



Microreproduction and the Acquisitions Program

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IF THE ACQUISITIONS LIBRARIAN could somehow contrive to incorporate within the library all books and other materials needed by its users without superfluous items, his life would be serene and his days would be filled with gladness. There are simply too many books and other evidences of recorded knowledge, too little money, not enough space, and insufficient personnel. Problems do not disappear but grow in size and complexity. Paradoxically, a surging demand for basic research material endures as established libraries continue to grow and new ones are being formed. The several micro-techniques are being called upon to assume ever greater responsibilities but their application has too often been dictated by expediency rather than enlightened planning. It is time to take stock.

When in the late 1920's the first of many microphotographic processes of documentary reproduction winked dimly above the bibliographic horizon, the event was viewed by some as a star of promise, by others as an apparition to be feared, avoided or circumvented. The path of microreproduction has been neither direct nor smooth; there have been mistakes, misconceptions, misapplications, dead ends, and controversies. Processes that are really complementary or supplementary have in some cases been regarded as rivals and proponents, rather than users, have separated into opposing camps to engage in vigorous conflict largely in the form of verbal charge and counter-charge with scant attention to the facts. Nevertheless, bold pioneering efforts, experiment and experience by librarians, users, technicians, and perhaps most important of all commercial concerns, have brought these techniques securely and permanently within the spectrum of library operations. No acquisitions program can be valid without them.

Microreproduction may be divided in terms of the physical form

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of the product into seven classifications. Two major subdivisions are: microtransparencies, textual material on a transparent support read by transmitted light, and micropaques, textual reproductions on an opaque support usually paper read by reflected light. Microtransparencies may be further subdivided into three groups:

1. Microfilm, 16 or 35mm in width on rolls of up to 100 feet in length.
2. Sheet microfilm comprising a sheet of film of some convenient size containing rows of textual images.
3. Short strips of microfilm approximately a foot or less in length used and stored as strips or mounted in lengths or even as single images in cards of various sizes and kinds.

Micropaques are produced photographically or printed. The former include:

1. Microcards, or rows of textual images on a 3 x 5" card.
2. Microtape and microstrip comprising images on narrow lengths of adhesive paper sometimes supplied in rolls of up to 100 feet in length; these are cut to suitable length and mounted on cards 3 x 5" in size or larger.
3. Microsheets are sheets of paper approximately 8 x 10" in size sometimes containing as many as two to three hundred images arranged in rows.

The second micropaque variant is not in its final stage produced photographically; instead it is a product of the printing press. The only commercial producer at the present time is the Readex Microprint Corporation which prints one hundred pages on each side of a sheet of paper 6 x 9" in size.

To illustrate graphically typical library uses of the microtechniques and some limitations of various processes, the accompanying chart (see page 445) has been prepared. The microtechniques as described above appear at the top, while at the left are listed four types of activity with certain subdivisions in each case; the categories are not mutually exclusive. "Single copy to order" means production of a single copy to meet a specific need; multiple copy or project work means cooperative endeavor whereby a group of libraries agree to share the costs of a particular operation in return for a copy. File negatives usually result from other operations maintained in a library or other center as a source of additional copies to be made on request; publication or republication means edition production designed to

make available single units or appreciable blocks of material in the same manner that a book publisher produces an edition for a general audience.

Single or to order copying can best be considered under three sub-headings namely, short run copying, as for example journal articles, usually to meet the needs of an individual, the copying of manuscripts and archival material which may be undertaken to meet the needs of an individual or as a part of a program to enhance the resources of a library, and a similar activity reproducing complete books either for an individual or for a library, sometimes in lieu of interlibrary loan. Most "single copy reproduction" is aimed directly at filling an immediate need; larger programs not intended for immediate specific needs partake of the nature of project copying except that in this instance an individual library may organize, finance and carry out a program. Many libraries, archives and similar institutions are equipped to provide microreproduction to order.

