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Library Resources & Technical Services, the quarterly official publication of the Resources and Technical Services Division of the American Library Association, is published at 1201-05 Bluff St., Fulton, MO 65251. Editorial Office: American Library Association, 50 E. Huron St., Chicago, IL 60611. Advertising Traffic Coordinator: Leona Swiech, Advertising Office, ALA Headquarters, 50 E. Huron St., Chicago, IL 60611. Circulation and Business Office: Central Production Unit/Journals, ALA Headquarters, 50 E. Huron St., Chicago, IL 60611. Subscription Price: to members of the ALA Resources and Technical Services Division, $7.50 per year, included in the membership dues; to non-members, $15.00 per year; single copies $4.00.

Second-class postage paid at Chicago, Illinois, and at additional mailing offices.

LRTS is indexed in Library Literature, Library & Information Science Abstracts, Current Index to Journals in Education, and Science Citation Index. Its reviews are included in the Book Review Digest, Book Review Index, and Review of Reviews.

Contributors: Manuscripts of articles should be addressed to the Editor: Wesley Simonton, Library School, University of Minnesota, Minneapolis, MN 55455. Each manuscript should be in two copies, typed in double space, with illustrative matter in finished form for the printer. Preceding the article should be its title, the name and affiliation of the author, and a 75- to 100-word abstract. The article itself should be concise, simply written, and as free as possible of jargon. Citations should be brief, easy to understand, and consistent in form within the article. Copies of books for review should be addressed to: Central Production Unit, American Library Association, 50 E. Huron St., Chicago, IL 60611.

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Copyright

The agony may be over, but the ecstasy, for many at least, is yet to come. For it seems that though the Ninety-Fourth Congress passed and the president signed into law a new copyright revision bill, many of its provisions are so complex that the proverbial Philadelphia lawyer may be required to unravel them. The exegetes are already at it and others probably will follow as more time becomes available to study the law. American Libraries gives in full the guidelines developed by the National Commission on New Technological Uses of Copyrighted Works, the Ad-Hoc Committee of Educational Institutions and Organizations on Copyright Law Revision, the Authors' League of America, and the Association of American Publishers and includes a list of permissible and impermissible actions as presented by the Chronicle of Higher Education. Congress, in making the law effective 1 January 1978, wisely allowed sufficient time for all concerned to analyze the provisions in the law and then to establish the policies and procedures necessary to implement them.

Macrocopying (Full-Size)

Copyright, of course, touches many areas of library reprography, not the least of which is full-size photocopying. The limitations on such copying of copyrighted works in the new law are such that under certain conditions royalty fees will have to be paid to the copyright owners. Thus, libraries, schools, and others will have imposed on them bothersome and costly administrative burdens, such as record-keeping, correspondence, and the like, to meet the requirements. Very likely, photocopying may begin to decrease and thus affect adversely the market for such machines. Last year's review noted the rather gloomy outlook of that market, and this year one dealer in Washington, D.C., advertises the exhibition of twenty famous-name copiers in one showroom. Among those were the Toshiba BD 702, a plain paper copier using the toner and
selenium drum required by the Xerox process, which will copy on two
sides of the paper and on other materials at an equipment cost about
half that of a Xerox copier. GAF displayed its 800 model, an electro-
static copier that copies at the same rate as the Xerox 2400 at a machine
cost of about one-tenth the latter's cost.

Whether to buy or lease photocopying machines is sometimes a prob-
lem. Sawyer argues plausibly for leasing from a third party instead of
directly from the manufacturer and concludes that “third party leasing
remains a viable alternative for users who prefer not to commit thou-
sands of dollars to equipment purchase, who can see a continuing need
for copy duplication and who are satisfied with the capability of the
equipment to be leased. The substantial savings is still there.”

Many librarians, having seen the advertisements for color copying
machines, may be interested in learning that the Lawrence (Massachu-
setts) Public Library is trying out such a service, using in its fine arts de-
partment the Xerox 6500 color copying machine that can reproduce both
slides and posters.

Microform Materials and Micropublishing

As with last year’s review, this section must begin with a warning re-
minder about the growing use by micropublishers of nonsilver materials
for library micropublications that are intended to become part of per-
manent collections and the risks that are implied in such use. In the
latest of his series of editorial comments on the matter, Veener con-
tinues to call attention to this practice and to the sales sophistries of
those who seek to persuade librarians to purchase micropublications on
nonsilver materials for their permanent collections. After effectively re-
butting these arguments, he goes on to observe: “The fact remains that
there are as yet no national standards for testing the durability of non-
silver images or the efficacy of their processing. Therefore the burden
of proof for the durability of non-silver materials is upon the producer
and not on the library. Librarians may wish to consider the incorpora-
tion of a specification in their purchase orders and contracts requiring
the sole use of materials for which national standards have been pub-
lished.” Moreover, the RTSD Resources Section’s Micropublishing Com-
mittee and Reproduction of Library Materials Section’s Standards
Committee reaffirmed in July at the ALA Annual Conference their joint
recommendation made at the 1975 Annual Conference “that libraries buy
for their permanent collections only microforms (such as silver halide
film) for which standards have been established by recognized standards
organizations.”

(A momentary digression seems to be in order at this point. The in-
explicit wording of the last clause of the joint recommendation brings
to mind a matter that has become of considerable concern to this author.
There has been noted an unfortunate tendency on the part of many li-
brarians, when speaking or writing of microforms, to equate the terms
“silver halide film,” “silver film,” or “halide film” with “archival perma-
ence,” as though they were synonymous expressions. This usage is, of course, inexact, for in order for silver halide film to qualify as the archival permanent type, it must have been processed in accordance with the specifications laid down in such standards as ANSI (American National Standards Institute) Standard PH1.28-1973, Specifications for Photographic Film for Archival Records, Silver-Gelatin Type, on Cellulose Ester Base, or ANSI Standard PH1.41-1973, Specifications for Photographic Film for Archival Records, Silver-Gelatin Type, on Polyester Base. There are, therefore, two terms to the equation under consideration: the film type and the processing it receives. Veaner recognizes this latter when he refers to “the efficacy of their processing.” Thus, it may be clearer and less susceptible to misinterpretation, deliberate or otherwise, if we speak and write about “archivally processed silver halide film” when we are referring to film that has been produced in accordance with such standards. Consequently, it appears that the last clause in the ALA recommendation above should read something like “microforms (such as silver halide film) which have been processed in accordance with standards for archival permanence that have been established by recognized standards organizations.”

Returning to the subject, another view should be added to those given above. James B. Rhoads, archivist of the United States, in a letter responding to a request from Dr. Peter Z. Adelstein, chairman, ANSI PH1-3 Task Group on Vesicular and Diazo Film (which is trying to develop standards for such films), as to the exact meaning of the word “archival,” states that “essentially the term ‘archival’ is synonymous with ‘permanent’ and the two are frequently used interchangeably. To us they have the same meaning: that is, forever. . . . Permanent or archival record film can be defined as any film that is equal to or better than silver film, as specified in ANSI specifications PH1.28 and PH1.41.”6 It might be noted here that Dr. Adelstein has indicated (in January 1976) that his task group expects to complete its work in “about two years,” if the present pace of progress continues.7 However, there seems to be some question whether even then the diazo-type film will be able to satisfy the requirements for archival permanence. A British research team of the National Reprographic Centre for documentation (NRCd), investigating the effects of exposure to light on such film, concluded that “loss or degradation of information is possible when the film is exposed to any form of light for a sufficiently long period of time.” They observe further that “in any situation where longer term use is likely to be required and where the availability of replacement duplicates is likely to be either uncertain, costly or inconvenient the use of diazo becomes questionable. Undoubtedly the many commercial projects acquired by libraries for relatively long-term use are in the latter category. In all such situations consumers should be given the option of acquiring the information on silver halide film.” Their report concludes: “While alternative materials which are archival exist at economic prices it is questionable whether it is worth attempting to develop and specify an archi-
val documentation system using diazo materials."

So the choice, then, at the present time, for librarians wishing to add microfilm to their permanent collections is clear: restrict such acquisitions to those micropublications on archivally processed silver halide film.

Another NRCd discovery of interest to all users of diazo microfiche is that such fiche, when stored in the open-type envelopes sold for the purpose, developed in the areas on the fiche immediately adjacent to the gummed areas of the envelope a "blooming" effect, along with the loss of background density. They therefore concluded that "it would appear reasonable to assume that the glue was in some way responsible for the deterioration of the fiche." NRCd advised that some envelope manufacturers were aware of the possibility and are paying attention to it, but that others may not be so cognizant. Micrographics Newsletter, in reporting on the matter, naively cautions: "Before ordering your envelopes, check what tests have been made." One wonders: tests for what, by whom, and with what results? Perhaps there is a need here for some research and investigation looking toward the establishment of standards for microfiche storage envelopes.

From Europe, also, comes the announcement that equipment for the production of two new "jumbo" fiche is being manufactured. The German firm of Minox Gmbh offers a step-and-repeat camera, readers, and automatic frame-location units for 180-by-240mm microfiche to be done at reductions as high as 43:1 and with a maximum capacity of 1,326 frames per fiche. In the Netherlands, the firm Documento en Microfilm has produced a version of its Dagmar camera that will make 105-by-187mm fiche. (The U.S. standard size is 105-by-148mm.) Though designed primarily to serve nonlibrary uses, these "jumbo" fiche may prove attractive to the European micropublishing industry, so prospective purchasers of microfiche from that scene may wish to check to insure that their present equipment will accommodate the larger size both physically and optically. Moving to the other extreme, the U.S. firm Data Corporation (Portland, Oregon), which introduced 72× a few years ago, now offers its new 3-by-4-inch-size (74-by-105mm) COM fiche in 42, 48, or 72× reductions. It is wryly dubbed "Minno-fiche," perhaps in the hope that the public will take the bait.

On the matter of film base, Eastman Kodak (EK) points out that, although the dangerous cellulose nitrate film base was largely rendered obsolete in the U.S. by 1951 with the introduction of the safety-base acetate film, some of the older nitrate film may still be in film storage locations or film vaults. EK observes that the nitrate film gradually turns yellow and then brown, the emulsion becomes adhesive, a noxious odor is emitted, and the film becomes brittle, finally turning into powder. It is also subject to spontaneous combustion. To help in checking for such film, EK advises that no Kodak 16mm films ever were produced on the nitrate base and no 70mm or 35mm color-camera original films ever were produced on such a base, so only black-and-white films in the latter two
sizes need be considered. They also switched industrial X-ray films from nitrate to acetate in 1933, and other sheet films were switched in 1939. Wash off release and positive sheet films were similarly changed to acetate in 1950.12

(For those cases where uncertainty still exists, Veenan describes two simple tests for ascertaining the presence of the highly flammable nitrate-base film, one of which involves the use of trichlороethylene in a well ventilated area, preferably near an open window. But as the result of recent research, Veenan advises that trichlороethylene has been suspected of being carcinogenic and, therefore, he warns anyone using it for such film testing to be certain to follow the manufacturer's precautions in its use and especially to keep all containers tightly closed so that no vapors remain in an enclosed area.13)

Film manufacturers are always on the alert for new developments and on occasion come up with improvements on existing films and even completely new ones. Xidex Corporation (Sunnyvale, California), for example, has announced that it has produced a new vesicular film—its XR (Extended Range) Print Film—which overcomes a deficiency of conventional vesicular in that XR performs in the viewer just as well as silver film in reproducing continuous tones.14 The 3M Company, choosing a propitious time, when the National Micrographics Association and the Association of Reproduction Materials Manufacturers are looking horns with the U.S. Occupational Safety and Health Administration over details of a proposed standard for exposure to ammonia (which is used in diazo film development), introduced its new ammonia-free Dry Diazo Film that uses heat instead of ammonia for development.15 Many of those, the present writer included, who attended the 1972 National Microfilm Association Conference in New York, witnessed a demonstration of Ovonic Image Systems' new wet-process duplicating film that seemed to hold some promise if it could avoid two of silver halide's major shortcomings: its inability to produce archival permanent images without using copious quantities of an increasingly scarce commodity—fresh clean water—to wash off the excessive residue of the thiosulphate fixer chemical and the frequent testing required to insure that such washing removed the residue sufficiently to meet the specifications for archival permanence contained in ANSI Standards PH1.28-1973 and PH1.41-1973. The Ovonic film, however, disappeared from view for several years, only to surface in 1976, this time under the aegis of 3M, which announced its intention to distribute Ovonic film, papers, and systems.16

Of the nonfilm items coming under review, two seemed to be of interest. Partly overcoming one of the shortcomings of microfiche use for record-keeping—the lack of a means for updating them frequently or adding on new information—Microseal's (Zion, Illinois) Card Jacket™ for microfiche has been designed to accept 16 or 35mm film of 15–60 images and at the same time to provide space on the jacket to write or type in short updating information.17 Intresco, Inc. (Woburn, Massachusetts), has developed its Intresco Tab, a fastener with special ad-
hesive properties for use in fastening the ends of roll microfilm, which can be removed and reused as needed.¹⁸

During the year, the micropublishing industry was quite busy with mergers, name changes, and a prolific outpouring of new projects. Unfortunately, only a few of these activities can be noted here. Congressional Information Service, Inc. (Washington, D.C.), took over the Greenwood Press (Westport, Connecticut) in August, with the understanding that the latter would continue its program in microform, original book, and reprint publishing as a separate entity. Greenwood's microform collections, including its latest offering, the Series II of Periodicals on Women and Women's Rights (eleven titles, plus thirteen in Series I, for a total of twenty-four), are available from either publisher.¹⁹ Pergamon Press, Inc. (Elmsford, New York), announced its intention to reproduce on microfilm the annual reports of about 650 leading U.S. corporations in cooperation with the Harvard Graduate School of Business. Pergamon announced at the same time that it was publishing on microfilm the Spanish, Portuguese, and Japanese editions of Reader's Digest.²⁰ They also claim that they have been able to increase the sale of microforms by giving a trade-in discount for the paper editions that libraries are eager to dispose of for space-saving reasons.²¹ Environment Information Center, Inc. (New York), announced the publication of its "Environiche," a timely microfiche collection of environmental documents, and "Statefiche," a microfiche collection of all major U.S. state environmental laws and regulations. It seems rather ironic, though, that a micropublisher specializing in environmental subjects would choose diazo film, which employs in its development a chemical, ammonia, that has recently come under criticism as a potential air pollutant. Update Publications, Inc. (Los Angeles, California), likewise working on a timely topic, is publishing on microfiche a series of collections of U.S. government documents dealing with energy in all forms. To be updated annually, these collections are to include all previously published material, plus everything currently available from the U.S. National Technical Information Service (NTIS). Not to be outdone, University Microfilms International (Ann Arbor, Michigan) has indicated its intention to publish on paper an index to doctoral dissertations on energy research and development, which will list more than 25,000 citations to 6,000 titles covering the period from 1866 to 1975.²² The University of Chicago Press introduced its "Text/Fiche" publications that consist of printed text and picture captions of the illustrations, which are in color or black and white, on microfiche that accompany the work. More than twenty-seven titles of these heavily illustrated works have been produced to date. However, those to whom color stability is of importance may wish to consider the Press' "Important Notice on Color Fiche," which states that all film color dyes are subject to change over time and that such microfiche may not be returned for any change in color. The British firm Oxford Microform Publications, Ltd. (Oxford, England) seems to be pursuing a similar path in its Oxford Medieval Manuscripts in Micro-

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form, a series which consists of three elements for each title: the full
text and colored illuminations on color microfiche, black-and-white bib-
liographic microfiche, and an introduction and guide on paper bound in
hardcovers, along with the fiche envelopes. Oxford University’s Bodleian
Library is making the manuscripts available for photographing. Univer-
sity Microfilms (Ann Arbor, Michigan) has launched its new program
of research publishing called Monograph Publishing on Demand. This
involves the selective publication, usually by xerographic process, of
highly specialized works that are uneconomical to issue in conventional
form. Access is afforded through the firm’s Monographs Abstracts, a pub-
lication that calls attention to on-demand monographs issued under the
imprint or the sponsorship of scholarly presses, learned societies, univer-
sity departments, and other research organizations. In Englewood, Colo-
rado, Information Handling Services announced last spring a change in
name of its Microcard Editions to Library and Education Division, price
increases on full-size bound books and micropublications, and the adop-
tion of new policies regarding the ordering and return of their prod-
ucts. Some of the latter appear to be rather stringent, such as requiring
all institutions ordering less than $50 thereof to prepay their orders and
advising that larger orders will be billed ( invoiced) and shipped only if
the order is accompanied by or in the form of a numbered purchase or-
der, subject to the institution’s creditworthiness. How the “credit-
worthiness” will be determined and at whose cost is not mentioned in the
rather prolix letter “To Our Customers” in which these announcements
were made.

Last year’s review noted that the New England Board of Higher Edu-
cation signed a contract for the filming of agricultural documents held
in six public land-grant universities in the New England area. With the
support of the National Agricultural Library, the project now has been
completed, producing more than 350,000 pages on film. Copies of the
film will replace the paper copies at each institution, and the experience
gained during the project will be shared with other U.S. land-grant in-
sstitutions that are considering going to microfilm.23

The Educational Testing Service (Princeton, New Jersey) announced
publication of its new project—Tests in Microfiche—which contains re-
productions of 220 unpublished tests for educators, psychologists, and
others in college and university libraries. Annotated indexes accompany
each set.

From New Haven, Connecticut, comes the announcement that Re-
search Publications, Inc., has taken over the micropublishing and mar-
keting of the (London) Sunday Times, the Times Literary Supplement,
the Times Educational Supplement, and the Times Higher Educational
Supplement. RP is also to take over the (London) Times, after the
existing agreement with Microfilming Corporation of America expires,
and then will have the exclusive microfilm rights to those publications
in North America.24

The list of journals publishing in microfilm, simultaneous or other-

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Reaffirming its faith in the future of the micro-opaque format of which it is now the only U.S. producer, Readex Microprint Corporation (New York) not only announced several new projects in that form—the British House of Lords parliamentary debates from 1919 through 1971/72, its U.S. government publications (including the Depository, Non-Degository, and U.S. Serial Sets), and its United Nations documents and offical records—but also exhibited a prototype of its new Universal Micro-Viewer, which can be used to read two adjacent images of either micro-opaques or microfiche on a 15-by-12-inch screen at 18 or 24× magnification.

From the Library of Congress comes announcement of availability of two microform publications, *Library of Congress Subject Headings in Microform* and the *Register of Additional Locations*, both of which have been produced by computer output microfilm. The two micropublications are available in either microfiche (24×) or 16mm roll film (24×), and the *Register* may be produced in 48× reduction microfiche if sufficient interest is manifested. Libraries interested in the 16mm roll film should check their equipment to determine whether it has lenses of sufficient strength to enlarge the 24×-reduced images to readable size. (Many libraries have the Kodak/Recordak MPE readers that, although they will accommodate physically 16mm roll film, have only 19× magnification lens that may not yield a comfortably readable image from a 24×-reduced film.)

From time to time, unfortunately, problems develop in the area of micropublishing-customer relations to which attention must be called. In one recent instance, a warning, previously publicized, was reiterated by the RTSD Resources Section. This concerned attempts by some “unscrupulous dealers” to induce some libraries to exchange their bound serials for free copies of the film version to be made from them, but the serials and the dealer disappeared, with no film copies forthcoming. It was subsequently indicated that the alleged perpetrator had died and the hope was expressed that no one else would take up the racket. In another case, an ALA unit cautioned that one or more micropublishers may be making copies of existing microfilms and selling the copies at a higher price. These latter copies suffer a loss in quality as a result of the new generation produced in the copying process and thus the buyer is being asked to pay a higher price for an inferior product. Furthermore, the vendor in such instances is probably in no position to make good on any defects that may have been in the original existing film from which he made his copy. Libraries would be well advised to consult all available microform acquisition tools when considering purchases to insure that they do not fall prey to such objectionable practices. In still another instance, some publishers (hard copy) and micropublishers have
adopted a policy of either refusing to sell their products or offering to do so only at a higher price to libraries participating in networks, consortia, etc.\textsuperscript{30} One micropublisher, Unifo Publishers, Ltd. (Stony Brook, New York), in a public letter addressed to the Center for Research Libraries (Chicago, Illinois), dated 24 June 1975, informed the addressee institution that ". . . we must adjust prices for single set purchases by consortia, according to their membership. The Series [ordered by CRL] is available from stock at $1,500 for direct purchase by individual libraries. . . . Acquisition by CRL would carry a premium of $13,500, making a total purchase price of $15,000. Your order for the Series is returned herewith. . . ." The matter was further pursued at the ALA Midwinter Meeting (January 1976), where a paper presented by John Burn, president of Unifo, entitled "One Publisher’s View of Consortia Acquisition Practice," was presented for consideration. It is not clear at this time what, if any, action the affected libraries can take to counteract this budget-busting practice.

To end this section on a less somber note, we shall ask and answer the rhetorical question, "What do micropublishing and the Wild West have in common?" The obvious answer is that both owe a lot to film, but what about reward notices? It seems that Microfilming Corporation of America sent to some of its customers an "MCA Microgram," dated 29 October 1976, headed "Important—$50 Reward," in which it promised such reimbursement for the return of a master negative fiche that was inadvertently mailed in place of the intended positive copy to an unknown recipient. We fervently hope the fugitive fiche was found and the finder duly rewarded.

Micrographic Equipment and Processes

During 1976 micrographic equipment manufacturers and distributors exhibited their wares in profusion at the National Micrographics Association’s twenty-fifth Annual Conference held in Chicago in April, at the ALA Annual Conference also held there in July, at the Second Annual Library Microform Conference in Atlanta in October, and at lesser meetings elsewhere. As usual, some of the equipment displayed was old, some was new, and some represented modifications of older models. Among the latter it was noted: Dukane has added to its Explorer 14 roll film reader a motor drive that resembles the one used by Xerox/University Microfilms on their 1414 Roll Film Reader, now called the 350. XUM also renamed its 1212 portable film reader, which also was marketed without the roll film transport assembly as the XUM 2240 Microfiche Reader, the Elite, and raised the price. The old, federal government award-winning DASA PMR/50 portable fiche reader, which disappeared from the market several years ago, resurfaced recently as the MISI (Micro Information Systems, Inc.) Monitor, after undergoing some improvements in its screen resolution as a result of new lighting, new screen, and lenses. Realist brought out its Valiant COM fiche reader that bears some resemblance to Washington Scientific Industries (WSI)
Mini Cat, another federal government award-winner. Among the new items introduced were: Realist’s Viking portable fiche reader, a foldable device that has an upright screen in front and the projection apparatus and fiche carrier similarly upright at the rear, both on a common base but with no hood or cover over the entirety.

Perhaps of greater interest to libraries are the two new 16/35mm roll film readers designed especially for library use—Kodak’s Startech and Bell and Howell’s Microphoto 16.35. The Startech, looking somewhat like Kodak’s motorized MPG model, is, however, manually operated, has a triple lens turret head permitting quick change from one of the three lenses (14x, 19x, and 23x) that must be purchased separately, image rotation of 360 degrees, and a larger 143/4-by-161/2-inch upright screen. A printer unit is also available for coupling to the reader to provide paper copies, using a conventional electrostatic wet process. A diagram of the film threading pattern, which is the same as that used in the old Kodak/Recordak MPE model readers, is shown on the lamp housing cover at the front of the reader, conveniently located adjacent to the film transport assembly, and clear operating instructions are located at the front, next to the on-off switch. The Bell and Howell Microphoto 16.35 is, unlike the Startech, motorized. Its larger screen—eighteen-by-twenty-four-inches—obviously points to its intended use—reading microfilmed newspapers or other large-page documents, volumes, or the like. The Microphoto 16.35 looks somewhat like the old hooded MPE models, except that the complete front and about two-thirds of the two sides of the ambient-light shielding hood have been stripped off, leaving the back and the top to support the projection and film assembly, with a canted screen like the MPE at the bottom. The exposure of the screen to ambient light brought about by the partial hood removal may well introduce some problems in the image readability there. It is also noted that the insides of the two side panels are white plastic and therefore may reflect stray light from the projector, or from outside ambient light sources, or both, causing some distraction to the user. In the photograph accompanying the announcement, no film threading diagram is to be seen, despite the fact that the pattern followed—loading the supply reel on the left spindle and the take-up one on the right—is unconventional and confusing, to say the least, since most library readers, especially the widely used and well-known MPE, follow the opposite pattern. Thus, users accustomed to the latter are going to have to be instructed by library staff in the new Bell and Howell loading procedure. Self-service microform reading rooms or areas will have even greater problems with this lack of standardization in the film loading procedure, not to mention the variations in fiche loading as well.

Neither of these two “library” readers has what this writer considers a desirable feature—a pull-out shelf or draw leaf at the bottom of the reader suitable for note-taking purposes. (The new British Marshall Smith Library Desk Top Reader is equipped with such a shelf.)

Keyan Industries (Braintree, Massachusetts) introduced a piece of
library micrographic equipment: its Model 35 Book Cradle for filming from bound volumes. It has two independent, spring-mounted platforms that adjust automatically to the thickness of each side of the open bound volume as the pages are turned for photographing. The springs, pressing upward on the two platforms on which the book rests, keep the two open pages pushed tightly against the underside of a hinged glass plate so that they are in focus as they are filmed. At a price of $825, this relatively simple piece of equipment may be difficult to sell.\textsuperscript{31} Furthermore, this appears to be quite comparable to the device that was sold for $495 in 1974 by the Micobra Corporation (Hanover, Massachusetts) as its Book Cradle M25.\textsuperscript{32}

Some trends, begun the previous year, were noted in the fiche reading equipment displayed at the NMA Conference in the emphasis on greater versatility through the use of dual- and tri-lens mounts on the machines, along with dual fiche carriers, and also on portability.\textsuperscript{33} However, it hardly seems necessary to point out that, with very few exceptions, microform readers are usually designed to fill the needs of the larger market of banks, businesses, industries, etc., where quick look-ups serve the purpose. Libraries, on the other hand, must have equipment that is designed ergonomically for people engaged in extended reading, as well as for staff members who are called upon to demonstrate its use.

For those seeking current information about new micrographic equipment appearing on the market, one of the best sources is the National Micrographics Association's periodical \textit{Micrographics Today}, which in its "Product Review" section gives brief descriptions based on the promotional literature and often accompanies them with clear photographs, as well as furnishing complete addresses for further information. \textit{Micrographics Newsletter} does a similar job in its "Product Parade," but the descriptions have no photographs. Ballou's compilation of specifications of micrographics equipment—\textit{Guide to Micrographic Equipment} (Silver Spring, Md.: National Micrographics Association)—does a fine job, but because of its infrequency of publication—triennially (most recent 1975) with annual supplements—it has difficulty keeping up with the latest arrivals on the scene.

