Spanish America

MARIETTA DANIELS SHEPARD
*Chief of Library Development Program
Pan American Union, Washington, D. C.*

TEN MEMBERS of an Advisory Committee on Subject Headings in Spanish met in Washington, D. C., February 15 to 17, 1965, to assist the Pan American Union in establishing general principles and specific recommendations for the compilation of a general comprehensive list of subject headings in Spanish for publication within the next year. Participating in the meeting were three subject heading specialists from Latin America, representatives of the three national libraries in the United States, compilers of the list, other members of the Pan American Union library staff, and three other consultants.

The Committee was given a brief review of the historical development of the project at the Pan American Union. Preparatory work on the subject heading project was initiated in mid-1962 when certain of the better organized libraries in Latin America were contracted to supply lists in card or page form representing the terms which they are using in their own libraries. Generally, these are translations of Library of Congress headings. The terms received were interfiled into two card files, one in English with the Spanish translations, and one in Spanish with the corresponding English original. Printed lists of subject headings in English and Spanish published by several individual libraries were procured, as well as several short general lists in Spanish, such as the 1949 translation of Sears. Numerous dictionaries and other reference works were purchased for the project.

Members of the Advisory Committee were given the opportunity of seeing for themselves how the work is being carried out, and reviewing the tools which are being consulted in the establishment of terms in Spanish.

A \$25,000 grant from the Council on Library Resources, Inc., permitted the employment in July 1964 of a Latin American subject heading specialist, Jorge Aguayo, to bear the principal responsibility for the selection of terms, working with Carmen Rovira, librarian specialist of the Library Development Program staff. Both are authors of various works in Spanish on technical processes.

Although the new work is based primarily on the Library of Congress compilation, ample use is being made of the contributions made by individual libraries in Latin America, and the orientation of the

work is towards the needs of Latin American libraries. The forthcoming list will provide libraries in the Spanish-speaking world with the first authoritative list in the Spanish language designed for use in large general libraries established along the modern lines developed in the United States and adapted to the needs of Latin America. It is anticipated that a single standardized list of terms will not only promote uniformity of cataloging among the libraries of the Hemisphere and thus promote interlibrary cooperation, but will reduce cataloging costs and increase consistency and accuracy in the description of the contents of collections. On the basis of the comprehensive list, it is expected that consistent shorter lists can be produced for the use of public, school, and specialized libraries. The lack of such an authoritative list in the past has prevented cataloging uniformity and discouraged cooperative cataloging efforts.

Printer's copy for the list will be prepared by using tape-controlled typewriters. This will make it possible to store the tape which can be readily edited at a later date when it becomes desirable to issue a revised edition, thereby reducing considerably the cost of preparation.

Selection is being made currently from the more than 60,000 terms supplied by some 20 different libraries, frequently from varying translations of the same English term. In the course of the selection of the most adequate and appropriate terms, the compilers encountered certain questions of both general and specific nature involving principle and practice in the determination of terms in English, as well as problems of a purely linguistic or syntactical nature. These problems on some 35 different topics were discussed with members of the Advisory Committee, and the following conclusions were reached for the final determination of terms:

CONCLUSIONS FOR GENERAL APPLICATION

A. General Principles

1. The introduction will give a set of principles, how to follow the rules, how to create terms for needs of individual libraries, with examples, lists of subdivisions, etc.
2. Aim at a list of medium extension, especially for use in large libraries, particularly university and national.
3. Discard Sears' concept of use of general terms for small libraries.
4. Special libraries will need special lists, but try to avoid conflicts in principles, if possible.
5. A second edition of Cavero's agricultural list is needed, and also a good translation of MESH (Medical Subject Headings).
6. It is not necessary to follow LC religiously, but to develop a list for Latin American needs.
7. The Spanish list should not be a literal translation—render the concept into proper Spanish equivalents; e.g. use some academic terms such as PEDAGOGÍA for TEACHING to express accepted concepts.

8. For terms which LC would change if it could, especially obsolete terms such as SCHOOLHOUSES, use modern terms or eliminate from Spanish altogether.
9. National and regional usage of terms should be taken into account, with generous use made of cross references.
10. The list of headings in Spanish is to be principally a guide to use, and it cannot cover all fields thoroughly. Use explanations and examples.
11. Use explanatory notes when desirable, especially for Latin American users.
12. Scope notes are needed under many headings, and should be used generously.
13. Any other devices used in the list in addition to *see* and *see also* references (such as *see specific headings*, *see related headings*) are to be explained in the introduction.
14. The trend in other lists to make more specific phrase headings and fewer subdivisions under general headings should be applied to the Spanish list whenever possible.
15. Avoid the use of two terms (popular and scientific) for a single subject, such as a plant or a disease. If both have to be used, explain in a note.
16. Try for consistency in the use of plural vs. singular form, although sometimes it is necessary to use both for distinctive purposes.
17. In compiling the list on slips, it is useful to use some symbol for authority such as "K" for Kapsner, but not for printed list.

B. Linguistic Considerations

1. The *Real Academia* dictionary should be used as the principal source of reference for most acceptable terms.
2. Use *Real Academia* grammar for Spanish construction, use of prepositions, etc.
3. A term used throughout Latin America, however, will generally be given preference to the term used in Spain.
4. If considerable variance is found in various countries, generally use term in *Real Academia*.
5. For technical terms not yet included in *Real Academia*, use them, consulting appropriate dictionaries.
6. Use scientific term if generally known, rather than common term which varies sometimes from country to country.
7. Avoid localisms such as "Boston Tea Party"—all countries will have them, and libraries in each country will create them. Make some cross references to general terms.
8. The tendency in English headings to eliminate inverted headings creates no problem in Spanish, for the noun precedes adjective. Try to eliminate as many prepositions as possible, in favor of adjectival phrases.

9. For English direct form beginning with an adjective, use in Spanish will depend on the disciplines themselves, to avoid too many headings under the same term, such as *ELECTRICIDAD*. Use appropriate cross references or examples. The same applies to tendency to "natural language" in English.

C. General Headings

1. Whenever appropriate, give name of discipline as well as subject treated by the discipline, such as *CRIMINOLOGÍA* and not merely *CRIME AND CRIMINALS*.
2. As for headings including opposite concepts such as *VIRTUE AND VICE*, make cross references both ways.
3. Compound headings joined by conjunction, when they do not denote a relationship, such as *NURSES AND NURSING*, are very undesirable, and if both parts are not to be used separately, use cross reference.
4. The list should anticipate needs and also include some obsolete concepts; e.g. *ALCHEMY*.

D. Special Subject Areas

1. The term *DERECHO* followed by adjective or adjectival phrase (*DERECHO LABORAL*, *DERECHO DE FAMILIA*) is to be used when there is a body of law, with its theory and commentaries. For the texts of the laws themselves, add subdivision *LEGISLATION*.
2. For subjects which do not have a well developed body of law, use as heading the subject with subdivision *LEGISLATION*. Geographic subdivision, when applicable, should come first.
3. Explain these principles briefly and get reaction from Latin American law librarians.
4. Use *TAXATION* as heading with country as subdivision, as well as a subdivision under subject.
5. For medicine, stick principally to LC, using MESH mostly for reference purposes. Little conflict is anticipated between them.
6. Compile lists of subdivisions to be used with each organ or disease, drugs, etc.

E. Specific Headings

1. Refer to the principles stated in the "Introduction" for the creation of new headings.
2. Specific names of plants, insects, etc., will not be listed (but libraries may use them in their catalogs, adding them to their own subject heading file).
3. More study is required for *ARQUEOLOGÍA*, *PREHISTORIA* and *ANTIGUEDADES*—see faceted classification and literature.

F. Subdivisions

1. Disregard the term "form" subdivisions; use a more general term such as "common subdivisions" (subdivisiones comunes).
2. Subdivisions under a single subject should be mutually exclusive, in accordance with NLM (National Library of Medicine) experience; if overlapping, use scope notes generously.
3. Include subdivisions to be used under any language in a separate table.
4. For geographical subdivisions, use "May be subdivided geographically."
5. Some regional subdivisions, such as AMÉRICA CENTRAL, are needed for many headings. Explain in "Introduction."
6. Common subdivisions, such as DICTIONARIES, will be listed under specific subjects only when cross references demand it, but in the introduction to the printed list librarians should be instructed to include them in their own authority files.
7. For COLLECTED WORKS and COLLECTIONS, use COLECCIONES as a subdivision.
8. Use ENSAYOS, CONFERENCIAS, ETC., for ADDRESSES, ESSAYS, LECTURES.
9. Continue to use HISTORIA Y CRÍTICA as subdivision for literature & music headings, for Latin Americans are used to it.
10. Most publications by societies will be entered under the name of the society and under the subject treated, but not with the subdivision SOCIETIES.
11. For STUDY AND TEACHING—use ENSEÑANZA.
12. For DESCRIPTION AND TRAVEL, use GEOGRAFÍA under country when applicable, DESCRIPCIÓN for both cities and countries, as well as GUÍAS.
13. For POLITICS AND GOVERNMENT, use GOBIERNO, ADMINISTRACIÓN PÚBLICA, POLÍTICA, as the case may be.
14. NATIONAL CHARACTERISTICS are needed under country, as a subdivision.
15. FOLK-LORE is needed as a subdivision under country and under social and ethnic groups, as well as a main heading.

G. Cross References

1. More cross references are needed for the Latin American user, more detail, and more examples.
2. As for *see also* references, use downward or collateral, but not upward; general to specific, but not vice versa.
3. Cross references are useful, but ordinarily no cross references should be made for subjects beginning with the same word.
4. Substitute one general reference with examples for many *see also* references from general headings to many specific ones; eliminate *see also* references from subject to same subject followed by adjective.

Participating in the meeting were Luisa Arce Rovedy of Chile, Amalia Cavero de Cornejo of Peru, and Pedro Zamora of Mexico, as well as as these members of the Advisory Committee: Werner Ellinger, Jorge Grossmann, Jeanne Holmes, Robert R. Holmes, Eugene Muench, and Bella Shachtman. Serving as Consultants and attending some of the sessions were Miriam Huddle, Ann Painter, and Janeiro Schmid. In addition to Miss Rovira and Sr. Aguayo, the following Pan American Union staff members participated: Arthur E. Gropp, Marietta Daniels Shepard, and the editorial assistant on the project, Sylvia Gajardo de Poblete. Corresponding members Thelma Eaton and Nelly Kopper were unable to attend.

TESTING OF DOCUMENT RETRIEVAL SYSTEMS

Herner and Company, of Washington, D. C., has formed an evaluation section to undertake tests of the effectiveness of document retrieval systems utilizing techniques of the type developed in England by Cyril Cleverdon.

Test programs are carried out under the immediate supervision of F. W. Lancaster, former member of Cleverdon's Cranfield team.

Under the assumption that any type of document retrieval system can be tested with techniques which involve measurement of response to a number of "synthetic" and "real-life" questions, system effectiveness is measured in terms of the percentage of known relevant documents in a collection retrieved in searching, and the percentage of total search output judged relevant by the original questioner.

Test programs are designed to permit analysis which can identify defects and sources of failure, as well as indicating system efficiency. A detailed report summarizing findings on system behavior, drawing useful comparisons with other systems, and making recommendations on means of improving the system or its operation, is the final product of a Herner test program.

Z39

Jerrold Orne, Librarian of the University of North Carolina Libraries at Chapel Hill, has been appointed Chairman of the American Standards Association's Z39 Committee on Library Work and Documentation by the Council of National Library Associations, sponsor of the Committee. Dr. Orne succeeds Robert E. Kingery.