Multiple copy projects usually involve cooperative effort. A group of libraries for example may decide to pool their resources and finance the reproduction of a block of material each receiving a copy. By the same token a commercial producer will often organize a similar project on a subscription basis. There are many examples that might be selected as illustrations. One of the early ventures involving printed material was the microfilm reproduction by University Microfilms, Inc., of Ann Arbor, Michigan, of English books printed before 1640. A recent micropaque project is the microcard edition of *Corporation Annual Reports* available through the Microcard Report Service at Middletown, Connecticut. The microprint edition of the *British Sessional Papers*, a vast undertaking by the Readex Microprint Corporation of New York, illustrates one application of printed micro images. Insofar as multiple copy projects for manuscripts are concerned, an illustration is the microfilm reproduction of the *Adams Manuscripts* undertaken for subscribers by the Massachusetts Historical Society in Boston. Over 300,000 pages of original manuscript are being delivered to subscribing libraries in the form of 35mm microfilm positives. Newspapers in libraries constitute a particular library problem of massive dimensions. Preservation, use, storage, and acquisition of back files have been made possible through the microtechniques, principally by microfilm although experiments with other variations have been undertaken. This activity has become so extensive and widespread that the Microfilm Clearing House at the Library of Congress in cooperation with the Association of Research Libraries has issued a union list of

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newspapers available on microfilm. Similar activities for periodical files are common and are listed in the *Clearing House*, and publicized in its bulletin appended to the Library of Congress *Information Bulletin*.

File negatives often result from other operations. When, for example, a library copies a fragile, rare book, more frequently than not the negative is placed on file so that positives can be made without the need to rephotograph the original book. A most useful source for information about file negatives is the *Union List of Microfilms* edited by Eleanor E. Campion at the University of Pennsylvania.¹ There have been, however, extensive programs for the acquisition of material which has subsequently become available for reproduction to order in whole or in part.² In 1936 W. S. Jenkins began a fifteen year program that resulted in the production of 1,700 reels comprising "The Microfilm Collection of Early State Records" on deposit in the Library of Congress. It is worthy of note that activities of this type are possible only through the use of techniques which enable reproductions of a single copy at one time to be made economically. In practice this has meant microfilm or, in Europe sometimes, sheet microfilm. Presumably the same could be accomplished with microcards, although the handling costs might be excessive. File negatives of manuscripts are essentially similar to those for printed material. The National Archives has inaugurated a File Microcopy Program including for completeness or in anticipation of demand not only material which has been requested in microfilm form but also records for which no request existed. This activity on 35mm microfilm has been termed sub-publication. Theses are again essentially similar and many universities retain thesis negatives to supply future needs. An important distinction has been made at the Library of Congress between "expendable negatives" which may be used in reading machines as they can easily be replaced and "non-expendable" or file negatives which may only be used for reproduction.³

Publication and republication involve the use of the microtechniques purely as graphic media. This is to say that instead of publishing in letterpress or offset, a publisher may produce an edition or reissue a former work in a microformat. Publication of original manuscripts, and in this category are included typewritten manuscripts as well as those produced by hand, have been undertaken by microfilm, sheet microfilm, microcard, microsheets, and microprint. Through a plan devised by the Association of Research Libraries over half of all doctoral dissertations currently produced in the United States are pub-

lished on microfilm. The University of Rochester publishes its theses in music, medicine, library science, and other fields in the form of microcards. Many other examples of original publication exist. Republication as in the case of the microfilm edition of *The New York Times* and of current periodicals is common. The catalogs of the Microcard Foundation are extensive and offer a great variety of items. The Microlex Corporation, Rochester, New York, is reproducing law "libraries" in a special sheet micropaque form. Similarly the Readex Microprint Corporation offers among other microprint reproductions a single unit comprising the complete bibliographies of Sabin, Evans, Harris and Church (New York 1940-41) for \$50.00.

The final column at the bottom of the chart is entitled Edition Economy and refers to estimated production efficiency of the several micro processes used in producing multiple copies or editions. The essential difference between the photographic and printed reproduction of micro images rests in the fact that photographically sensitized material is considerably more expensive than plain paper. The costs for photographic reproduction in the last analysis cannot be less than the cost per square inch of sensitive material developed or processed ready for use. Similarly, the cost of any printed micro image can never be less than the cost of the paper stock plus the cost of making an impression and finishing the product.