Since none of the above publications offers evaluations of the equipment described, however, those seeking such must turn elsewhere. \textit{Library Technology Reports (LTR)}, of course, provides excellent evaluations of micrographics equipment from time to time. The September issue, for instance, contains evaluative studies of the following microfiche readers: Canon 400, GAF 7800 DMR, Kodak Ektalite 220, Micro Design 920, Micro Design 950, Micro Design 4020, Realist Vantage COM II, Washington Scientific Industries' Mini Cat Mod II, and their Informant I.\textsuperscript{34} In the July issue, \textit{LTR} Research Assistant Judy Cohen discusses reader/printers generally and then appends a tabular listing of selected characteristics of some twenty-four such machines that also contains prices as well. Though nonevaluative, the listing affords the opportunity to make comparisons and signals those that previously have been
evaluated in LTR. In Great Britain, the National Reprographic Centre for documentation (NRCd) published individual full-length technical evaluation reports (TER's) on the Fuji RFP2 Portable Microfiche Reader, the Xerox 340 Microfiche Reader, the Kodak Fiche Reader 321, the Kodak Roll Film (16mm) Reader 322, and the (British) Marshall Smith Library Desk Top Reader (roll film). The Xerox 340 resembles the Washington Scientific Industries Mini Cat COM microfiche reader.

The two Kodak readers, part of a tripartite modular line that has a separate printing unit also, are manufactured by Alos, AG., of Zurich, Switzerland, a firm for which Kodak is the European marketing agent. The Marshall Smith is a British-made reader that features the pull-out shelf for note-taking mentioned above. Following its usual practice, NRCd’s Reprographic Quarterly published summarized evaluations based on the full-length technical evaluation reports. Covered during the year were: the MCL Minor Portable Microfilm Reader, the Bell and Howell Filemaster Camera, the Fuji RFP 2 Portable Microfiche Reader, the Xerox 340 Microfiche Reader, and the Kodak Fiche Reader 321.

In July was launched a newcomer to the equipment evaluation field, Microform Review’s latest addition to its list of publications for libraries. Edited by William R. Hawken, well-known consultant to Library Technology Reports, the new quarterly is entitled Micrographics Equipment Review. The first issue, appearing in July but retrodated to January, contained nine well-written evaluative reports that provide in nontechnical language the essential characteristics and features of the following microfiche readers: the Micro Design (now a division of Bell and Howell) Microfiche Readers, Models 910, 920, 930, and 950, the Library Microfilms and Materials (LMM) “Advantage” Microfiche Reader, the Bruning Model 95 Microfiche Retrieval Display Unit, and the Quantor Microfiche Readers (Display Units), Models 307, 308, and 310.

(Now that we have at least three different sources to consult when searching for evaluative commentary on micrographics equipment, what we seem to need is one consolidated index covering all three sources and any others as well. In view of its program of issuing new publications that tend to fill in the informational hiatuses in the library micrographics field, perhaps Microform Review may wish to undertake the venture.)

Several new processes came to light that seem to be worthy of noting here. One of these involves a new technique for producing low-cost color fiche capable of being read on existing readers. Developed by Radio Corporation of America’s Avionics and Special Programs group and called Zero-Order-Diffractorion (ZOD), the process is said to yield a high degree of resolution and color stability by the embossing of a surface relief pattern from a heated metal master onto a clear plastic base. The system is expected to be useful as a low-cost, high quality technique for micropublishing. (Should this prove to be so, libraries may stand to benefit from the color-stable, low-cost micropublications so produced.)

Another concerns the so-called “fly’s eye” reader system that received
some newspaper publicity recently. Offered by the IZON Corporation (Stamford, Connecticut), the IZON 200 Model reader weighs about three pounds and has dimensions of 2⅜-by-9⅛-by-12⅜ inches but is usable only with the specially prepared fiche (8-by-10 inches) that constitute an essential part of the total system. The reader makes use of a unique plastic plate containing 504 tiny lenses (the “fly’s eye”), each of which projects only a minute segment of the total image on the screen from the fiche. Each of the lenses is fed its own light from the single ten-watt bulb through its own fiber optic filament (fiber optics are threadlike fibers that will receive light at one end and transmit it to the other much as a wire conducts electricity) in such manner that all 504 overlapping segments comprising the total image are displayed simultaneously on the screen, producing there the complete picture. Through the use of a similar “fly’s eye” lens plate, the camera recording process captures simultaneously on an 8-by-10-inch film all 504 picture segments which later can be reconstituted on the reader screen. After a very small movement—.027 inch—the next page is similarly recorded and so on until 195 pages are on the film, when the film movement will have been only 0.4 inch. A similar, very precise displacement takes place in the reader as the user moves from one page to another.40 (Though very ingenious, this system will have virtually no application to library microform operations because of the necessity to rerecord all retrospective holdings to make them readable thereby.)

Holofile Industries, Ltd. (Woodland Hills, California), has announced a process that, using a holographic memory unit, will store up to 200 million bits of information on a 4-by-6-inch film. They claim that all the information in the Los Angeles or Manhattan telephone directory could be stored on such a film at a cost of ten or fifteen cents each, plus the one-time cost of a display terminal ($500). The catch, however, is that the machine for recording computer output or other information in holographic form costs “several hundred thousand dollars.”41 (Such a process, provided it can be made practical and economical, could conceivably have some application to storing the vast amounts of information in library card catalogs.)

So far as computer output microfilm processes go, the trend seems to be in the direction of higher reduction ratios. The federal government, apparently the victor in its battle with NMA and others, has adopted the 48× ratio over NMA’s 42×, and the U.S. Data Corporation (Portland, Oregon), which began using 72× several years ago, is generating 3.1 million such reduced frames per month at eight different locations. They assert that 25 percent of their 72× business represents transfers from 48× and the other 75 percent from customers first moving to COM on microfiche.42 (Special high magnification readers are required, of course, to read such high reduction fiche.)

Newspapers, too, are attempting to combat rising costs by squeezing more and more information onto a page of newsprint. The Washington Post, in a paper-saving move, switched from an eight-column page to six
wider news columns and nine narrower advertising columns and in
doing so expects to save annually more than $2.4 million and 8,000 tons
of price-escalating newsprint. The Chicago Tribune and the New York
Times, among others, made the same switch.43

The growing insistence of libraries that micropublications purchased
for their permanent collections be on archivally processed silver halide
film may be one of the factors spurring interest in laboratory testing of
processed film to determine if it will meet the ANSI specifications for
such permanent record film. MicroD Products (Corona, California) and
Eastman Kodak both have announced the availability of an annual test-
ing service, which provides for routine testing of processed film up to
fifty-two or fifty-four times per year, respectively, to measure the effec-
tiveness of the processing machines in removing the excessive residual
thiosulphates as called for in the specifications.44 Since such testing is the
key to establishing the validity of a processed film’s claim to archival
permanence and the buyer of such film is not likely as a general rule to
be in any position to perform the testing operation, it would appear to
be desirable for the purchaser to have some place to which he could turn
for help and advice in such situations. Hence, the need for the estab-
ishment of a national testing and certifying agency that has been
urged by experts in the library micrographics field.

Applications, Audiovision, Facsimile

So far as applications are concerned, the leader was the conversion
of library catalogs to computer output microfilm (COM). Among the
public libraries switching to COM catalogs are the Forsyth County Pub-
lic Library (Winston-Salem, North Carolina), the St. Louis (Missouri)
County Public Library, the Clark County Public Library (Las Vegas,
Nevada), and the Salt Lake County (Utah) Public Library. On the
higher education level, the University of Toronto initiated a similar
conversion that, it is claimed, will be “the world’s largest COM library
catalog,” since it is expected to contain nearly 4.3 million entries for the
library’s 1.25 million titles.45

Another university, Georgia Institute of Technology, which has been
using a COM microfiche catalog since 1971, explains the economics be-
hind these conversions. The institution’s library director, E. G. Roberts,
referred that the annual cost of updating the COM catalog is about $3,500
to $4,000, whereas the cost required by similar action on a card catalog
would amount to about $8,000, without taking into account the cost of
additional catalog card sets or the cost of the space to house them.46

The Library of Congress, too, is finding COM useful but not for
card catalog conversion. In announcing the publication mentioned
earlier of its Library of Congress Subject Headings in Microform and
its Register of Additional Locations, LC asserted that “COM has made
it possible for them to distribute these publications in a more timely
fashion as well as in a cumulation pattern heretofore impossible.”47

Efforts to explore the unrealized potential of the application of

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COM to library operations received some encouragement in January when such a study was initiated by the Council on Library Resources. A panel of micrographics and computer experts met to lay the groundwork for determining the degree to which present or impending COM hardware, software, and services can be applied effectively to library services and operations. Matters to be studied include the current and prospective cost ranges for generating COM output of bibliographic data, the availability of character fonts and formats, suitability of presently available readers and reader/printers, the limitations of COM formatting, user reactions, and the identification of existing bibliographic products that are good candidates for conversion to COM.

Some activity on the audiovision scene was noted. Early in the year Sony introduced its Betamax, a device for the home recording on video tape cassettes for later viewing of a program being telecast on one channel at the same time that another program is being viewed on a different channel. (Librarians and educators tempted to make use of the device may want to hesitate in view of the impending lawsuit against the Sony Corporation by Universal City Studios and Walt Disney Productions. These two producers allege that the Betamax "encourages and induces" copyright infringement and have asked the court to ban the manufacture, advertisement, and sale of the machines and to destroy some of the tapes already made. The motion picture industry estimates that it loses $100 million a year to those pirates who make and sell unauthorized copies of copyrighted films.) On the other hand, it was announced that the National Broadcasting System, along with the American Broadcasting System and the Columbia Broadcasting System, now permit off-the-air video taping of certain news programs by educational institutions, school systems, and other nonprofit organizations.

Experimentation on the use of video discs for the high-density storage of information continued unabated from the previous year. Digital Recording Corporation described its high density (300 million bits per square inch) video recording system that uses an optical recording technique to transfer digitized material in the form of microscopic dots and spaces to an inexpensive (twenty-five cents) fixed photosensitive disc, which can then be read later by a photodiode scanning head machine costing around $300 (in volume). The Japanese firm, Mansel Kogo, reporting on its contribution, indicates that it uses a helium-neon-laser pick-up, somewhat like the equipment manufactured in the Netherlands by Phillips and in the United States by Zenith, and that it expects to sell at a price—around $100—somewhat less than the Phillips and Zenith products. Another Japanese firm, Hitachi, has perfected a semiconductor laser pick-up for video discs that makes use of a smaller power supply, is claimed to be easier to adjust and maintain, and is to be about one-twentieth the size and volume of the conventional pick-ups. For recording, a laser beam is pin-pointed on a two-micron area on a Phillips-type video disc. (It is too early to tell what, if any, application these
high-density storage systems will have to micropublishing where multi-
editions are required.

In Japan, too, experiments were to begin in Tokyo on the installa-
tion of a CATV network that would use wider-band, lower-cost, highly
expandable fiber optics instead of the conventional coaxial cable. After
field trials with some 300 subscribers are completed by 1978, the system
is expected to be extended, using central and regional computer controls
that will enable subscribers to obtain many services via a keyboard.
Among these will be TV programs automatically transmitted on request;
still pictures on all types of specialized information including news; pa-
per copies of video information including a home newspaper; com-
puter-assisted instruction for children and adults on a number of sub-
jects; bills paid by use of keyboard; TV shopping involving selection,
purchase, and automatic payment; burglar and fire alarms to alert police
or fire stations; automatic reading of electric, gas, and water meters, with
charges paid as cashless transactions; and regular TV and FM reception
capabilities.65

The National Micrographics Association recently accepted the defi-
nition of micrographics as "that which has to do with the creation and use
of microimages,"64 but it is doubtful that a new miniature TV set, the
"Microvision," manufactured in Britain by Sinclair Radionics, Ltd.,
comes within the scope of the definition. It is of interest, however, be-
cause of its size—four inches wide, six inches long, one-and-a-half
inches high. It has a two-inch screen, weighs one-and-a-half pounds, and
is expected to sell for $300 each.65

Those whose hearing is too poor to permit them to listen to the audio
portion of TV programs are the focal point of a case reported by two
U.S. Senators, Patrick J. Leahy (Vermont) and Charles H. Percy (Illi-
nois). Pending before the Federal Communications Commission, the
case concerns the future of the use of Line 21, the first nonvisual line
above the TV picture on the screen, to transmit for the benefit of the deaf or those with impaired hearing captions of the audio part of TV
programs in such manner that they will be decodable with special equip-
ment. The three networks oppose the permanent assignment of Line 21
for that purpose, while the senators argue cogently and persuasively in
favor of affording the estimated 13.4 million persons so handicapped
the opportunity made possible by modern technology to "hear" as well
as see their favorite TV programs.66

On the facsimile front, activity largely centered around publications,
especially those of the state-of-the-art kind. The RTSD Reproduction
of Library Materials Section (RLMS) Telefacsimile Committee com-
pleted a survey of the use of telefacsimile in U.S. libraries and suggest-
ed publication of the results in the RLMS Microform Series that is
distributed by the Library of Congress Photoduplication Service.67 In
Britain, the second edition of Brown's Telephone Facsimile for Business
is reviewed by J. F. Aitken, who states, "It is highly recommended read-
ning for any potential user intending to move into this expanding

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Brown points out that "...great strides have been made in facsimile between 1973 and 1976" owing largely to a technique known as redundancy reduction, which enables the transmission of a standard A4 (8½-by-11¼-inch) document in less than one minute in contrast to the conventional time of six minutes. Libraries having older, slower facilities should find some food for thought in his comment that "reducing the time taken to transmit a document from six minutes to one minute reduces the telecommunications charges by a similar amount and completely alters the economics of using facsimile over long distances." Simpson's review of the book by Barrett and Farbrother entitled Fax: A Study of the Principles, Practice and Prospects for Facsimile Transmission in the U.K. asserts, "For those who must decide on the cost-effectiveness of a change to facsimile transmission this report will provide a most useful reference." Some progress was made on standards for microfacsimile by the joint National Micrographics Association-Electric Industry Association Microfacsimile Committee, which completed its study of the objects for testing various parameters of such systems and indicated its readiness to turn over the results to the parent organizations for consideration.

Publications, Research, and Professional Activities

During 1976 publications about micrographics, continuing the pattern noted the previous year, appeared in such abundance that only a few can be mentioned here. The National Micrographics Association (NMA) introduced at its annual conference in Chicago the new 1976 Supplement to its Guide to Micrographic Equipment and thereby added the descriptions of some fifty new products that appeared on the market through December 1975. Also debuting there was NMA's 1976 Supplement to its Micrographic Index that added 455 new entries to the original edition. Released during the year was NMA's revised Basic U.S. Government Micrographic Standards and Specifications; its Micrographic Time Capsules, giving guidelines for film materials to be included; its AV program Introduction to Micrographics in new Spanish and Portuguese versions; its COM and Its Applications, a compilation of thirty-two articles from the Journal of Micrographics over a three-year span; and its AV package, COM: Systems and Applications.

Except for a few items, NMA's Journal of Micrographics contained little during 1976 of general interest to libraries. Already mentioned is Adelstein's report on the progress of his task group's efforts to prepare specifications for standards for diazo and vesicular film, something he envisions as being completed in about two years (from January 1976), and his exchange of correspondence with James B. Rhoads, archivist of the U.S., on the meaning of the adjective "archival" when applied to microfilm. The May/June issue is chock-full of information about the history of NMA, including some of its major activities in standards work and in issuing publications. Tracing the history of the latter, Kiersky points out some things of which many librarians may be un-
aware—that ALA’s *Journal of Documentary Reproduction* (1988) was the predecessor of the subsequent NMA publication that culminated in the present *Journal of Micrographics* and that the Council on Library Resources funded the project that led to the publication in 1959 of the *Guide to Microreproduction* (later *Micrographic Equipment*) under the editorship of Hubbard W. Ballou.

Somewhat more oriented towards librarians' interests are the new publications appearing under the *Microform Review* imprint. Among them are *Micrographics Equipment Review*, a quarterly edited by William R. Hawken, that contains annually about twenty-four reviews written, thus far, in a pellucid style for nontechnical readers; the 1976–77 *Microform Market Place*, a comprehensive directory of every micropublisher in the U.S. and abroad; and Nitecki’s sixth edition of the *Directory of Library Reprographic Services*. In addition *MR* has taken over from the Library and Education Division (formerly Microcard Editions) of Information Handling Services the publication of the annual *Guide to Microforms in Print* and its companion, *Subject Guide to Microforms in Print*, and in doing so has expanded the scope of the new 1977 edition to cover titles micropublished abroad in addition to those in the U.S. that were covered before. Since these two latter publications are published annually, *MR* affords coverage in the intervening period in its *Microlist*, a periodical (ten times per year) that informs about new titles from micropublishers both in the U.S. and elsewhere. *MR* also has announced a list of forthcoming books scheduled for publication during 1977. The list includes *Studies in Micropublishing: A Reader*, edited by Allen B. Veaner; *Serials Management and Microforms: A Reader*, edited by Patricia Walsh; *Microforms Management in Special Libraries: A Reader*, edited by Judy H. Fair; *Government Documents Management and Microforms: A Reader*, edited by Robert Grey Cole; *Microforms and Library Catalogs: A Reader*, edited by Albert Diaz; and *Developing Microform Reading Facilities* by Francis Spreitzer.

The quarterly periodical itself, *Microform Review*, continues to be a gold mine of information about library microforms and microform sets. Darling's meaty and well-researched comments on the microform as a tool for preserving information usually recorded on paper and on the methods for storing and preserving microforms themselves are must reading for libraries generally. Reed analyzes the economics of replacing current paper periodicals with their micropublished counterparts. For those whose curiosity may have been aroused about the British research and testing agency, the National Reprographic Centre for documentation (NRCd), which has been mentioned passim in this review, its director, Bernard J. S. Williams, offers some enlightenment on its activities and history.

NRCd’s *Reprographic Quarterly*, in addition to carrying the summarized equipment evaluations mentioned earlier, has one or two articles per issue, along with a number of abstracts of international literature on micrographics and related matters. Already alluded to above was
Brown’s article “Business Facsimile,” and another of interest is Butcher’s “National Data on Microfiche: Bibliographic and MARC-based Use of COM.”

Among the monographs published by NRCd was a new work by Alan Horder, head of research there, on the COM implications of the choice of duplicating methods, with special reference to diazo and vesicular films and the associated choice of processing methods. Williams revised his *Thesaurus of Micrographic Terms* to produce the third edition, but, as with the preceding editions, definitions are not given as a rule.

In *Microfilm Techniques*, a controlled circulation periodical whose subtitle, *The Magazine for Operational Microfilm Personnel*, indicates its raison d’être, Dorfman highlights his column “Shop Talk” with a clear presentation of the various factors that must be considered to achieve archival permanence.

Elsewhere, Spreitzer, writing in ALA’s *Library Technology Reports (LTR)*, reports on four libraries selected from “several dozen” he visited while on a Council on Library Resources fellowship grant as exemplifying the best practice in microform operations. LTR also issued a new annual microfiche edition, called *The Sourcebook of Library Technology*, which contains in a loose-leaf binder a printed paper index and an edited cumulation of previous reports from 1965 through 1975 reproduced on thirty microfiche. In an ALA Library Technology Program publication, Sullivan and La Hood, both at the Library of Congress, discuss the organization and administration of reprographic services in libraries. ALA published its first yearbook, with a feature article by Allen Veaner on micrographics. ALA’s *American Libraries* initiated an irregular series of brief, nontechnical essays on microforms in the library situation for the continuing education of librarians, under the editorship of Carl M. Spaulding of the Council on Library Resources. He wrote the first article also—a primer on computer output microfilm. The second, by the present author, discussed film types and the choices and problems they engender.

Drexel University’s Graduate School of Library Science devoted one entire issue of the *Drexel Library Quarterly* to “Microimagery in the Library,” a collection of eight articles on various aspects of the past, present, and future of that subject. Spigai and Butler do a superb job of reviewing at some length from the information science and library standpoint the micrographics literature of the past several years. Gray discusses library microforms in an elementary fashion in the *IMC Journal*, the organ of the International Micrographics Congress. Dranov reports on the results of her survey of about 150 libraries with microform collections, apparently finding many well-known problems but few answers. Mann’s *Reducing Made Easy* is written in an informal, chatty, and anecdotal style that is ill-suited as an instructive medium on the subject of its subtitle—*The Elements of Microfilm*—for those in the library field. It is both undocumented and unindexed.

The University of California (UC) indicated the availability of its
Union List of Serials (UCULS) that contains on 48×-reduced microfiche approximately 244,000 titles held in the various UC libraries throughout the state; and the UC at Berkeley also is publishing, in the same format with monthly updating, a listing of the serials holdings of all forty-one libraries on the Berkeley campus. And finally, the Library of Congress announced its intent to publish a cumulated edition of the National Register of Microform Masters in one alphabetic sequence of five or six volumes covering the period from its beginning through 1975.

Much of the research during the year concerned the development of standards. The American National Standards Institute issued new standards on format and coding for computer output microfilm86 and on storage of processed safety photographic film. This latter standard, which should be of special interest to libraries with microform collections, covers all processed silver-gelatin (silver halide) photographic films that are considered archival record film, as well as color, diazo, and vesicular films. It also provides for short-term (up to ten years) as well as for archival storage.87 Other standards-related activity took place at the NMA twenty-fifth annual conference in Chicago where twelve of the eighteen standards committees met to present progress reports of their work to that date.88 Unfortunately, however, one of those not so reporting was the Uniform Products Disclosure Committee, which was established in 1975 for the purpose of developing a list of characteristics that should be disclosed by the seller when describing each piece of micrographic equipment, such as cameras, readers, reader/printers, and the like. On work on one standard, the British seem to have scooped NMA by issuing their new standard for microform readers89 at a time when NMA has just submitted its working draft on the same matter to its constituency for suggestions and voting. NMA also is engaged in two struggles on standards, one with the Occupational Safety and Health Administration over the terms of the latter’s proposed standards on worker exposure to ammonia (such as encountered in developing diazo film)90 and the other with the federal government over its efforts to impose 48× as a standard reduction for COM-produced microfiche in opposition to NMA’s 42× as a standard and 48× as a nonpreferred option. It appears that the federal government is winning this latter bout.91 It has also been reported that NMA has drafted some standards for color microforms but found that color dyes on film are not guaranteed by the manufacturer, so such film should not be considered for archival use at the present time.92

Standards, too, came in for some discussion at the joint meeting of the ALA Resources and Technical Services Division’s Resources Section’s Micropublishing Projects Committee and the Reproduction of Library Materials Section’s Standards Committee, which took place at ALA’s ninety-fifth Annual Conference in Chicago in July. The joint group reiterated at the meeting its stand taken last year that, because of the lack of standards for nonsilver films, libraries should buy for their permanent collections only nonsilvers on silver halide film.93
ever, as we indicated earlier, the likelihood that one nonsilver film—diazod—can be certified in any standards for archival use is slim, if the findings of NRC’s research team “that diazo images faded relatively slowly when exposed to actual or simulated ambient light and relatively quickly when exposed to light in reader systems” are valid and apply to all such films.

Already at least two equipment manufacturers indicate an awareness of this fading problem and even extend their concern to vesicular film as well. Quantor (Mountain View, California), in the instruction folders accompanying its Models 305, 308, and 310 microfiche readers, warns users to set the variable brightness condenser mechanism in the “forward” or low position when viewing vesicular or diazo film “to prevent fading.” A similar admonishment is included in the instructions for using the portable Japanese-made Fuji RFP2 microfiche reader which has only one level of brightness: “. . . caution is required when projecting diazo and vesicular type films because the image may fade if the same frame is projected for longer than ten minutes, although the time may differ somewhat depending on the brand used and processing conditions.”

Further, considering the fact that the NRC researchers tested twelve different diazo films in twenty-four different readers and found that fading occurred at varying rates in all twenty-four, it seems logical to assume that probably many other untested readers will yield similar results. Consequently, libraries having such fade-prone films in their collections are going to have some problems in controlling their use as demanded by the requirements. In addition, the problems are compounded by the fact that there is at present no sure way of distinguishing between fadeable diazo and fade-resistant silver halide (vesicular, having a characteristic milky-white appearance, is readily discernible from the other two). Perhaps research is needed at this point to establish some standard similar to the edge marking for safety base film that will enable the two look-alikes—diazo and silver—to be easily distinguished.

Taking no chances on such fading, the Internal Revenue Service is now requiring those who keep their general books of account solely on microfilm to make the master microfilm on permanent record film, as specified in ANSI standards for silver-gelatin film on cellulose ester or polyester base, and to establish a system of inspection and quality control to ensure that this and other requirements will be met.

At the same ALA joint committee meeting, other standards were discussed, among them the important ANSI Z39.26—1975, Standard for the Advertising of Micropublications. Last year we predicted that compliance with this new voluntary standard would be slow in coming. This has proved to be the case. According to a survey made by the group, of twenty-eight catalogs and flyers, only seven were found to be acceptable when measured against the standard. Perhaps some public commendation is in order for those micropublishers found to be in compliance to encourage them to continue and others to begin to follow suit.

One would think that above all others, libraries engaged in micro-
publishing would want to set the example and adhere very closely to the requirements of that standard. In one instance, however, that did not prove to be the case. The Micrographics Laboratory of the James A. Michener Library at the University of Northern Colorado in its publication Microforms Unlimited (v.1, no.7, p.1-2, July 1976) gives a two-page description of their offering of Topographic Maps: Geographic Series (Colorado) that tells nothing about the size of microfilm used, the range of reduction ratios used (although the only illustration shows \(21\times\)), the polarity, the film type, or the microform standards adhered to—all information deemed essential in the advertising standard to enable the prospective buyer to know what he or she is purchasing.  

Bibliographic headers for microfiche are also the object of efforts toward standardization being made by ANSI Committee Z39/SC/33, which is chaired by Joseph Howard of the Library of Congress.  

Libraries having photographic laboratories will be interested to know that the Federal Register of 14 July issued the Environmental Protection Agency's interim final rules on effluent guidelines and standards for the discharge of waste water from facilities that are designed to limit the amounts of silver and cyanide going into waste streams.  

In Britain, Herbert Spencer and Linda Reynolds report on their research which sought to "identify as many as possible of the factors affecting the acceptability of microforms as a reading medium and to assess their relative importance on the basis of a review of past research and experience." One reviewer of this laudable effort to bring together in one place information produced by their research expressed the hope that those in the micrographics industry might make use of the ideas presented there so that, "We might then be able to realize the complete potential of this medium which today is only a promise." Others, too, interested in combating the phenomenon known as "reader resistance" to microforms as a reading medium will want to give the report some serious study.  

In the United States, Lee and Buck, considering some of the factors, concluded that screen angle and luminance affected reading but that variations in ambient light did not.  