The Committee, which now has fourteen active sub-committees, issued the "American Standard for Periodical Title Abbreviations" in 1963. Three new draft standards on Trade Catalogs, Abstracts, and Proof-Reading Symbols are currently being circulated to the Committee for approval. Revisions of two earlier American Standards on Indexing and the Arrangement of Periodicals are under way, and the work of the Subcommittee on Classification is nearing completion.

Let's Exchange Profitably

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Introduction

IF WE CONSIDER the fact that duplicate exchanges constitute only a small percentage of the staff's effort in the average college or university library, much has been written about this subject in the last decade. By examining the topic of exchanges in the library literature for this period, one can find at least a dozen titles dealing with the subject. The field of exchanges is quite broad in scope: it may cover books, periodicals, or both. Exchanges may be limited to a few institutions in the same region exchanging among themselves; or they may include hundreds of libraries, both here and abroad. Sometimes these exchanges represent the only source of new materials, rather than an augmentation of normal sources. It is easy to see then, why so much literature and thought has been devoted to this single phase of library work.

Little has been written, however, on the costs of exchanges, and what has been written generally adopts a pessimistic point of view. The few studies we have found seem to indicate that from a cost standpoint exchanges are disadvantageous to the institutions utilizing them. We would like to present one case where exchanges have been favorable from a cost standpoint.

Before considering in detail the cost analysis of exchanges, it may be well to state how our exchanges at the University of Santa Clara started. For years we had received duplicate exchange lists from other libraries. We had requested materials regularly from these lists, and while our requests were honored, we had never prepared an exchange list to offer our materials to these libraries. By 1958 the bibliothecarial conscience started to bother us. Even more decisive, perhaps, was the fact that the allotted space, some 500 linear feet of stacks, had been filled with duplicate periodicals. At this stage we had two alternatives: either add no more to the collection from incoming materials, or organize the existing duplicates, prepare lists, and send these lists to other libraries interested in exchange. We chose the second.

The question then arose as to which libraries we should send the lists. We are a medium-sized college library, with 1200 periodical subscriptions, a present collection of 25,000 bound volumes, and we are adding some 1500 volumes annually. Should we mail our duplicate exchange lists to other college and university libraries comparable in size and type of instruction and curricula? What should be the criteria for putting in-

stitutions on the mailing list? We finally decided that we should send the lists to all college and university libraries in the area with which we have had cooperation in the past. At the same time we established a policy of mailing our duplicate periodicals exchange lists to any library sending its own exchange lists to us in the future. We started by mailing our lists to twelve college and university libraries, both private and public, small and large. In subsequent years the number of institutions on our mailing list has grown to forty-five. These libraries are located in sixteen states, including Washington, D. C., and Hawaii. We are not, officially, a member of any duplicate exchange union, regional or national, such as that of ALA's RTSD.

The exchange materials consist of serial publications only, mostly periodicals. When we first started the exchanges, our stock consisted of some 500 linear feet of shelf space, and the titles on these shelves represented the fields of engineering, liberal arts, business, and theology. The space used for duplicates has been reduced through the exchange program, and this section now occupies some 200 linear feet of shelving. Each of the exchange lists, issued semi-annually, removes about 20 per cent of our stock. Occasional weeding of useless titles reduces the stock further. On the other hand, the stock is replenished by receipt of gifts and from our duplicate subscriptions.

Our cost study began with the second (1959) published exchange list and ended with the exchange list of 1963, a total of eight prepared over a period of four years. The first one contained materials accumulated over a period of twenty years, and an accurate estimate of cost for this list was not available. The tables represent the statistics routinely kept for the annual report to the librarian. Whenever estimates were necessary, we tried to make them as reasonable and conservative as possible.

Costs of Exchanges

The largest single readily-determined cost in duplicate exchanges is that of preparation and packing. During the first year, when the work was being arranged, we utilized the services of one full-time student assistant, a total of 320 hours. His rate of pay during this year was \$1.00 per hour, which means that the cost of preparation and packing for 1959/1960 was \$320.00. From the year 1960 to the present, the maximum time of student assistance in exchanges was five hours per week, or thirty-two five-hour weeks. The pay rate of student assistants was \$1.10 during 1960/1961, \$1.20 per hour for 1961/1962, and during 1962/1963 the pay rate was \$1.25. Thus the cost of preparation and packing totalled \$176.00, \$192.00, and \$200.00 for the final three years of the study. In four years the accumulated cost for this work was \$888.00. The student assistant arranges the material in alphabetical order, writes holdings of each title on 3 × 5 slips, fills out requests for periodical exchanges, types address labels if they are not pre-typed by the requesting institution, and takes packages to the mail pick-up station in the library.

The next largest cost in the exchange work is that of typing the lists on the stencils and mimeographing them. At this institution the typing of stencils is done by student assistants. The cost is figured at \$1.25 per page of copy, estimating that students complete one page per hour. (A clerical employee would probably type faster, but the rate of pay would be higher.) The cost of labor for 128 stencils needed during 1959/1963 was \$160.00. The price of the stencils was \$12.92. After they are cut, the stencils are taken to the Mimeographing Department of the University. This Department charges the Library \$0.65 for each 25 copies per stencil, including the paper. This base rate increases to \$0.85 when the requested number of copies is over 50 per stencil. The number of copies needed varies, 55 copies per stencil being the maximum number ever requested by the library. The cost of mimeographing the 128 stencils during 1959/1963 was \$93.15.

Between 1959 and 1963 we prepared eight duplicates exchange lists. The smallest consisted of thirteen legal-size pages, and the largest was nineteen pages long. We mailed from 12 to 45 copies of each list, or a total of 243 lists during the four-year period. The postage, computed at the Library Materials rate, amounted to \$9.72.

Additional expenditures included containers, twine, tape, and postage for the materials. The total amount spent for these, however, was minor: The containers are received free from other departments within the institution. The cost of twine and tape has never exceeded \$2.00 a year, and postage for amounts exceeding ten cents is refunded. A fair estimate of these costs for the four year period, including non-refunded postage, would be \$10.00 per year, or a total of \$40.00 for the four-year period.

While the costs mentioned so far are easily determined or can be accurately estimated, the cost of the professional staff time spent on the process is the hardest to establish. The best we can do is to describe the professional librarian's duties, and estimate the cost. The librarian explains to the student assistant what there is to know about exchanges. He suggests to him how to undertake the job and arrange the materials. He tells the student how to record each title and its holdings; explains to him the rules for filing; and gives him an old editions of *Ulrich's Periodicals Directory*, which the assistant can refer to in case of doubt. And this instruction must be repeated for each new student assistant, which may happen anytime between one week or four years. From here on the librarian checks occasionally on progress, answers questions, decides borderline cases. When the arrangement of duplicates at hand is completed, and all the holdings are recorded on slips which are filed in the same order as are materials on the shelf, he corrects the filing if necessary.

The librarian withdraws the titles and issues needed to fill his own files, as well as those titles which he deems valuable and salable. From the slips referred to above, two lists may be produced. The first list, made up of the majority of exchange titles from the slips, is typed on

stencils, mimeographed, and mailed to institutions on the mailing list. The second list, made from the remaining slips, is typed in several copies on regular paper. This second list is mailed to dealers, and the listed material is offered for sale. We have occasionally prepared just one list of all materials and mailed it to all participants, commercial and institutional, and to our great satisfaction the needs of all were reasonably well satisfied. When two or more institutions or dealers request the same item, the librarian decides who receives it. He also supervises the filling of requests and orders.

Another time-consuming duty of the professional librarian is checking the lists and catalogs received from libraries and determining which available items are needed by his library. He must see that orders and requests are placed, and check the materials when they are received. Finally, he must keep records of the transactions. We can only estimate the time needed for these activities, and translate this into dollars and cents. By saying that twenty per cent of the librarian's time is consumed by these activities, we would assume that the estimate is reasonable. If his salary for the years 1959/1963 averaged \$6,000 per year, the cost of his time can be estimated to be \$4,800 for the period of four years.

Benefits of Exchanges

The benefits of exchange come from two sources. As mentioned earlier, we are offering journals we know or think to be salable to the dealers, on special, carbon-duplicated lists. We mail these lists to three or four second-hand periodical dealers and wait for their requests. When orders from the dealers are received, we find that most of the time each is interested in different titles, which enables us in most cases to fill the requests of all. When two or more dealers bid for the same item, we usually send it to the higher bidder. If we think, however, that the higher bidder will charge us with higher prices for items that we need, or if the credit with him is too high, or other similar reasons, we may send an item to a lower bidder. The dealers' bids are expressed in dollars for each issue, volume, or lot. We don't accept the cash, but prefer the dealers' credit for the amount due. When we need any specific issues or select certain periodicals from their catalogs, we request them and draw on the credit accounts. Since there is no actual exchange of money involved, we call this part of our exchange trade. This phase in our exchange operation can easily be converted to dollars and cents of value received. During the four years our total dollar credits amounted to \$3,758.03. Of this amount \$1,306.57 was gained during the first year of operation, and \$601.17, \$1,305.90, and \$544.39 was credited to us for the succeeding three years.

The most important element to us, though, is the completion of volumes. The trade activity has been most satisfactory in this respect. During the years in question we received a total of 1,507 issues or volumes of periodicals, which helped us complete 392 volumes.

The second source of filling of our needs is the exchange with other libraries. In the four years we received a total of 1416 issues or volumes from these libraries. Since we are receiving bound volumes and single issues from both sources, i.e., from the dealers and from the libraries, we shall base the value of exchange materials received from the libraries on the value of materials received from the dealers. The value per unit received from dealers amounts to \$2.49. On this basis the value of the receipts from the libraries would be \$3,525.84.

The amount of \$2.49 per number may seem rather steep, but it is not when we consider that we had paid for one issue, and on more than one occasion, as much as \$7.00 or as little as \$0.50, when we had ordered from the publishers. And the second hand dealers' catalogs show few issues below \$1.00. In addition, the cost of ordering and postage should be added. And finally, among the issues we received there are some bound volumes.

Summary and Conclusions

Statistical Tables

A. Total Costs of Exchanges, 1959/1963			
Professional supervision, etc.			\$4,800.00
Preparation and packing			888.00
Typing of stencils			160.00
Mimeographing			93.15
Stencils			12.92
Postage for lists			9.72
Miscellaneous cost			40.00
			<hr/>
Total			\$6,003.79
B. Benefits of Exchanges, 1959/1963			
Issues or volumes received from dealers	1507	value	\$3,758.03
Issues or volumes received from libraries	1416	est. value	\$3,525.84
			<hr/>
Totals	2923		\$7,283.87

The statistical tables show that the cost of exchanges for the period of the study is \$6,003.79. This cost would have been present, practically unchanged, even if we had been exchanging with the libraries only. Also, our stock would not have diminished at such a fast rate, had we not traded with the second-hand periodical dealers simultaneously. It has been mentioned earlier that the demand for materials does not always coincide, that is, the libraries and the dealers are not always interested in the same materials. On the other hand, the benefits of exchanges amount to 2,923 issues or volumes with a value of \$7,283.87. Again, had we dealt with the libraries only, we would not be aware of the value of exchanges to us to the same extent as we are now. In terms of cash, the balance for the four years is \$1,280.08 in our favor, or, \$320.00 for each of the four years of the study.

This study would not be complete if it failed to mention the quantity of exchanges. We have kept detailed account of issues and volumes received from the dealers and from the libraries. The figures showing our

contribution to the libraries and to the dealers are available only in terms of packages. We have sent, in four years, a total of 432 packages, ranging in weight from one to seventy pounds. Of this number, the libraries have received on the basis of some 170 requests, 270 packages; the balance of 172 packages was shipped to the dealers.