In comparable graphic terms the curve of photographic reproduction costs begins at about the median, drops immediately to the production level and continues as a straight line. A similar curve for printed micro images begins much higher initially and slopes sharply to a much lower production level than that for photographic reproduction. Some edition economies may be achieved using the photographic process. In microfilm, for example, it is more expensive to make the negative which involves an operator and hand work than to make a positive, since the latter is printed and processed continuously by machine. If the cost of a negative therefore is \$.30 per foot processed, the cost of a positive may be in the magnitude of \$.07 to \$.08 per foot. If several positives are made a small amount added to the cost of each positive will meet the cost of the negative. There is a point after the cost of the negative has been amortized when for all practical purposes the next microfilm copy will cost as much as its predecessor with the cost curve approximating a straight line. In sheet microfilm this tendency is even more apparent for it is comparatively more expensive to prepare the sheet microfilm matrix whether it is made by assembling strips of roll microfilm or entire as with a special

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"step and repeat" camera, but the positives are much less expensive. A limiting factor for sheet microfilm is the fact that the printing, processing and finishing operations have not been mechanized. While the design and production of automatic machines for this purpose is not impossible it is difficult and would be expensive. Microcards and sheets must face similar problems although mechanization is much further advanced than in the sheet microfilm field. Printed micro images involve proportionately higher expenditures for the negative and printing plate but subsequently a great number of impressions on plain paper can be printed at extremely low costs. Obviously if the cost of preparing a printing plate is spread over 1,000 copies, the plate cost becomes negligible.

Edition economies therefore have been tabulated as "little" for microfilm, strip and card mounted films, microtape, and microstrip, "some" in the case of sheet microfilm, "considerable" for microcards and micropaque sheets and "great" for printed micro images. A rule of thumb on costs of production which is not always accurate in specific instances holds that up to 25 copies can be efficiently reproduced by microfilm while between 25 and 50 copies the process becomes proportionately less attractive. Microcard production is usually not economical below 25 copies; between 25 and 50 it becomes more desirable; between 50 and 100 real efficiency is achieved. Readex Microprint on the other hand may not be indicated for editions of less than 25; between 50 and 100 it becomes progressively less expensive; at 100 copies and above it represents the cheapest method of publication now known. Again it must be emphasized that there are notable exceptions to the foregoing; microfilm, for example, is the most practical existing process for newspapers and in some instances special circumstances may weigh heavily in favor of one or another technique.

In general the chart shows that microfilm has been used for all listed operations which is understandable enough, for it serves as the basis for all or most of the other methods. Sheet microfilm in the United States is of little practical significance at the moment. Strip and card mounted film for scholarly library purposes find limited applications (though this is not the case in special library and commercial usage). Microcards and printing press microprint are being used for publication and republication. Microstrip and microtape are special purpose techniques while photographic microsheets are being produced as a medium of publication thus far limited to law books. For all practical purposes the acquisitions librarian at the present time

is limited in his selection of microcards to the products of the Microcard Corporation and its licensees, for microsheets to the products of the Microlex Corporation and for printed microtapes to the editions of the Readex Microprint Corporation, while microfilm is available from many sources.

The production or acquisition of a microcopy in whatever form is only half the story. By definition a microcopy is too small to be read by the unaided eye, therefore short of optical magnification which is impractical for more than checking or brief consultation, or the making of enlarged paper prints which are usually too expensive to produce or to store for projects of any size, suitable reading machines are required. There are reading machines for each type of microreproduction but there is no single machine capable of accepting both microtransparencies and micropaques, and what is much worse from the standpoint of the consumer, no reading machine for microfilm will conveniently accept microfilm in all of its forms, and no reading machine for micropaques will accept all forms of micropaques with equal efficiency. This is another way of saying that there has been no standardization across the entire breadth of the field. In passing it may be noted that difficulties inherent in projecting by reflection as opposed to projecting by transmission cause the image on the reading screen of the microtransparency reader to be somewhat better in quality than the image on the micropaque reader screen. In practice, however, serviceable reading equipment for any microreproduction process can easily be procured, and there is considerable latitude for selection.