The U.S. Navy in October 1975 asked the micrographics equipment industry to develop a Personalized Portable Micromedia Display System (PPMDS) that would be suitable for use in both daylight and low-light areas in confined spaces of ships, aircraft, or a shore facility by technicians consulting manuals of technical data in locations now inaccessible to a viewer and in addition must be usable by "the student, in home study, on the bunk in the ship, or barracks of a shore facility." Because of the lengthy winnowing process required by the various field tests and evaluations that the proposed prototypes have to undergo, it is expected that two more years will be needed before a final choice is made. Obviously, any device meeting the specifications may be suitable for library applications in some cases, so the outcome of the tests will be of interest to such institutions.
The Educational Resources Information Center (ERIC) is having some problems with the vesicular fiche it has been using since 1974. A number of users of that service have experienced difficulties in obtaining satisfactory fiche-to-fiche duplication from ERIC's vesicular masters. ERIC offered suggestions on overcoming the problems and at the same time pointed out that ERIC fiche are available on silver film on special order at a cost about twice that of vesicular fiche.\textsuperscript{106}

Two developments in the area of bibliographic control of microforms must be mentioned. E. Dale Cluff, head of the Media Services Department of the Marriott Library at the University of Utah, is seeking reactions to his proposal to undertake a national cooperative effort to create bibliographic access to selected microforms collections,\textsuperscript{107} and the Microforms Cataloging Project at the General Library, University of California at Riverside, announced the availability of catalog cards covering four microform collections (11,514 titles) completed to date with four more in progress.\textsuperscript{108}

Some activities on the part of the National Micrographics Association (NMA) require mention here also. Its Long-Range Planning Task Force conducted a survey of both its professional and trade members to obtain their conceptions of the major issues affecting the micrographics industry in the next five years and found that the three highest are: improving the readability of microforms, getting greater recognition of the role of micrographics in the design of information systems, and gaining more widespread user acceptance at decision-making levels in government and business. Both groups, however, unfortunately placed concern for human factors in micrographics equipment design at the bottom of the list of questions asked.\textsuperscript{109} NMA also named Daniel M. Costigan to succeed the retiring Hubbard W. Ballou as editor of \textit{Guide to Micrographics Equipment}. Ballou had edited the \textit{Guide} since its beginning and elevated it to its present status of “Bible of the Micrographics Industry.”\textsuperscript{110} The organization also approved development of a pilot program and test for the national certification of microfilm technicians.\textsuperscript{111} It also announced plans to increase the frequency of publication of the present bimonthly \textit{Micrographics Today} to ten times per year and increased annual dues for association membership to $40.

Two library-oriented seminars of importance were conducted during the year. One was held under the sponsorship of ALA’s Micropublishing Projects Committee (RTSD) and \textit{Microform Review} in Chicago during the NMA twenty-fifth annual conference in late April, and the other met in Atlanta in late October. At the former, Francis Spreitzer of the University of Southern California, Carl Spaulding of the Council on Library Resources, and Allen Veaner of Stanford University discussed such topics as the care of microforms and microform collections, COM in the library, and the selection, maintenance, and use of equipment. At the latter, the same trio, along with Robert Sullivan and Charles LaHood of the Library of Congress, and others from both the academic and commercial worlds presented their views in the Second Annual Li-
Library Microform Conference, sponsored by two RTSD committees: the Micropublishing Projects Committee and the Bookdealer-Library Relations Committee, along with Microform Review.Covered there were such topics as ordering procedures and acquisition tools, selecting and evaluating micrographics equipment, reading facilities in libraries, micrographics standards and the library, choosing among silver, diazo, and vesicular film, COM and the card catalog, serials and the use of microforms, and library consortium buying vis-a-vis the micropublisher. More than 300 people attended the conference and some thirty-seven exhibitors displayed their wares—both publications and equipment.¹¹²

The National Endowment for the Humanities awarded a grant of $173,584 to the Organization of American Historians to fund a pilot project designed to control and preserve via microfilming the newspaper holdings of libraries and other institutions in a state. Iowa was chosen as the state in which the project would be conducted.¹¹³

Library microform holdings and usage continue to multiply and expand in their own inexorable way. One large university library, the University of Illinois at Urbana, reporting on its growth over the 15-year period 1961-76, listed such holdings at 34,949 in 1961-62 and at 1,323,640 in 1975-76 for an almost 40-fold increase of 1,288,691. At the same time, the number of its processed volumes and pamphlets rose from 3,272,412 to 5,368,666 for a total increase of 1 ¼ times, or 2,096,254.¹¹⁴ Elsewhere it was reported that the median collection of total microform units held by 82 university libraries rose from 290,944 to 733,755, or 2 ½ times, in the six-year period from 1967-68 to 1973-74.¹¹⁵ In a prognosis of the future, a survey of two-year colleges, made under a grant from Baker & Taylor Co., indicated that during the next few years such colleges are expected to increase their microform holdings but not spectacularly.¹¹⁶

And in response to increased usage, the Microform Reading Room of the Library of Congress increased its hours to cover seven days a week, thus putting it on the same schedule as the Main Reading Room.¹¹⁷

Finally, Princeton University Library, spurred on by space, budgetary, and security considerations, launched a laudable program to improve and upgrade its microform services. The division was moved from its dreary quarters in a subbasement to more commodious ones on the first floor near the main entrance, new equipment was purchased, a professional head was appointed, cataloging backlogs were reduced, and training programs and seminars were conducted to overcome resistance of the staff, students, and faculty to the implementation of a planned program of aggressive acquisition of microforms.¹¹⁸ Let us hope that others will see fit to release their "second class citizens" from their undeservedoubliettes and give them their rightful place in the sun. At any rate, as Hamlet soliloquizes: "Tis a consummation devoutly to be wished."

So much for 1976; for a peek at the future and its trends and desiderata, we turn to two well-known experts in the library micrographics fields, Carl Spaulding and Allen Veaner. The former, after de-
bunking some micromyths that were engendered by exaggerated claims made for ultrache collections and very-low-cost portable readers, asserts: "The most important force in the field of library microforms will be COM which will be used in more and more libraries of all types as a medium for catalogs and other bibliographic aids." The latter presents an agenda for the future: "The degree to which microforms will succeed in the academic community will be greatly influenced by the extent to which librarians commit themselves as professionals to learning the facts of micropublishing, selecting only high-quality products, banding together to promote quality projects, and supporting appropriate educational programs in the library schools."

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40. A New Micrographic Reader System with Superior Personal Use and Portability Characteristics (Stamford, Conn.: Izon Corp., n.d.).
93. Ibid.

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ANY REVIEW of serials for 1976 must, as in recent years, give major emphasis to the CONversion of SERials project (CONSER), catalog code revision, *ISBD*(S): International Standard Bibliographic Description for Serials, the National Serials Data Program (NSDP), and the development of standards and standards setting activities for serials management functions. However, inflation, recession, and the publication explosion have made 1976 a year for taking stock. The various national and international undertakings in improved serials control have reached the point where it is profitable to examine these developments with regard to their implications for the future. Economic pressures make it impossible for practitioners in the field to remain content with promising progress reports and optimistic predictions for the day when products of the new technology will make serials control as easy as the push of a button. The practicing serials librarian wants to know what the services of this project or the promulgation of that standard can do now to help one do a more efficient job for one’s own institution, be it large or small, academic or public. Nineteen seventy-six has been a year of increased interest in national developments at the grass-roots level, and this year the literature has reflected a more critical examination of projects and programs and the practical implications they hold for improved serials management at all levels.

*Economics and Acquisitions Trends*

For the past several years, the section of the serials review dealing with economics has consistently begun with the phrase “rapidly rising costs,” and 1976 is not the year to break that pattern. The annual *Library Journal* survey of periodical prices for 1976 shows the average cost of an American periodical up 12.9 percent over last year, raising the average subscription price to $22.52; while the average cost of an American serial service in 1976 rose 9.7 percent, bringing the average price for such services to $129.47. As in last year’s price study, both figures not only...
represent a marked increase in average cost but also reveal a continuing trend in growing rates of inflation for periodical subscription prices and serials service costs over the previous year. Clasquin's 1974-75 update for periodical prices corroborates this trend, indicating an increasing rate of inflation in most subject categories over the past three years. This useful comparative study of periodical prices appears to have become a regular feature of the October issue of Library Journal. This year the Philosophers Index has been added to Faxon's Subject Authority Index at the request of theological school libraries. In addition, the H. W. Wilson Company has increased the titles in the Business Periodicals Index by 45 percent, and this increase has resulted in a significant change in average prices in this category for all three years. Clasquin has added a new chart to the study that presents a price comparison between foreign and domestic journals, and, although the average price is substantially higher for foreign titles (since most foreign journals in Faxon's data base are scientific or technical), the rates of inflation are not dissimilar to those for American periodicals.

The inflationary trend has been with us for so long now that each July is expected to bring increased percentage points in the Library Journal survey along with the warmer weather and fireworks displays. Although we are all aware of the seriousness of the deteriorating economic climate, the periodical price indexes no longer have the sobering effect of a few years ago. A more enlightening exhibit is a comparison of the increase in the average price of U.S. periodicals between 1970 and 1975 with the increase in the U.S. Consumer Price Index for those years. The average cost of a periodical increased 92 percent from 1970 to 1975, while the Consumer Price Index rose 38.6 percent for the same period, and the total materials expenditure in seventy-nine academic library members of the Association of Research Libraries increased by only 36.5 percent. Put another way, in order for libraries to maintain their current subscriptions during the period 1969-1973, as well as absorb the estimated 2 percent net growth in scholarly and research journals published in the United States, an increase of 13.4 percent in the serials budget was required. When one compares this figure with an estimated annual 8 percent increase in the total budget of large academic libraries, it is not surprising that a significant transfer of funds from the book to the serials budget occurred during this period, resulting in a drastic reduction in the level of monographic purchasing. Taking into account the increased inflation rates presented in the price studies cited above, in order to maintain the status quo in serials collections by the late 1980s, libraries will have ceased purchasing monographs entirely. Small wonder librarians are looking for ways to fight back.

In light of such figures, it is not unreasonable to ask if publishers are not taking advantage of the economic climate to make excessive profits at the expense of libraries. A study of the economics of journal publishing as a viable medium to communicate scholarly and research information, conducted by Fry and White, indicates that this is not the case.
Specifically, the study points out that the need which publishers have to secure revenues from libraries is not matched by the libraries' ability to meet the needs from their own materials budgets. It follows, then, that if the closed economic system in which publishers and libraries operate were left unaltered, a certain amount of attrition in journal titles published would occur, the survival rate being based on the decisions of the marketplace. If this were allowed to happen, a probable imbalance in the environment would occur, severely damaging the not-for-profit sector of the publishing industry, which could result in the demise of scholarly publication in certain fields. In support of this thesis, Fry and White suggest that since libraries appear to review the entire serials collection in terms of subscription costs vs. available funds, there is a distinct possibility that price increases in some journals may lead indirectly to cancellation of other journals. Fry and White conclude from these findings that the economic environment requires funding from an outside source, probably from the federal government. This additional funding would come through subsidizing of the purchasing library, the publisher, or the author.

Despite all these gloomy reports, 1976 did manage to wind up the economic picture on a positive note. Faxon's figures through December 29 (reflecting approximately three-fourths of the agency's dollar volume business) indicate that the average prices established by publishers for the volume year beginning in January 1977 have decreased in the escalation rate. Average price increases appear to be about 7.5 percent, as compared to the 12.9 percent reported by Brown for 1976. This figure lends support to Dessauer's projection of library materials expenditures, which predicted a steady decline in the rate of inflation beginning in 1976.

As if the problems of increasing subscription costs and shrinking budgets were not enough for serials librarians to contend with, two other factors affecting the already overtaxed economic environment are trying the ingenuity of this hardy breed. These are rising personnel costs and what Bill Katz refers to as "periodical proliferation." No amount of alliteration can temper the fact that together these two factors pose serious problems for even that rare institution whose acquisitions budget has as yet been spared the axe. Michael Gabriel sums up the situation quite graphically:

The economics of serials acquisitions and maintenance is becoming for libraries what a perpetually growing proboscis was for Pinocchio; an unendurable, unsightly monstrosity which threatens to topple the body that supports it.

A direct result of these pressures is increased interest in selection techniques and bibliographic control, storage, and retrieval of serials materials. During 1976 a number of articles were published dealing with the problems of selection and weeding. Weeding is beginning to occupy a more important place in the hierarchy of library activities. Serials librarians are changing their attitudes about what constitutes an effec-
tive serials collection and are questioning such criteria as dollars expended and volumes added as major indicators of collection quality. Storage, binding, and collection maintenance costs are being given serious consideration in the development of serials collections, and one solution is a carefully planned program of deacquisitioning. The fact that “in the case of our 80,000 known scientific journals, half of the total reading will be done in only 283 of the journals,” causes one to question the money expended on the storage and maintenance of the other 79,000-plus titles. A number of libraries are, in fact, finding a partial answer in the reduction of subscriptions. Intelligent application of this approach implies the ability to review systematically various segments of the collection in terms of cost and effectiveness. Such considerations are having a significant effect on the development of serials record management and purchasing techniques. One result of the growing interest serials librarians are developing in budget management is an increased use of the periodical vendor; and, indeed, a number of institutions are consolidating their purchases with one dealer in order to take advantage of various control and management services available to the library when a significant portion of its collection is serviced through one source. These same pressures are effecting significant changes in the subscription agencies as well. One obvious trend is the move toward a few large agencies with many regional subsidiaries. Another is the use of computers to provide personalized services tailored to the needs of the institution. An article that every librarian concerned with serials acquisition should examine is Huff’s recent paper on serials subscription agents. This excellent paper presents a history of the development of agencies, discusses in some detail the factors affecting the agency/library relationship, and examines apparent trends and potential problems.

Of course deacquisitioning and nonselection do not provide the whole answer. While offering some relief to an overburdened materials budget, they raise another serious question. The library’s decision that a particular title does not rate high enough on the productivity/cost scale to warrant inclusion in its collection cannot be taken as an indication of lack of interest in the journal. How can a library insure user access to the journal? How can a library insure user access to materials it can no longer afford to acquire and maintain? Thus, another part of the solution is resource sharing in the form of regional and national storage centers, cooperative acquisitions, and other devices. More and more libraries are investigating membership in the Center for Research Libraries and finding the fee that provides them with hard copies or microfilm copies of materials they no longer need to purchase and maintain well worth it. The National Commission on Libraries and Information Science (NCLIS) has appointed a task force to plan a national periodicals system. The task force, which is made up of representatives from large research libraries, national libraries, and regional and state networks, will try to build on an earlier study conducted by the Association of Research Libraries. Under investigation

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are such alternatives as regional centers with strong resource library back-up or a center patterned after the British Lending Library. In addition, the task force has been charged with examining specification, organization, management, service obligations, and implementation strategy for the creation of such a system. Some of the problems to be faced include storage space, protocols, bibliographic control, and implications of the new Copyright Act on such an enterprise. On the international level, cooperation in resource sharing was the topic of a workshop on the improvement of information transfer organized by Unesco at Rabat, Morocco, 24–28 May 1976. Among other things, discussions centered on methods of cooperation available to regional information service networks for building, maintaining, and servicing shared resources.28

Yet another response to the economic situation receiving significant attention in 1976 is the effective use of microforms.24 The dollar savings in storage space and binding costs are immediately obvious. A recent study by Reed comparing costs of periodicals in hard copy and microform concludes that, although one must take into account increased acquisitions and equipment costs, substantial dollar savings can be achieved when current hard-copy periodicals are replaced with commercially available microforms.25 Longevity and, in certain cases, completeness of holdings are added attractions. Along with this solution comes a host of questions to be grappled with. One must determine which microforms to use, what materials to acquire or replace with microform, types of readers and reader/printers to be purchased, how to house and service the collection, and, perhaps most difficult of all, how to provide adequate bibliographic access after the first four questions have been answered.26 The urgency of the latter problem is underscored by the fact that we are rapidly reaching the point where the microform collection will contain more than a fourth of all recorded information in research libraries.27 In response to the need to establish adequate bibliographic control for these materials, the RTSD Resources Section Micropublishing Projects Committee’s Bibliographic Control Subcommittee entertained a proposal at the 1977 Midwinter Meeting in Washington for a program designed to develop a strategy for bringing microforms into the national bibliographic network.

Bibliographic Control

Revision of the cataloging rules for serials continued to occupy a major portion of the limelight throughout 1976. Although the time seemed long past when one could effect any substantive changes in the rules being written for the second edition of the Anglo-American Cataloging Rules (AACR2), any mention of entry of serials at a gathering of serials librarians was bound to draw a crowd—and the crowd was doing more than just listening. Neal Edgar, a member of the Catalog Code Revision Committee (CCRC) Team 2 (serials), has received six to eight inches of letters and supporting documents dealing directly with
AACR Rule 6 (entry of serials) alone. A distillation of this material identifies five options on Rule 6: (1) do not change the rule at all, (2) do not have a separate rule for serials, (3) enter all serials under author, generally corporate, (4) enter all serials under title, even if generic, and (5) enter serials with a distinctive title under title and all others under corporate body. After sorting out the arguments presented in the available literature and listening to serials catalogers debate the topic, it appears that the majority of librarians favor one of the latter three positions. The decision of the CCRC at the 1976 ALA Midwinter Meeting to endorse a limited concept of corporate authorship for all materials appears to support position (4), with the modification that certain limited classes of materials will be entered under corporate author. Subsequently, the Joint Steering Committee for the Revision of AACR (JSCAACR) tentatively agreed that the revised code will contain no special rule for serials, assuming that the restricted concept of corporate authorship endorsed by the CCRC is accepted and that a general rule for diffuse authorship is adequate. Specifically this means that serials entry will no longer be treated as an exception to one part of one rule. Instead, the general rule governing choice of entry will apply to all types of materials. It is expected that this rule (Rule 1) will specify the conditions for personal author entry, define those items which can emanate from a corporate body, and provide for title entry for all other items, thus eliminating many of the problems associated with choice of entry and heading that now exist. Since the title is the most stable bibliographic element, serial catalogers should all be happy with the result that under the new code most serials will be entered under title. As of the writing of this review, thirteen chapters of the new code have been written and have by now been sent to various library organizations for comment. AACR2 will probably be published sometime between July and December of 1977 and will be presented at the 1978 ALA Midwinter Meeting. However, the new code will not be implemented by the Library of Congress until 1980, at which time the library plans to close its catalog and abandon the practice of superimposition. Edgar has written two very informative papers for Title Varies concerning the debate surrounding serials entry and developments in catalog code revision. Mary Ellen Soper provides a discussion and history of cataloging rules pertaining to serials entry and their relationship to recent developments in bibliographic control of serials.

The RTSD Serials Section Ad Hoc AACR Revision Study Committee continues to provide a forum for the discussion of these and other developments concerning serials cataloging at both the Midwinter and Annual Conference meetings of ALA. At the summer meeting of the committee, strong opposition was expressed to the Canadian and European proposal that the use of the word “supersede” be abandoned in successive entry notes and replaced by “continues” in all cases regardless of changes in numbering. Related to this topic is the decision of the Library of Congress to use Key Title and International Standard Serial
ity of attempting to reconcile a standard for bibliographic description with conventional serials cataloging, all should be taking an active interest in the development of these standards. A review of the ISBD(S) standard was conducted at the 1976 Midwinter Meeting and a position paper was prepared by CCRC Team 2 (for serials) for John Byrum, CCRC chairman, to forward to the August meeting of the ISBD(S) Working Group. The North American position has been very successful up to this point, and Edgar considers the standard to contain very few major weaknesses as it now stands. Of major importance to the development of ISBD(S), as well as to other ISBDs, is the ISBD(G): International Standard Bibliographic Description (General). All ISBDs will conform to ISBD(G) regardless of type of material. ISBD(G) has been patterned after ISBD(M) but includes a new area, the Materials Specific Area, which will contain elements pertaining to a particular type of publication. For serial publications this area will contain volume and date designations.

The National Serials Data Program (NSDP) is forging ahead with the registration of serials as part of its contribution to the ISDS effort to create a computer network linking various national serials data bases. In cooperation with Cornell University, which has been recataloging government document serials, NSDP is assigning Key Titles and ISSNs to those serials, and the revised listing is scheduled for publication in the February 1977 issue of the Monthly Catalog.* Serials titles will be published as a supplement to the catalog. An ISSN and Key Title catalog is expected to be issued by NSDP by summer. Another step forward has been made in the effort to gain more widespread use of the ISSN. In the

* Ed. note. This compilation appeared as number 988 of the Monthly Catalog, following the April 1977 issue.
fall the Cataloging Division of the Copyright Office issued its first semi-
annual, computer-produced listing of periodicals covering titles newly
registered with the office from January through June 1976. In addition
to title, the list contains ISSN, when available, and the volume and issue
number in which it first appeared. This listing is a product of the Copy-
right Office Publication and Interactive Cataloging Systems (COPICS),
an on-line system developed for the Cataloging Division, which, since
February 1976, has been using the system to support its periodical ac-
cessioning activities. Beginning with the next six-month registration
period, COPICS will generate two print-outs for periodicals. One will
be a listing of all periodicals newly registered and the other a list of all
periodicals previously registered for which an ISSN has been obtained
from an issue registered during the period covered. In December the
Serial Record Division at the Library of Congress installed a computer
terminal for the purpose of accessing COPICS. The Serial Record
Division and the Copyright Cataloging Division are studying ways in
which the serials control activities in each division could be of use to the
other's operations. The application form for copyright of periodicals
now contains an area for the registration of ISSN, albeit optional at this
time. The possibility of having the registration of ISSN connected with
the payment of royalties is being investigated.

Automation

By now a household word for serialists, the CONSER data base has
continued to grow steadily throughout 1976, moving toward its objective
to cooperatively build a quality data base of some 200,000 to 300,000
records. The Library of Congress and the National Library of Canada
are serving as authentication centers for various bibliographic elements
within a record, as well as Key Title and ISSN assignments. Approx-
imately 40,000 records had been authenticated by the end of 1976, with
a goal of some 70,000 records by November 1977, when it is estimated
that the CONSER data base will contain approximately 175,000 records.
Presently there are some 140,000 records in the data base and partici-
pants are experiencing approximately a 50 percent hit rate. Two new
participants were added during 1976, namely, the Library of the Depart-
ment of the Interior and Harvard University Library. While the bene-
fit to the file-building process from these two institutions is obvious,
their acceptance at this stage of the project raises the questions of cri-
teria for participant selection and stages at which new participants may
be added. This file-building phase of CONSER, partially funded and
managed by the Council on Library Resources (CLR), is now referred
to as CONSER I. CONSER I will end in late 1977 at which time the
project will be transferred to the Library of Congress and CONSER I
will become CONSER II. Planning for this transfer is already under-
way, and the Library of Congress/Council on Library Resources
CONSER Continuation Team has prepared a report to aid in this plan-
ning. Briefly, CONSER will continue to be a cooperative project for

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building and maintaining an on-line data base of bibliographic records for serials. In addition, the possibility of allowing large academic libraries or regional union list offices to input and maintain holdings records is being investigated. In relation to this function, the American National Standards Institute (ANSI) Subcommittee Z39.40 has been developing a standard for summary holdings statements and intends to study the feasibility of standardizing the required data elements and notation format for more complex holdings statements. The Library of Congress plans to continue distribution of CONSER records through the MARC Serials tapes and printed cards, and, in addition, New Serials Titles (NST) will be expanded to provide a medium for the dissemination of CONSER data, including ISSN and Key Title, in a book-catalog format. More detailed information concerning the present status of CONSER I and plans for CONSER II may be found in a series of articles prepared for the January 1977 issue of American Libraries.38

In addition to its efforts in bibliographic control of serials through participation in the CONSER project, the Ohio College Library Center (OCLC) is forging ahead in other areas of serials record management. The check-in module of its Serials Control Subsystem is operational, and, as of 20 January 1977, 150 institutions had been authorized to use the system.40 Until sufficient utilization data has been accumulated to evaluate system performance, no new institutions will be added. Development of a new search key designed to improve response time for corporate author searches is being worked on. It is still unclear at what point the claiming and binding modules will be available, a definite drawback to the use of the check-in module. Catalog card production for serials has been rescheduled for implementation sometime this summer.

OCLC is not the only network promising us a better way to manage our serials records. The Washington Library Network (WLN) has as part of its overall plan a serials control module, which will include check-in and claiming functions, binding control, and management statistics. The serials control module will be operational sometime during 1977 and will be available for installation in other states, regions, large libraries, or groups of libraries.41

At yet another stage in the development of systems for automated serials control, the Stanford BALLOTS system (Bibliographic Automation of Large Library Operations Using a Time-Sharing System) supports the ordering, receipt, and check-in of first issue and cataloging for serials.

The increased interest that librarians are exhibiting in the various aspects of automated serials control has struck a responsive chord in several larger subscription agencies. In addition to a variety of on-line applications for control of customer accounts, which enable the vendor to offer more efficient service, subscription agencies are offering their clientele a number of options as by-products of these in-house applications. Everything from simple alphabetized lists of titles serviced to invoicing
on punch cards and magnetic tape is being offered by the larger firms. For example, the three-year price study done by Glasquin from Faxon's data base and appearing each October in Library Journal can be performed on an individual customer's account or specified portion of that account to aid the institution in analyzing its serials expenditures. As part of a paper prepared by the CONSER Continuation Team, the subscription agent was identified as a possible candidate for a special authentication center with authority over specific data elements in the CONSER records. Perhaps the day is not far off when larger libraries will be able to order and claim on-line to the agent, while at the same time creating the bibliographic and other records necessary for serials record control.

Serials Literature and Bibliographies

Several periodical publications devoted to topics of major interest to serials librarians were initiated during 1976. The long-awaited volume 1, number 1, of The Serials Librarian was issued in the fall. This quarterly publication covers major aspects of serials librarianship in academic, public, and special libraries through review papers and studies dealing with current developments in serials management and control as well as budget and collection development. To afford the reader an opportunity to keep abreast of the latest developments in the world of serials, the journal contains two regularly featured sections. "Serials News" is intended to provide the most up-to-date and comprehensive information available on current events in networks and consortia, library schools and continuing education, vendor/publisher services, and individual libraries. "Current Abstracts on Serials," divided into two parts covering library and information science and subject serials, provides an annotated bibliography of periodical literature of interest to serials librarians. A subject and author index to this section will be provided annually in the summer issue, and tear sheets or photocopies of most of the journal articles cited may be ordered from the Original Article Tear Sheet Service of the Institute for Scientific Information. If the first issue is any indication of the regular fare to be expected from this publication, it is one journal in the collection well worth its cost.

With the current economic climate making deselection a hot topic today, it must have required a certain amount of deliberation and courage to add still another journal to the list of titles to be acquired under the title: The De-acquisitions Librarian. This quarterly newsletter was intended to provide information to aid librarians in the development, management, and evaluation of an on-going weeding program, with discussion of problems related to all aspects of deselection and limited library, as well as resource sharing and improved collection development. Only two issues of the newsletter appeared, and announcement of title change to Collection Management was received early in 1977.

A third periodical of potential interest to serials librarians is Micro-publishing of Current Periodicals. This new newsletter is intended to

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keep publishers up to date on new trends in microform publishing of periodicals, as well as provide a guide for librarians to periodicals that become available in microform from all publishers. The newsletter will contain announcements on new ventures in both the simultaneous publication of titles in microfiche and hard copy and standing-order microfiche projects.

The growing interest in the automation of serials control functions over the past two decades has generated a significant number of articles dealing with all aspects of this topic. Pitkin's well-annotated bibliography provides access to information published on the automation of serials records in the United States. The work presents in chronological order annotations of all articles dealing with serials automation published between 1951 and 1974 and cited in Library Literature. Following each citation, the content of the article is highlighted by three descriptors identifying application, type of library, and institution. These are followed by rather comprehensive annotations relying heavily on quoted matter. One very attractive feature is an index by function, which allows the user to trace the history of a particular control function as a whole or the development of serials control functions in a particular institution. The absence of articles on bibliographic control is an unfortunate weakness in this otherwise fine work.