We agree with those who claim that exchanges are disadvantageous to the exchanging library in terms of quantity. But this is not the most important consideration in this matter. There are other sides to the question. We belong to that group of librarians who hesitate to throw anything in the waste basket. The exchanges so far prove that we should continue this conservative policy. Another factor is the space problem. It can be quite expensive in terms of space to keep a file of duplicates. Trade and exchanges solve this problem. And, of course, last but not least, we always feel a certain joy and satisfaction when we can help others through exchange. No matter how unimportant or insignificant an item may seem to us, there is, most of the time, some institution desirous of it. It is also true that sometimes the exchange is one-sided. There are institutions which never send anything in return for received items. In this situation one can either be altruistically motivated and continue to send materials to such libraries, or one can simply stop mailing duplicate exchange lists to them. We cannot agree that it is cheaper to buy needed items than to exchange for them. For one thing, some items which were needed for our collection could not have been secured from any other source, yet we obtained them through exchange activities. Also, when we buy issues from publishers, which we do in addition to exchanges, the costs of ordering, postage, etc., are present in addition to the price of the items themselves.

On the basis of our experience we find that it is important to pick a suitable partner, perhaps on the basis of similar needs, mutual interest, etc. It is also fairly evident that, while a small library may not be able to offer much to one of her larger sisters, she can prove quite valuable to another small library. And, finally, as long as our libraries continue to contain incomplete sets of journals, and continue to receive gifts of exchangeable materials, we will need exchanges.

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The Death of the Departmental Library

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MANY OF THE DEPARTMENTAL LIBRARIES of universities have developed, and continue to develop, from office collections. Further evolution appears to be in the direction of the consolidation of departmental units into large units covering broad subject areas. There are good reasons for the change. The departmental library has some serious shortcomings.

In the first place, it frequently proves impractical to pattern library structure after the administrative organization of a university. The distribution of courses among departments has been known to change; faculty may move between departments, taking their subject specialties with them; departments move from one building to another; new departments are born, and old ones die. What is to be done, for example, with the library which has served the departments of ceramics, metallurgy, mining, and petroleum engineering when petroleum engineering is transferred to the department of chemical engineering, which is served by the chemistry library; mining and metallurgy move into a new building; and the building housing the library is used to provide office space for ceramics and overflow education department faculty?

In the second place, so small a unit as the departmental library cannot support a staff of the quality or quantity desirable for good service. The departmental library is too often staffed by a non-professional assistant who is not qualified by either training or experience to interpret the collection to the library's public. It is difficult to understand how university libraries, which demand the highest level of professional education of their top administrators, can justify the maintenance of any branch which can provide only clerical staff full time.

The departmental library may suffer from a shortage of staff quantity as well as quality. The one-man library is a commonplace. If the one man is a professional, he cannot be employed economically, because a large proportion of his time must be spent in clerical routines. Professional or not, a single library employee is undesirable from an administrative

standpoint because of the difficulty of providing a substitute in the event of absence. Furthermore, the library suffers from the discontinuity of policy and practice which is inevitable when personnel changes, as it frequently does under these circumstances.

It is obvious that the smaller the units into which the university library's collection is divided, the more duplication of resources is demanded. The cost of excessive duplication may be such that it becomes a financial strain to satisfy undergraduate requirements, let alone acquire the unique titles which make graduate research possible.

Furthermore, the splintering of the library collection into bits representing highly specific subjects is not in harmony with the increasingly interdisciplinary characteristics of modern thought. The sciences and humanities no longer occupy separate worlds, to say nothing of the interrelationships between the various physical and social sciences. The library's own vocabulary attests to the reality of interbreeding between disciplines—"physical chemistry," "linguistic geography," "mathematical economics." The technologies have always been dependent upon the sciences, but now there are horizontal as well as vertical kinships which make it increasingly difficult to separate cleanly the literatures of different subjects. Not only is the literature of physics fundamental to an understanding of electrical engineering, for example, but there are close relationships between the literature of electrical engineering and the literatures of metallurgy and aeronautical engineering. The literatures of operations research and information retrieval find a home in libraries specializing in widely different subject fields. The departmental library can hardly afford to maintain a collection which represents adequately the interests of the department which it serves.

Unfortunately, the limited resources of the departmental library may be the only resources which the university library succeeds in making available to its departmental public, because this public characteristically fails to use other collections freely. The departmental library tends to be regarded by the department's students and faculty alike as their library, to be developed insofar as possible so that it will meet all of their needs for library materials. They do not see it as a subject section of the larger university collection; they see it as the library which serves them. As a consequence, they may either remain ignorant of or fail to exploit the resources of the library system as a whole. *Dissertation Abstracts* is a good example of a reference tool which is pertinent to all intellectual disciplines, but which cannot be duplicated in every one of the libraries of a large system. *Chemical Abstracts* is the single most useful abstracting service for far more subjects than its title suggests, but no university can afford to duplicate *Chemical Abstracts* to the extent that would be desirable. Confined by inclination to his departmental library, neither student nor faculty member becomes acquainted with such reference sources unless they are immediately at hand. Less obviously, neither student nor faculty member comes in contact with the variety of literature which is available to him in the university collection as a whole. The natural

tendency toward parochialism is reinforced by a departmental library organization.

The most unfortunate practice encouraged by a departmental library organization, however, is the practice of turning over to the faculty the responsibility for book selection. According to figures quoted by Harry Bach,* 70-80 per cent of college and university libraries allocate book funds to the teaching departments. In so doing, the library commonly relinquishes its responsibility for the quality of that part of the collection acquired by the expenditure of allocated funds. A transition from faculty to library staff responsibility for the quality of the collection is facilitated by dissociating the library's organization from that of the teaching departments both physically and administratively. The transition is not complete until the library controls the expenditure of its budgeted book funds. *This is not to say that the faculty should have no voice in book selection.* On the contrary, the faculty should be provided with whatever it asks for, and the library staff should seek faculty advice freely. But the decision to buy or borrow or copy, duplicate, transfer, or withdraw, should be the library's for a number of reasons both theoretical and practical.

Good management practice requires that responsibility be accompanied by authority and, conversely, that those in authority assume responsibility. To permit the faculty to exercise authority so far as the quality of the library collection is concerned is to assign authority to an agent who cannot, practically speaking, be held responsible for the result. It is doubtful whether a member of the faculty has ever been asked to resign because of his poor performance in selecting books for the library. It is the university librarian who is held to account for the quality of the library's collection, regardless of who selects it. It is he, therefore, who frequently assumes responsibility without exercising authority.

Budgetary control also demands the centralization of authority. When each member of a department's faculty is free to spend without restraint so long as the money lasts, it is unlikely that the money will last very long. It is also unlikely that the publications selected will represent the interests of all of the members of the faculty and contribute to the development of a well-rounded collection. An alternative to no control is control by a representative or a committee of the faculty. Although such arrangements may be better than none, they do not answer other objections to faculty authorization of book expenditures.

It is inevitable that departmental book funds will be inadequate to supply all that is wanted in the departmental library if the public it serves expects the library to be self-sufficient. No matter how wisely money is managed, it cannot be made to stretch so far that each library on campus is able to provide all of the materials on all of the subjects that are required by the public it serves. The librarian's perception of the departmental library as one unit of a system and his recognition of

* Bach, Harry. "Why Allocate?" *Library Resources & Technical Services*, 8:161. Spring 1964.

the necessity for interdependence of all of the libraries within the system are not ordinarily shared by faculty and students. They fail to appreciate the advisability of concentrating upon their chartered area of subject specialization and depending upon the rest of the library system to provide materials outside of that subject area. Instead, they expect to find on the shelves of their own library all of the literature which they require, and it is toward this goal that their acquisition efforts are directed. An unfortunate consequence of misdirecting financial resources in this way may be a weakness in the very area of subject specialization, which weakens the university library collection as a whole.

Aside from its desirability from the standpoints of administrative and budgetary control, the job of book selection properly belongs to the librarian because it is a full-time job. A collection built by the haphazard method of acquiring any title which may catch the eye in a publisher's advertisement cannot hope to be the equivalent of a collection built by conscientious, consistent review of specialized book selection tools. Selection can absorb an infinite amount of time; how, then, can one expect not just one faculty member, but all faculty members, even if they wished to do so, to do a systematic job of selection, for which they are not held responsible, in addition to those duties for which they are held responsible? Nor are most faculty members likely to have the time or the inclination to evaluate an existing collection in order to strengthen it. Furthermore, the faculty is frequently handicapped by a point of view which is neither broad nor impartial. Faculty members are a part of the public served by the departmental library, and it is hardly common practice to place book selection in the hands of the library's public. Each member of that public naturally puts his own interests first and is apt to consider no interests other than his own. On the other hand, the librarian, who can be objective so far as special interests are concerned, and who sees the library as a resource not only of the individual, but of the department, the university, the local community, and the community of scholars, is in a position to develop a well-balanced collection designed to serve undergraduates, graduates, faculty, and research assistants, and designed to meet not only immediate needs, but a share of future needs as well.

Of even greater significance is the librarian's unique opportunity to observe the use which is made of the collection by all of the members of the public which it serves. The faculty member who does attempt to select to meet requirements other than his own does so in ignorance of the use which is made of the collection and the demands upon it which it fails to meet. Fine historical runs of research serials may gather dust in an overcrowded library which lacks bibliographical access to their contents. Current monographs may be acquired enthusiastically for a library which serves principally as a study hall for students using their own textbooks. The faculty also lacks the information which is necessary to achieve an equitable balance of materials for the teaching programs. A very simple example involves the extent of duplication in the reserve collection. In the absence of library policy, five reserve copies may be

supplied for Professor A's class of thirty students while the fifty students in Professor B's class fight over one copy.

There are other areas in which the competent librarian's knowledge may be expected to be superior to that of the faculty. The librarian is acquainted with such alternatives to acquisition as interlibrary loan and photocopy. He is a good judge of the appropriateness of certain kinds of materials in the university library collection. The vertical file materials which are so essential to good information service in the public library may be of questionable utility in a library which serves scholars, for example. The experienced librarian is frequently able to judge quality on the basis of publisher. He recognizes reprints. He can distinguish between materials of current interest only and those of permanent value to the collection and establish processing and retention policies accordingly.

The principal argument against library selection of materials is based upon the assumption that the librarian is less competent than the faculty to determine what is needed. This is hardly the point. The faculty determines what is needed in the sense that it asks for the materials it needs, and very properly expects the library to see that these materials are provided. The manner in which this is done, however, whether by acquisition, intralibrary loan, interlibrary loan, or photocopy, should not be the concern of the faculty. This is an oversimplification of the situation, of course, because materials are commonly selected in anticipation of need. Need may be predicted fairly accurately on the basis of experience, however, and the problem should not be a critical one in view of the fact that doubtful selections may be referred to the faculty for decision.

When the decentralization of a university library collection becomes expedient, then, either for reasons having to do with campus geography or because of the necessity for limiting the physical growth of a central library, the library is well advised to establish branches housing collections covering subject areas as broad as possible or the level-of-material areas exemplified by undergraduate libraries. Library systems with existing departmental libraries are equally well advised to merge small units into large units, even in the face of faculty opposition. Experience with a library unit large enough to support adequate staff, services, and collections will convince a reluctant faculty of the wisdom of consolidation as no amount of persuasion without demonstration is likely to do.