While the lack of a reading machine that will accept both microtransparencies and micropaques in whatever format is a limiting factor in the selective use of the microreproduction techniques, its importance can be overestimated. If an acquisition is otherwise desirable, the cost of a suitable reading machine can be computed as a part of the cost of an operation or more justly apportioned to all projects that may benefit from the use of the machine. In the last analysis if reading machines are needed in order to build library resources and make them usable, then they become as much a part of the library equipment as book shelving, circulation desks, catalog trays, tables or chairs. It is often said that one reading machine means one user at any one time and this is quite obvious. A little more thought will reveal the fact that the materials most likely to be found in micro form are rarely those that great numbers of people will wish to consult at the same time. A great public library whose back files of newspapers are largely maintained on microfilm finds it possible

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to meet current demands with less than a dozen machines and these are not in use all of the time. There is moreover no reason why reading equipment cannot be handled on a reservation basis as for study carrels and music listening rooms. Some libraries maintain a stock of portable reading machines which are loaned out to users with microreproductions. Relatively few scholars and scientists have thus far provided themselves with personal reading equipment for micro images but the number is growing steadily. The situation resembles the period when the typewriter was coming into general use. In the early days it was regarded as a fad or luxury; nowadays it is a necessity and there are few indeed who do not own or have access to a typewriter. A fair decision on the merits of a plan involving microreproductions cannot be made on the basis of hardware, that is cameras or reading equipment.

There are certain myths about microreproduction that although long exploded continually reappear. One of these is eyestrain. It has been conclusively demonstrated that there is no reason to expect that proper use of microreproduction differs in any way from similar use of the printed or manuscript originals. Either can cause eyestrain if heedlessly used. Here as everywhere common sense is the rule.

A second phantasma now of uncommon incidence is that microreproductions are not permanent. Properly made, processed and stored, microfilms are as permanent as letter press printing on rag stock paper.⁴ This does not mean that they may be treated precisely as if they are letter press on rag stock paper; microreproductions require different though no more rigorous handling schedules and present different problems. File negatives, for example, should not be used in reading machines, for the handling and possible scratching will reduce the quality of any subsequent prints made from them.

A third delusion is the fifty dollar reading machine. Many librarians and some users have often wondered why a reading machine cannot be produced to sell for fifty dollars, and of course it can be if one is a member of the "do it yourself school," for all necessary optical and electrical parts can be purchased for much less than this amount. When they are properly assembled the resulting instrument will read microreproductions, but it will not possess all of the features of the large commercial models. It is also possible to purchase all of the parts for a midget automobile for a few hundred dollars. When these are assembled the car will provide transportation, but it will compare adversely with a new 1955 model in all aspects except price.

Most difficult of all to understand is the assertion, formerly much

more common than at present, that a faculty or group of users will not use microreproductions but demand the originals. If this is really true, then the alternatives are to acquire them or for the prospective user to prepare to travel to the location where the originals may be located and make arrangements which may involve fees of one kind or another to use them. The mechanism of interlibrary loan which has served so well in the past is now taxed to the breaking point; indications are that this most useful cooperative venture will contract rather than expand in the future. The building of a research library on the basis of originals is not a matter to be approached lightly involving as it does the expenditure of vast sums of money for purchase, housing and maintenance and more importantly time which may extend into generations. Money conceivably could be procured but time may not be bought; money is of no avail if the materials in the original are not for sale. The philosophy of the collector holds that anything is for sale if one can but wait until it appears on the market. Few users can or will wait. The outlook for the future is not bright. World War II destroyed much material and its aftermath which happily includes concerted efforts to improve library resources in all parts of the world have combined to create a demand which is increasing as steadily as prices in the used book market.

The fact is that faculties, graduate students, and the general public are using microreproductions, perhaps with some grumbling on the part of the older individuals but with progressively less "sales resistance" on the part of the younger. This use, moreover, is not restricted to the consultation of research materials but, as in the case of theses, may include publication of original material in micro form. With the growing popularity of television, a new generation is progressively more accustomed to the screen image as a source of entertainment; the transition to reading textual material on a screen is much less difficult. It is possible to trace a somewhat similar reaction in the fifteenth and sixteenth centuries when printing began to replace the manuscript. Conservatives deplored the loss of beauty, individuality, and value of the manuscript and heaped contempt on the cheap ugly machine produced book. That the substance not the form is the important element escaped many, and the eyes of some of those who inveigh most strongly against the microtechniques seem to be equipped with similar blinders.