However, in the majority of libraries, serials management control is still largely a manual process. Even in those institutions fortunate enough to have on-going programs in serials automation, various aspects of serials control functions are performed manually. Thus, the report of the RTSD Serials Section Ad Hoc Committee to Study Manually Maintained Serials Records should be of interest to all librarians involved in serials record management. The report is the first part of a study begun in 1971. Tabulation of the responses of eighty-nine libraries in the United States and Canada to a questionnaire dealing with check-in, claiming, and receiving methods is presented along with sample forms and an appendix containing explanatory comments submitted by the participating institutions. The committee is now beginning the second phase of its study, which will include acquisitions, selection/deselection, cataloging, and binding. The committee's charge has been expanded to include all types of serials records in view of the growing number of systems employing some mix of manual and automated records.

Among the significant indexes and bibliographies published in 1976 is the second edition of Guide to Special Issues and Indexes of Periodicals, which provides information on 1,256 periodicals that contain special features or supplementary issues, editorial indexes, or indexes to advertisers. A new feature of the second edition is the "Classified List of Periodicals," which lists titles covered by broad subject categories. A more detailed index to the special or feature issues also is provided. The guide helps to fill the need for easy access to the rapidly growing body of specialized data contained in consumer trade and technical periodicals.
Another index helping to fill a long-felt need is the *French Periodical Index, 1973–1974*, which covers French periodicals of a general or popular nature, such as *Sondages* or *Realites*. Seven titles are included in this subject index, and three more will be added to the volume for 1975. The subject headings are divided into twenty-six fairly general categories arranged alphabetically, with articles under each heading arranged chronologically. The index will be most helpful in providing access to information difficult to locate through the standard periodical indexes. This tool represents a welcome addition to the reference collection of most academic libraries serving the liberal arts.

Kraus-Thomson has recently issued an index providing access to the contents of more than 100 English-language little magazines in a single alphabetical listing of contributors. Under each contributor, entries are separated into works by and works about that person. Bibliographic information for each entry includes an indication of form, such as poem, play, review, etc.

*Education for Serials Librarians*

It is indeed startling that with all the furor serials activities have been creating of late in the library world, students can still manage to leave library school without having acquired the basic skills required for work with serials; and it appears that there is still a long way to go before instruction in serials management becomes an integrated part of the preparation of new librarians. This fact was underscored by the results of a survey of library schools with ALA-accredited programs conducted by the RTSD Serials Section Ad Hoc Committee on Library School Education, which revealed that very little is being done at present to prepare students for a career in serials. The committee is working hard to make the library schools and the profession as a whole aware of the problem. Publicity is going out to the library press on this topic, and additional meetings are scheduled for the annual meeting in Detroit. In a parallel effort, the RTSD/LED Education for Resources and Technical Services Committee devoted its program meeting at the 1976 Annual Conference to the problem of education for serials librarians. The program featured four speakers discussing various aspects of the problem and its solution, including the pros and cons of adding serials courses to the library school curriculum and the need for some form of continuing education programs in serials management. At the 1977 Annual Conference in Detroit, the committee will sponsor a hearing on serials management and library education in an attempt to determine the educational requirements for librarians engaged in serials management. The starting point for the hearing will be a statement on the education of librarians for serials work resulting from the discussions that took place at the committee's program on education for serials librarians at Chicago.

The RTSD Serials Section Regional Serials Workshops Committee also is involved in education for serials librarians. In addition to en-
couraging and coordinating serials workshops at the regional level, the committee completed work on the final draft of a manual for organizing serials workshops. Intended as a working tool, the guide is based in large part on the experiences of librarians who have held such workshops. The manual is scheduled to be issued by RTSD sometime before the summer.

Copyright

On October 19 the president signed into law the first major revision of the copyright law since 1909. Of particular interest to serials librarians are the sections dealing with photocopying because of their potential effect on interlibrary loan and other cooperative ventures. These sections provide an exemption for libraries and archives and set forth the circumstances under which copies may be made for the purposes of research. At the request of the House subcommittee charged with marking up the Copyright Revision Bill as passed by the Senate (S.22), the National Commission on New Technological Uses of Copyrighted Works (CONTU) drafted guidelines relating to section 108 (g) of the bill, which prohibits systematic reproduction or distribution of single or multiple copies of copyrighted works. CONTU guidelines recommend that a library be allowed to request as many as five copies of a specific journal article or issue within a given year, without having its own subscription, and that there be no limitations if the library has the work in its own collection. The Association of American Publishers (AAP) agreed to the portion of the recommendation allowing a library to request up to five copies of an article or issue per year but took exception to limiting this regulation to only those periodicals published within the last five years of the request date and to the unlimited copying of materials in the library's own collections. Fortunately, representatives of the various library associations were able to convince members of the House subcommittee that section 108 (g) as in S.22 could be particularly damaging to interlibrary cooperation. The subcommittee amended the bill by providing that nothing in the prohibition against systematic reproduction should be interpreted as preventing libraries and archives from engaging in interlibrary activities as long as the library or archive receiving the copies did not do so in such aggregate quantities as to substitute for a subscription to the work. Specifically, section 108 of the new Copyright Act provides that under certain conditions it is not an infringement of copyright for a library or archive to make single copies of a work for distribution, provided that such reproduction is made without any purpose of commercial advantage, that the collections of the library are open to the public or available to researchers not connected with the library, and that the reproduction of the work includes a notice of copyright. Even as amended, the new law raises a number of questions. How will the law be enforced? On whom will the burden of proof lie—libraries or publishers? One thing seems certain: increased record keeping for libraries. However, it should not require another six-
ty-five years to accomplish some revision if section 108 proves unsatisfactory. A final subsection was added to 108 during mark-up, which provides for a review of the section every five years to determine if it has accomplished "the intended statutory balancing of the rights of creators and the needs of users." A rather detailed analysis of the revision of the copyright law is provided in a two-part symposium and Baynham and Gallagher have written a two-part paper containing a comprehensive description of copyright and a discussion of the various aspects of the controversy surrounding photocopying and interlibrary loan and its effect on the library and its users.

Publishers still blame cooperative sharing of resources and photocopy for a decrease in sales. Librarians on the other hand contend that tight budgets are restricting buying and that only low-use titles are getting trimmed. A study conducted by Line and Wood supports the position of librarians. The study finds no evidence that increased library cooperation and the economic difficulties experienced by journal publishers have any cause-and-effect relationship. The study goes on to suggest that both are due to the same cause—a tight market and increases in the cost and volume of production—and that the undue concern with photocopying on the part of the publishers might be more profitably directed toward seeking positive solutions to their problems.

Summary

Examination of developments in the various areas of serials activity in 1976 makes clear the interrelationships and interdependence of all facets of serials work. Projects in automation are affected by developments in bibliographic control and standards work. Serialists working with collection development are concerned with emerging cooperative programs and trends in microform publication. Subscription agencies are responsive to the changing methods of serials record management. Obviously, a decision in any one of these areas may have a significant effect on any of the others. As suggested in the introduction, serialists have justifiably begun exploring the practical implications of the major activities that have dominated the serials scene in recent years. It is equally important for us all to insist that these technical developments, which have such high potential for drastically changing policy, practice, and standards in serials work, be compatible with the ultimate purpose of all our labor, which is service to the library user.

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Analysis of the literature and events of 1976 in the field of library resources reveals a continuing and expanding trend toward the formation of networks supplemented (or abetted) by a growing litany of catchwords and clichés: revenue sharing, no-growth collections, steady-state libraries, cooperation, shared selection responsibility, and others. It is not that these concepts are not valid and useful, because in fact they are. But terminology pushed to the point of ritualistic Kyries can sometimes add to a problem by clouding the communication process. There is already considerable evidence, as this paper will demonstrate, that not everyone means the same thing with reference to such “obvious” concepts as “network” and “cooperation.”

Nevertheless, the trend toward network development, at least in the short term, is clearly inevitable if not entirely effortless. And most of the developments in 1976 suggest there is reason for cautious optimism. Networks are offering more sophisticated services, spirited debate is ranging over every important aspect of collection development, imaginative selection and acquisition procedures are being tried, the Library of Congress is continuing to move toward a national library role, and the profession is looking forward to the White House Conference on Library and Information Services tentatively scheduled for September 1978.

It is true that reductions in the size of book budgets for many libraries are still a problem. But in many cases, current appropriations give the appearance of inadequacy only because they may be compared unfavorably with the soaring sixties, a period which, in any case, probably constituted an anomaly in the history of library development in this country. Library literature regularly reports as many or more success stories as failures with regard to library appropriations in general and to book budgets in particular. And the stimulus given to network development by virtue of relatively reduced circumstances will probably turn out to have been a blessing in disguise. On balance, therefore, the
picture is not so bad as it was a few years ago, and there is no reason to suppose that recovery will not continue, albeit gradually and somewhat ponderously.

Resource Sharing and Library Networks

The situation with respect to networking and resource sharing is becoming so complex, and conditions are changing so rapidly, that there is danger of everyone going off in separate directions with increasing loss of communication. There does not even exist a set of generally agreed upon definitions. Networks, for example, have been defined as "consortiums of several institutions with mutual needs who have banded together to share resources." While this has the advantage of clarity and simplicity, one suspects that something has been left out. In the interests of filling in the picture a little, we may turn to the definition used in Washington State for network planning and development:

Network means a statewide system encompassing on a formal basis all types of information agencies meeting specified criteria, tied together with a communication system having bi-directional capacity, including a look-up system and providing switching capabilities for optimum routes. The network also provides the capability for communicating with information networks at the regional and national levels.

The disparity of these two examples is typical of conditions throughout this area of the profession. One may as well fall back on an Oxford English Dictionary definition of network as an "interconnected chain or system of intangible things." And it wouldn't hurt to keep in mind another aspect exemplified by Emerson's remark that "English law is a network of fictions."

One last example from the realm of information science will serve perhaps to prove the point. Goldstein defines a network as "any coalition formed by a group of similar or dissimilar libraries to share resources and centralized processing with one another." But this approach is rejected by Faibisoff on grounds that this definition "lends itself to systems, consortia, or cooperatives as well as to networks," all of which are presumed to be substantially different concepts and, in any case, are undoubtedly subject to the same conflicts and disagreements over meaning.

Confusion over definitions and terminology is often symptomatic of deeper issues and is to be expected in the early stages of grappling with large and complex problems. The real danger lies in the possibility that excessive disorder may spread to the substantive aspects of network development. The National Commission on Libraries and Information Science (NCLIS) has been sensitive to this issue, stressing the need for coordination and rational planning and warning against problems inherent in uncoordinated, sporadic system development. But there is growing evidence that "consortia and other cooperatives are springing up, expanding, and seemingly coming into direct competition with each other in just the way NCLIS warns against."

Another problem is the reconciliation of apparently conflicting aspects
of a complicated problem, such as the question of cooperation versus competition with reference to the identification of collection development policies. In their survey of the development of major American research collections, Edelman and Tatum point out that American librarians have traditionally favored broad gathering and retention policies in contrast to their European colleagues who emphasized the acquisition of "solid research materials," a concept much more restrictively defined there than in this country. They further point out that "at no time in American library history, including the 1960s, was it ever the case that the research libraries of the country could satisfy their appetite for books"; and while it is true that "from the turn of the century to date, the topic of cooperation between libraries in the development of their collections has been on the minds of university administrators and librarians," nevertheless, "faculty pressure to develop research resources locally prevailed; and, paradoxically, the real strength of most of the research libraries is based on the principle of competition."7

But most networks embody the concept of coordinated collection development and shared resources as one of the more important goals. The Washington state network, for example, lists the following among its objectives:

Provide a workable base for cooperative collection development. . . . Cooperative acquisitions have been discussed, tried, failed and tried over and over. A basic problem is how to keep one another informed without enmeshing everyone in time-consuming procedures. The question was posed, if all libraries had terminal access to review what other libraries were ordering or had already acquired, could not each institution make decisions which would enhance the coverage?8

The fact that most of the Washington network goals are framed in the form of questions is significant and suggestive. It symbolizes the fact that we are just beginning to come to practical grips with the problem, and no one at this time has very many answers. At this stage of the game, it is the questions that are primary. How is the requisite information on which to base selection decisions to be dispersed, and how are we to insure that appropriate decisions are in fact made? How can we continue to develop collections of real strength and distinction without abandoning the principle of distributed selection authority and responsibility? In short, how are we to reconcile the conflict implied by the concepts of cooperation and competition?

Perhaps there is no conflict at all if we are to believe Voigt, whose observations appeared along with those of several other librarians in a recent survey of attitudes and opinions on the subject of networks. It is his feeling that networks should be relied on for the provision of services, but that "networks as a substitute for resources is a badly oversold concept." While it is true, he argues, that "networks will help in making distant resources more available . . . [nevertheless] as a substitute for materials that must be available locally for research, networks can

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be of little more than marginal value, now, or in the foreseeable future."9

An even stronger denial of the widely held notion that networks constitute some sort of panacea was advanced by Eric Moon, president-elect of the American Library Association, who is reported to have argued that networks are “a means of solving research problems, but they have little or no relevance to the average person and maybe zero for the presently unserved: the elementary school student, the underprivileged undergraduate, the small public library user, the community college student, the rural user."10

Nevertheless, literature on library resources for 1976 shows the trend to networks is continuing for all types of libraries. In fact, the literature is so voluminous that there is space to cite only a few examples. With regard to academic and research libraries, the Research Library Group (RLG) announced plans to extend membership of the group,11 and the University of California at Berkeley and Stanford University stated their intention to establish a cooperative similar to the RLG.12 Public libraries were represented by a report on developments in the North Suburban Library System (Chicago),13 and special librarians focused on networking at their sixty-seventh annual meeting.14 School libraries in Wisconsin formed a cooperative network to share their strengths and develop mechanisms for the delivery of materials.15 statewide networks increased in number with the formation of the California Library Authority for Systems and Services (CLASS) and the Washington Library Network (WLN) among others.16 In connection with regional cooperation, Kaplan provided an extremely useful historical review of the Midwest Inter-Library Center, touching on its achievements and its handicaps.17 A new national library network has been started in Scotland, with the intention of developing such services as an acquisitions system. The network is also expected to have the capability of being integrated with any national network implemented by the British Library.18 On the international front, conditions which may inhibit the progressive growth of international science information networks were analyzed by Burchinal, an outline of principles which should guide U.S. cooperation in international information activities was offered by Werdel,19 and Voigt reported on the development of a European information network (EURONET).20

For a review of cooperative programs initiated by colleges and universities over the last century, Weber’s paper is indispensable. He concludes by pointing out that “on-line computer-based operational programs constitute a radical and permanent change in cooperative style...but that] the same type of problems as have been seen in cooperative examples” of the past will have to be faced.21 And Weber finds himself in agreement with Mayhew, who concluded that “the major problems to be overcome with respect to educational or research use of networks are not technical...The real problems are political, organizational and economic.”22

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An annotated bibliography on the subject of cooperation in academic libraries was prepared by Chang, who found that, although the literature on library cooperation had grown enormously since the 1960s, there was only a limited amount of material which was empirically based. This review of fifty-five items emphasizes the problems and prospects of actual programs reported since about 1970.

Reports on two recent conferences that dealt with resource sharing point up the ambiguities and uncertainties which hover around the subject. The meeting at the University of California, San Diego, emphasized the need for large collections near at hand as an indispensable aid to the scholar and the need to revamp collection development policies which still do not respond to the real needs of scholars. In contrast, participants at the 1976 Pittsburgh Conference on Resource Sharing in Libraries demonstrated widespread agreement with the idea that "the criterion of ownership is yielding to one of access" ... and that "the huge library organization might never have been a sound concept." John McDonald, University of Connecticut, was almost a voice crying in the wilderness when he said: "It is the nature of libraries to grow: resource sharing is not a solution to the problems of library growth or economics, but a means of improving service to library users."

Growth of Library Collections

A problem not unrelated to the foregoing discussion of resource sharing and networks is the growth of library collections and the controversy over the question of whether the concept of "limits to growth" has any practical validity. Growth rates of major American research collections were reevaluated by Leach who discredits the validity of Fremont Rider's hypothesis that academic library collections double in size every sixteen years. In addition, Leach tentatively identifies the collection-size level past which growth-rate deceleration begins.

But deceleration alone is not sufficient for Gore and others presenting papers delivered at the Conference on Space, Growth, and Performance Problems of Academic Libraries, held in Chicago in April 1975. Many of them are proponents of the "steady-state" theory of collection growth and their "solutions" range over the whole landscape: microforms, union catalogs, compact storage and storage libraries, interlibrary loan networks, and so forth. Never mind that these are old solutions to old problems and that the problems are still with us. At least this volume constitutes a useful summary of what the profession has tried up to this point, even if it hasn't managed to lead us out of the wilderness.

The problem of control of library collections through the acquisition and weeding processes is examined by Sinha and Clelland, who assume that publication date and collection size are the principal variables relevant to the problem. The authors note that this is the first time the effects of age and size have been studied jointly, and they derive a general model for relating a demand criterion to various important operating variables.
On the other hand, in the likely event that library collections continue to grow in spite of gainsaying by Gore and other revisionists, it is useful to refer to Drake's analysis of forecasting techniques applied to library growth and other factors. The idea is that slow-growth is not the same thing as no-growth, and, in point of fact, "the need for planning assumes a greater importance in times of decreasing resources and retrenchment."30

Federal Appropriations

Early indications were that funding for the Higher Education Act (HEA) and the Library Services and Construction Act (LSCA) would probably remain at the 1974 level. Legislation designed to renew HEA at present funding levels through 1982 included $70 million for books and other library materials and $9 million for the National Program for Acquisition and Cataloging (NPAC). With reference to LSCA, NCLIS reversed its previous position on federal funding and recommended that "the funding level for fiscal year 1977 for LSCA, Title I (services and programs), be at a level not less than the FY 1976 appropriation; Title II (construction) at a minimum level of $9 million; Title III (cooperation), including the Library Partnership Act, at a minimum level of $15 million; and Title IV, Older American Services, at a minimum level of $2 million."31 But prospects for improvement in this and other areas of federal funding were not good in view of the position taken by the administration.

President Ford's election-year education budget called for a $1 billion reduction in education expenditures below the level of appropriations approved by Congress for fiscal 1976. Moreover, the president's fiscal 1977 budget proposed a consolidation of twenty-seven (later reduced to twenty-four) federal aid programs in education into one block grant of $3.3 billion. Very little was earmarked for libraries, and, as it turned out, no funds at all were requested for HEA (college library resources) and LSCA (public library programs). The consolidation of programs into a block grant resembled in some respects the revenue-sharing provisions of the previous administration. In consequence, therefore, there was cause for additional pessimism since libraries have managed to attract barely 1 percent of all revenue-sharing funds. The only indication that things might turn out differently was offered by George Mahon (D-Tex.), chairman of the House Appropriations Committee, who said in his annual budget review that "it is safe to predict that Congress will undertake to provide sharp increases in spending in the fields of health and education over the levels proposed in the President's budget."32

This is in fact what happened. After a great deal of maneuvering for position, and perhaps with an eye on the voters, Congress recommended substantial increases in LSCA funding as well as an extension of the Higher Education Act. On 30 September 1976, Congress voted to override President Ford's veto of education and related appropriations, and on 12 October the president signed the provisions into law. The
most serious omission concerned future funding for LSCA, which continued to operate on a one-year extension due to expire 30 September 1977, but key congressional leaders promised action early in the next session.

The Congress also moved on another front with reference to the question of federal support for libraries. At mid-year the Senate adopted a bill (S. 3244) sponsored by J. Glenn Beall (R-Md.) that would amend the Higher Education Act so as to “authorize new direct aid to research libraries for book buying.” The act would authorize funding levels of $10 million for 1977, $15 million for 1978, and $20 million for each of the following three fiscal years.

Library Budgets

Despite continuing efforts by Congress to renew or maintain federal support for libraries and despite, or perhaps because of, various experimental programs, such as revenue sharing and other programmatic tinkering, library literature continued to report case after case of budgetary cutbacks and general austerity. On the other hand, in perhaps a hopeful sign, there was a large number of libraries that appeared to be experiencing a very high level of support. The explanation for this rather curious state of affairs is not at all clear, but there appears to have been a continuation of the same circumstances which characterized last year’s report on resources.

Once again, budget headlines revealed conflicting conditions. A fairly extensive examination of the literature indicated that published reports were almost evenly divided between Armageddon and Paradise. Typical of the latter were the following gems: “Sunshine in California . . . budget upped”; “Library $$$ gains reported by W. Va., Tulsa, & Texas”; “N.C., New Mexico & Minn. report successful referenda”; and “W. Va. state $$$ doubled.” But to prove that all was not well, we have only to witness these laments: “Payoff & service cuts hit Jersey & N.Y. libraries”; “Michigan systems lose out: $$$ cutbacks in Ohio”; and “Memphis-Shelby Co. faces drastic cuts.”

It is interesting, perhaps indicative, that the reports of budgetary increases were almost evenly divided between Sun Belt states and the rest of the country. But virtually all of the disaster headlines referred to areas outside the Sun Belt, primarily the Northeast and parts of the Midwest. Whether this observation is explanatory or merely accidental remains to be seen.

Since few would argue that good times constitute a problem, it may be useful to mention some of the ways libraries have sought to cope with drastic cutbacks. A survey of eighteen city and suburban library systems revealed that not all systems were in dire straits, but those that were at least did not have to lay off staff. By and large, cutbacks were achieved through normal attrition and hiring freezes. Many libraries, rather than cut staff, have reduced their book budgets alarmingly, while maintaining serials expenditures at the normal level. Holland reports the de-
Development of a formula "which allows for well-advised cuts in the serials budget without serious damage to service." A number of libraries have begun to develop a scale of priorities which would be invoked in case of disastrous setbacks. In these cases, highest priority is usually given to the continuation and maintenance of a good collection of books and materials. Another method of coping with adversity involves the increasing use of volunteer manpower to prevent the shutdown of financially pinched libraries. Volunteers in the Tulsa City-County Library system have totaled 20,168 hours of service since the program began nineteen months ago.

A completely different, and much more sweeping, idea was put forth at the first meeting of the newly formed Eastern New York Chapter of the Association of College and Research Libraries. Hugh Atkinson, now director of libraries at the University of Illinois, suggested "the possibility of a return to another kind of normalcy—the decentralization of great academic libraries and the reconstitution of departmental libraries dedicated to specific segments of the academic community and supported directly by whatever portion of a departmental budget its clients would allocate to it . . . made possible by the existence of the 'electronic protocols' that will standardize the channels of communication between librarians and facilitate complete access to information, even for a small library unit."

Postal Rates

The latest round of postal rate increases went into effect on 28 December 1975. The special fourth-class book rate is scheduled to be increased over a four-year period by 80 percent. And the fourth-class library rate, which covers interlibrary loan and exchanges, is slated for an increase of almost 350 percent over a period of twelve years.

Following intensive lobbying by the American Library Association and the Association of American Publishers, Congress finally passed major postal legislation (S.2844) providing, among other things, an across-the-board annual subsidy to the Postal Service of $1 billion for the next two years. This legislation was the product of a House-Senate conference which reconciled the Senate bill supported by Gale W. McGee (D-Wyo.) with a similar bill (H.R.8603) introduced by James M. Hanley (D-N.Y.), chairman of the House Post Office and Civil Service Committee. The intent of this legislation is to provide relief for mailers by requiring the Postal Commission to take account of the "educational, cultural, scientific and informational value of mail to recipients" and by permitting publishers to mail books to school and college libraries at the library rate. The bill also provides for the creation of a commission to examine postal problems and devise long-term solutions. In the meantime, further cutbacks in service or increases in postal rates will not be allowed until the completion of the commission's report which had a 15 March 1977 due date.

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Publishing Industry Activities and Statistics

Production of U.S. monographs declined in 1975 by almost 1,500 titles or 3.6 percent. But since the average price has continued to spiral upward, the dollar value of total book industry sales was expected to increase by approximately 8 percent, which would yield a 1975 volume in the neighborhood of $3.8 billion.\(^{41}\)

The average price for hardcover books rose 15 percent to $16.19 compared with $14.09 in 1974. Thus, the price has almost doubled since the base year period 1967–69 when the average was $8.77. Periodical price increases have been even worse, with the 1975 average topping out at $19.94 compared with $17.71 in 1974 and $8.66 in 1967–69. Serial service costs, as usual, rose less precipitously to an average of $118.03, which is in line with the 6–8 percent trend of recent years.\(^{42}\)

Recently, some controversy, or at least confusion, has arisen over Axford’s support of Fraze’s assertion that a more accurate guide to budgeting than the Bowker figures quoted above would be “the average price per copy paid by purchasers of various categories of books . . . taken as a whole.”\(^{43}\) The RTSD Resources Section Library Materials Price Index Committee sought to clarify the issue by arguing that it is not an either/or situation.\(^{44}\) The committee notes that, while there is no substitute for local figures in local budgetary situations, nevertheless the national indexes offer certain possibilities for which local indexes would be useless or irrelevant. Among these are the following: indication of overall price trends of library materials, development of price index standards, source of statistics for the development of national policies and programs, and comparison of local buying trends with national publishing patterns.

The publication industry continued to be analyzed and dissected by a growing number of qualified investigators in a variety of fields. As usual, John Dessauer led the way by directing an economic review of the entire book field.\(^{45}\) As a result of these studies, he found that three generalized comments could be made about the industry and the context in which it presently finds itself: (1) the industry is extraordinarily complex and so, of course, are its problems; (2) there is evidence to suggest contradictions between what many wish to believe about the industry and what is, in fact, the reality; and (3) this is an industry concerned with knowledge that really knows very little about itself. He concludes by saying that “this is only a beginning. . . . Vast, unexplored vistas lie all about us,” the net effect of which is to cause us to be relieved that a beginning has been made but uncertain as to the prognosis.

The Book Manufacturers’ Institute (BMI) at its 1976 convention focused on “the general operating environment for book manufacturing (and other elements of the book industry as well)” with emphasis on economic factors, government relations, labor, and book publishing.\(^{46}\) It was also announced that the Book Industry Study Group, an organization which grew out of the 1975 BMI annual meeting to perform research on book industry problems, is “now organizing a major project to
research the possibilities for a statistical program to link manufacturing-capacity measurements with measurements of work loads and flows from publishers."47

Underscoring the importance of library/trade relations, a number of publications appeared as by-products of the all-day program on book marketing and library selection that was held during the ALA San Francisco Conference under cosponsorship of the RTSD Resources Section and the division's Joint Committee with the Association of American Publishers. Geiser, Lane, and Jacobs reported on the substance of the meeting itself,48 which depended heavily on the results of a detailed questionnaire, selected portions of which have appeared in a variety of sources and the full text of which has now been made available as an ALA publication.49

Acquisition Procedures

The year 1976 was unusually productive in terms of reports on various acquisition procedures. These reports may be divided into two basic categories: technical acquisitions processing in general and various order procedures in particular.

With regard to the former, there were a number of papers which dealt with certain aspects and problems occasioned by exchanges. These included an analysis of national exchange centers, with special reference to the efficiency of international exchanges of publications;50 a survey of activities by the International Federation of Library Associations (IFLA) in the field of publication exchanges;51 and an outline of the problems associated with exchanges between African and other countries.52 Lupton analyzed problems created by duplicate periodical issues and suggested a solution designed to improve handling methods.53 Shaw reported on methods of acquisition in the field of art at the Library of Congress.54 Queueing theory was used by Rouse to develop a procedure for optimal allocation of resources among the many processes of a library system leading to a formula approach to budgeting.55 Regression techniques were explored by Raouf to predict output and manpower requirements for bibliographic searching of monographs.56 A number of important studies based on use and user patterns were published with particular reference to acquisitions procedures, those of DePew,57 Martin,58 and Montgomery, et al.,59 being the most important. We might also include the paper by New and Ott in this category, since interlibrary loans can be interpreted as a type of user pattern.60

With reference to order procedures, acquisitions librarians were interested to learn of Baker & Taylor's microfiche book ordering system for bookstores.61 Ingram Book Company has used such a system to service the library market since 1974, and many librarians expressed hope that Baker & Taylor would follow suit.