It is possible that a careful survey of the identity and objectives of each visitor to a departmental library would provide data indicating that the establishment of a study hall in every campus building, with a dictionary, a few handbooks, and an appropriate reserve collection would satisfy the principal requirements of the local population at a cost several magnitudes less than the cost of maintaining a departmental library. Such a facility might be serviced by departmental staff with a minimum of effort, saving the costs of library staff, auxiliary catalogs, library equipment, and duplication of resources, to name only the most obvious economies.

A New Author Notation

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THIS IS A BRIEF DESCRIPTION of a new author notation developed while classifying the collections in the Law Library of Stanford University. Although it originated in and has so far been applied only to a law library, its potential utility is not so restricted. As the discussion below shows, its origins are such as to make it appropriate for use in most general and special libraries.

As is obvious enough, the difficulties in author notation flow from the uneven distribution of combinations of letters in main entries. Of all the possible combinations of four letters beginning with B, for example, only a few are actually encountered as the first four letters of entries beginning with B in libraries. On the other hand, certain combinations, such as BROW and BLAC, are frequently used. The problem is to distinguish among them without spelling out entire names and other distinguishing data.

Cutter numbers represent a very simple attempt to meet the problem, but in practice they break down; either the numbers become too long or there is inadequate differentiation. Eventually most libraries find that they must, even with long Cutter numbers, abandon strict alphabetic order. These problems become particularly difficult in dealing with corporate and title entries. This is not surprising, since the Cutter system was devised primarily for individual authors in fiction and biography classes.

The principle we employed is very simple: we rewrote the author entry into a notation made up of four capital letters, of which the first is the first letter of the entry and the remaining three are arbitrarily assigned according to the notation schedule described below. The widest possible distribution of four letters beginning with B starts with BAAA and ends with BZZZ. There are 17,576 distinct notations in this "ideal distribution." What we have done is to adjust the actual to the ideal. We did this by taking a representative sample of main entries, ascertaining the actual distribution of letters in them, and superimposing this actual distribution on the ideal distribution.

The result was that we established ranges of positions for various combinations of letters actually used, the size of the range depending on the frequency with which the combination occurred in the sample. Thus

frequently recurring combinations, like BROW, for example, received a proportionately large number of positions, while those that occurred infrequently or did not occur at all received few. Within the assigned ranges, allocation of positions to entries is done by the classifiers. Given the size of our library and the nature of our classification, the schedules are far from completely filled in; there are many more unassigned than assigned positions, but the existence of a large number of such unassigned notations is obviously essential to a good system.

Even though the first letter of the author notation is arbitrarily the same as the first letter of the main entry, and some flexibility is thereby lost (there are many more main entries beginning with E than with X in American and European libraries), a four-letter notation of this kind offers an effective range of up to 17,576 main entries under each letter. The nearness with which the maximum of 17,576 is approached depends, of course, on the quality of the sample as an indicator of the pattern of main entries, now and in the future, in the library in which the notation is employed. The sample thus is crucial to the utility of the notation.

We used the *Library of Congress Catalog of Printed Cards: 1898-1942* as our sample, and so our distribution is the same as the distribution of entries in it (subject to certain adjustments: e.g., to provide for the United Nations). This is an extensive record of past practice but cannot, of course, foretell the future. It is true that patterns, particularly among individual names, tend on the whole to perpetuate themselves, but corporate and title entries are less predictable. By choosing so extensive a sample and providing so many positions, we believe that we have postponed the likelihood that we will have an entry for which we cannot find an unassigned notation in our schedules to the remote future. Even then the simple addition of a fifth letter will provide an effective remedy for maldistribution.

The notation for a specific work is found according to a method similar to that employed in using the Cutter-Sanborn table. The schedules consist essentially of two columns. One column contains all of the possible combinations of four letters from AAAA to ZZZZ. The other contains combinations of letters actually found in the sample. The second column is printed opposite the first in such a way as to indicate which of the possible combinations are assigned as notations for those actually found. Ordinarily this produces a "range" of possible notations. The cataloger selects from this range.

To illustrate how the notation works, let us take a hypothetical author: Jock Q. Studleigh. Turning to the schedules we find that of the 17,576 possible combinations of letters beginning with S, SXRA to SYAN have been assigned to author entries beginning with STU (a total of 248 positions). Within this range we find that SXVJ to SXWC have been assigned to author entries beginning with STUD. The cataloger will assign one of these 20 positions to Jock Q. Studleigh. Assume it is SXVS. This is the author notation.

This notation offers the following advantages over Cutter numbers:

1. Greater capacity. In using a notation of the same length there is much greater capacity for differentiation in a notation of letters than in one of numbers. A four-place Cutter number offers 1,000 possible variations for entries beginning with a given letter (e.g. B000 to B999). In our scheme, as pointed out above, a four-place notation offers 17,576 such variations (e.g. BAAA to BZZZ).

2. Decimal reading. Letter notations are automatically read decimally: AZIMUTH precedes BAD in the alphabetic order. If expansion ever becomes desirable, it can be done without the necessity of a decimal point or special instruction to library staff and patron. The contrary is the case with numerals. If it is desired to insert a new notation between B222 and B223, either a decimal point is necessary (e.g., B222.5) or the risk must be taken that, in spite of careful instruction, staff and patron will read B2225 non-decimally, as a number following not only B223 but B999.

3. Most important, the notation is based on a very extensive sample of the actual distribution of letters in main entries, including corporate and title as well as personal entries (there are, for example, 12,506 positions for U. S. entries, official and other). This provides a reliable basis for assignment of author notations for works published prior to 1942 and cataloged in the Library of Congress. For most American libraries this is a more than adequate sample of works published prior to 1942. There is a further advantage in that the sample is based on the main entry designations on which many American libraries rely: Library of Congress cards.

As to works published since 1942, the sample can only be a basis for uneasy prediction. Compared to other available bases for prediction it is rather good, but this does not mean that it is perfect. There is no way of knowing whether massive shifts in the spelling of main entries or in the quantities of publications produced by existing or new corporate authors are likely to occur or what their directions are likely to be.

Meanwhile notations must be assigned. For libraries in which an alphabetical notation for main entries is desired the notation here described is superior to Cutter numbers.

We are presently investigating the possibility of making this notation available to other libraries and would welcome expressions of interest from readers of this journal.

EXPANDED SERVICES

Professional Library Service, Santa Ana, California, offers, among other services, "complete book jobbing," cataloging and processing (preparations?), pre-binding, and "cards with books."

Cataloging the Contents of Certain Recordings

SHERMAN ANDERSON, *Phonorecord Cataloger*
Detroit Public Library, Detroit, Mich.

IN THE SELECTION of subject entries for phonorecords, it has been the practice to consider only the content of the records. Perhaps it is time to revise this practice in regard to certain types of phonorecords which are more valuable for the personalities presented on them than they are for the material contained on them. This idea is brought up for consideration because the selection of subject entries for the content on these records can be a difficult matter. The questions arise: Will such subject entries be used for any real purpose? Might subject entries which describe the types of persons who are recorded be more useful? Need any subject entries be made? (Recordings are accessioned, not classified, at the Detroit Public Library, and, therefore, subject entries must receive careful consideration.)

Although these questions had previously come to my mind in regard to a few recordings, it was *Bertrand Russell Speaks*, Caedmon TC 1149, which finally provoked me into a search for the answers. It is safe to say that no two catalogers would arrive at the same subject entries for the content of this recording on which Bertrand Russell expresses his ideas in response to questions given to him by Woodrow Wyatt. Several subject entries were made for this particular record at the Detroit Public Library, but I am of the opinion that no entries for the content were needed. In the first place, they were not needed because the amount of material covered by any subject entry was very small when compared to the material in books which is covered by the same subject entry. In the second place, the record has not been issued so that Bertrand Russell can thereby make a major pronouncement to the world, the like of which he has never made before. The statements on the recording seemed to echo the statements which have appeared in print.

We can speculate on the reasons for the issuance of *Bertrand Russell Speaks*. Obviously it was issued because Russell is a famous person, and he does possess the normal capacity for speech. There must be thousands of persons who could carry on an intelligent and interesting discussion of social problems, but their words will never be recorded and made available as recordings because their names mean nothing to the world at large. Therefore, it is not always the material on a phonorecord which determines its existence.

Bertrand Russell Speaks is in no sense a recording of one of Lord Russell's books. I believe it resembles a portrait of the man and should be regarded in that manner. His voice belongs only to him, and the phono-

record is one way which permits us to hear the particular quality of his voice. However, where this record is concerned and others like it, it is not the quality of the voice which is as important as it is the manner of speaking. Something of the spirit of a man is revealed in his manner of speaking, and in any famous person, the inner spirit is of more importance than any of the physical attributes. The *manner* in which a man speaks will, of course, have a strong relationship to *what* he speaks. It is necessary, then, that there be content for recording purposes which is sensible and which is important to the speaker; if there is not, his manner of speaking will lack character. We find that recordings like *Bertrand Russell Speaks* do possess content, but it is not the content which is of primary importance. The recordings' most important feature is that they have captured some of the personal characteristics of each celebrity who speaks on them. One record company may have been thinking along the same lines which I have proposed because Spoken Arts 770 bears the title, *Portrait of Adlai Stevenson, in Conversation with Arnold Michaelis*.

Reynolds Metals Company issued a phonorecord several years ago called *Conversations Regarding the Future of Architecture*. On this can be heard the voices of Mies van der Rohe, Walter Gropius, Richard Neutra, Eero Saarinen, Ernest Kump, and Gordon Bunshaft. Added entries for each architect would be doing rather too much, but, since PRESIDENTS—PORTRAITS is in use, why might not ARCHITECTS—RECORDINGS be used for this record? The future of architecture was not the only topic which they discussed; the recording contained a mixture of content.

Experience with the sort of records being investigated has demonstrated that the content on them is extremely diffuse. This observation is certainly true of Folkways FC 7351 on which Robert M. Hutchins is heard and for which several subject entries could be considered in addition to the obvious one, EDUCATION. Folkways has issued more than one such record, and with them the company is in the habit of supplying printed texts of the material recorded. For this practice, I wish to commend Folkways most heartily. The text for the Hutchins record consisted of only six pages although there were two columns per page. I do not believe that many catalog departments would be happy about cataloging such a text and providing the appropriate subject entries for it, and yet the printed text contains exactly the same content as the recording. I should think that the content would be less valuable on a recording than in print because a machine will be necessary in order to hear the recording.

Most record companies do not issue printed texts for recorded speeches, conversations, etc. A great many provide neither an outline nor a succinct description of the content. The cataloger who is determined to discover the true nature of the content can, of course, spot-check by lowering the tone-arm at selected spots on the record. However, this procedure is by no means as satisfactory as the comparable procedure of scanning paragraphs in a book. Nor is it fool-proof. The speaker on a

record called *On Fallout and Nuclear Warfare*, Verve MGV 15020, is Linus Pauling. A spot-check of this item indicated that he was describing the effect of radioactive fallout on the production of defective germ plasma in mankind. But towards the very end of the second side, he makes his plea for world peace, and it becomes clear only then that the entire speech is a plea for disarmament. The speech is not a general discussion of nuclear warfare.

If all of the lectures recorded today were delivered by people of renown, it might be possible to formulate one procedure for cataloging all of them. As you might expect, this is not the case. For lectures by unknown individuals, subject entries for content are a necessity, and a complete hearing of the record may be necessary before cataloging it. David L. Jennings, heard on *Physical Anthropology*, Lectern LSA 101, finally arrived at his topic near the end of the record after he had spent most of his time with paleontology, evolution, genetics, and the origin of man. Now I believe that my intelligence will stand comparison with the average, but I confess that I am never able to understand mitosis unless I have a printed text before me and plenty of diagrams to accompany it. I cannot believe that a one-minute discussion of mitosis and miosis on a recording is going to make any real impression on anyone. For lectures by unknown individuals, I would favor the policy of non-acquisition unless there is a definite demand for them.