Enthusiasm for the microtechniques must not be allowed to obscure judgment in planning acquisitions. There are areas and uses wherein microreproductions may not serve as adequate replacements for origi-

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nals or full scale facsimiles. A classic area is advanced bibliographic criticism. It is obvious that relatively little information can be obtained about paper stock, ink, water marks, binding, and the like from a microreproduction of a manuscript or rare volume. Similarly in translating, the original or a full sized facsimile copy is often indispensable. A manuscript full of paleographic problems or replete with scribal abbreviations may necessitate side by side comparison of pages which is often difficult on a reading machine screen. Fine arts material with plates in color while not impossible to reproduce in micro form do present difficulties and entail considerable expense. Tabular material requiring detailed study and perhaps comparison with a text or other charts is sometimes more difficult to use on a reading machine than in the original. A bibliography or index is much more usable at full size than in miniature. In fact any source or reference handbook that is constantly used should be full size. Some librarians have expressed strong objections to serials on microcards or in sheet microfilm form. In some libraries microreproductions are maintained in one place, reading machines in another and the books or other materials to which the microreproductions relate may be in still a third location. The amount of personal service required to bring all of these divergent elements plus the reader together should be weighed. The problem of instructing readers unfamiliar with the use of reading equipment and the proper handling of microreproduction is elementary but necessary.

An important aspect of library use is keyed to the educational system. A summary⁵ of recently published data reveals certain interesting facts relating to higher education. Enrollment, 2.148 million in 1952 is expected to increase 34% by 1960 and around 100% by 1970 to 4.4 million; with the existing student faculty ratio of 11.1, a total faculty of 210,350 (in 1950) must be expanded by about 20,000 per year beginning in 1955. There are around 9,000 doctor's degrees granted each year (16,000 estimated by 1970), perhaps half in science and engineering; only about 10% in engineering and science enter the educational field; of the remaining fields a larger percentage may enter education. Of the 1,800 colleges, universities and professional schools, 65% are privately controlled; doctor's degrees are awarded in some 490 schools, but most of the training is done in some sixty institutions. Large scale growth is indicated but it is reasonably certain that many private institutions cannot expand. Tax supported institutions may indeed be forced into a vast program of new buildings and even new schools. The library outlook for the next twenty years will be ex-

tremely interesting. Books will have to be provided to equip new and enlarged facilities for current work. Of equal importance and greater difficulty, resources will have to be found to train the teachers who will staff these institutions and fill vacancies caused by normal attrition in the existing faculties.

It is reasonably certain that enough new books, periodicals and the like can and will be printed to supply the demand. There will be a sharp increase in full size reprinting of much used basic material. Graduate instruction, particularly in the humanities and certain fields of science, requires first-class research libraries. It is by no means certain where, if not from microreproductions, many of the resources can be supplied. Through consolidation of research facilities, regional planning and the like, some original material may be released as in fact has already been the case. The plan evolved by a committee headed by Keyes D. Metcalf of Harvard University to sell the library of the American Academy of Arts and Sciences in Boston to Linda Hall in Kansas City is an example of intelligent, long range library planning. Resources that were duplicated and really superfluous in a strong center of research were transferred to an area less abundantly supplied.⁶ Unfortunately the number of possible transactions of this type is strictly limited.

All microreproduction excepting of course the large field of recording original data which has no practical bearing on the discussion at hand involves recopying or reprinting. Operational reprinting exemplified by short-run copying and similar services will involve the microtechniques when they may be advantageously employed instead of such competitive systems as photocopying in all of its various forms. In the larger sphere of library planning the microtechniques offer methods that in many instances cannot be matched by other and more conventional methods for reproducing blocks of material. In Europe at the present time extensive full size reprinting programs are under way to replace in part material lost during World War II. The costs for printing in Europe are such that these projects are economically feasible. Similar activities have not been lacking in the United States and should be encouraged whenever the edition demands are large enough to warrant the attention of a publisher. As has been earlier indicated reprinting at full size is necessary when large numbers of people may need to use the same material at the same time. The *Engineering Index* which was recently reprinted by photo offset can best be used and consulted in this form. A microreproduction would be easy to make but vastly more difficult if not impossible to use effec-

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tively. There do exist, however, vast areas where one or another of the microreproduction techniques can render real services.