Experimental efforts under the leadership of the ISBN Data Transmission Study Group were directed towards the development of a computerized book-ordering system. This group has already developed a

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"common computer-compatible data format for the information normally contained on orders for books sent to publishers and/or wholesalers." The group is also working on the possible use of optical character recognition (OCR) devices and various methods of providing continuously updated information for ordering and bibliographic purposes. And in a related development, R. R. Bowker Company announced plans to introduce an ISBN magnetic tape service for book ordering.

The future of approval plans as an ordering device is uncertain at this time. Maddox warned that they may become a "thing of the past" unless a number of long-standing questions are answered soon. And the best intelligence emanating from the RTSD Resources Section Collection Development Committee suggests that "the trend seems to be toward cancelling most approval plans, especially English-language plans, and defining and monitoring those that remain much more carefully." Another type of acquisition "plan" was explored by Cushman, who described the use of book-lease plans in academic libraries and summarized their advantages and disadvantages.

Darling and Fayollat reported the latest developments in the technical processing system at the UCLA Biomedical Library, including an account of the completed feasibility study for addition of a subsystem for acquisitions.

Copyright

After more than twenty years of legislative effort and political maneuvering, Congress approved a comprehensive copyright revision bill (S.22) on 30 September 1976. This legislation provides the first complete revision of the federal copyright law since it was enacted in 1909 as Title 17 of the U.S. Code. The long-awaited bill (P.L.94-553) was signed by President Ford on 20 October and was scheduled to become law on 1 January 1978. The extended lead time was intended to allow the Copyright Office to revise regulations, forms, and publications and to permit the president to appoint the Copyright Royalty Commission as required by the law.

Sections 107 and 108 of the new act will be of particular interest to librarians with responsibilities in the area of resources. Section 107 specifically recognizes the principle of "fair use," which places a limitation on the rights provided by copyright, and describes the factors which determine the circumstances under which the use made is a "fair" use. In an effort to describe the minimum standards of educational fair use under section 107, the House Judiciary Committee prepared a set of guidelines for copying in educational institutions. These guidelines, however, have not met with universal support in the educational community, which considers them too restrictive for some purposes.

Section 108 provides for distribution of single copies of publications by libraries under certain circumstances. At the same time, this section clearly limits such privilege so that multiple reproduction or distribution which can be considered "systematic" is prohibited. This provision of
section 108 is clarified by a set of guidelines arising out of an agreement between librarians and publishers with the National Commission on New Technological Uses of Copyrighted Works (CONTU). A useful review of the new copyright bill and the problem of photocopying from the viewpoint of authors and publishers appeared in Publishers Weekly. It is clear that differences still exist among the principal parties involved in this controversy, and it is therefore fortunate that section 108 also directs the Register of Copyrights to report to Congress at five-year intervals regarding the extent to which this section has achieved the intended statutory balancing of the rights of creators and the needs of users and to prepare appropriate legislative or other recommendations. Perhaps this will be the means by which, in the words of William Nasri, whose review of copyright is the latest and best available, we will establish “a new basis for copyright that takes greater account of the public’s right to know and the author’s desire that his work be disseminated.”

But CONTU also has a great deal of work left to do, particularly with reference to the question of a clearinghouse mechanism that will process payments for photocopying of copyrighted material. At the January 1977 meeting of CONTU, the National Technical Information Service (NTIS) presented a plan which provides for NTIS to act as an experimental copyright clearinghouse service. This plan met with immediate opposition from representatives of the Association of American Publishers (AAP) and the Information Industry Association (IIA). Paul Zurkowski, president of IIA, stated that: “The private sector is diligently pursuing the establishment of the necessary clearinghouse capability . . . [and] the information industry strenuously objects to the so-called ‘reprint’ service proposed by NTIS.”

Other topics of interest to resources librarians relating to the problem of copyright include a survey of photocopying among a large number of special libraries, a report by the Register of Copyrights to the effect that the Copyright Office will have to completely revamp its procedures because of the new law, an analysis of the growth of photocopying in the British Library Lending Division (Boston Spa), a thought-provoking lecture on problems associated with manuscript collections, and an update on the controversy between the Columbia Broadcasting System and Vanderbilt University with reference to the servicing of network news tapes.

Government Documents

The controversy over the level and quality of performance of the Government Printing Office (GPO) continued relentlessly throughout last year. Deputy Assistant Public Printer William J. Barrett argued that service to depository libraries had improved and that “there is a light at the end of the tunnel.” Some of the improvements he cited included reorganization of paperwork, centralization of mail operations, reorganization of personnel, and faster subscription fulfillment. He also
defended price rises by claiming increases in paper prices of 98 percent, postal rates of 400 percent, and labor costs of 64 percent. At the same time, Barrett noted that GPO had centralized warehousing operations in a large new facility, the backlog of unfilled orders had been reduced, and a pilot project had been undertaken with the Ohio College Library Center (OCLC) to provide cataloging data and catalog cards.

But the associate commissioner at the Bureau of Labor Statistics' Office of Publications, Henry Lowenstern, issued a report which was highly critical of the GPO and repeated the familiar litany of complaint: inferior printing, unmet deadlines, and excessive pricing. In fact, Lowenstern stated that the GPO was charging “more than three times the actual cost of printing, postage, and distribution.”

The GPO, in the person of David Brown, chief of media relations, countered by citing once again the increasing cost of paper, postage, and labor and by announcing a study designed to evaluate pricing and distribution procedures. The GPO also announced the establishment of an Advisory Council on Printing and Publications Service, composed of GPO customers with a mandate to “focus on major problem areas and recommend changes . . . even changes to existing law.” The Public Printer had already ordered a study of the entire documents operation, and the GPO authorized another conclave, called the Documents Distribution and Pricing Study Group, and charged it to come up with recommendations that will balance the interests of GPO with Congress, the federal agencies, and the public.

The long-term effects of these studies cannot be predicted at this time. Yet it is hard to see how prices will go anywhere but up, although services, one can hope, eventually may be stabilized and improved.

Microforms

Fundamental considerations which govern the choice of publication medium were examined by Otten. Emphasis was given to circumstances in which microform is the preferred method of information distribution, and some attention is given to the expansion and future of micro-publishing.

Micrographics management by agencies of the federal government was reviewed by Beim, who found that there are few policies which must be followed in producing or distributing microforms. He also reported that the Archivist of the United States has approved formation of a Federal Government Micrographics Council to foster better management of micrographics.

Recent major publications by Diaz include a monographic compilation of forty-one studies covering all aspects of micropublishing as it applies to libraries and an important journal article which describes information sources for publications available in microform.

The American Library Association has issued a warning with regard to the questionable business practices of some micropublishers. This should be of particular interest to acquisitions librarians since “it has
become apparent that one or more micropublishers may be securing copies of materials already in microform, reproducing them, and selling the resultant microform at costs substantially higher than charged by the originating agency.” In one case, an inferior second generation copy was offered at $2,200 as compared with the original publication which sold for $1,260. A number of authoritative sources were listed which librarians should consult before making a decision to purchase. The specific ALA agency to which problems and questions should be referred is the RTSD Resources Section Bookdealer-Library Relations Committee, c/o Harriet K. Rebuldelo, Chairperson, University of Colorado Libraries, Boulder, CO 80302.

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26. Ibid., p.2337.
39. "Staff & Service Cuts Foreseen by Academic Librarians," Library Journal 101:299 (15 Jan. 1976). The reader should also keep in mind the opposite point of view, most recently expressed by Edelman and Tatum, who argue that "it is almost unanimously agreed that administrative and later physical consolidation of library resources and services has increased efficiency in the expenditure of book funds and in processing costs and has greatly improved the utility of the university library as a research instrument." Edelman and Tatum, "The Development of Collections," p.227.
47. Ibid., p. 50.
49. See for example: “How Libraries Buy Books,” Information News and Sources 7:272–73 (Nov. 1975). The complete survey is entitled Book Marketing and Selection and is available for $1.00 from the Resources and Technical Services Division, American Library Association, 50 E. Huron St., Chicago, IL 60611.

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The developments in the fields of cataloging, classification, and the technology associated with communication and manipulation of records are so interrelated that it is difficult to isolate them and discuss them as discrete entities.

Bibliographic Records

Eirolf asks, “Is the card catalogue’s unquestioned sway in North America ending?” Cramer asserts that computerization of the catalog holds promise of better access to the library’s collection through additional search sequences and by providing the possibility of having more copies of the catalog available at strategic points. He concludes that the computer-output-microform catalog (COM) will, in time, replace the card catalog and affect the roles of the library staff and management. Martin holds there is reason to believe the pace of change in practices of bibliographic description will continue. The second edition of the Anglo-American Cataloging Rules (AACR2) and the announcement of the Library of Congress (LC) anticipating the closing of manual files to rely on machine-readable records will provide the focus for develop-
ment of bibliographic tools. Each institution will respond to that development in relation to economics, staff, and politics. Typically book or COM catalogs will replace the card catalog. It is likely there will be a mixture of on-line, book, and COM catalogs.

The Map Division of the New York Public Library (NYPL) has converted to an automated cataloging system with final accepted cataloging copy printed in the NYPL automated book catalog. The Council of Research and Academic Libraries (CORAL) has produced a union catalog of more than 600,000 monographic titles on microfiche.

The University of Toronto has closed its card catalogs as of June 1976 and is now depending on a COM catalog with monthly supplements, available in microfilm and fiche format. The catalog contains more than a million records and consists of a main section with full bibliographic records, supplemented by author, subject, and title indexes. Other libraries announcing a change to COM catalogs include Forsyth County Library (North Carolina), St. Louis County Public Library (Missouri), Clark County Public Library (Nevada), and Palm Beach County Public Library (Florida). The Public Library of Harford County (Maryland) claims to be the first to go directly from a card catalog to a microfilm catalog.

More than one billion catalog cards have been sold by the Library of Congress in the last twenty years. In fiscal year 1976, more than 82 million cards were distributed. Distribution of cataloging information, however, extends beyond catalog cards to the sale of book and microform catalogs and MARC tapes. The Card Division is now known as the Cataloging Distribution Service.

The growing number and kinds of bibliographic products distributed by LC result from the development and applications of the Multiple Use MARC system (MUMS). MUMS is a generalized on-line system that will eventually link the components of the “core bibliographic system.” During 1976 the MARC on-line input system was implemented for the MARC Editorial Division. The MARC search service continues to grow and in July was handling about 2,700 searches per day. All MARC records are available through the on-line file.

In July the first preliminary cataloging record was input on-line to the Automated Process Information File (APIF) data base. This data base will provide in-process control of the cataloging of approximately 235,000 titles a year. The first phase of this operation includes the input of English-language books with preassigned card numbers, the on-line printing of cataloging forms and preliminary cards, and the update of the APIF record at subsequent points during the processing cycle. APIF records will be made available as part of a separate MARC distribution service. A communications format, In-Process Records: A MARC Format, has been published.

MARC coverage continues to expand. It is expected that during 1977, MARC will cover all current cataloging in roman-alphabet languages. Input of sound recordings and music scores, planned for fiscal
The communication and display of bibliographic data are being affected by new technologies, and the traditional card catalog is being challenged effectively. Christophers reports on the machine-readable catalogs in the British Library Reference Division. Hiscock describes an automated catalog department in reference to the Birmingham Libraries Cooperative Mechanization Project (BLCMP); Dunn describes the National Library of Canada's (NLC) Canadiana/Cataloguing system; Bierman reports the results of his survey concerning automated alternatives to card catalogs for large libraries; and Freedman discusses the products and services of automated catalogs. Scott and Markuson provide overviews of the evolution of bibliographic systems in the United States that speak of where we have been and where we appear to be heading in terms of bibliographic record management.

While current literature tends to stress new technologies in bibliographic display, Kemp and Grady discuss the traditional card-format catalog in terms of the divided catalog. Kemp describes the division of a 2.8 million card dictionary catalog at the University of Oregon and the implementation of improved card production and maintenance procedures. Grady discusses different kinds of catalog division and the effect of division on catalog departments in terms of cost and physical expansion of the catalog.

Cooperative Bibliographic Record Exchange

Cooperative efforts concerning bibliographic interchange extend from Universal Bibliographic Control (UBC) at an international level through national and regional cooperation. In June 1975, at an Institute on International Standards as Related to Universal Bibliographic Control held in San Francisco, Tate traced the American cataloger’s codes from 1900 to date and argued that the first stepping-stone to UBC is maximum standardization of form and content of bibliographic description and that evolutionary progression from cataloging as an art to that of a science must be accelerated.

The International Standards Organization ISO/TC46 Working Group 6 ‘Bibliographic References’ Outline ISBD(M) was circulated to ISO member bodies for voting in February 1976. That draft was accepted by thirteen countries with two disapproving for technical reasons. Sweden preferred the full text of ISBD(M) to be accepted as an ISO standard, and the United States disapproved because the 1974 text of ISBD(M) did not conform in every respect to the ISBD(G) International Standard Bibliographic Description (General). The present draft of
the Outline ISBD(M) has been revised to take into account the various editorial points made, and it is anticipated that it will be published in early 1977. With the publication of ISBD(M) and its incorporation in Chapter 6 of the revised AACR, one aspect of UBC became a reality to those committed to the use of AACR. The ISBD(M), however, has not been readily accepted by all members of the library profession, with some librarians feeling they had not participated in the deliberations and others expressing concern that the user would be adversely affected.

Consideration of the ISBDs and UBC has caused the American Library Association to increase its international consciousness. The announcement of the new ISBD(G) at the 1977 ALA Midwinter Meeting caused concern regarding the role of the American library community in the promulgation of international standards. The Resources and Technical Services Division (RTSD) Board of Directors responded by appointing an International Cataloging Consultation Special Committee to "study issues involved in the development of international cataloging policies by international organizations and to propose methods to insure adequate consultation with the appropriate library organizations and individuals in the United States." They also requested ALA to investigate the possibilities of acting as the publication distribution center.26

In November 1975, the Joint Steering Committee for Revision of the Anglo-American Cataloging Rules (JSCAACR) confirmed that AACR2 will use ISBD(G) as the basis for the rules of description. Agreement had been reached at a joint meeting of the JSCAACR, the IFLA Committee on Cataloguing, and the chairman of the IFLA Specialized ISBD Working Groups. Initiatives for the formation of ISBD(G) were taken by JSCAACR.27 The standard resulted from concern that ISBD(M) and ISBD(S): International Standard Bibliographic Description for Serials had presented problems of compatibility and uniformity. ISBD(G) provides a single framework for describing all types of publications and avoiding future structural conflicts.28

At the IFLA meeting in Lausanne, Switzerland, August 1976, the UBC program accomplishments and plans were reviewed and the Medium-Term Programme of the Committee on Cataloguing was reported.29 That program anticipates the final text of ISBD(G), of ISBD(NBM) for nonbook material, of ISBD(CM) for cartographic materials, and of ISBD(S) during 1977. ISBD(Music) and ISBD(Rare Books) are expected to be completed during 1977-78. It is also expected that ISBD(M) will be revised in 1979-80 in light of ISBD(G).

Other projects in the Medium-Term Programme include a Joint Working Group of the Committee on Cataloguing and of Official Publications on Corporate Headings with the responsibility of elaborating a statement of principles governing presentation of names of corporate bodies in headings (1976-77) and the elaboration of a statement of principles governing the use of corporate headings in library catalogs and bibliographies (1978-79).30 There is also a program concerned with script conversion in libraries in cooperation with ISO/TC46. The Committee
on Cataloguing, in cooperation with the Committee on Mechanization, will be working on problems concerned with the form and reproduction of library catalogs. A final element of the Medium-Term Programme is cooperation, as necessary, with the IFLA sections on various problems concerning cataloging (1976-80).

Four meetings of the Committee on Cataloguing were held at the Lausanne conference. A joint session of the Committee on Cataloguing and the subsection of Geography and Map Libraries discussed the draft ISBD (CM). There was discussion of the terms used for “General and Specific Material Designators” with concern expressed that terms used in ISBD (CM) were very specific. It was noted that ISBD (NBM) had this same problem. Questions were raised about provision for International Standard Serial Numbers (ISSN). There was a session of the committee to discuss ISBD (G). Concern was expressed that ISBD (G) might not always be appropriate to the future, and it was recognized that change would be inevitable.

At the ISBD (NBM) session it was proposed that the ISBD chairmen coordinate their terms for general and specific materials designators. It was pointed out that it would be possible to use several ISBDs for one description. The chairman, Chris Ravilious, made an extensive survey of existing systems and proposals for cataloging and description of non-book materials in preparation for drafting the ISBD (NBM). The ISBD(S) discussion was a part of a meeting of the IFLA Committee on Serial Publications. A presentation was made of the revised text of ISBD(S). Revision was necessary to insure conformity with ISBD (G) and, in particular, the adoption of the concept of “proper title” in place of “distinctive title.” The newly established working group in corporate headings met for the first time in Lausanne. Eva Verona’s study, Corporate Headings: Their Use in the Library Catalogs and National Bibliographies, will be the basis for the work of the group.

At the annual conference of the International Association of Music Librarians (IAML) and the International Association of Sound Archives (IASA) held in Bergen, Norway, August 1976, two meetings of the joint IFLA/IAML Working Group on ISBD (Music) were held and drafts of ISBD (Music) were discussed. It is expected that by April 1977 an agreement can be reached on a final draft, which will then be circulated to interested organizations for review.

One of the foundations for effective UBC is the ability to exchange records in machine-readable form. Since the Library of Congress MARC service began in 1969, national MARC services have developed throughout the world. The structure of the MARC format became an American National Standard Institute (ANSI) standard (Z39.2 1971), was adopted with a few minor modifications as an ISO standard (ISO 2709), and has been adhered to by the majority of national formats. The structure, however, is only one of the basic components to be considered. Others include content designators, the contents, and the character set for encoding of data, with a defined set of codes for such items as language.
of the work, etc. These other components have provided elements of conflict.

Recognizing the difficulties created by the lack of standardization, IFLA created a Working Group on Content Designators in 1973. Their charge was to arrive at a standard set of designators. Liaison was established with the ISO counterpart, as well as with the UNISIST Working Group on Bibliographic Data Exchange. Meetings of both the IFLA Working Group on Content Designators and the ISO Technical Committee 46 (ISO/TC46) were held in Brussels between 28 April and 7 May 1976. Major problems remaining with an international format (UNIMARC) were resolved. It was announced that the format for book materials would be published before the end of 1976. The major significance of the completion of UNIMARC for the U.S. is that it should be an important factor in the ability of the Library of Congress to accept machine-readable cataloging from major European countries. Prior to a meeting held in Paris in October 1975, UNIMARC was referred to as MARC International Format (MIF).

In the spring, LC MARC Distribution Service-Books (Canada) began. This servicecumulates monographic entries distributed by the National Library of Canada (NLC), converts them to MARC II, and distributes them to subscribers. These records are not integrated into the MARC data base.

Papers of the Western European Seminar on the Interchange of Bibliographic Information in Machine Readable Form held in Banbury, England, in 1974 were published this year. Resolutions of that seminar support the development of interchange agreements, data processing standards, and bibliographic standards.

At the national level, cooperative efforts concerning bibliographic interchange focused on LC as a national bibliographic center. Standards adopted and products produced by LC will have major influence on regional and local situations. Of major significance to the regional network is the developing association between the Research Library Group (RLG) and LC. A grant of $197,290 was provided to RLG by the Carnegie Corporation to develop, in cooperation with LC, a computer-based cataloging system. The project is scheduled for eighteen months and will provide remote on-line access to the MARC data base at LC.

The National Serials Data Program (NSDP) at LC has continued to register publications by assigning an International Standard Serials Number (ISSN) to titles cataloged by LC, by the National Agricultural Library, and by the National Library of Medicine. NSDP has extended its coverage to include registration of titles input into the CONSER data base. The first issue of the ISSN Key Title Register, which will contain the ISSN and bibliographic data on all titles processed by the NSDP through February 1975, was expected to be published by the end of 1976.

ISSN is one of several competing “standards” serial identifiers. Groot provides a discussion of four “standard” identifiers including Coden,
Allen and Beirne discuss the advantages of Coden for on-line logging of periodicals in conjunction with the IBM system Interactive Query Report Processing (IQRP). The Council on Library Resources (CLR) awarded a grant of $165,800 to LC to support the system design and programming required to integrate the functions of the CONSER (CONversion of SERials) project with other technical processing activities making up the library's national bibliographic service. LC's target date for absorbing the function is November 1977. MARC serials tapes produced by on-line input or authentication by LC began in July. During the period ending December 1976, LC added 4,253 new serial records to the CONSER data base and distributed a total of 4,455 full-level authenticated records via the MARC distribution service. The libraries of the Department of the Interior and Harvard University were admitted as members to the CONSER project during the fall of 1976, and the National Agricultural Library and Cornell University signed a cooperative agreement to add agricultural serials and journals to the data base.

Three other projects of national importance should be noted. CLR awarded a $12,000 grant to LC for two studies aimed at improving the Register of Additional Locations (RAL), a machine-readable file containing more than one-and-a-half million records of additional locations for titles listed in the National Union Catalog (NUC). The first study is to determine how LC could use existing machine-readable data bases to expand the RAL file. The second is to determine how often to publish a microform edition. COMARC (COoperative MARC) records became available in April 1976 through the MARC Distribution Service. The name of this new service is MARC Distribution Service-Books (COMARC). Agencies submitting records as participants are Washington State Library, Information Dynamics Corporation, the University of Chicago, the Boston Theological Institute, Cornell University, and Northwestern University. Finally, on a national level, mention should be made of Cataloging In Publication (CIP) as an active and growing cooperative project. More than a thousand publishers are now cooperating. CIP programs have developed in a number of countries; the CIP program of the Deutsche Bibliothek at Frankfurt Am Main is two years old and the British program began during 1975. In September 1976, LC sponsored an International Meeting on Cataloging In Publication.

At the regional level of cooperation, the Ohio College Library Center (OCLC) continues as the largest network. During fiscal year 1975-76 participating libraries cataloged more than 5,700,000 books, and by the end of 1976, the on-line catalog contained 2,250,000 catalog records. In the late fall of 1976, the OCLC Board of Trustees established an Advisory Council to examine and recommend OCLC's functions among other elements in a nationwide library network and to propose a reorganization plan. Debenham, Rastogi, and Scheiber have prepared a
report on the public use of OCLC terminals in four academic and three public libraries. Nitecki reviews the impact of OCLC on the administration of a large university library's technical service operations. Stecher provides some insight into the economics of OCLC and the problems of costing. Hewitt has reviewed the impact of OCLC on forty-seven charter members. Only nine of those libraries reorganized the department structure of technical services. The most marked effect of the system was the speed with which books were cataloged. Plotnik outlines OCLC operations for the uninitiated.

OCLC continues to grow with network development in Illinois, Iowa, and Minnesota. The Federal Library Committee in May 1976 decided to use OCLC for input of government publications and to use the resulting machine-readable tapes to produce the Monthly Catalog.

At a meeting held at the State University of Albany in November 1974, Frederick Kilgour, executive director of OCLC, suggested that users could look forward eventually to being able to tap into the BALLOTS (Bibliographic Automation of Large Library Operations using a Time-sharing System) data base centered on the campus of Stanford University. The BALLOTS system became operational in 1972 and began extending its services to public libraries in 1975 and more recently to academic, research, and special libraries. A brief report of the Mid-Mississippi Regional Library (Kosciusko) outlines their reasons for selecting BALLOTS over other available networks: no binding contract, no membership fee, the need only to search and not catalog on-line, obligation to pay only as the system is used, no programming or maintenance fee, and no use charges per items searched.

Plans for the Washington Library Network (WLN) continue to develop. Objectives of the network are statewide sharing of resources, economically meeting information demands of the state, and centralized computer communications systems for bibliographic services. Eight public library systems and the state library are currently participating in an automated system that produces catalog cards, spine and book labels, and resource directories. The resource directories are photocomposed using a computer-produced driver tape. Franklin and MacDonald described the development of the system and plans for future expansion for the state network.

One of the more interesting documents concerning networking of this past year has been Library Networking in the West: The Next Three Years. The assumptions in that document, if borne out in fact, are of considerable importance. A few assumptions are that BALLOTS, OCLC, and WLN do now or will have on-line bibliographic systems supporting cataloging and other operations; that these "utilities" may be required to interconnect for economic reasons and the need to provide access to holdings of many libraries; that the users are likely to demand the capability to use more than one "utility" with the same terminal; that it is not economical for all utilities to process and store all nationally distributed records or maintain large files of unused records on-line;
that LC files may be accessible for on-line searching; and that a national library network plan will evolve as a result of "utility" service centers (such as AMIGOS), state and regional planning in conjunction with LC, and the National Commission on Libraries and Information Science (NCLIS).

**Descriptive Cataloging**

Henderson provides an overview of descriptive cataloging in the United States from 1876 through 1976, dealing primarily with the development of general codes for catalogers in the U.S. Wright traces the history and development of *AACR 1*, the principles on which it was based, and the practical considerations evoked in later stages that had an effect on the final rules. Frost discusses the Bodleian catalogs of 1674 and 1738 in terms of modern cataloging theories, pointing out that these catalogs were able to fulfill the functions enumerated in the Paris Principles of 1961, the principles that played a major part in *AACR 1* and that will play a part in *AACR 2*.

Literature concerning the revision of *AACR* points to an ever-increasing momentum toward international standardization. Anderson observes that *AACR 1* is a multinational code and urges continued consideration on the part of the editors of revision that will respond to international needs.

This year has been a period of discussion, deliberation, and formulation for *AACR 2*, the input period having ended in the previous year. The first few months of 1977 will be a review period limited primarily to questions of style and consistency. It is expected the revision will be published in 1977. Factors that have had great influence on the revision include agreement between JSCAACR and IFLA on ISBD(G), which will be the basis for chapters on description, and the desire to produce a unified *AACR* text. These two factors should result in the production of a code of rules that will respond to the present and future needs of international cooperation. The associate editor of *AACR* is charged with producing an abridged edition to be used in small libraries, in the early stages of library education, and in places where English is not the native language.

Deliberations, decisions, and events surrounding revision of *AACR* have been regularly reported in *Library Resources & Technical Services*. An update to Edgar's "What Every Librarian Should Know About the Proposed Changes in Cataloging Rules," along with the original article and Buchinski's paper addressed to the Canadian library community, provide an overview of changes made and contemplated.

Buchinski outlines the general objectives of *AACR* revision and the major policy decisions that have been taken by JSCAACR. The organization of the new code will differ from that of *AACR 1*. Some of the new features will be: chapters on description preceding chapters on entry; emphasis on general rules that outline the basic choices for entry; a new rule devoted to defining changes in title; drastically restricted use of
corporate main entries; no special rule for entry of serials; deletion of form subheadings; lack of certain compromises that appeared in the 1967 code; and reduction in the number of alternative rules. As a compromise, JSCAACR agreed to use existing romanization or familiar English versions for names consisting of forenames only. Systematic romanization according to the ISO transliteration tables will be used as examples for headings with surnames. The ISO scheme will not be endorsed as such in the revised AACR, but the preference for an international scheme will be implied through examples. Buchinski suggests that the adoption of the entire code will not be possible unless national libraries are prepared to close their catalogs. Descriptive cataloging changes could be adopted without undue difficulty. Changes in choice of entry also may prove to be relatively easy to adopt. Difficult areas are those that require different forms of heading and thus suggest revision of large files.