Recordings are produced for entertainment as well as for information, and those produced for entertainment should be cataloged in a manner befitting them. It is with recordings made by the personalities in show business that the consideration of subject entries for content can become ridiculous. This is so because these records are concerned with neither information nor esthetics. What is of interest on them is the style of the entertainer, and his style seems to be intimately bound up with his personality. How does one catalog individual style?

It was *This Here Andy Griffith*, Capitol T 1215, which demonstrated the inadequacy of the traditional approaches of cataloging to me; and "this here" recording has stuck in my memory as one of the most appalling brutes ever corralled. On his recording Andy Griffith spoke with humor on the subjects of North Carolina and Hamlet, gave cute recitations accompanied by appropriately saccharin music, and sang jazzy songs and other kinds of songs. (This cataloger was neither amused nor satisfied.) I decided that a person would enjoy the record if he liked Andy Griffith; if he did not like Andy Griffith, the record would be nothing. Subject entries for each type of material performed would surely have served no one. The record merited no more than one subject entry, and the final choice was ENTERTAINERS followed by a subdivision. Some subdivision would be a necessity, and it is the characteristic of certain subdivisions that their use changes to a certain extent the meaning of the subject without subdivision. ACTORS—CORRESPONDENCE, REMINISCENCES, ETC. is an example of a subject with such a subdivision.

Some entertainers speak and sing and do anything else with their voices that can be recorded, but others are content to be comedians or singers. Quite a number of recordings have been made by popular comedians, but the amount of wit per record may actually be very small. If their material were available only in printed form, it is not likely that libraries would be interested in the purchase of it. Certainly the word, comedians, describes them very well since they are impersonators quite as much as they are humorists. It would be interesting if one could discover how successful Mort Sahl, for instance, would be with Shelley Berman's material.

The songs which certain entertainers perform on records cannot be truly categorized by any of those subjects from the Library of Congress list. For instance, I do not believe that HUMOROUS SONGS would be an adequate description for the repertory of Mae West. Her material has come to be uniquely her own, and it is probably not intended for general use. At this point I want to make it perfectly plain that I am not urging the Library of Congress to devise a subject heading for certain tantalizing performances which would be so particular that everyone would be able to think of it. But you can bet that Eartha Kitt and Mae West are not causing this fellow any more anxious moments; I know just what to do with them in the catalog.

REPRINT EXPEDITING SERVICE BULLETIN

The Reprint Committee, RTSD-Acquisitions Section, has turned over to Oceana Publications, Inc., all rights and responsibility for the *RES Bulletin*. Sam P. Williams, of the New York Public Library staff, will continue as Editor, but ALA will have no connection with it.

Under the new imprint the *RES Bulletin* will be increased from a quarterly publication to six issues each year. It is to contain information on all phases of reprinting interests: Reports of surveys among libraries, reports from people or organizations working on special problems, plans for reprinting titles, and the listing of books recently or about to be reprinted.

Subscriptions will be \$12.50. Subscriptions inquiries should go to Oceana Publications, Inc., Dobbs Ferry, New York; editorial correspondence to Mr. Williams, P. O. Box 2959, Grand Central Station, New York, N. Y. 10017.

CATALOG OF PERSIAN BOOKS

The Harvard University Library has issued a preliminary edition of the *Catalogue of Persian Books* in the College Library. This catalog lists Persian texts only and is arranged alphabetically according to the Persian alphabet which is employed on the cards. It is mainly an author-title catalog with some personal subjects and contains nearly 4,000 entries representing about 3,000 titles. The 218-page volume measures approximately 9 by 11 inches and is a photographic reproduction of the original cards (18 to the page) with a 50 per cent reduction. It is on Permalife paper, in paper covers, and a "perfect" binding.

The *Catalogue of Persian Books* was reproduced for Harvard's internal use, but some additional copies are available at a price of \$7.00 from the Business Office, Harvard University Library, Cambridge 38, Massachusetts.

Encounter with a Cataloger

DANIEL GORE, *Assistant Librarian*
Asheville-Biltmore College
Asheville, N. C.

(Note: The following is a transcript of a question-and-answer session recently conducted for the benefit of library school students intending to pursue a career in cataloging.)

Moderator: We are fortunate in having with us today, to help you students explore some of the current issues in cataloging, Miss Melissa Spindrift, Chief of the Cataloging Division of Arbutnot University, and Chairman of the Regional Library Association's Cataloging Round-Table. I hardly need tell you that for many years Miss Spindrift has been recognized as the dean of American catalogers, and that her views on cataloging are therefore both authoritative and representative of current thinking within the library profession. She has generously offered to answer any questions that you students may wish to raise with regard to cataloging, and it is with great pleasure that I now turn the session over to her.

A. Thank you, sir. We will proceed straight to questions. Yes, young lady?

Q. Miss Spindrift, what do you consider to be the greatest challenge facing catalogers today?

A. The insidious attempts of the enemy within to close the space gap.

Q. Could you give us some details, ma'am?

A. Gladly. There is a small but dangerous group within the profession today that no longer respects the sanctity of the three spaces left before the imprint on a catalog card. And their attitude towards the two-space gap before the edition statement is unfit for polite mention. These people, if not restrained, will some day make chaos of our cataloging code.

Q. How did this threat arise, Miss Spindrift?

A. Well, as best as I can determine, it began among some arrogant young catalogers who felt resentful at being asked to type their own catalog cards, though heaven knows, we maturer professionals have been typing them willingly during our entire careers. So, to express their rebellion, they have begun by furtively trying to close the three-space gap, and worse is sure to come unless you younger people accept the challenge and put these rebels to rout. The havoc they will wreak when they reach the collation statement is too dreadful to contemplate.

Q. How should we prepare to defend ourselves?

A. The most important thing a professional cataloger can learn, the *sine qua non*, I had almost said, is how to type expertly. I might add that this will help keep the clerks in their place too.

Q. After the space gap, what would you say is the next most important issue confronting catalogers today?

A. Restoring the integrity of the three dots.

Q. Would you explain, please?

A. It is very simple, and very sad. Some years ago, a group of irresponsible catalogers at the Library of Congress agreed to abandon the use of elision marks to indicate the omission of any but the most important features of the title-page. I naturally protested, but it did no good, so now the cards printed by LC no longer have that fresh speckled appearance, and we of course quit using their cards forthwith.

Q. Do you mean, Miss Spindrift, that your library actually stopped using LC cards altogether?

A. Of course. There is such a thing as integrity, you know, and you may come to appreciate it more as you grow older. Not that we lost much by abandoning the LC cards, you understand, since we never took them very seriously anyhow, and there were always a great many changes to be made.

Q. What is so wrong with LC cards besides the dots, ma'am?

A. Carelessness, carelessness, carelessness. One thing about cataloging you must learn as soon as possible: trust nobody's work but your own. That way, you can never go wrong. And of course nobody will ever trust your work either, so don't make the silly mistake of supposing they will.

Q. Miss Spindrift, may I ask how many catalogers you have on your staff at Arbuthnot?

A. Thirty.

Q. And how many volumes do they catalog in a year?

A. Volumes or titles?

Q. Well, ah, titles.

A. Thirty thousand.

Q. Then this must mean that each cataloger catalogs about a thousand books a year, doesn't it?

A. Young man, I can see that either you have no head for figures, or you simply don't understand how a cataloging department is run. Our catalogers are divided into three groups of ten, and each group not only catalogs the books it is responsible for, but also revises and corrects all the work done by the other two groups, and that is probably the hardest and most demanding work of all. So if each group of ten is actually working on the entire thirty thousand volumes, excuse me, titles, then that means *three thousand titles* for each cataloger, doesn't it?

Q. Thank you for that clarification, Miss Spindrift. I think that what I was trying to get at in my own clumsy way was this: if you have thirty catalogers, and pay each of them about six thousand dollars a year, then you have paid a hundred and eighty thousand dollars to get thirty thousand titles cataloged, or six dollars a . . .

A. I can see what you are getting at, young man, and I hasten to tell you that in *my* cataloging department the only thing that counts is quality. Anybody can buy books, but precious few really understand how to catalog them correctly. What this world needs is not more books, but better catalog cards. We have too many books already. I wish you could see the enormous backlog that is still waiting to be cataloged at Arbutnot because our staff is too small. Perhaps reference work should be your field. Next question.

Q. Miss Spindrift, our cataloging instructor tried and tried to explain the rules of capitalization on catalog cards to us, but somehow I never felt I really understood them. Would you care to comment?

A. Indeed I would. This is one of the most sensitive areas in cataloging today, and one that leads to the most conflicts among our revisers. Often the disputes that arise are so intricate that they can be settled only by bringing them to me for a decision. This may sound immodest, but sometimes I think I may be the only cataloger left who fully understands the rules for capitalization in an imprint. The problem is so vast that I can only hint at its solution by giving you an example. If a book is published by New York University, then "university" is of course not capitalized. But if it is published by the University of North Carolina Press, then "University" *is* capitalized, and "press" is not. I hope this gives you some insight into the complexities of the problem, and the importance of finding a correct solution.

Q. What about the period after the word *map* in the collation statement, Miss Spindrift? Could you throw any light on that problem?

A. One of the most difficult things for a beginning cataloger to learn is that the period after the word *illus.* indicates not only an abbreviation, but a full stop as well. So *map* takes a period too, though this is not easily learned, and I have had to let more than one promising cataloger go on account of this weakness, even when they weren't trying to close the space gap as well. I hope you youngsters are beginning to see that cataloging is an art that only the finest minds are fitted for. Stay away from it unless you have true dedication and deep insight. There is no place in cataloging for triflers and shallow minds, believe me.

Q. In your opinion, what change is most urgently needed in cataloging today?

A. We need better lighting in our workrooms.

Q. Miss Spindrift, what is your estimate of the work of Walter Greg and Alfred Pollard?

A. Greg, Pollard? No, I can't place the names. I'm sure that neither of them ever worked for me, and I don't remember seeing them at any of the professional meetings, so of course I have no opinion.

Moderator: I see our time is running out, and we must bring this very enlightening session to an end. We are grateful to Miss Spindrift for sharing with us the rich harvest of her long career. The foretaste that she has given you students of the cataloging world should enable you to cope better with its perplexities when you become catalogers yourselves, since you now know something of what lies ahead. Thank you very much, Miss Spindrift, for the revealing light that you have directed into the darker recesses of the cataloger's domain. I believe it has helped us all to see better the true nature of the cataloging predicament, and the direction we must take in solving some of the problems that have so long baffled and frustrated the library profession.

Regional Groups Report, Summer 1965

THREE REGIONAL GROUPS have reported meetings for inclusion in this issue.

The Southeastern Regional Group of Resources and Technical Services Librarians took a look at the future by means of three papers. Margaret C. Brown (Free Library of Philadelphia) presented a general overview of the future of library resources, activities and policies. Lucile M. Morsch (Library of Congress) spoke on what librarians can expect of the Library of Congress in cataloging activities and services. David Kaser (Joint University Libraries) dealt with the future of acquisitions work in an automated library world.