At the time of writing a project is under way to reproduce all of the titles in Evans *American Bibliography*. In fact there are three more or less competing projects, one proposing to supply all of the titles in Evans in the form of microcards apparently without much editorial supervision or attention to bibliographic revision; it will cost \$462.50 per year for 20 years. The second proposal will supply in the form of Readex Microprint a version carefully edited under the auspices of the American Antiquarian Society of the contents of Evans for a subscription fee of \$750.00 per year for a ten year period. The third proposal will involve a selective reproduction organized in cooperation with a special Committee of the American Studies Association of significant items in Evans and related material that is normally not accessible in microfilm form totaling perhaps 500,000 pages in increments of 100,000 pages at a cost of \$500.00 per year for a period of five years. Each project will be implemented through a commercial concern.

What does an acquisitions librarian do when confronted with an opportunity of this type? The first step is to decide whether all or most of the items in Evans are wanted at any price; if not, no further thought need be given. If yes, the next consideration should be an estimate of probable use. Obviously, material should be added to the library for use and not for the sake of completeness. The bibliographic quality of the products proposed to be supplied is a factor to be carefully weighed. It is as easy to acquire a miscellany of microreproductions as it is to acquire a personal library of books or an accumulation of family papers. Unorganized material brings with it the obligation which may be expensive in time and money of arrangement and preparation before use. One of the great benefits of cooperative activity, and one of the perils of hasty project organization, is the orderly planned arrangement of the product in useful form at one time for all participants. Even though libraries generally have been unable to achieve cooperative cataloging, in projects for microreproducing source materials they may be afforded a new opportunity for real cooperation. Some thought might be given to the fact that even though some or a considerable number of the titles in Evans might already be in the library, the burden of use of the originals would be eased by the presence of the facsimiles. The librarian would be wise to review the matter thoroughly with appropriate faculty members and even graduate students to enlist, hopefully, financial support, and weigh

carefully the opinions for and against the proposal. If the opportunity is judged to be sufficiently attractive as compared to other calls on library funds, then the technical considerations can be examined. These include format, the number of reading machines estimated to be required and if not available their cost, the costs of processing for use and of servicing the materials in the library. If after this survey the acquisitions librarian is unable to make a recommendation then he had better forget the whole thing. The pity of it is that with so much to be done three discrete proposals should revolve about a single bibliography. The time will come when no bibliography will be regarded as complete unless it serves as the index or finding list for a complete edition of its contents in some micro format which may be purchased entire or selectively from a deposit, pool or commercial source.

Insofar as the microtechniques are concerned the early years were distinguished by an infinity of cooperative plans, usually centering around microfilm application. Groups of libraries banded together to finance the reproduction of a master negative of the file of a particular newspaper in return for a copy, and perhaps ten or twenty sets of reproductions were scattered more or less haphazard over the country. It is easier to justify an acquisition on the basis of participation in a cooperative effort than it is to study it in terms of coldly calculated future needs. An outgrowth of these efforts has been a proposal whereby libraries allocate a comparatively small sum of money each year to a pool devoted to the production of master negatives and loan positives as for example of newspapers. The participating library does not receive a print in return for the contribution; instead the right to borrow is assured from the existing pool of positive prints as needed for current research.⁷

The foregoing discussion is directed toward the uses of the microtechniques in the acquisition of material for the library. From the indicative examples cited, and these can be multiplied many times over, it is apparent that documentary reproduction will be employed on an ever increasing scale. The impact of novelty has come and gone leaving a foundation of tested practice and many unexplored areas. A rule book for the use of the microtechniques in the field of acquisitions remains to be written. The deficiency is understandable enough in view of the diversity of individual library requirements and the array of available techniques from which selection can be made to meet them. A joint approach to some common problems would insure faster progress; indications are that this development will not be too long

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delayed. Meanwhile the serious librarian must continue to study the field of microreproduction and to employ proven methods boldly when they are indicated as to the best means to resolve a problem; he may and should continue the exploration of new fields and applications. As they acquire the patina conferred by familiar, daily use, these tools will add immeasurably to the satisfactions gained by a skilled and competent workman demonstrating mastery of his craft.