Revision of AACR, the CONSER program, ISBD(S), and the NSDP have generated interest in the problem of entry of serials. Soper reviews problems of serial entry and suggests that the present rules do not answer the question of whether a serial is important because of format or because of content. Format would suggest the need for separate rules. Content would suggest that rules for other material should also apply to serials and that authorship be the most important determinant of entry. After much deliberation and argument, AACR 2 rules will result in title entry for most serials, but the possibility of author entry is retained. Stress is placed on content of the material rather than format. The same basic rules will apply to all materials. Description of serials will have special rules, but entry and heading will follow the rules for monographs.

With regard to nonbook materials, LC began to apply rules in chapter 12 AACR 2 in March. Cataloging is limited to motion pictures, filmstrips, slide sets, and sets of transparencies. Video recordings distributed by the National Audio-Visual Center also are included. Implementation of revised rules necessitated revising Films: A MARC Format and preparing a manual for its use by the MARC Editorial Division.

In May, chapter 14, revised text, was published, incorporating all currently valid revisions. It is appropriate to note that in March, the Music Section of the Descriptive Cataloging Division completed a one-year pilot project to provide composer-title added entries (analytics) for sound recording collections. Pending a decision on whether they will adopt these analytics as a standard practice, the section will continue to provide them.

In their Standards for Cataloging Nonprint Materials (4th ed.), Tol- lin and Quinly attempt to reflect the current thinking of those U.S., Canadian, and British organizations that have participated in the discussions of cataloging standards for nonbook materials. These authors recommend AACR be used for cataloging audiovisual materials. From a British point of view, Croghan presents a description of a bibliograph-
ic system for nonbook materials. The work is supported by an extensive bibliography. A task force on nonbook media of the National Commission on Libraries and Information Science (NCLIS) has undertaken a project to develop a national data base of information on nonprint materials. An advisory team working under the aegis of NCLIS and the Association for Educational Communications and Technology (AECT) will assist in drafting basic specifications for bibliographic information. Advisers on the panel represent state libraries, publishers, the Library of Congress, the National Audio Visual Center, and the National Information Center for Educational Media.

Shoyinka outlines problems of applying author and subject headings for state governments of Nigeria based on AACR and LC subject headings. Her consideration is evidence of international application of AACR; further evidence is found in the workshop on AACR held in the National Library of Kenya in February. Sayre and Hamburger have provided an illustrated guide to ISBD(M), and Hoffman has undertaken to reexamine the concepts that underlie the practice of descriptive cataloging.

The new Danish cataloging code was introduced into the Dansk Dogfortegnelse (Danish National Bibliography) and all public libraries in January 1976. The Royal Library of Copenhagen and several other academic libraries also adopted the new code, which is based on AACR. The old rules for entry of serials have been retained until AACR questions concerning entry are clarified. The Danish Cataloguing Rules Committee supports main entry for serials.

Lee provides a brief history of cataloging codes in Korea. In recent years, major universities and research libraries in Seoul have adopted AACR with modifications to fit various scripts and publishing traditions. Korean libraries have followed and participated in activities to establish ISBDs and cataloging codes.

As the time approaches for the publication of AACR 2, concerns are being expressed that perhaps the revision has moved too fast and covered too much ground with the result that it may fail to meet its goal. Richmond urges further research and expresses concern that catalog code revision has never been based on experimental data. The ultimate aim of that research would be to provide adequate models for qualitative analysis of rule generation. She observes that machine-readable catalogs provide possibilities for such research. Another form of analysis of AACR has been done by Packer and Schabas. Their method relies on a decision-flow chart to interpret and clarify the logic of revised chapter 6 AACR for including the dates of publication in a catalog entry.

In the area of script conversion and transliteration, Wellisch reports on results of a questionnaire submitted to 320 national, university, public, and special libraries in 55 countries with substantial holdings and dissimilar scripts in order to ascertain script conversion practices. He finds a considerable diversity of romanization practices, with a large
measure of uniformity only in the U.S. and Canada, due to an almost complete adoption of LC romanization. A survey of transliteration systems used in the national and other major libraries of various European countries for the Russian cyrillic alphabet by D. Smith and V. G. I. Smith found thirteen separate transliteration systems currently in use. The survey concludes that there seems little likelihood of achieving national or international agreement on the use of any single system. Currently valid ALA-LC romanization tables are being printed and made available in Cataloging Service, beginning with bulletin 118.

The 1976 Margaret Mann Citation was presented to Eva Verona of Zagreb, Yugoslavia. The citation acknowledges her contribution to UBC through her continued leadership and recognizes her definitive work on corporate headings. It seems appropriate in this year that an award is given that acknowledges international contributions and interests.

In January 1976, the RTSD board agreed to change the name of the Computer Filing Committee to Filing Committee and revised their assignment as follows: to produce a filing code designed to facilitate arrangement and display of bibliographic records, with particular attention to the content of bibliographic files in machine-readable form and with recognition of various forms of display; to consider and make recommendations on the applicability of such a code to manual filing situations; and to work toward compatibility with any similar filing code which may be developed and endorsed by the (British) Library Association. The committee agreed that work on the filing code could not be completed until any relevant AACR rules had been reviewed. Hoffman provides an examination of the second edition of ALA filing rules.

Subject Analysis

The centennial anniversary of the publication of the Dewey Decimal Classification (DDC) occasioned numerous programs and publications. At a program in July 1976 cosponsored by the Resources and Technical Services Division and the Cataloging and Classification Section, Phyllis Richmond discussed the continuing problem of establishing meaningful cataloging standards in the absence of adequate empirical research, Richard Sealock emphasized the international cooperation that has characterized the history of the DDC, and Benjamin A. Custer gave a brief history of the development of DDC.

The University of Illinois/Forest Press Allerton Park Institute in November 1975 provided an in-depth discussion of classification systems in general and of DDC in particular. Topics ranged from a look at recent editions of Dewey, to a comparison of DDC with LC, to an examination of classification and subject retrieval.

On 26-30 September, the Dewey Decimal Classification Centenary was observed at a conference held in Banbury, Oxfordshire, England, sponsored by the (British) Library Association and supported by the Forest Press, with representatives from the United States and nineteen European countries. Papers were presented reflecting four recurrent
themes: stability of classification vs. change, concern about the index, the effects on DDC of computers and automation, and interest in internationalism.

The May issue of *International Classification*, dedicated to Melvil Dewey, included a tribute by Gopinath to Dewey and Ranganathan, noting their contributions to library science and to the profession in their respective countries. The centennial of DDC was marked by Comaromi's detailed study of the eighteen editions and by a facsimile reprint of the first edition by Forest Press.

During the period 1 January 1975 through 7 November 1975, the Forest Press sponsored a study to measure the use of DDC by U.S. and Canadian libraries of different sizes and types, to obtain information about application of DDC to library collections, to determine problems of application, and to ascertain to what extent DDC is taught in library schools. In the 1970s, DDC remains the predominant classification system in the world. It is used by 85 percent of all libraries in the English-speaking world. A comprehensive report of that study has been published. Downing notes that there is greater use of Dewey by libraries in those countries where the national bibliographies are arranged by DDC and that DDC has been steadily developing in an international context with the *British National Bibliography* and the LC Decimal Classification Division having a working agreement. That agreement and working relationship has been described in some detail by Trotter. Lewis reports on factors that have influenced the work of the British Library Working Party on Classification and Indexing, established in 1972 "to examine various classification and indexing systems currently in use in the various components of the British Library and to consider possibilities of rationalisation taking into account the need for standardisation nationally and internationally." DDC was accepted "insofar as a single scheme proves to be necessary" for the British Library.

Friis-Hansen reports that classified catalogs are now the only subject approach in Danish public libraries. "Danish Dewey" has gone through five editions since 1915 and is used in public schools, teacher school libraries, the Royal Library, and the Danish national bibliography. He also observes that DDC dominates classification in Canada, Australia, South Africa, and the new nations formerly under the British flag and concludes that, while DDC is an American classification, it is one of international standing and application.

Bloomberg and Weber provide a concise introduction to DDC, with a brief history and outline of the characteristics of the classification and of the full tables, for technical assistants. Davis suggests to the classifier a means by which DDC may be expanded using negative numbers. He describes an extension of DDC notation as it has been used for computer-based Selective Dissemination of Information (SDI) and discusses implications for other automated systems.

Preparation of the nineteenth edition of DDC continues, looking toward publication in 1979. At the March meeting of the Decimal Clas-
sification Editorial Policy Committee, final approval was given to all draft schedules except 610 (Medical Sciences) and 020 (Library and Information Sciences). Coordination continues with the British National Bibliography, the Australian National Bibliography, and Canadiana and is being initiated with the South African National Bibliography. At that same meeting, it was recommended that a manual for user application be prepared and that there be workshops for teachers, administrators, and classifiers on the occasion of the publication of DDC19.

In April 1974, changes were made in the local government of England and Wales that were reflected in a revision of the subdivision of area notation 42. These new DDC subdivisions have been published in full for British Libraries. The complete revision will be generally distributed only with the publication of DDC19. A summary has been provided in *Dewey Decimal Classification, Additions, Notes and Decisions*, October 1974/April 1975. An article by Downing rationalizes the change.

The major changes planned for DDC19 include phoenix schedules: 324 and 329 will be merged at 324; 301 (Sociology) will be completely revised using numbers 301-07; and 360 will have been substantially revised, especially 361 and 362. Subjects at present in 614, which deal with services rather than techniques, will be located in 360. The only other phoenix, 780 (Music), is under discussion. That revision was done in Britain and supported by a grant from Forest Press to the (British) Library Association.

LC classification (LCC) development work continues on the class K project. Subclass K Law (General) was to be published in 1976. Subclass KE (Law of Canada) and KKC (Law of Germany) are complete in part but have not yet been edited. Schedules for French and Latin American Law are in progress. The third edition of Class C (Auxiliary Science of History) and the fourth edition of Class G (Geography, Anthropology) were published during the year. Subclass K Law (General) was applied to LC cataloging in July. Classification revisions for Poland, Eastern Europe, and Hungary have been printed, while those for East European areas are under development.

Pollard has asserted the need of a revision of the LC classification for social and clinical psychology because the schedule for social psychology is outdated and clinical psychology is an applied field of psychology rather than psychiatry.

Stevenson considers the relationship of LCC to DCC, observes that there has been no objective evaluation and comparison of the two classifications, and suggests areas in need of research. He feels that although the shift in popularity from DDC to LCC may have lost some of its momentum, it will not be reversed unless there are drastic changes in the relationship between DDC and bibliographic needs of academic librarians. He speculates that if LC continues to include DDC numbers on all items issued in MARC tapes, then DDC may be a serious contender on the international level.

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One of the major events in classification in 1976 was the announcement that the new and enlarged revision of the Bliss Bibliographic Classification (BC) was to be published in the summer, beginning with the introductory volume and J (education), P (religion, the occult, morals, and ethics) and V (fine art, including music), and continuing until completion not later than three years from that date. There are a number of features designed to ensure maintenance of the new BC. The authors feel the future of BC rests with the fact that it is a considerable advance on the existing general classifications. A large range of special libraries and information services are likely to find BC to be beneficial. The question of incorporating BC in the MARC record has been raised. At the present, the prospects are not bright. It is particularly feasible to translate PRECIS strings into the new BC class marks, since the theory underlying PRECIS analysis is very similar to that used in the new BC. Campbell observes that the new BC is perhaps the only instance where a large classification developed in one country has been taken over and revised in another. He feels that if the scheme meets with a successful reception, there should be no difficulty in having BC class marks added to MARC tapes and perhaps even LC cards. He provides interesting insights into Bliss, the man and the scholar. Dahlberg identifies Bliss' contribution to classification as having put library classification in closer relationship with philosophical principles of classification, i.e., with the conceptual foundations of class formation, division, and partition.

Mowery reports, as a result of a survey during 1971-73, that seventy years after Charles Cutter's death, his classification scheme was still in use in a dozen libraries in the U.S. and Canada. Those libraries range in number of volumes from 21,900 to more than 450,000.

Another classification revision of significance is that of the London Classification of Business Studies, funded by a grant of £5,000 from the Social Science Research Council to the Department of Library and Information Studies, Liverpool Polytechnic. This classification originally was compiled by K. D. C. Vernon and Valerie Lang and published by the London Business School in 1969. It is now used by more than fifty libraries throughout the world. The revision project will extend to 31 August 1977.

A series of articles concerning problems and solutions in classification in the visual arts was published by the Art Library Society of North America. A review of the literature of document classification and a presentation of the document classification scheme used by the University of Texas at El Paso is described by Siler-Regan, McClure, and Etheredge.

The latest section of the English full edition of the Universal Decimal Classification (UDC) to be published by the British Standards Institution is BS 1000 [72], containing UDC 72 Architecture. This schedule provides a systematic classification of information about esthetic, stylistic, and historical aspects of buildings and buildings according to func-
An alphabetical subject index is included. In a paper on DDC, UDC, and the Broad System of Ordering (BSO), Wellisch considered the revision of a new UDC, and he reported that a proposal for BSO was submitted to UNISIST in early 1975 for approval and testing. He suggests that perhaps the new BSO may achieve on a very general level, for the subject orientation of documents, what has already been accomplished in descriptive cataloging control by ISBD.

The first Ranganathan Award for Classification Research of the Committee on Classification Research of the International Federation for Documentation (FID) was presented to Derek Austin. The award will be made every two years for the outstanding contribution in the field of classification.

The Library of Congress introduced a number of changes in procedures relating to subject headings, most notably making available in supplements and future editions of Library of Congress Subject Headings (LCSH) a majority of the so-called "nonprint" headings not previously included. These headings include chemical and biological names, family names, geographic regions and features, names of structures, and other similar types of names. Subject Heads for Children's Literature, second edition (1975), originally published in the introduction to LCSH, eighth edition, was published separately and includes all headings adopted through December 1973. Any supplementary materials will appear at the beginning of the regular supplement to LCSH as it is published in three cumulative quarterly issues with the annual cumulation.

Programs have been completed for issuing a total cumulation of LC subject headings in microform (24× fiche and 16mm microfilm) on a quarterly basis. The first issue will contain the subject headings approved and printed since the system started at the turn of the century through the first quarter of 1976. Each subsequent quarterly microform will, again, be a total cumulation.

In 1975, LC agreed to accept, for its internal use and for production of external cataloging products, name headings established by the National Library of Canada (NLC) for Canadian corporate bodies. As a further step in international cooperation, in 1976, LC and NLC reached an agreement on the creation and use of subject headings. Under this agreement, all topical subject headings created by NLC that are not specifically related to the Canadian cultural and historical context will be submitted to LC for possible incorporation in LCSH. The NLC will develop those subject headings that are uniquely Canadian and publish them separately. LC and NLC have set up joint procedures to ensure that subject headings will be developed according to uniform principles and practice. Ferrington reports on development of the Canadian List of Subject Headings and discusses compatibility with LCSH.

In September 1976, LC began distribution of LCSH authority records in machine-readable form. The tape service is in two parts: a master file containing data that appeared in the eighth edition of LCSH and its annual supplements through 1975 and quarterly noncumulative sup-

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plemmental tapes available from 1976 on. Purchasers of tapes will be re-
required to develop their own maintenance systems. Subscribers also re-
ceive a copy of Authorities: A MARC Format and other technical
specifications. Test tapes of both name and subject authority files are
available. The distribution of name authorities will probably begin
sometime in 1977.118

Buchinski, Newman, and Dunn describe the automated authority sys-
tem at NLC.119 Of particular interest is the ability to control bilingual
headings and to store and control authorities for multiple applications.
Advantages of the authority system and implications of enhancement
to the system with respect to potential or actual systems and services, in-
cluding MARC distribution, CONSER, the Canadian Union Catalogue,
and shared cataloging, are discussed.

Critics of LC subject headings continue to question the adequacy of
the system. Dickinson describes the Hennepin County Library (HCL)
(Minnesota) automated subject authority control system, which is assert-
ed to provide a flexible, changeable subject authority system responsive
to current patron needs.120

In February 1977, HCL will issue its authority file in microfiche for-
mat, offering annual subscriptions. The file contains 139,000 terms in one
alphabet, including authors, both LC and HCL modified personal and
corporate, and subject headings of which 15 percent are HCL originat-
ed.121 Ross describes the Bell Laboratories Library Network subject
heading authority list in machine-readable form and its maintenance.
This list comprises 15,000 headings based on LCSH practice and modi-
fied to reflect telecommunications research interests.122

While there is considerable discussion of the effectiveness of subject
headings, there appears to be little research. An investigation by Mc-
Clure suggests the need.123 He examines subject and added entries as a
means to gain access to information contained in titles listed in the Na-
tional Union Catalog (NUC). Results of his study indicated that 1.3
subject added entries were assigned to a typical item in 1950-57 and that
the rate remained constant through 1973. He found that a typical eighty-
six-page item listed in Research in Education in 1973 was likely to have
five subject headings. He concludes that perhaps we should discontinue
subject added entries and replace them with machine-produced subject
catalogs where the “work” will be subject indexed and not the “book.”

Subject analysis for audiovisual materials presents special problems.
There are those who feel that standard subject analysis is not well suited
to audiovisual materials. In July 1975, the Cataloging and Classification
Section of ALA appointed an Ad Hoc Committee on Subject Analysis
of Audiovisual Materials “to investigate and identify any differences in
subject analysis and control requirements of nonbook materials and
books,” with a final report due in 1977. As part of the investigation,
Weihs gathered information from the Canadian community.124 Subject
heading systems most frequently discussed were Sears and LC. PRECIS
is not considered by the committee to be used widely enough to come un-
der the committee terms of reference. Concern was expressed that non-
book materials, being less browsable than books, need more precise sub-
ject headings. The need for currency in subject headings was considered
important. For example, video tapes may create instant new subject con-
tent. There is a book orientation in such subject headings as “hand-
books, etc.” that needs review in terms of nonbook materials. The great-
est unhappiness concerns subject headings for music. Music subject
headings were designed for scores and are not as useful as they should
be for recorded sound. A controversy has arisen over the use of media
form subdivisions. There are those who support the use of media form
subdivisions because patrons ask for items in a particular format, and
those who oppose media form subdivisions feeling that these subdivi-
sions reinforce the impression that books are normal and audiovisual
materials are not. Preliminary guidelines have been developed by the
Subcommittee on Subject Analysis which should eliminate “bookism”
from AV cataloging. These guidelines have been published in the ex-
pectation that they will be reviewed and commented on prior to any
final report.126

For the cataloger, the predominant indexing literature is associated
with PRECIS (P{Eserved Context Index System). In October 1976, an
International PRECIS Workshop was held at the University of Mary-
land. Austin has presented a series of three papers relating to the system.
The first paper outlines the origin of PRECIS and considers its use in
English-language indexing.126 The second paper establishes a theoretical
model of the indexing operation to account for the growing empirical
evidence that PRECIS can be applied successfully to the terms and
phrases of more than one natural language.127 The third paper discusses
the growth in interest in the use of PRECIS by indexers in non-English-
speaking countries.128 A draft version of a multilingual terminology of
PRECIS was prepared in 1975. The major part of the work is in three
separate alphabetical sequences—English, German, and Danish—with
equivalent terms in each of the other two languages printed in parallel
columns. The draft is incomplete, intended to stimulate further prog-
ress. The Bibliographic Services Division of the British Library initiated
a project to develop and test the potential of PRECIS for translingual
indexing. Experiments will be limited to switching between English,
French, and German. Duration of the project is expected to be two and
half years. With an automatic translingual switching procedure, in-
dexing data would be usable immediately.129 PRECIS provides index-
ing data for UK MARC records and subject indexes to BNB. It was suc-
cessfully exported to the National Library of Australia and has been
used to provide subject data in the Australian MARC records and to gen-
rate subject indexes for the Australian National Bibliography. Two ex-
perimental PRECIS indexes have been produced in French: one to a
multimedia catalog published by the Ministère de l’Éducation du Qué-
bec Service Général des Moyens d’Enseignement and the other to a sam-
ple of theses held by the Université de Rouen.130 Since January 1976 the

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British Education Index has used PRECIS for subject analysis.\(^3\)

PRECIS has not been limited to the scholarly library, as witness its use in Aurora High School in the province of Ontario, Canada.\(^2\) It was adopted there because of its open vocabulary, which allowed terms encountered in library materials to be admitted easily to the index to meet curriculum needs.

Richmond discusses PRECIS as a basis for studies relating to classification and other subject analysis systems.\(^1\) She explores the relationship of existing methods of subject analysis to one another through PRECIS and suggests that it forms an unusually sound basis for further study, partly to verify the soundness of PRECIS and also to attempt to build classification systems by inductive and more objective means.

The literature of 1976 provides an introduction to subject indexing, with program texts by Brown in collaboration with Langridge and Mills covering UDC and chain procedure in subject indexing.\(^5\) Jackson, Cogswell, and Foster discuss classroom procedures in teaching indexing and abstracting at the University of Texas, Austin, where students produce indexes as part of their classroom instruction.\(^6\) Paul outlines a punch-card, optical-coincidence information retrieval system for drug abuse literature that can handle 30,000 to 40,000 items and can be adapted to computerization.\(^7\) Lewis reports that cost and timeliness are the reasons for the creation of visual indexing, defined as finding graphic images by reviewing them visually rather than by reference to verbal identification.\(^8\) At a theoretical level, Meincke and Atherton provide the reader with a new insight into the theory of indexing.\(^9\)

Finally, in the area of subject analysis, Hickey provides an excellent interpretive survey covering the period 1876 through 1976.\(^10\) In commenting on the future of subject analysis, she expresses considerable pessimism and feels the future is not bright, noting that current library attention is focused on descriptive control, where the issues are more clearly defined and, perhaps, more crucial. The current trends indicate that the future of subject analysis will depend largely on focuses either outside of libraries or outside the United States. Belzer and Robertson have compiled a selective list of key publications in information science of the last 200 years,\(^11\) including works on classification, indexing, vocabulary construction and content analysis, and automatic treatment of natural language and theory.

Conclusion:

The anticipated promulgation of new cataloging standards and the second edition of AACR, the changing character of the bibliographic record along with the increased dependence on network developments—all have caused considerable disquiet and expectation within the profession. Freedman, in his concern for the client of the public library, calls for a PEOPLE'S/MARC from a national bibliographic center.\(^12\) His position represents concerns associated with the question of whether the standards serve the profession or those the profession serves.
wonders whether cataloging will go the way of the woolly mammoth. Krieger has edited an article based on five papers presenting views of the future of the cataloger. All agree, change is at hand. These articles represent the concern of librarian-catalogers with their present and future roles. Wynar and Dowell present texts for the cataloger and administrator which reflect many of the recent changes that have caused concern. More changes are on the way.

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*Volume 21, Number 3, Summer 1977*
Libraries of ninety universities granting doctorates were surveyed regarding binding, cataloging, classification, storage, and checking of format practices for theses and dissertations. On the basis of the findings and with consideration given to the processing time and potential use of these materials, it was decided that checking of content and format should be left to the graduate school and academic departments, with the library involved in checking archival qualities. Recommended processing practice involves full descriptive and subject cataloging, with author input on the latter point, and elimination of all but the most rudimentary classification.

ALTHOUGH PRACTICES INVOLVED in processing dissertations and theses are unique both in acquisitions and cataloging, library literature is notably lacking in discussions of the specialized problems pertaining to them. The University of Wyoming Library, finding itself in an uncertain position in relation to the Graduate School so far as screening of library deposit copies was concerned, and finding that the extremely specialized, narrow nature of the subject matter created definite problems of time and accuracy in subject classification and subject heading assignment, decided to conduct an informal “state of the art” survey in an attempt to find out how other universities dealt with these problems.

No studies dealing with the library’s role in reviewing dissertations and theses for format were found in the literature, yet a genuine question existed, on the University of Wyoming campus at least, as to what that role should be.

Manuscript received June 1976; accepted for publication October 1976.
In addition, the technical processes division noted an imbalance between the amount of time needed to catalog and prepare the theses and dissertations for binding and the apparent amount of their later use. For these reasons a staff committee was appointed to investigate the existing situation and make recommendations. The present paper has grown out of that committee's work.

One hundred university libraries were chosen to receive a questionnaire, taking as a starting point the list of institutions used by the American Council on Education in its survey of quality in graduate education. Maintaining the basic criterion of using only institutions offering the doctoral degree, the committee then modified the list liberally in an attempt to obtain a wide range of size of institution and the widest possible geographical distribution, possibly weighted a little toward our own area. For the most part, purely technological institutions were eliminated.

The following summary of practices is based on the ninety libraries' responses received in time for analysis. Totals in a number of cases are less than ninety because of a failure to answer the question. The questionnaire and a list of respondents are appended.

**Binding**

Nineteen libraries receive all theses and dissertations already bound. Sixty-seven respondents indicated they receive all at the library in an unbound state. Of these, sixty-five bind all copies permanently, and two consistently bind only the circulating copies. One keeps its archival copies in spring binders, and another has varied its treatment of the official or archival copy over the years. Two institutions reported receiving master's theses bound but doctoral dissertations unbound. Of these two, one binds them permanently, while the other reported that binding practice varies within the system. The library of one school receives microfilm only; the graduate school and academic departments maintain paper copy files.

Of those respondents which reported receiving some or all of their copies already bound, ten indicated that the binding responsibility lies with the graduate school, seven with the student, and one each with the academic department, the university bookstore, and the graphics department.

**Format Regulations**

All but two respondents indicated their schools have formal thesis format regulations. Thesis standards are set in the majority of institutions (fifty-one) by the graduate school alone. Twenty-five other schools indicated collaboration of the graduate school with other university agencies in establishing such standards. In only one university is the library alone responsible for thesis format standards, but in thirteen the library cooperates with other agencies in establishing standards. Detailed responses are shown in Table 1.

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TABLE 1

Agency Responsible for Setting Format Standard

<table>
<thead>
<tr>
<th>Agency</th>
<th>Number</th>
</tr>
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<tbody>
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<td>51</td>
</tr>
<tr>
<td>Graduate school and library</td>
<td>10</td>
</tr>
<tr>
<td>Graduate school and academic departments</td>
<td>10</td>
</tr>
<tr>
<td>Individual colleges</td>
<td>5</td>
</tr>
<tr>
<td>Academic departments only</td>
<td>3</td>
</tr>
<tr>
<td>Graduate school, academic departments, and library</td>
<td>2</td>
</tr>
<tr>
<td>Graduate school and university archives</td>
<td>1</td>
</tr>
<tr>
<td>Academic department and Graphic Communication Service</td>
<td>1</td>
</tr>
<tr>
<td>Thesis committee appointed by graduate school with strong representation from library</td>
<td>1</td>
</tr>
<tr>
<td>Council of university senate</td>
<td>1</td>
</tr>
<tr>
<td>Academic departments for master’s; graduate school for Ph.D.s</td>
<td>1</td>
</tr>
<tr>
<td>Library only</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>87</td>
</tr>
</tbody>
</table>

Checking Format

In forty institutions, the responsibility for checking the format is delegated to the graduate school. In thirty-five schools the graduate school shares this responsibility with other agencies, frequently individual academic departments and/or the library. Three schools leave all such checking to the library alone, and in seventeen others the library is involved in some way in the checking. Table 2 details the responses.