The Potomac Technical Processing Librarians, in a joint meeting with the Virginia Library Association and the Potomac Valley Chapter of the American Documentation Institute, heard speakers on two seemingly widely different topics which may someday merge to a large extent: Germaine Krettek (ALA Washington Office) spoke on the implications to librarians of recent federal legislation and Edward Heiliger (Florida Atlantic University) spoke on automation in his library. The papers were followed by small luncheon round tables at which related topics were discussed.

The Chicago Regional Group of Librarians in Technical Services heard Helen Welch (University of Illinois) speak on the cost of technical services, with emphasis on the ratio of technical services costs to total library services costs.

Some Random Thoughts on the Cost of Classification

MATHILDA BRUGH O'BRYANT
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Princeton University Library
Princeton, New Jersey

DANIEL GORE'S ARTICLE, "The Cost of Classification: a Neglected Topic,"¹ has probably been read with interest by many administrators. Mr. Gore has the answer for the cost of classifying books and has made the classifier obsolete in library service. One administrator remarked that he was making sure that his catalogers read the article so that they could use the suggestions made therein. As I have read various articles by Mr. Gore, I have visualized the Utopian library in which catalogers and classifiers are eliminated. No longer will the library field be cluttered with fussy, busy, useless work performed by these strange people called catalogers. All that a library needs to do is to convert to LC classification, order LC cards, and hire clerks to do the rest. I wish that this could be possible even if it would mean temporary unemployment—most catalogers can do reference work, so would not be unemployed for too long a period. Although Mr. Gore has said many things that needed saying, I must disagree with some of his implications. Maybe they fit his library, but his library appears to be an exception to the majority of libraries in the country.

First, let us consider the figure of saving \$300,000 by a library of a million volumes using the Library of Congress system of classification instead of the Dewey Decimal scheme. He arrives at this figure by saying that it will cost one cent per title to classify by LC and about thirty-five cents per title by Dewey. This is based on a classifier averaging about \$3.00 per hour in pay. Mr. Gore does not specify how much more could be saved were a library now using a non-standardized system changed to the Library of Congress system. Classification schemes other than the LC and Dewey cannot be kept up to date with printed schedules, often lack an index, relative or otherwise, and do not have their class numbers assigned to printed cards or to entries in the Bowker Company listings or in the British national bibliographies. In short, there are several libraries now using schemes that have no printed aids. If these libraries changed to LC and did not reclassify the old material, perhaps \$300,000 *could* be saved for the next million titles. (I am assuming that Mr. Gore meant titles instead of volumes.)

He is on less firm ground, however, if he is implying that a library of a million volumes or more would save \$300,000 to reclassify from Dewey to LC. To reclassify old material would quickly exceed any savings gained

from using LC for new titles. Many libraries have been using Dewey since 1876. The rate of pay was far different then, so it did not cost the library 35 cents to classify one title. On the other hand, if a library had used LC from the day it opened its doors, the classification bill for one million titles would be more than the \$10,000 that Mr. Gore states would be possible if using LC.

A large research library seldom gets more than fifty per cent of its titles for which there are Library of Congress cards. Therefore the fifty per cent of original classifying will continue to be as costly as all classifying was under the old system. If a library switched from its present classification to the Library of Congress classification today, left old titles in the old system, and acquired a million new titles in the next ten years, the savings under ideal circumstances might be about half of \$300,000. This \$150,000 is still a large enough figure to make one think about changing to the Library of Congress classification for his library.

Aside from the original cataloging, there are other factors that prevent the acceptance of the LC call number in total or even in part. Universities are creating special libraries which are scattered over the campus. These special libraries are oriented to their particular subject field. In some universities, an engineering library will take no title classed in Q, and the chemistry library will accept no classification in T. If both libraries receive the same title, one copy must be classed in Q for chemistry and the other in T for engineering.

Series are sometimes classed together by LC but some libraries will scatter by subject. Or, a library will class together a series that LC has scattered by subject. If the LC number is followed blindly, the procedure of the local library will be ignored, and the series will be classed both ways.

Eight years ago I was the head cataloger at a university that was very new. Its library began with the idea of using the Library of Congress services in every way possible. We wholeheartedly adopted the method now recommended by Mr. Gore of using the entire LC number as given on the LC cards. Even in this ideal situation, we catalogers found ourselves having to "fit" numbers, to consult the shelf list, and unable to use the entire LC number because we had already used it for a former title.

Problems arose which we did not anticipate. The library received many foreign books for which there were no LC cards printed. Fifty per cent of our cataloging had to be done with no LC cards. As we did original cataloging, we would have to assign an author or Cutter number. Subsequently we would acquire a title with LC cards that would carry the number we had already used. Aside from foreign books and other original cataloging, we had problems with titles that had LC cards prepared by other libraries such as Harvard. These cards gave no call numbers. So again we had to make up an author number. Sometimes we would catalog a title before the LC cards were printed, and thus did not arrive at the same number which LC chose later. To try to avoid this, the catalogers would search the *Library of Congress Catalog of Printed Cards*

for other titles by the author being classed in order to try to discover the author number that had been given (this was mainly for literary numbers) and hope to be in step with LC. Belles lettres gave us trouble, because we put all PZ3's in the literary numbers. I think the above factors made the cost of classing a title a wee bit more than one cent. I might add we had an unusually good staff.

In spite of the above personal experience (or perhaps because of it) I continue to believe that it is a sound idea to use the LC class number as a whole when available and when it "fits" into the shelf list. Realistically the shelf list in most libraries will continue to need temporary slips to avoid the duplication of call numbers for different titles.

Libraries differ greatly (a trite statement if I have ever read one). The range goes from Mr. Gore's library of users, who regard a call number as only a shelf location device, to the libraries where the call number is a very important feature. Princeton is one of the largest open stack libraries in the United States. It occupies six floors. It can be understood that a graduate student or a faculty member would prefer that his material be located near his study carrell or his office. It is important enough to him for him to spend hours of his valuable time trying to convince a cataloger that a book correctly classified should be changed to another equally correct number. Can a cataloger answer that it is a Library of Congress number and thus absolutely correct, even though it means the professor must travel six floors to his material? In open stack libraries, professors and students are often emotional about having books in their subject near their areas.

What does a cataloger do? Catalogers are not supposed to be economists and know the value of a dollar. This does not excuse them from trying to avoid the high costs of classification and cataloging and making it a professional obligation to do so. But at the same time, they are forced to work in their individual institutions. If the faculty and student body are interested in where the books are located, then it would seem they have a library that is used. The whole character of an institution, historically derived, determines the functions of its parts.

Every really complex library and library system in this country (this does not mean just university libraries) has its traditions. People become used to these traditions and so use them to preserve their own comforts, status, or whatever an individual wishes to preserve. This is embedded in any institution over fifty years old. Practices and methods result which are unique to the individual institution. If the top administration wishes to go along with these policies and is reluctant to break traditions, the cataloger must also go along. Here again the whole LC number must be disregarded to follow practices. The continuation of observing local traditions makes it more and more inimical to the development of a national (not to speak of an international) system of classification and cataloging.

The goal of national cataloging should be kept in mind. It is a necessity now for libraries to share cataloging and to have uniform rules. When one reads this statement, one thinks only of entries. It can be

added that if libraries could take the whole number from the LC card, the result would be that all libraries would have the same call number for identical titles. This would be a great aid to interlibrary loan requests, and also help avoid duplication in research. Research libraries through the ARL are working towards a plan of shared cataloging. It is hoped that this can be accomplished by government support and the Library of Congress increasing its coverage. If LC should begin to print cards for current foreign titles and be able to send them to libraries within a month after receiving the titles, the result should be that even the largest libraries in the U. S. would have the majority of their current imprints covered by LC cards. This should bring about more savings to libraries that use the LC classification. Even so, there will be many times when a classifier will have to make a decision on the wisdom of following the LC number in part or in its entirety. For the reasons stated previously in this paper, LC cannot be followed blindly. However, a classifier can be encouraged to make a decision quickly if he has the confidence that he is backed by the administration. I am aware that this subject could take an entire paper or even a book. I bring it up to point out that libraries should attempt to use LC call numbers, but for more reasons than the one cent per title cost of classifying.

To support this idea of following Library of Congress, I shall quote Richardson: "Libraries . . . gained rather than lost by not attempting to satisfy the wishes of the professors as to what they regarded as a more modern scientific classification."²

In this quotation, Richardson is defending Dewey, because Dewey's classification had a printed schedule, an index, and was revised as new knowledge arose. I think if Richardson were alive today, he would be as enthusiastic for the adoption of the LC classification.

I do agree with Mr. Gore that it is most desirable to reduce the cost of classification to a minimum. The ideal of this world this day for that future is for a library to maximize service and minimize cost. Daniel Gore has made a start in this direction but needs to pause to consider libraries other than his own.

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Subject Catalogers—Equal to the Future?

MANUEL D. LOPEZ

Lockwood Library

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THE SUBJECT ANALYSIS of library materials, the theory and the lack of it, the clerical and physical procedures necessary to such analysis and the possibilities of mechanization have been the focus of general dissatisfaction, evaluation, and criticism. The most important component, in the process of subject analysis, the subject cataloger, has often been ignored. The assumption seems to be that the cataloger of today and tomorrow is capable of: (1) contributing to, comprehending and evaluating the developing corpus of theory, (2) applying and adapting new systems in a uniform, systematic, and consistent manner.

Such attributes are as desirable and necessary now as in the future, and they will be required for the intelligent and logical application of the developed theories and systems and the manipulation of the mechanical or electronic devices to produce the desired results. Unfortunately, such capabilities cannot be simply ascribed and then prophetically projected into the future. However, a modicum of reassurance could be derived from evidence that those qualities are presently manifested in the processes of subject cataloging.

In an attempt to establish the existence of such evidence an analysis of eight library card catalogs was made to determine:

- (1) the number of identical books that received identical subject headings.
- (2) the number of identical books that received different subject headings.
- (3) use of the elements of the system
 - (a) scope or definition card
 - (b) "see also" cards used
 - 1) the number of titles "lost"¹ due to inadequate "see also" references.

To minimize the effects of a diversity of public served, scope of collection, and purpose of function, the card catalogs of public and special libraries were excluded from the survey. Eight library collections were selected on the basis, as far as existing conditions allowed, of function and level of content. Seven libraries are associated with academic institutions offering a master's degree in one or more subject areas. The eighth library's function is to provide materials to other institutions rather than to an individual directly. Consequently, its own staff, professional research personnel, scholars, and academically-sophisticated students compose its clientele. Library of Congress catalog cards were uti-

lized in the card catalogs, and all the libraries involved followed the *Subject Headings Used in the Dictionary Catalog of the Library of Congress* as the source of their subject headings. It should be noted here that the use of LC cards was considered, for the purposes of the analysis, as indicative of the suggested subject headings. Of the number of titles included in the preliminary sample only nine required original cataloging. It is interesting that they, with one exception, were consistently described with the test term.

The procedure of the analysis included the following operations:

(1) The subject heading, COMMUNICATION, was selected as the test term. The card catalog of each library was searched for this heading and, for titles found under this subject heading, the following information was recorded:

- (a) Author
- (b) Title
- (c) Publisher
- (d) Edition
- (e) Date

The initial technique of using the subject approach defined the quantity of the sample. A total of 124 titles, which had been described with the test term, was located in the eight selected libraries. No individual library collection contained all of these titles, but copies of different titles in the sample were located in two or more of the libraries included in the survey. This method, the subject approach, also indicated that the test subject heading COMMUNICATION had been consistently assigned to copies of 55 different titles which were available in two or more libraries.

Using the author entry of the 124 titles located by the subject approach, each card catalog was searched once again. This technique located 21 additional copies of the titles in the sample which had not been assigned the test term COMMUNICATION.