Typical Library Uses of the Microtechniques

LIBRARY USE OR APPLICATION		Microtechniques						
		MICROTRANSPARENCIES			MICROPAQUES			
					PHOTOGRAPHIC			PRINTED
		Micro-film 16 and 35 mm.	Sheet Micro- film	Strip + Card Mount- ed Film	Micro- card	Micro- strip Micro- tape	Sheet	Readex Micro- print
<i>Single copy to Order</i>	Short run, Journal articles, etc.	X ₁	X ₁₀	X ₁₁	X ₁₂	X ₁₆		
	Manuscripts and archival material	X ₁	X ₁₀					
	Complete books etc.	X ₁	X ₁₀					
<i>Multiple Copy "Project"</i>	Printed Material, Books etc.	X ₂	X ₁₀		X ₁₃			X ₁₇
	Manuscript	X ₃			X ₁₃			X ₁₈
	Newspapers	X ₄			X ₁₃			X ₁₈
<i>File Negative</i>	Printed Material	X ₅	X ₁₀					
	Manuscript	X ₆						
	Theses	X ₇	X ₁₀					
<i>Publication and Republi- cation</i>	Manuscript	X ₈			X ₁₄			X ₁₈
	Printed Material	X ₉	X ₁₀		X ₁₃		X ₁₆	X ₁₉
<i>Edition Economy</i>		Little	Some	Little	Consid- erable	Little	Consid- erable	Great

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NOTES ON MICROTECHNIQUES CHART

Notes to accompany chart on "Typical Library Uses of the Microtechniques." These notes have been compiled to assist readers to verify and extend the chart; they are purely illustrative and are by no means complete. The selected list of references compiled by Blanche P. McCrum, *Microfilms and Microcards: Their Use in Research*, Washington, Library of Congress, 1950, is an excellent guide to further information.

1. This service is available from many archives and libraries.
2. The "English Books" project begun in 1935 was subsequently extended to include English books printed before 1660. It provides reproductions on 35mm microfilm. *University Microfilms*. Ann Arbor, Michigan, University Microfilms, 1945.
3. *Microfilms of the Adams Papers*. [Part 1] Boston, Massachusetts Historical Society, 1954.
4. Schwegmann, G. A., ed., *Newspapers on Microfilm*. Philadelphia, Office of Executive Secretary of the Association of Research Libraries, 1948.
5. Jenkins, W. S.: Legislative Documents Microfilm Project. *Library of Congress Quarterly Journal of Current Acquisitions*, 4:60-64, Feb. 1947. Jenkins, W. S.: Records of the States of the United States. *Library of Congress Quarterly Journal of Current Acquisitions*, 6:3-7, May 1949.
6. *List of File Microcopies of the National Archives*. (National Archives Publication, No. 55) Washington, 1950.
7. Tate, V. D.: Defrosting a Frozen Asset: The Publication of Doctoral Dissertations. *College and Research Libraries*, 14:35-38+, Jan. 1953.
8. American Documentation Institute. *Catalogue of Auxiliary Publications in Microfilms and Photoprints*. Washington, The Institute, 1946.
9. *The New York Times* regularly issues an edition on microfilm.
10. In Europe the uses of sheet microfilm in the fields indicated are fairly extensive. In the United States library uses of sheet microfilm are experimental.
11. Film strips (microfilm) are supplied by many libraries; mounted microfilm strips are important for certain commercial purposes.
12. The Eastman Kodak Company Color Control Laboratory has developed a large scale microcard plan for reports and research data. The system is used within the organization.
13. The publications of the Microcard Foundation are the best source of data illustrating these activities. *The Microcard Bulletin*, (No. 1, June, 1948—date; the most recent is dated April, 1954, No. 14.).
14. *Microcard Publications in Music, Medicine, Library Science, Canadian Studies, Historical Manuscripts*. Rochester, New York, University of Rochester Press, 1954.
15. Microtape and microstrip have been developed primarily for commercial purposes. Some experimentation in the field of library use is being undertaken.
16. Descriptive literature including sample available from the Microlex Corporation, Rochester, New York.
17. Erickson, E. L.: The Sessional Papers Project. *Journal of Documentary Reproduction*, 4:83-93, June 1941. Descriptive literature is available from the producer, Readex Microprint Corporation, New York.
18. Experimental.
19. In 1941 the Readex Microprint Corporation reproduced the complete bibliographies of Sabin, Evans, HARRISSE, and Church in microprint. The entire reproduction occupies the space of a thin small folio volume.

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References

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