TABLE 2

Agency Responsible for Checking Format

<table>
<thead>
<tr>
<th>Agency</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate school only</td>
<td>40</td>
</tr>
<tr>
<td>Graduate school and academic departments</td>
<td>17</td>
</tr>
<tr>
<td>Graduate school and library</td>
<td>10</td>
</tr>
<tr>
<td>Academic departments only</td>
<td>7</td>
</tr>
<tr>
<td>Academic departments, graduate school, and library</td>
<td>6</td>
</tr>
<tr>
<td>Library only</td>
<td>3</td>
</tr>
<tr>
<td>Academic departments and library</td>
<td>1</td>
</tr>
<tr>
<td>Individual colleges</td>
<td>1</td>
</tr>
<tr>
<td>Graduate school and university archives</td>
<td>1</td>
</tr>
<tr>
<td>Academic departments and Graphic Communication Service</td>
<td>1</td>
</tr>
<tr>
<td>Academic departments for master’s; graduate school for Ph.D.s</td>
<td>1</td>
</tr>
<tr>
<td>Registrar and library</td>
<td>1</td>
</tr>
<tr>
<td>Dissertation secretary</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>90</td>
</tr>
</tbody>
</table>
A few institutions indicated having a separate office or person, with a title such as "thesis editor," "dissertation secretary," "thesis coordinator," etc., whose responsibility it is to set and maintain thesis standards. In such cases this position seems frequently to be in liaison with the graduate school and library. The situation at Utah State University is particularly noteworthy in this respect.

The Thesis Coordinator [although in the employ of the library] is responsible for the quality control for both the Graduate School and the Library. The position covers the entire spectrum of thesis and dissertation preparation and research, providing a service to the student and his committee from the beginning of the graduate’s program to the end. As such, the Coordinator is as involved in the eventual outcome of the thesis as the graduate and his committee, doing editing, a great deal of counseling, teaching in the classroom, and, of course, the final complete reading of every manuscript, when it is checked for [format], as well as plagiarism, correct statistical method of data analysis, and quality of content.2

The Utah State University thesis coordinator gives a one-hour seminar once a year in each academic department that offers a graduate program. During the seminar we not only tell the student how to write a thesis or dissertation in great detail, we also outline the kinds of reference services we have available, describe the requirements for duplication and publication, and outline the basic steps that must be followed from the beginning when the proposal is written to the end when the unbound copies are submitted for binding. We also talk about such things as picking a good committee and getting through a defense.3

After attending the seminar students apparently feel free to approach the coordinator with any problems they encounter during the thesis writing process, and Utah State feels that it has succeeded in developing a workable helping relationship with the students, their committees, and their department heads.

Format Checking by Libraries

Libraries which are at least partially involved in checking format are concerned primarily with checking for paper quality, quality of reproduction, adequacy of margins, and with collating the copies for completeness. Several libraries check illustrations, tables, figures, and graphs. Other items checked include format of title page and abstract, completion of approval or transmittal sheets, arrangement of preliminary pages, fitness for filming, and general appearance of manuscript. Only two libraries indicated that they check theses and dissertations completely for adherence to all university format regulations. Tables 3 and 4 show the items checked by libraries and the library personnel responsible for the checking.

Cataloging

All but one of the respondents indicated that they do at least partial
TABLE 3

ITEMS CHECKED BY LIBRARIES

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper quality</td>
<td>9</td>
</tr>
<tr>
<td>Quality of reproduction</td>
<td>9</td>
</tr>
<tr>
<td>Margins</td>
<td>9</td>
</tr>
<tr>
<td>Completeness (collation)</td>
<td>8</td>
</tr>
<tr>
<td>Illustrations, tables, figures, graphs</td>
<td>5</td>
</tr>
<tr>
<td>Title page</td>
<td>3</td>
</tr>
<tr>
<td>Approval page or transmittal sheet</td>
<td>3</td>
</tr>
<tr>
<td>Abstract</td>
<td>2</td>
</tr>
<tr>
<td>All format rules</td>
<td>2</td>
</tr>
<tr>
<td>Fitness for filming</td>
<td>1</td>
</tr>
<tr>
<td>General appearance of manuscript</td>
<td>1</td>
</tr>
<tr>
<td>Arrangement of preliminary pages</td>
<td>1</td>
</tr>
</tbody>
</table>

TABLE 4

LIBRARY PERSONNEL RESPONSIBLE FOR CHECKING FORMAT

<table>
<thead>
<tr>
<th>Library Personnel</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis advisor under aegis of library</td>
<td>2</td>
</tr>
<tr>
<td>Binding supervisor</td>
<td>2</td>
</tr>
<tr>
<td>Library assistants</td>
<td>1</td>
</tr>
<tr>
<td>Archivist</td>
<td>1</td>
</tr>
<tr>
<td>Staff member in archives</td>
<td>1</td>
</tr>
<tr>
<td>Reference librarians</td>
<td>1</td>
</tr>
<tr>
<td>Assistant university librarian</td>
<td>1</td>
</tr>
<tr>
<td>Dean of library services</td>
<td>1</td>
</tr>
<tr>
<td>Acquisitions librarian</td>
<td>1</td>
</tr>
<tr>
<td>Director of technical services</td>
<td>1</td>
</tr>
<tr>
<td>Catalogers</td>
<td>1</td>
</tr>
</tbody>
</table>

cataloging of theses and dissertations. In some institutions completeness of the cataloging depends on the academic degree, with the doctoral dissertation generally receiving more complete cataloging. The most common exception to full cataloging is the provision of fewer added entries, including title. A few libraries reported that the degree of cataloging has varied over the years.

Description. A substantial majority of the respondents (seventy-three) catalog theses and dissertations according to the Anglo-American Cataloging Rules (AACR). Three others use slightly modified AACR. The most common modifications involve variations in the imprint and the formal dissertation note, which is expanded by some libraries to include date of acceptance and academic department within the university. One institution reports that only doctoral dissertations are cataloged according to AACR, with master's theses handled in various ways by the
individual departmental libraries. Six libraries indicate the use of local schemes of varying degrees of complexity. At least one of the six simply notes the author's name and the title of the work. Six respondents either did not answer this question, or their answers were not responsive to the intent of the question.

Subject Headings. To the question of whether subject headings are assigned, sixty-three libraries responded with an unqualified yes and fourteen said no. Of those qualifying their answers, four responded that they assign only broad subject designations or assign subject headings on a selective basis, e.g., for theses and dissertations of local subject interest or those in certain disciplines only. Two schools group theses and dissertations under the subject heading "Dissertations, Academic—(Institution)—(Subject)." Four libraries assign subject headings to doctoral dissertations but not to master's theses. One school subject-analyzes only master's theses, using Dissertation Abstracts International as a subject approach to its doctoral dissertations. See Table 5.

TABLE 5

Subject Heading Assignment

<table>
<thead>
<tr>
<th>Degree of Assignment</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>For all</td>
<td>63</td>
</tr>
<tr>
<td>For none</td>
<td>14</td>
</tr>
<tr>
<td>In selected areas only</td>
<td>4</td>
</tr>
<tr>
<td>Grouped together by subject under</td>
<td></td>
</tr>
<tr>
<td>&quot;Dissertations, Academic—(Institution)&quot;</td>
<td>2</td>
</tr>
<tr>
<td>Doctoral only</td>
<td>4</td>
</tr>
<tr>
<td>Master's only</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>88</strong></td>
</tr>
</tbody>
</table>

One university is experimenting with a separate KWIC indexing system for theses and dissertations. They provided no details of the system, indicating that it has not been in operation long enough to make an evaluation.

One respondent commented that subject analysis is too costly for the cataloging department and a waste of time in relation to the amount of use. In general, a trend toward less specific subject headings was noted, probably as a result of lack of time and cataloging personnel as well as the volume of the material.

Classification

Responses to the question about classification generally fell into two broad categories: (1) Library of Congress (LC) classification or some local scheme superimposed on the LC classification (forty-three); and (2) entirely locally devised scheme (usually some combination of year, academic department, and author cutter) or simple locating device
(serial number, alphabetical arrangement, etc.) (thirty-eight). Four institutions reported using the Dewey Decimal Classification.

Of those reporting the use of the LC classification or some local modification thereof, it is impossible to tell from the questionnaire how many classify by subject and how many group theses and dissertations together under the number provided in the LD schedule for the individual institution. A number of those reporting use of a local scheme superimposed on the LC classification system employ a system devised by the University of Chicago. In this system 999 or 99 is added to the LC classification for the particular subject. In this way, theses and dissertations fall within the subject area provided within the LC system but are still grouped together and segregated from other publications on that subject.

Imperfect Copies

In a large number of institutions (forty), catalogers collate manuscripts and try to correct any flaws. Six libraries reported that they do not systematically collate theses and dissertations but do try to correct any errors discovered in the normal course of cataloging. Other common methods of dealing with flawed copies include describing the manuscript as received with no attempt to correct and returning the manuscript to the graduate school. A small number of respondents reported returning flawed copies to the student or his academic department for correction. Six respondents stated that they do not receive flawed copies. Presumably in these institutions (as with one other institution which so stated), the flaws are caught by the graduate school or academic department before the manuscript arrives at the library. Others reported that no flawed copies reach the catalogers because flaws are caught and corrected by the person or department responsible for binding or because, in one case, manuscripts are collated and corrected by the university archives, which is not a part of the regular library system. Table 6 details the response.

Availability

Although all but one of the respondents participate in Dissertation Abstracts International, only forty-two keep microfilm copies of theses and/or dissertations in the library. Almost half of the libraries still keep both archival and circulating files in paper form only. The next most common combination is paper archival copies in conjunction with circulating copies in both microfilm and paper, followed by archival copies in both formats and circulating copies in paper only. Several libraries also reported keeping their archival copies in film form only and their circulating copies in paper form. Table 7 details the responses.

Three institutions specifically indicated that they circulate only master's theses, and three circulate only doctoral dissertations. Two libraries keep archival copies of their master's theses only, depending on the University Microfilms master in Ann Arbor to serve as their doctoral archive.

More than half of the responding institutions reported that in addi-
TABLE 6
TREATMENT OF IMPERFECTION COPIES

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collate and correct</td>
<td>40</td>
</tr>
<tr>
<td>Do not collate, but try to correct if flaws are discovered</td>
<td>6</td>
</tr>
<tr>
<td>Describe just as received</td>
<td>9</td>
</tr>
<tr>
<td>Return to graduate school</td>
<td>10</td>
</tr>
<tr>
<td>Return to student</td>
<td>4</td>
</tr>
<tr>
<td>Return to academic department</td>
<td>1</td>
</tr>
<tr>
<td>Not received by catalogers</td>
<td>12</td>
</tr>
<tr>
<td>No explanation</td>
<td>(6)</td>
</tr>
<tr>
<td>Caught by graduate school</td>
<td>(1)</td>
</tr>
<tr>
<td>Caught by binding staff</td>
<td>(4)</td>
</tr>
<tr>
<td>Caught by archives</td>
<td>(1)</td>
</tr>
</tbody>
</table>

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TABLE 7
AVAILABILITY OF THESIS IN LIBRARY

<table>
<thead>
<tr>
<th>Availability</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archival and circulating paper copies</td>
<td>43</td>
</tr>
<tr>
<td>Archival paper copy, circulating copy in both formats</td>
<td>14</td>
</tr>
<tr>
<td>Archival copy in both formats, circulating copy in paper</td>
<td>10</td>
</tr>
<tr>
<td>Archival film copy, circulating paper copy</td>
<td>9</td>
</tr>
<tr>
<td>Archival paper copy, circulating film copy</td>
<td>3</td>
</tr>
<tr>
<td>Circulating paper copy only</td>
<td>3</td>
</tr>
<tr>
<td>Archival copy in both formats only</td>
<td>4</td>
</tr>
<tr>
<td>Archival copy in both formats, circulating copy in both formats</td>
<td>2</td>
</tr>
<tr>
<td>Circulating copy in film only</td>
<td>1</td>
</tr>
<tr>
<td>Incidence of various formats</td>
<td></td>
</tr>
<tr>
<td>Archival paper</td>
<td>76</td>
</tr>
<tr>
<td>Archival film</td>
<td>25</td>
</tr>
<tr>
<td>Circulating paper</td>
<td>81</td>
</tr>
<tr>
<td>Circulating film</td>
<td>20</td>
</tr>
</tbody>
</table>

It is clear from the responses to the questionnaire and from appended statements of opinion by several respondents that matters of form and style, both the setting of standards and the enforcement of those standards, are best left in the hands of the academic departments and graduate schools to which the theses are presented and which are responsible.

Discussion and Conclusions

It is clear from the responses to the questionnaire and from appended statements of opinion by several respondents that matters of form and style, both the setting of standards and the enforcement of those standards, are best left in the hands of the academic departments and graduate schools to which the theses are presented and which are responsible.

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TABLE 8

AVAILABILITY OF NON-LIBRARY COPIES

<table>
<thead>
<tr>
<th>Availability</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic departments</td>
<td>49</td>
</tr>
<tr>
<td>Graduate school</td>
<td>4</td>
</tr>
<tr>
<td>Branch libraries</td>
<td>4</td>
</tr>
<tr>
<td>University archives</td>
<td>2</td>
</tr>
</tbody>
</table>

possible for granting the degrees. It should not be the library’s responsibility to control the intellectual content or the stylistic presentation of degree papers, but rather to act as a repository and point of access for these materials. As such, the university library must be concerned with the physical format of such papers as it affects legibility, bindability, and archival qualities of the copies deposited.

It is probably logical in most universities for binding preparation to be done by the library, since this function is already performed in most libraries for serials and paperbacks. Handling of incomplete or flawed copies discovered during binding preparation is another matter. There is an inherent difficulty in obtaining replacements for missing thesis pages after their authors have graduated and accepted employment elsewhere. Perhaps careful page-by-page collation before the copies are accepted for deposit (and before the student graduates) is the only sure way of avoiding such frustrations. Such a quick page-by-page inspection by the library agent accepting the thesis would also render evident any instances of margins too small for binding or fading xerography too faint for microfilming while the author is still on hand to remedy the situation.

There are two schools of thought affecting subject cataloging of theses. One holds that a thesis, like any other book, represents information on a subject and as such should be classified and shelved according to its subject matter. The other asserts that a thesis is first and foremost a thesis, that it should be handled and classed as a thesis, and that all theses should be shelved together, since the main users of theses are prospective thesis writers who consult them to determine the proper format or to confirm that the proposed subject has not already been treated by someone else in the department.

In an attempt to satisfy the valid viewpoints and needs of both schools, the University of Wyoming has created a compromise which meets the subject needs of the first group by thorough cataloging and complete subject analysis and the browsing needs of the second group by shelving all theses together, arranged by academic department. This approach, perhaps modified to permit arrangement by date or degree, is suggested for other institutions. It eliminates the need for all but the most rudimentary classification, but does not alleviate the problem of
subject heading assignment for complicated and extremely esoteric materials.

Consequently, the committee has recommended the establishment of a thesis specialist position in the cataloging department. This person would act as library liaison, not only with thesis advisors and the graduate school but with the students as they are writing their theses. The duties would include assisting students with questions of physical format and bindability, directing them to reference personnel for bibliographic and research assistance as the need develops, and discussing topics with them in an attempt to arrive at accurate subject headings to be used in the eventual cataloging of the completed theses. The last activity would probably save considerable time now spent by catalogers in calling faculty members or rummaging through textbooks in unfamiliar disciplines, trying to translate undecipherable thesis titles into the vocabulary of Library of Congress Subject Headings. Upon completion, the cataloger would check the thesis for final compliance to physical format specifications, accept it for deposit, and catalog it. It is to be hoped that advertisement on campus of the availability of this person to help students throughout the thesis writing process would help to streamline the operation for all concerned, and eliminate errors at an early stage. The image of the library is not enhanced when a student finds out the day before commencement that he has not met some unknown format requirement and therefore cannot graduate.

REFERENCES

3. Barbara Wilde, letter to Kelly Patterson, Carol White, and Martha Whittaker, January 1976.

APPENDIX A: QUESTIONNAIRE

NOTE: If your library treats master's theses differently from doctoral dissertations, please indicate to which you are referring.

1. Are theses and dissertations presented to the library:
   - bound
   - unbound

2. If bound, who is responsible for seeing that they get bound?
   - student
   - academic department
   - graduate school
   - bookstore
   - other (specify)

3. If unbound, does the library:
   - bind permanently
   - shelf in pamphlets or spring-load binders
   - other (specify)

4. Does your institution have set thesis format regulations and standards?
   - yes
   - no
5. If yes, who sets these standards?

- academic departments
- graduate school
- library
- other (specify)

6. Who is responsible at your institution for screening and accepting format of theses and dissertations (check all which apply):

- academic departments
- library
- graduate school
- other (specify)

7. If the library is involved in this screening, please specify exactly what factors the library screens for and who on the staff is responsible. Possible factors may include content, paper quality, quality of reproduction, margins, illustrations, etc.

8. Do you catalog theses and dissertations?

- yes
- no

9. If "no," how are they stored and retrieved?

10. If "yes," are they descriptively cataloged:

- according to Anglo-American Cataloging Rules
- not at all
- other (specify)

11. Are they assigned subject headings?

- yes
- no

12. Are they classified:

- Dewey
- other (specify)
- LC

13. If catalogers receive flawed copies, do you:

- describe and shelve as received
- collate and try to replace missing pages, etc.
- other (specify)

14. Does your institution participate in Dissertation Abstracts?

- yes
- no

15. Do you keep in the library (check all which apply):

- archival (non-circulating) paper copy
- archival (non-circulating) microfilm copy
- circulating paper copy
- circulating microfilm copy

16. Are thesis and dissertation copies available for use somewhere on your campus other than the library?

- no
- yes (specify where)

17. If there is anything you feel is pertinent to the question of library handling of theses which we have not covered, please feel free to comment:

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Library Resources & Technical Services
APPENDIX B: RESPONDENTS

| University of Alabama            | University of Nebraska at Reno          |
| American University             | University of New Hampshire              |
| Arizona State University        | University of New Mexico                 |
| University of Arkansas          | New Mexico State University               |
| Auburn University               | New York University                      |
| Brandeis University             | University of North Carolina             |
| Brigham Young University        | North Dakota State University            |
| Bryn Mawr College               | University of Northern Colorado          |
| University of California, Berkeley | Northwestern University                |
| University of California, Los Angeles | University of Notre Dame            |
| University of Chicago           | Ohio State University                    |
| University of Cincinnati        | University of Oklahoma                   |
| Clark University                | Oklahoma State University                |
| Colorado State University       | University of Oregon                     |
| Columbia University             | Oregon State University                  |
| University of Connecticut       | University of Pennsylvania               |
| Cornell University              | Pennsylvania State University            |
| Dartmouth College               | University of Pittsburgh                 |
| University of Delaware          | University of Portland                   |
| University of Denver            | Rice University                          |
| Duke University                 | University of Rochester                  |
| Emory University                | Rutgers University                      |
| Florida State University        | Saint Louis University                   |
| George Washington University    | University of South Carolina             |
| Georgetown University          | University of South Dakota               |
| University of Houston           | South Dakota State University            |
| University of Idaho             | University of Southern California        |
| University of Illinois          | Stanford University                      |
| Indiana University              | State University of New York at Buffalo  |
| University of Iowa              | Temple University                        |
| Iowa State University           | University of Tennessee                  |
| University of Kansas            | Texas Tech University                    |
| Kansas State University         | Tufts University                         |
| University of Kentucky          | Tulane University                        |
| Louisiana State University      | University of Utah                       |
| University of Maine at Orono    | Utah State University                    |
| University of Maryland          | Vanderbilt University                    |
| University of Massachusetts, Amherst | University of Vermont            |
| Michigan State University       | University of Virginia                   |
| University of Minnesota         | University of Washington                 |
| University of Mississippi       | Washington State University              |
| University of Missouri          | Washington University (St. Louis)        |
| University of Montana           | Wayne State University                    |
| Montana State University        | West Virginia University                 |
| University of Nebraska          | University of Wisconsin                  |

Volume 21, Number 3, Summer 1977
A Cost Analysis of the Ohio College Library Center On-line Shared Cataloging System in the Ohio State University Libraries*

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and
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Processing Division
Ohio State University Libraries
Columbus

A study of the costs of cataloging and associated processing tasks before and after the adoption of the Ohio College Library Center On-line Shared Cataloging System at the Ohio State University Libraries finds that an increase in production has been achieved. Unit costs have risen at a rate less than the general rate of inflation.

Introduction

IN THIS INITIAL ATTEMPT to evaluate the effectiveness of the Ohio College Library Center (OCLC) on-line computerized cataloging system as it has been utilized by the Ohio State University Libraries (OSUL), the main focus is a description and analysis of a cost study based on a comparison of production statistics and technical processing budgets by departmental expenditures according to organizational structure and by functional expenditure for five time periods: July–December

Manuscript received July 1976; accepted for publication September 1976.

* Funding for this study was provided by the Ohio State University through the University Research Grant Program. The authors wish to thank Fred Kilgour of OCLC for his advice and Penny Key and many other OSU Libraries staff members for supplying data and advice.
1970, July–December 1972, July–December 1973, July–December 1974, and January–March 1975. In addition, the paper presents some views of a large academic library with established and often complex technical services procedures attempting to change itself in order to most effectively make use of a new tool, the OCLC system.

The original purpose of the study was a simple and straightforward comparison of “pre-OCLC cataloging” and “OCLC cataloging” by contrasting the costs of the period of entirely manual cataloging with those of the periods after the implementation of the OCLC system. However, as with most cost studies—and especially those which take place long after the time periods being studied—special circumstances developed. These special circumstances include problems such as (1) a lack of comparable statistics; (2) the difficulty involved in pulling together the necessary sorts of statistics and budget figures; (3) the lack of units limited to a single activity; for example, catalogers did both original cataloging and a certain amount of cataloging with copy; (4) organizational change and necessary adjustment to the physical arrangement of the OSU main library which severely limited the location of units and the flow of materials through processing; (5) shifting and transferring of functions from one department to another; (6) the necessity of manual production of cards for those items which could not be handled by OCLC, such as serials and non-roman-alphabet materials; and (7) the implementation in late 1970 at OSUL of the Library Control System (LCS), another automated system, which required remodeling of all the procedures and units in addition to those changes required by the adoption of OCLC.

LCS is an on-line circulation system which serves the entire campus via terminals located in the twenty-six department libraries, at the main library circulation desk, and at a telephone answering center. The technical services support of LCS required some organizational changes which coincided with other changes planned for the incorporation of OCLC. Such changes mixed the variables enough so that it is impossible in many instances to determine whether OCLC or LCS caused a change in cost per unit.

Another complicating factor was and is the OCLC/LCS interface. All of the work done on the OCLC terminals is transferred daily to a magnetic tape which is then sent to the OSU computer center, where it is edited and a shortened form of the OCLC records is added automatically to LCS. On the one hand, the OCLC/LCS interface is efficient and effective in automatically adding hundreds of records daily to LCS. On the other hand, because of the sorts of editing done during the interface, various types of materials cannot be cataloged on OCLC and thus require the manual production of catalog cards.

For all of these reasons—many of which will be discussed more fully later—the original, simple, straightforward comparison of “pre-OCLC” and “OCLC” cataloging is not possible. Rather, four subjects are discussed here. The first section contains a description of two cost figures:
cost per departmental unit and costs per technical service function. The various departments in technical services are also briefly described. The second section is an explanation of production statistics used and other elements involved in the statistics and costing formulas. The third section contains tables of gross cost figures for the five time periods and an analysis of the tables, including their relation to the organizational and procedural changes in the OSUL technical services areas.

Description of Cost Figures

Comparison of costs and production statistics by departmental unit is most meaningful when discrete functions can be determined for each department. It has not been the case, however, for one function to be kept in the same unit at OSUL, especially during the period covered in this study. Departments at OSUL have developed, bifurcated as the need arose, and transferred responsibility for some functions from one unit to another. Because specific functions cannot always be assigned to specific units, unit costs have been developed in terms of departments and functions. The costs by departmental unit are presented in Table 1 and Table 2 and the costs by function in Table 3 and Table 4.

The period from 1970 to 1975 was, as one would expect, one of great development and swift changes. Library organization experienced both intra- and interdepartmental changes. In order to understand the cost tables one must know the organizational development of the departments concerned. A detailed history of the departments which are involved in cataloging will be found in the authors' "Management and use: OCLC and Technical Services at Ohio State University Libraries." In this article, the explanation is limited to departments whose terms appear in the tables below.

In 1970 the Catalog Department (hereafter designated "Cataloging") was doing original cataloging. The LC Card Editing Unit (hereafter designated "LC Editing") was cataloging using copy from LC cards or the National Union Catalog (NUC). Catalog Maintenance and Card Production (hereafter designated "Catalog Maintenance") was preparing the materials for the Photoduplication Department to reproduce unit cards. Catalog Maintenance then typed the headings on the unit cards, distributed cards to departmental libraries, and filed cards in the public catalog in the main library. In addition, it maintained the name and subject authority files.

In 1971, the Quick Editing Unit (hereafter designated "Quick Editing") was organized and took over the search of copy through OCLC, NUC, the Micrographic Catalog Retrieval System, and other bibliographic tools. Quick Editing's responsibilities also included cataloging books using copy found in the OCLC data base or in NUC, processing duplicates and added editions, and labeling all materials. Cataloging concentrated on original cataloging, but continued some copy cataloging (because of various restrictions in either the computer processing or the
copy itself). Originally cataloged bibliographic data which could be input to OCLC were typed by catalogers on worksheets instead of traditional three-by-five-inch catalog cards, and the worksheets were sent to the Bibliographic Record Division (hereafter designated “Bibliographic Records”) to be input. The Automated File Control Section (AFC) was added to Catalog Maintenance and they became the two parts of Bibliographic Records. The worksheets from Cataloging were input in Bibliographic Records by trained clerks. The Photoduplication Department (hereafter designated “Photoduplication”) continued to reproduce the unit cards, but only for manually cataloged titles which could not be input to OCLC.

In 1973 the input of original cataloging worksheets was transferred to Quick Editing. In exchange, the checking of name authority for the items the Quick Editing editors cataloged was transferred to Catalog Maintenance.

In 1974 as a result of the procedural development at OSUL and the expansion of the capability of OCLC, Quick Editing took over as much copy cataloging as possible, to leave catalogers almost completely free for original cataloging.

Table 1 presents actual production and cost figures for the departments described above and Table 3 presents a comparative cost analysis of pre-OCLC and OCLC cataloging by function rather than by department.

One example of the difference between departmental and functional costs is that of the searching of titles, which should be divided by all the titles searched regardless of whether they are cataloged through OCLC or the manual card production system. In the departmental tables, the cost of such searching for books which are eventually sent to Cataloging for original cataloging is included under Quick Editing, which includes the search section as a unit. In addition, material cost such as the expense of Polaroid film is also charged to Quick Editing in the “additional cost” columns, though the Polaroids are mostly used in manual cataloging. We have tried to analyze such distinctions carefully for each of the time periods, and to divide the costs proportionately into manual and computerized cataloging in the functional tables. The cost of photoduplication of catalog cards, however, is applicable only to cards manually produced through LC Editing and the original cataloging section, and the cost is, therefore, divided between those two units according to the ratio of production.