This combination of techniques further refined the sample to include only those titles (a total of 76) available in more than one library. Of that total the test subject heading had been consistently assigned to only 55 titles. Considering the criteria for the inclusion of the libraries in the survey, could the low rate of consistency (72%) be justified on the basis of modification for local users?

It must be emphasized that the consistency rate is simply an indication of a comparison of the skills of all the subject catalogers employed by the libraries surveyed. The rate of consistency (72%) which was computed on the basis of this survey cannot be ascribed to the individual libraries included in the survey. No attempt was made to evaluate the consistency rate for the individual libraries; however, a careful review of the data of Table I may provide the necessary basis for reasonable assumptions regarding the subject cataloging of a book in the subject area of COMMUNICATION added to any one of the collections. For ex-

ample, a high degree of consistency might be expected from libraries G and H and, conversely, a lower degree of consistency could be expected from libraries A, B, and C.

"See also" references as a test element were selected, because the interdisciplinary nature of communications made it unlikely that any one individual would be familiar with all its aspects and relationships to other subject areas; consequently, "see also" cards would be a necessity.

The procedure for the evaluation of "see also" references consisted of the following steps:

(1) From the 6th edition of *Subject Headings Used in the Dictionary Catalog of the Library of Congress* and its supplements a list of suggested "see also" references was compiled:

- Communication and traffic
- Communication in science
- Communications research
- Cybernetics
- Information theory
- Intercultural communication
- Knowledge, Sociology of
- Leaflets dropped from aircraft
- Language and languages
- Oral communication
- Persuasion (Psychology)
- Popular culture
- Science news
- Semantics (Philosophy)
- Symbolism in communication
- Visual aids

(2) In each library the "see also" card for the test term COMMUNICATION was compared with the list of possible "see also" references. The number of subject headings on the checklist which were used in the card catalog but not referred to on the "see also" card was determined. The number of titles located under such "possible" references was tabulated. Table I summarizes the result of this approach.

Another element of the subject classification system selected as a test item was the scope note for COMMUNICATION. Such scope notes are included in the printed list of subject headings of the Library of Congress only when special subject dictionaries and general dictionaries fail to agree and when usage has not produced a definition of practical use and precision. Functionally, scope notes indicate the limits and scope or, if you will, define the subject heading and are useful in maintaining the consistency in the assignment of subject headings and aiding the library patron in determining the extent of the coverage of a particular subject heading. Table I indicates that only one library out of eight included the test scope note in its catalog. Consider the scope note and its function:

TABLE I

Summary of the Analysis of the Elements in the
Subject Heading Systems of Eight Libraries

	Libraries							
	A	B	C	D	E	F	G	H
Scope Note used	No	No	No	No	Yes	No	No	No
"See also" Card used	No	Yes	No	No	Yes	Yes	Yes	Yes
No. of Titles lost due to inadequate references	247	120	100	59	32	11	5	0
No. of Books in Subject Area of COMMUNICATION	27	18	14	13	96	35	27	12
No. of "possible" Subject Headings not referred to	7	8	6	6	1	1	2	0

TABLE II

Possible "See Also" References Not Referred To on "See Also" Cards

Possible "see also" references	Libraries							
	A	B	C	D	E	F	G	H
Communication and traffic	X	X	X	X			X	
Communications research	X	X					X	
Cybernetics	X	X	X	X				
Information theory	X	X	X	X				
Intercultural communication				X				
Language and languages	X	X	X	X				
Leaflets dropped from aircraft		X						
Oral communication			X					
Popular culture	X							
Semantics (Philosophy)	X	X	X		X	X		
Symbolism in communication		X						
Visual aids				X				

Communication

Here are entered works on human communication including both the primary techniques of language, pictures, etc., and the secondary techniques which facilitate the process, such as the press and radio. Works dealing with individual means of communication are entered under the headings Language and languages, Printing, Telecommunication, etc. Works dealing collectively with the industries concerned are entered under the heading Communication and traffic.

This analysis did not attempt to establish a correlation between the lack of scope notes and inaccurate subject classification, nor did it attempt to quantify the errors and confusion of library users who were without the aid of the guidance of such a device; but it would appear self evident that such a special definition requires inclusion in the card catalog.

Limited to the analysis of one subject heading in the card catalogs of eight libraries in one geographic location, the results of this survey would hardly qualify as representative; and the conclusions must be regarded as little more than tentative. In fact, this brief study simply complements Ann Painter's investigation of the convertibility problem at the government Office of Technical Services.²

Initially, this survey of library catalogs was to verify the present existence of those qualities necessary for subject catalogers. Unfortunately, the limitations of the study do not provide refuge from the probabilities suggested by the results. There seems to be little appreciation for the function and utility of scope notes. And there is a somewhat less than systematic use of "see also" references. The low rate of consistency (72%) in subject cataloging has already been discussed. It is interesting that Miss Painter noted in her larger study that "We are left with the fact that, in spite of the variables, there is a 62 to 72 percent consistency in indexing. This means that 28 to 38 percent of the indexing is inconsistent, or that the documents indexed will not be retrieved."

Miss Painter suggests that the level of consistency can be raised in four ways: "ensure the adequate training of the indexers before they index at all, i.e., subject training; give opportunity for experience in the art of indexing; standardize the indexing code or rules being followed; closely supervise the input to each system."

Sound suggestions. However, they appear to describe the function of the subject cataloger's graduate education, apprenticeship, and daily professional experience. Perhaps the education and training of subject catalogers should be reexamined and/or other measures should be considered to assure that future subject catalogers will be as intellectually sophisticated as the evolving body of theory and as systematic as the new mechanical systems being developed.

REFERENCES

1. Books, due to inconsistent subject cataloging and inadequate "see also" references, are considered "lost" to the user of the catalog who only looked under the subject heading COMMUNICATION.
2. Painter, Ann. "Convertibility Potential Among Government Information Agency Indexing Systems." *Library Resources & Technical Services*, 7:274-281. Summer 1963.

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The Acquisition of Hebrew and Yiddish Books

SHELDON R. BRUNSWICK
Semitics Librarian and Lecturer
Department of Near Eastern Studies
Brandeis University, Waltham, Mass.

ALTHOUGH THE EXTENSION of Public Law 480 to include Israel has somewhat changed matters for the institutions which receive their books from the United States government offices, institutions remain which are not now involved in the program. Furthermore, the acquisitions program of P. L. 480 does not cover Hebrew and Yiddish materials published outside of Israel. Finally, it is not certain for how many years the present government-sponsored program will continue. For these reasons, this discussion of the acquisitions of Hebrew and Yiddish literature may be useful.

It is best to start with a discussion of the Israeli national bibliographies. For many years the Israeli government has published in its Hebrew language edition of the Government Yearbook called the *Shenaton ha-memshalah* a full national bibliography of the titles published in Israel during the preceding year. This *Shenaton ha-memshalah* has the books arranged under about fifteen general subject headings such as belle lettres, juvenile literature, literary criticism, religious literature, education, psychology, etc. A few of these subject headings are further subdivided by more specific headings. These consist chiefly of linguistic divisions according to the original language from which the translation was made. Within each subdivision the titles are arranged by main entry, and the rest of the entry follows the customary pattern. It also includes collation.

There are two problems with this national bibliography. Only one entry is made even though some titles should be entered under several subject headings. Secondly, there is no index by author or title to the bibliography. It does have several merits, however. It is a thorough guide to the literature published during the year it covers. Secondly, it gives a full reference to each title in conventional fashion. It is to be regretted that for a few years this national bibliography was not included in the *Shenaton ha-memshalah*.

There are two national bibliographies besides the official one discussed above. The most valuable is the *Israel Book Catalog* edited by Jaap Bar-David; this is an annual bibliography similar to the *Publisher's Trade List Annual*. In Bar-David's catalog the titles are arranged according to publishers. Each publisher is requested to send to the commercial firm of Bar-David a list of titles and, most important, list prices. Each

publisher's entries are arranged alphabetically. At the beginning of the catalog is a list of the exact addresses of the publishers from which the titles can be ordered directly. Perhaps the most valuable feature of the catalog is the inclusion of three indexes, arranged separately for author, title, and subject. Many authors have published works with several firms, but in the author index all his works are brought together. The title index is very valuable since medieval books are best-known by title. The names of their authors have fallen into obscurity or are just not well known.

The Israelis have not developed a real subject-heading list comparable to the American ones, and as a result, the subject catalog is only a general one. Under the heading "general books" come encyclopedias, complete works, bibliographies, and periodicals. Philosophy and psychology are bracketed. "Religions" includes Bible, Talmud, Judaism, Hasidism, and non-Jewish religions. "Society" includes sociology, statistics, administration, police, military works, and economics. There are separate headings for education, languages, science, mathematics, art, biography, etc.

The Bar-David Israel Book Catalog has appeared on an annual basis since 1957, and each year sees an increase in the number of publishing houses included. Because of its indexes and annual appearance, it is the most valuable of the Israeli national bibliographies.

The third national bibliography is the *Katalog sefarim kelali* (general book catalog) published by the Hitahdut hotsa'ot sefarim bi-Yisrael (Book Publisher's Association of Israel). In arrangement it is similar to the *Bar-David Catalog*, with the individual catalogs arranged alphabetically followed by author, subject, and title indexes. There is also a full list of publishers' addresses at the beginning of the catalog. The major advantage of this catalog over the Bar-David one is the arrangement of the subject index. The subject headings are much more specific than those in the *Bar-David Catalog*. For instance, the *Bar-David Catalog* uses "Religions" as a catch-all, whereas the *Katalog sefarim kelali* contains many specialized subject headings such as: Islam, Religion, Judaism, Dead Sea Scrolls, Semitic languages, Bible, Talmud, Mishnah. The disadvantage of this catalog is that it does not appear on an annual basis. As of this writing, the latest volume is for 1961. Furthermore, the books published by the Yiddish language publishers are not included.

The problem of a national bibliography for Hebrew books published in the United States remains. In recent years such a list has appeared in the late "Ellul" issue of *Hadoar*, a Hebrew language weekly published in New York City. There is also one published in the *Jewish Book Annual* which began to appear on an annual basis in 1942. In volume 21 there appears an article by Theodore Wiener listing under several subject headings the books published. After each entry he gives a brief annotation in English.

Of course, for libraries anxious to know what is being published currently, these national bibliographies are not helpful. For Israel the best

solution lies in air mail copies of the daily newspapers such as *Ha-arets*. There, in the literary news section, will be found full information on new books. For Hebrew books published here in the United States, current information can be obtained by reading the daily Yiddish press, *Ha-do'ar*, and some of the journals such as *ha-Pardes* and *hà-Ma'or*.

This brings us to the question of a dealer. Some libraries may find it satisfactory to place standing orders for specific types of literature with an individual dealer. We, at Brandeis, had such an arrangement with the firm of Megilot, 7 Pinsker Street, Tel-Aviv. Libraries should insist that they be billed in Israeli pounds and should convert the invoices to dollars at the rate of three pounds to the American dollar.

There is also the problem of a dealer for American-Hebrew books. We, at Brandeis, have found the Bloch Publishing Company (31 West 31st Street, New York City) satisfactory. Some libraries may also find them best for current Judaica.

Before turning to a discussion of Yiddish Literature, reference should be made to the Israeli government documents. In this area, we are fortunate to have a bi-lingual publication issued once every two months. It is called the *Reshimat pirsume ha-memshalah* (Israel Government Publications). It has a full list of publications arranged by issuing ministries. Included is a list of the special booksellers carrying government documents.

Yiddish literature is published mainly in Argentina, Israel, Poland, and the United States. The best national bibliography is the annual *Bikher velt Katalog*, published by the "Cyco" Publishing House and Book Distribution Agency, 25 East 78th Street, New York City, 10021. It is arranged by subjects, and all books listed are obtainable from "Cyco." Libraries may find it convenient to use Bloch for Yiddish literature. For current information concerning Yiddish literature a librarian should consult the daily Yiddish press and the literary journals such as *Di Goldene Keyt*, *Davke*, *Tsukunft*, etc.

There remains the problem of cataloging. Librarians will find that Library of Congress does not have cards for current imprints until a year or two after publication; even then, the coverage is incomplete. At Brandeis, fully fifty per cent of the older titles have not been cataloged by LC. Therefore, libraries planning to engage in large scale acquisitions need the services of catalogers with the necessary linguistic knowledge.

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REVIEWS

(Editor's note: Reviews published in this magazine have a deliberately-chosen view point. That is, reviewers are asked to consider publications primarily on the basis of their meaning and contribution to the areas of our interest: the building of library collections and the absorption, care, and control of the materials comprising the collections.)

Colvin, Laura C. *Cataloging Sampler; a Comparative and Interpretive Guide*. Hamden, Conn., Archon Books, Shoe String Press, 1963. 368 p. \$10.

Upon first glance at this work, one sees that it is a collection of samples illustrating cataloging practice. This is, of course, implied by the title, but one finds upon examination that the examples are not exclusively catalog cards. Other cataloging forms and slips used by libraries are also included. What is more important is the realization that the samples are not limited to cataloging; acquisitions activities are covered also to the extent of including order forms, searching slips, and serial decision and report slips. Miss Colvin has succeeded in assembling in this volume of 368 pages a most inclusive collection of nearly two thousand examples.

She states that it has not been her intention to collect exhaustive examples nor to illustrate every rule but has designed the *Sampler* to demonstrate the various records involved in the cataloging process. The compilation was begun primarily for use in the cataloging courses of the Simmons College Graduate Library School. Because of the Library of Congress cataloging's influence on American cataloging everywhere, the samples are predominantly LC printed cards. However, some Wilson printed cards and examples from some libraries, primarily from the Greater Boston area, have been included for comparative purposes.

The only written text is the Preface and Introduction; the bulk of the

work is the samples without interpretive comment. Miss Colvin states that an explanatory text has been omitted since it is part of the teaching function. There is a concise outline preceding the sample records in each section. (For some unknown reason the outlines for sections VIII-X are divided into two parts and separated, without any warning to this effect.) The samples have been numbered continuously within each section, and these numbers have been added to the outline. Thus the outline indexes the samples which follow. The function of the Introduction, which is arranged according to the sections of the outline, is to provide supplementary information which is not readily apparent.

There is an extensive alphabetic index also, so the user has two approaches to the examples in this guide. First, there is the classified or group approach to the material through the table of contents and the outlines; and secondly, the alphabetic approach to specific topics through the index. The index refers to the specific examples within the sections. It is difficult to understand some of the seemingly double entries in the index, however. There are quite a few cross references, such as, "Cross references" see "References," but besides the entry "References," there are also the entries "See" references and "See also" references. There are the entries "Corner marks" and "Filing titles." The samples referred to in these entries are partially the same and partially different, and they are not tied together with see also references which seem to be helpful.

The compiler expressed the hope in the Preface that other library schools besides her own would find *Cataloging Sampler* effective in teaching cataloging and that it would also prove valuable in cataloging departments. It is safe to say that this book *can* be an effective teaching aid to students and, because of its fine arrangement and extensiveness, to beginning catalogers also. One might even say that experienced catalogers would occasionally find the *Sampler* helpful in unusual circumstances, i.e., those occasions which arise so seldom that the cata-

loger tends to forget how they are handled. The usefulness to acquisitions people, those handling serials, and even the administrators who are interested in forms used by other libraries should not be overlooked. I think the biggest drawback to this book is the fact that the title does not adequately describe all the contents. It is true that by far the greatest emphasis is on cataloging examples, but most librarians in technical services should be acquainted with this helpful compilation.—*Kenneth W. Soderland, Assistant Director, University of Chicago Libraries*

Reference Works

HAYDN, J.

Dictionary of Dates and Universal Information relating to all Ages and Nations. 25th ed. New York 1911 (Reprint 1965) \$76.00

Winchell: V25. "A dictionary of history and general information alphabetically arranged, information under each heading given mainly in chronological lists. Convenient for the smaller facts of history and for lists, e.g., Lord mayor of London, famous fires, inundations, etc. Addenda list includes events to Oct. 1910."

LORENZ, O.

Deutschlands Geschichtsquellen im Mittelalter seit der Mittes des dreizehnten Jahrhunderts. 3. in Verbindung mit Arthur Goldmann umgearb. Aufl. 2 vols. Berlin 1886-97 (Reprint 1965) \$40.00

Winchell: V255. "This and Wattenbach furnish comprehensive and critical guides to the historiography of Medieval Germany."

PHILLIPS, L. B.

Dictionary of Biographical Reference containing over 100,000 Names; together with a classed index of the biographical literature of Europe and America. 3rd ed. with a supplement by F. Weitenkampf. Phila. 1889 (Reprint 1965) \$61.00

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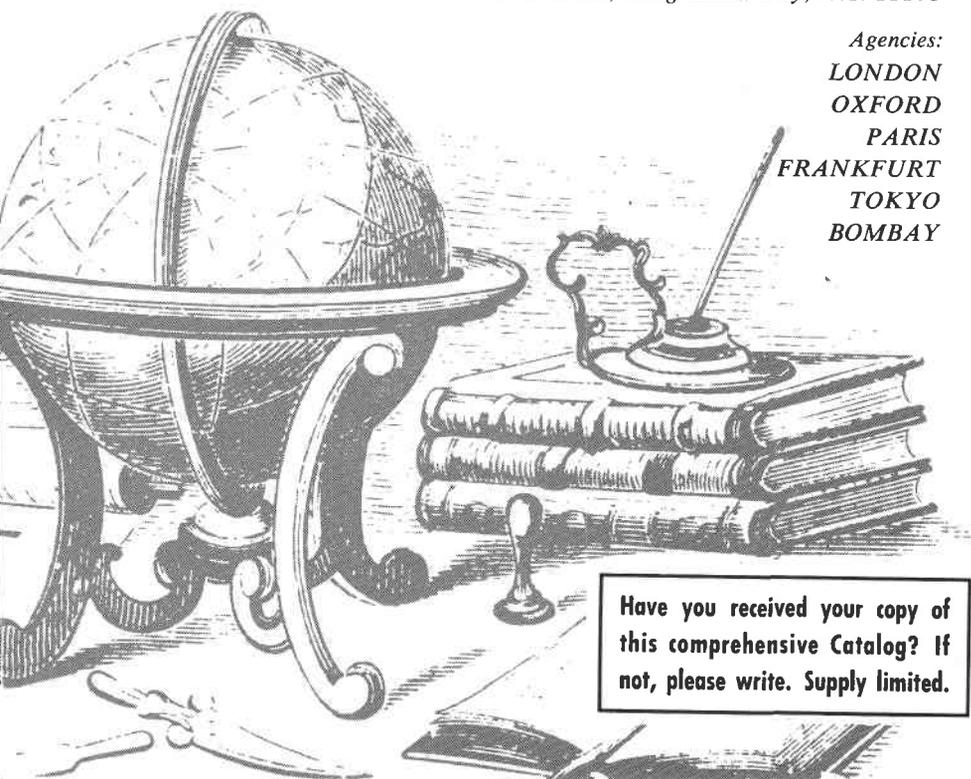
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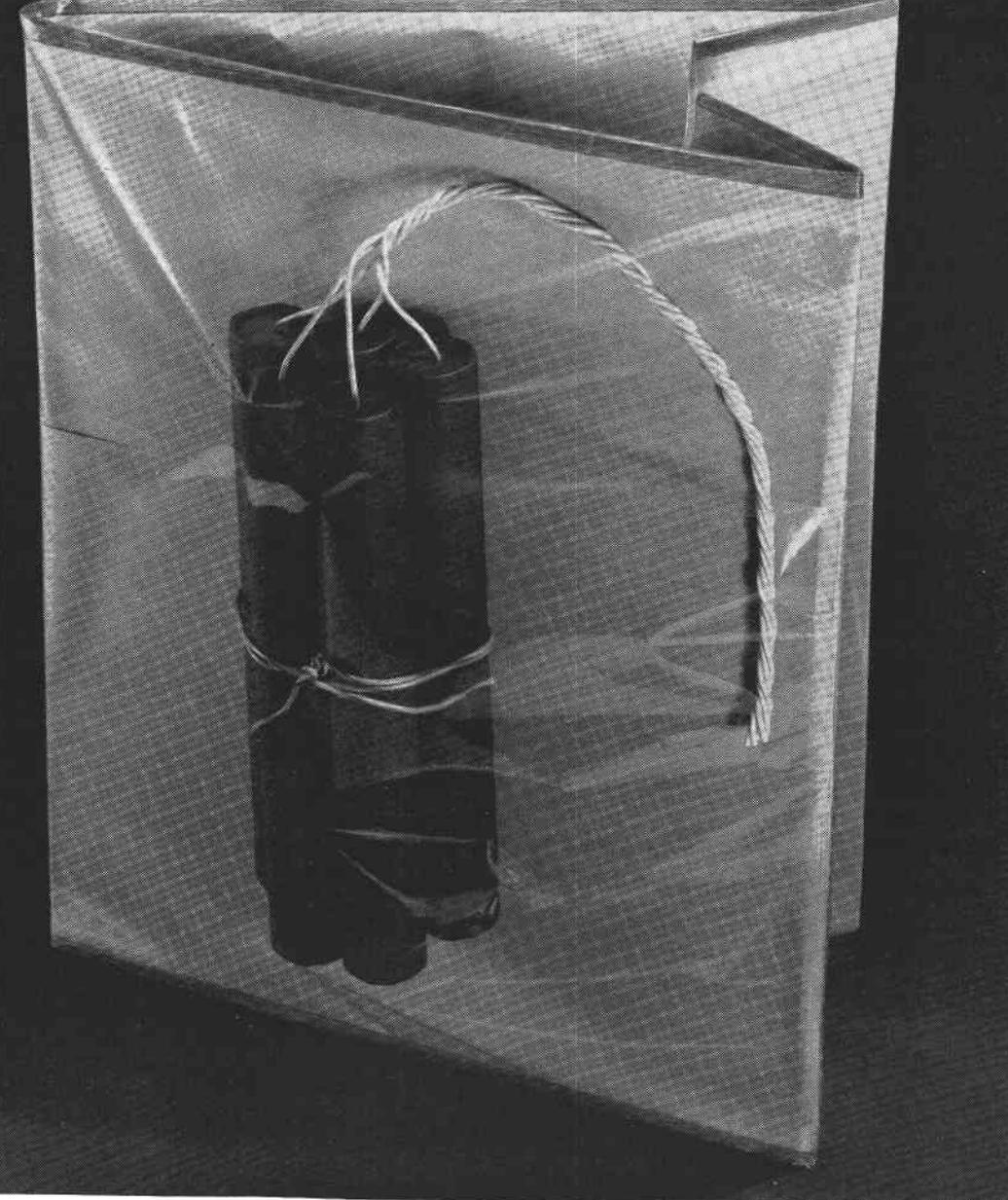
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