In Tables 3 and 4, the “functional tables,” figures are presented for the following functions: manual editing of available catalog copy (hereafter designated “Editing Card Copy”), “Computerized Cataloging,” “Original Cataloging” (manual), and “Catalog Maintenance.”

In addition to Table 1 and Table 3, which are based on actual cost figures, Table 2 and Table 4 provide data which take account of the rate of inflation. Since the time period under consideration includes a crucial inflationary period when the rate of dollar devaluation was as

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<table>
<thead>
<tr>
<th>Items Processed</th>
<th>Total Units</th>
<th>Basic Unit Cost ($)</th>
<th>Adjusted Unit Cost ($)</th>
<th>Additional Unit Cost ($)</th>
<th>OCLC Assessment ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC/Quick Editing*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970 Title</td>
<td>6,342</td>
<td>3.38</td>
<td>5.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970 Volume</td>
<td>6,979</td>
<td>3.07</td>
<td>4.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1972 Title</td>
<td>8,448</td>
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*Volume 21, Number 3, Summer 1977*
high as 12.1 percent, the figures in Tables 2 and 4 present adjusted figures, reflecting figures from the Consumer Price Index. The ratio of inflation adopted for each time period is as follows:

- November 1970 to November 1971: 3.5%
- November 1971 to November 1972: 3.5%
- November 1972 to November 1973: 8.5%
- November 1973 to November 1974: 12.1%
- 1975 first quarter: 8.0%

We have taken the 1970 figures as a base, and the figures for 1972 and later have been reduced proportionately.

The calculation could have been done in reverse, in which case we would have taken 1975 as the base and increased the actual figures of 1974 and earlier years proportionately. This method would have made it possible to examine the cost in the light of current dollar value. The former method was chosen to permit the continuing analysis of such costs using the same formulas and to avoid recalculating previous figures whenever a new period is added. Taking 1970 as the base period, we will only have to do calculations for each new time period.

Explanation of Statistics and Formulas

This retrospective study is based on statistics kept by various departments in various ways over a number of years. Therefore, some adjustments were necessary to come up with the statistics most suitable to our purpose. The determination of which data to include and which data to exclude was very time-consuming and complex work. We have tried, however, to keep the statistics as accurate and consistent as possible. Some data which should have been excluded were reluctantly included in order to allow for historical inconsistencies in statistics-keeping practices. The following section presents explanations of each item used in cost analysis and the costing formula utilized.

Production Figures. In addition to monographs, the following items are included in the statistics:

1. Serials. Since serials are not directly involved in OCLC cataloging, our original intention was to exclude serials from the analysis. Statistics for serials, however, were not kept separately until July 1973, and thus it was impossible to exclude figures for serials from the 1970-71 and 1972-73 periods. To consistently evaluate statistics from each time period, therefore, serials are included in production figures. It must be noted that serials were not input to OCLC for any period under consideration. In the near future, when serials card production can be done through OCLC, the inclusion of serials statistics will finally become useful.

2. Theses. The OSU dissertations and theses are cataloged according to simplified rules which use elaborate author numbers but no class number. The statistics for theses are incorporated into regular monographs statistics, being counted as regular new titles. These
are all input into OCLC and are therefore included in OCLC production figures.

3. Special language materials. These materials are treated as regular monographs. However, non-roman-alphabet materials such as Chinese, Japanese, Greek, and Russian are not input into OCLC.

4. Added volumes. Added volumes, handled only by experienced clerks in Cataloging, have been included in Cataloging statistics.

5. Microform publications. Microform publications are searched in regular manner, and processed by catalogers as original cataloging or using NUC copy. Each type of microform publication is either classified or cuttered only, using local rules. Microforms which are described in full with subject analysis are input into OCLC, and are included in Cataloging production figures.

Since the method of keeping statistics for audiovisual materials is somewhat different from that of other types of materials, they are adjusted in the following manner. The number of titles is a true reflection of production figures, but the number of volumes is arbitrarily equated with the number of titles rather than the number of pieces. Thus a set of 125 slides representing one title is counted as one title and one volume because 125 would not be an accurate reflection of volumes handled.

Title and volume counts for analytics, reinstatements, and materials recataloged are not included in the production statistics even though the labor costs to process these materials have been included. Therefore the resulting unit cost figures are slightly inflated.

Basic Unit Cost. The formula used for unit cost calculation per title and per volume is as follows:

Basic unit cost = Salary cost/Units produced

Salaries and wages for persons employed part-time or during parts of the periods under consideration are prorated in terms of full-time equivalents. Again, the departmental tables show the actual total salaries of the departmental staff, and the functional tables show salaries prorated according to the function the staff member is fulfilling, regardless of departmental boundaries. For example, in 1972 and a part of 1973 the work-sheets for original cataloging were input into OCLC by Bibliographic Records staff. The salaries for these tasks are calculated and added to original cataloging, along with the salaries for catalog card photoduplication staff. The searching time after the establishment of Quick Editing spent on books eventually given original cataloging is prorated and added to the original cataloging cost.

It should be noted here that the total basic unit cost is not equal to the sum of the basic unit costs of all departments in the tables. For instance, in Table 1, the total basic unit cost of 1970, $8.99, is not the sum of $3.38 (LC Editing), $8.30 (Cataloging), $0.08 (Photoduplication), and $2.03 (Bibliographic Records). The basic unit cost for each unit is calculated on the basis of its production rather than on the basis of the total unit production of the year. On the other hand, the total
basic unit cost is calculated by adding the costs of all the departments and dividing by the total production figure. The same method is used in the calculation of the adjusted unit cost.

**Adjusted Unit Cost.** Computation of the adjusted unit cost involves, first, the computation of the “standard unit cost per production hour” and, then, its adjustment, according to the following formulas:

- Standard unit cost per production hour = (Salary cost + Fringe benefits) / Hours actually devoted to production work
- Adjusted unit cost = (Standard unit cost per production hour × Number of full-time equivalents × 1040) / Units produced

(The 1040 figure is based on eight hours per day for twenty-six weeks.)

**Additional Unit Cost.**

Additional unit cost = Additional cost/Units produced

The column for “additional unit costs” is the sum of the following discrete added costs, each of which was computed individually: (1) Library Control System terminal rental, (2) OCLC card costs, (3) OCLC assessment, (4) OCLC terminal rental, (5) manual card cost, (6) Xerox machine rental, (7) NUC subscription fee, (8) Polaroid camera, (9) Polaroid camera film, and (10) Micrographic Catalog Retrieval System subscription fee. Of these, only the OCLC assessment figure is included in the table, because all of the others are minimal.

Thus, the total basic unit costs and the total adjusted unit costs may be obtained by adding total additional unit cost (column 5) to basic unit cost (column 3) and adjusted unit cost (column 4), respectively.

- Total basic unit cost = Basic unit cost + Total additional unit cost
- Total adjusted unit cost = Adjusted unit cost + Total additional unit cost

Overhead and supplies such as stationery and typewriter ribbons are not included in the figures.

**Library Control System (LCS).** The LCS terminals used by OSUL have included the IBM 2260 CRT (replaced by the Asciscope in 1974), the Hazeltine, and the Texas Instruments Printer Terminal. The cost of terminals for cataloging, which is based on the number and cost of terminals during a given period, has ranged from $810.00 in 1972 to $1,500.00, the figure for 1974 and 1975, based on three Asciscope terminals at $65.00 per month and one Texas Instruments terminal at $55.00 per month. In no case has the total unit cost per title been greater than $.05. In technical services, LCS is mainly used for updating and other cataloging maintenance by Bibliographic Records, and for shelflisting by Quick Editing, LCS cost is, therefore, charged to Quick Editing and Bibliographic Records in the departmental tables and Computerized Cataloging and Original Cataloging in the functional tables throughout.

**OCLC Card Cost.** OCLC card cost is divided between Quick Editing and Cataloging in the departmental tables and between Computerized Cataloging and Original Cataloging in the functional tables. The ratio of Quick Editing and Cataloging OCLC-input is determined by the
number of records added by each unit to the OCLC data base, as follows:

<table>
<thead>
<tr>
<th>Time period</th>
<th>Total</th>
<th>Quick Editing</th>
<th>Cataloging</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972</td>
<td>9,699</td>
<td>8,448 (87%)</td>
<td>1,251 (13%)</td>
</tr>
<tr>
<td>1973</td>
<td>14,135</td>
<td>11,092 (78%)</td>
<td>3,043 (22%)</td>
</tr>
<tr>
<td>1974</td>
<td>22,808</td>
<td>17,971 (79%)</td>
<td>4,837 (21%)</td>
</tr>
<tr>
<td>1975</td>
<td>10,942</td>
<td>9,179 (84%)</td>
<td>1,763 (16%)</td>
</tr>
</tbody>
</table>

In no case has the total unit cost per title been more than $.20.

**OCLC Assessment.** OCLC assessment is charged to Quick Editing in the departmental table throughout the study, since that unit manages all terminals and all except one are located there. In the functional tables, the assessment costs are divided between Computerized Cataloging and Original Cataloging by the ratio of OCLC production. During the years 1971-74, the library had four terminals included in the OCLC assessment, increased in 1975 to five.

**OCLC Terminal Rental.** In 1972 one rental terminal was located in Cataloging. It was used primarily by the department and by Bibliographic Records; it was also used to a lesser degree by the Acquisition Department. In the departmental tables, the cost is divided equally between Bibliographic Records and Cataloging. In the functional tables, however, it is divided between Computerized Cataloging and Original Cataloging.

In 1973, the terminal was moved to Bibliographic Records and was used equally by Bibliographic Records and Quick Editing, though it was also used occasionally by the Acquisitions Department and Cataloging. For this period, rental cost was divided equally between Quick Editing and Bibliographic Records in the departmental tables. In the functional tables, the rental is divided according to the ratio of production through OCLC between Original Cataloging and Computerized Cataloging. From 1974, a cost of $155.00 per terminal per month for three Beehive terminals has been charged to Quick Editing in the departmental tables, and proportionately between Original Cataloging and Computerized Cataloging in the functional tables.

**Manual Card Cost.** Manual card reproduction costs are all charged to Photoduplication in the departmental tables, and to Original Cataloging in the functional tables, except in the 1970 functional tables, when Editing Card Copy and Original Cataloging divided the cost according to their production ratio.

**Xerox Machine Cost.** Xerox machine cost is charged in the same manner as that of manual card cost. The total cost of the Xerox machine rental is calculated proportionately by the percentage of total use of the machine for card production.

**NUC Subscription.** In 1970, $600.00 is charged to Cataloging in the departmental tables and to Original Cataloging in the functional tables for the NUC subscription. From 1972 the cost has been divided equally between Quick Editing and Cataloging in the departmental tables and between Original Cataloging and Computerized Cataloging in the func-
tional tables. Total NUC costs for each period are: 1970, $600.00; 1972, $730.00; 1973 and 1974, $890.00; 1975, $446.00.

Polaroid Camera. A second Polaroid camera was purchased at $406.95 in 1973 and this cost is added to Quick Editing in the departmental tables. In the functional tables, 30 percent is assumed by Original Cataloging and 70 percent by Computerized Cataloging. Since NUC photocopies are mainly used in Original Cataloging, the actual proportion for Original Cataloging may have been a little higher.

Polaroid Film. The cost of Polaroid film was charged to the different periods on the basis of date of purchase and thus does not reflect the cost of film used during a given period. The costs are: 1972, $454.00; 1973, $454.00; 1974, $538.00; and 1975, $538.00. The same amount was purchased in a six-month period of 1974 as during a three-month period of 1975.

The cost of Polaroid film was charged in the following manner: all to Quick Editing in the departmental tables, 30 percent to Original Cataloging and 70 percent to Computerized Cataloging in the functional tables.

MCRS. In 1972 and 1973, OSUL subscribed to the Micrographic Catalog Retrieval System. The cost was divided between Quick Editing and Cataloging, in the proportion of 70 to 30, in the departmental tables, and between Computerized Cataloging and Original Cataloging, in the same proportion, in the functional tables.

Some Observations on the Results

Tables 1–4 display the computed costs obtained by applying the formulas to the figures as explained above. Table 1 is the sum of all the factual quantitative information gathered from each unit for each time period. Table 3 presents the costs by function rather than by organizational structure. Table 2 and Table 4 present the effect of inflationary factors on the figures in Tables 1 and 3, respectively.

The results show an unexpectedly high cost per unit cataloged. It must be noted, however, that the cost figures shown here are the highest possible, that is, the worst possible case. When figures were rounded off or prorated, the highest possible figures were adopted. Furthermore, as indicated above, analyses, reinstate-ments, and recataloged copies are not included in the total production statistics, although the cost of their cataloging is part of the unit cost. It was not possible to separate out the time and money spent in the cataloging of those materials.

Because of such clouded areas, the cost figures are more useful for comparison between periods than as absolute values. We considered that consistency was important to see the trends of cost over the given periods. Consistency throughout periods, therefore, has been sought rather than preciseness within the period, even if there were more breakdowns of costs available in some periods.

The general trend observed in Table 1 is a rise in cost in 1972 in all categories and a decrease in cost in 1973. The situation is too complicated to assume that such an increase in the costs was caused solely by
the implementation of the OCLC system. Factors such as the implementation of the Library Control System, organizational changes, and new work flows interacted to affect the unit cost. Production for 1972 does not increase markedly. We hypothesize that the effect of the 1972 adjustments did not become apparent until 1973.

The decrease in costs during 1973 seems to indicate the effectiveness of the adjustments in structural organization and materials-handling procedures. Improvements in the flow of work in various sections were noticed. In Quick Editing, for example, we first searched in the OCLC data base and if the record was not found, we searched in NUC. Then books were shelved for the second search. After studying statistics for certain periods, we decided that it was more efficient to search NUC only after a second search in OCLC failed. Also, after taking the statistics for "hit rates" for the second and third searches, we concluded that the second search ten weeks after the first search was most efficient in terms of "hit rates" for searching done.

Also, department and interdepartment shifts of work load contributed to increased work efficiency. A procedural change of this nature was the input of original cataloging information to OCLC. The inputting was transferred from Bibliographic Records to Quick Editing in exchange for authority file checking, which began to be done by Bibliographic Records after the OCLC cards were received. In addition, Cataloging reduced its cataloging with copy and attempted to limit its scope to original cataloging and transferred cataloging with copy to Quick Editing in order to use professional time most effectively. The implication is that while Cataloging was doing less cataloging (though more of it was original), Quick Editing was doing more with copy and so overall production increased. In Photoduplication, utilization of copiers for purposes other than card production reduced the initial cost of copier machine rentals drastically.

One additional factor was OCLC's addition of the "extended search" capability in February 1973. In the beginning of OCLC operation, no more than 50 entries for one search code could be displayed. Currently, up to 256 entries for one search code can be searched in a few steps. This may have prompted a decrease in time of manual searching. This type of intangible benefit should not be overlooked.

Real cost comparison of manual and computerized cataloging is best done when the costs of cataloging an identical item both manually and by computer are available. Though the original purpose of this paper was such a comparison, at OSUL, manual cataloging is now done for items which cannot be processed through OCLC. In addition it is impossible to compare "manual" cataloging of 1971 with "automated" cataloging of 1974. The result here is a demonstration of the trends in costs of manual original cataloging in relation to the costs of computerized copy cataloging within OSUL.

As mentioned above, the figures show that in 1972 both "manual" and "automated" cataloging costs rose, but that only "manual" costs rose
in subsequent years. The rises are due in large measure to the effect of organizational changes. Initially, there were many titles which could not be cataloged through OCLC because of interfacing problems between OCLC and the Library Control System, including many titles which represented simple cataloging. As a result of organizational change, technical improvements, and the increase in OCLC's capability, a pattern has developed in which the popular English materials are cataloged quickly from the OCLC database, whereas materials presenting problems must wait for original cataloging. The rise in "manual" cataloging costs indicates that the system is reaching a point at which original cataloging is limited to those titles requiring ultimate professional knowledge, with resulting high expense. As OCLC's capability increases, this trend will continue and the work of professional catalogers will indeed be limited to original cataloging. Table 5 presents figures on FTE personnel in the several units over the five-year period.

The adjusted cost for Cataloging is high in proportion to other divisions. For example, the difference between "adjusted cost," basically salary plus fringe benefits, and "basic costs," salary, in Quick Editing is

| TABLE 5 |
|---|---|---|---|---|
| **Professional** |  |  |  |  |  |
| LC/Quick editing* | 0.5 | 2 | 2 | 1.5 | 1.5 |
| Cataloging | 21 | 16 | 12 | 12.5 | 12.5 |
| Bibliographic Records | 1.5 | 2 | 2 | 2 | 2 |
| Photoduplication | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | 23.0 | 20.0 | 16.0 | 16.0 | 16.0 |
| **Clerical** |  |  |  |  |  |
| LC/Quick Editing* | 6 | 14 | 15 | 14 | 14 |
| Cataloging | 11.4 | 10.5 | 14 | 10 | 10 |
| Bibliographic Records | 7.75 | 6 | 14.5 | 13 | 13 |
| Photoduplication | 0.6 | 0.4 | 0.3 | 0.3 | 0.3 |
| **TOTAL** | 25.75 | 30.9 | 43.8 | 37.3 | 37.3 |
| **Special Contract** |  |  |  |  |  |
| LC/Quick Editing* | 0 | 0 | 0 | 0.4 | 1 |
| Cataloging | 0 | 2 | 0.6 | 0 | 0 |
| Bibliographic Records | 0 | 0.8 | 0 | 0 | 0 |
| Photoduplication | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | 0 | 2.8 | 0.6 | 0.4 | 1 |
| **Student** |  |  |  |  |  |
| LC/Quick Editing* | 0.3 | 5 | 4 | 7 | 4.1 |
| Cataloging | 2 | 3.5 | 1.1 | 1.8 | 1 |
| Bibliographic Records | 10.5 | 10 | 9.1 | 12.7 | 7.6 |
| Photoduplication | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | 12.8 | 18.5 | 14.2 | 21.5 | 12.7 |

* Figures for 1970 for LC Editing and 1972-75 for Quick Editing.

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* Library Resources & Technical Services
between $1.00 and $3.00, while in Cataloging the difference is as much as $5.70. On the other hand, the “additional cost,” a large portion of which represents an assessment cost for OCLC, was much higher in Quick Editing in 1972, decreasing drastically by 1974 and then stabilizing. In Table 3, the tendency is shown more clearly, that is, the difference between “adjusted cost” and “basic cost” in Computerized Cataloging is between $1.00 and $3.00, while in Original Cataloging the difference is as much as $6.21. The “additional cost” shows the same relation between Computerized Cataloging and Original Cataloging as between Quick Editing and Cataloging.

The implication is that Cataloging’s cost is highly related to salary and other fringe benefits, that is, the main factor to influence cost is the cost for personnel. On the other hand, the computerized cataloging cost is highly related to “additional costs” in addition to salary. The figures also reveal that the cost of personnel involved in original cataloging tends to increase as non-personnel costs decrease, until a certain level is reached at which both costs stabilize.

It is interesting to observe the cost change in Quick Editing compared with LC Editing in Table 1. In early 1972, the computerized process was much more expensive than the cost of manually editing LC cards. The computerized process was twice as expensive, gradually decreasing for three years until it became as low as the 1972 LC Editing cost. In the fourth year it decreased further, finally making computerized cataloging less costly than the manual editing of LC cards. This cost trend seems to substantiate the earlier observation that the initial cost of automation is very high and that the effectiveness of its application brings the cost down to an economically justifiable point.

In comparing the tables presenting actual figures with the tables presenting inflationary figures, we see that inflation accounts for a great part of the increased costs. The typical example is the “basic unit cost” per title for Cataloging, which was $11.18 in 1974 and $11.11 in 1975, increasing approximately $8.00 from the $8.30 of 1970 (Table 1). Yet in the inflationary table, the “basic unit cost” per title is $8.59 in 1974, and $7.90 in 1975 (Table 2). A decrease of $.40 from 1970 to 1975 would have resulted if inflation had not been occurring. If inflation were not a factor, the cataloging operation would not be as costly as it appears. In fact, the trend would be toward a reduction in cost. The implication may be that even though manual cataloging costs more than computerized cataloging, it also may have benefitted from the computerization, which certainly reduced the time and effort involved in manual searching while adding the benefit of adding records to both OCLC and LCS (via the interface) in one operation.

Conclusion

In sum, this pilot cost study demonstrates that OCLC has allowed an increase in OSUL’s cataloging production, though unit costs rise slightly. Indeed, it has been shown that if inflation were not a factor, there would have been a substantial decrease in unit costs.

* Volume 21, Number 3, Summer 1977 *
In the future, unit costs may or may not increase, depending on continuing organizational and procedural refinements, and the increasing sophistication and expansion of the OCLC data base, e.g., inclusion of serials, audiovisual materials, etc.

REFERENCES

1. The 1970–71 academic year has been excluded because OCLC was implemented during the year and any costs would represent a mixture of pre-OCLC and OCLC cataloging. The 1975 figures were compiled at a time when only the three months of January to March were available.

2. Kaye Gapen and Ichiko Morita, “Management and Use: OCLC and Technical Services at Ohio State University Libraries” (accepted for publication in this journal at a later date).


5. The procedures used in computing these costs follow closely those of Dougherty and Heinritz and so have not been repeated in detail here. The figure for professional personnel for the six-month period is 753 hours and for clerical personnel 803 hours. Both are adjusted to take account of sick leave, holiday time, vacation time, personal needs, and fatigue allowance.

6. Cost of the first Polaroid camera is not available.

BIBLIOGRAPHY


Romanization

The article "Romanization Reexamined," which I wrote for the Winter 1977 issue of *LRTS*, was occasioned by my growing perception of a continuing course of events that is making our traditional schemes of romanization more and more untenable in the context of the forces of international standardization, universal bibliographic control, and computer input of bibliographical data. These events, in combination with the expected closing of the public catalog of the Library of Congress and the beginning of a new one with no necessary ties to the old one, carried the clear implication that time is running out for research libraries to reevaluate present practice critically and to decide the right course to follow in the future.

As I pondered this situation it soon became clear to me that the problems of romanization could be finessed by simply abandoning this procedure at the "cost" of abandoning the universal author/title catalog. On further reflection this "cost" began to appear to be, in fact, a distinct gain. After having wrestled with certain details such as translations, added entries, subject entries, and the special case of music, I was ready to start writing. The resultant article was based entirely on my own knowledge, experience, and reasoning and was prepared without benefit of a literature search. It represented a change of position from my earlier paper on this subject, prepared for the Conference on American Library Resources on Southern Asia, held at the Library of Congress in 1957.

Subsequent to the publication of this article, it has been brought to my attention that Bella Weinberg of the Yivo Institute for Jewish Research of New York City also has analyzed the problems of romanization and has proposed the same solutions to these problems that I have proposed. It is clear that Ms. Weinberg asserted in print the rationale of abandoning romanization three years before I did.

It is also clear that the North American research libraries did not get the message. My article was intended to arouse them to make the necessary decisions before the critical point is passed at the end of this decade. Hence, the style and tone of my article. It was necessary to explain the nature of the problem to readers not conversant with the details, to set forth the logic of the proposed radical solution as convincingly as possible, and to make clear to the unaware the nature of the events that will soon demand a solution.

It is unfortunate that Ms. Weinberg's contribution was not acknowledged in my paper. I can only hope that this indication that the two of us, analyzing the problem independently, have come to the same conclusion, will attest to the urgency of the problem and the necessity of the solution that we have both proposed.—C. Sumner Spalding

REFERENCES


*Volume 21, Number 3, Summer 1977*
We have read with interest Mr. Spalding's article entitled "Romanization Reexamined." We agree with his recommendation of separate catalogues for separate collections of material in nonroman writing systems, and there are indeed libraries, normally humanities-orientated, whose holdings are organized in that way; but a library such as the British Library's Science Reference Library has vast holdings of such material that in no way form separate collections. For example, our Russian and Japanese books and periodicals are shelved by subject alongside similar works from other parts of the world. They are heavily and successfully used by readers who do not know the languages concerned, gaining access to what they need through the English summaries, diagrams, graphs, etc., and even by commissioning translations. Furthermore, the citations from which the reader starts may not reveal the language, writing system, or country of the original document; yet in the majority of cases, it is found without difficulty, or with minimal assistance, in Mr. Spalding's bête noire, the "universal catalogue." And what would he have us do with the hundreds of journals with two titles, one in roman script and one not, and containing articles in various languages?

Mr. Spalding may, however, be reassured to know that we are not quite "alone in feeling a need to represent names from other writing systems in our own," or at least, equally to the point, words other than names: if we look at Chinese and Japanese pocket dictionaries, we see that they sometimes feel a need, not to represent our writing system in theirs, but to go even further and represent theirs in ours, and that for their own convenience. That is, romanization used to arrange words so they can be more easily found—as in a catalogue!

It is also irrelevant to say that a Russian librarian would not dream of Cyrillicizing roman-alphabet material. Moderately educated Russians, Greeks, or Japanese are inevitably familiar with the roman alphabet, but the converse is seldom true of even highly educated Frenchmen, Germans, or Englishmen.

Although romanization is indeed the quagmire he describes, his alternative would be a worse one for libraries such as ours.—E. J. Copley, Head of Slavonic and East European Section, and G. J. Sassoon, Head of Oriental Section, Science Reference Library, The British Library, London.

I have read, and re-read, Mr. C. Sumner Spalding's article (LRTS vol. 21, no. 1, Winter 1977) "Romanization Reexamined" with interest and approbation. As you may know, a tendency at Harvard has been to have separate catalogues for materials in nonroman scripts. Thus the Far Eastern language books go to the Harvard-Yenching Library, the Hebrew books to the Hebrew Department of Widener Library, and books in the various Middle Eastern languages go to the Middle Eastern Department, of which I am the head.

Having long experience as a Middle East specialist and professional librarian, I can agree completely with Mr. Spalding on the necessity to avoid the problems that arise from the effort to force all of a library's holdings into one catalogue by means of "standardized" transliteration systems. My experience at Harvard has shown that separate catalogues for Arabic, Persian, Ottoman Turkish, Urdu and Armenian books have been quite satisfactory from the point of view of technical library operations and eminently satisfactory to the users of our collections, who find it far easier to work with a vernacular catalogue
than to puzzle out the various schemes of "romanization" that do not conform to the sounds of a language.

I am very much afraid that the drive for universal bibliographic control, and especially the desire in national American library circles to force everything into conformity with what is grandly referred to as "national bibliographic standards" so as to meet the requirements of computer operations, will eventually sweep away our vernacular catalogues. Our unique service to those who are able to use non-Western resources will give way to the need to conform to the needs of those who cannot read them and who wish to feed digestible Romanesque to their computers. I am therefore overjoyed that a person with Mr. Spalding's standing in the library world has spoken out against "Romanization." I approve without reservation his three recommendations and hope that I will be able to assist those leaders in the library world who may heed his call to discuss the issues and consequences of "Romanization."—David H. Partington, Middle East Librarian, Widener Library, Harvard University, Cambridge, Massachusetts.
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