

User Experiences with Primary Journals on 16-Mm Microfilm*

LEE N. STARKER

Warner-Lambert Research Institute, Morris Plains, N.J. 07950

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The availability of scientific journals on 16-mm film is a relatively new phenomenon. User acceptance of this microfilm application has been greatly improved by loading the film into cartridges and making use of motor-driven reader-printers. This equipment permits rapid searching of the microfilm and adds the convenience of on-the-spot hard-copy prints as needed. Of prime importance are the economic advantages of these editions, since they allow many special libraries to stretch greatly the space available to them for journal housing. The economics of this approach are also discussed, as are the reactions of the scientists and information personnel who use them.

For several years now, many of us have been looking toward the day when we would be able to replace the bound journal holdings in our libraries with microfilm copies. We all knew that a tremendous educational job had to be done, but none of us really knew what was the likelihood for success.

Publication of *Chemical Abstracts* on 16-mm film in cartridges solved many of these problems. Users were enthusiastic, and began to urge acquisition of other microfilm materials. The problem, now, was that although many scientific journals were available on 35-mm film, and a smaller number in one or more of the other formats, virtually none was obtainable in the desired 16-mm size. Cartridges and motorized reader-printers for 16-mm film were an integral part of the *Chemical Abstracts* success, and it was very important that this format be maintained.

In the course of a casual discussion at the American Chemical Society's Spring Meeting in 1967, it was discovered that concurrent efforts were being made by Ben Weil of the Esso Research and Engineering Co. and myself to stir up interest in this area. Mr. Weil was working with the petroleum and chemical companies, and I had been proselytizing the pharmaceutical companies, both of us working to put pressure on the several microfilm-publishing companies to make more scientific journals available on 16-mm microfilm. Our ultimate success is attested to by the fact of this symposium.

As a result of our 1967 discussions, the now-famous "Grass-Roots" meeting was held in New York on May 29, 1967. This meeting brought together representatives of a number of information groups, all of whom were interested in developing a collection of scientific journals on 16-mm microfilm in cartridges, in order to take advantage of the breakthrough achieved by *Chemical Abstracts*. As a result of this discussion, several microfilm publishers announced their willingness to offer scientific journals on 16-mm film. Most interesting, also, was an

announcement that the Council of the American Chemical Society had before it a proposal to make all American Chemical Society journals available in microfilm editions.

Time does not permit a full recounting of the history of all of the events that led to making the journal literature available in this new format, but substantial progress is now being made. However, the total number of journals that can be made available has not yet been approached.

We at Warner-Lambert received our first journals on microfilm late last year. Having been forewarned by earlier recipients, we carefully checked our films for the presence of poor-quality reels. Although our experience in this respect was good, we did find it necessary to return several reels of film to the publishers for replacement. It should be noted, too, that delivery periods have varied widely from one publisher to another.

In addition to *Chemical Abstracts* on film, we now have *Biological Abstracts*, *Journal of the American Chemical Society*, *Journal of Organic Chemistry*, *Analytical Chemistry*, *Journal of the American Medical Association*, *Journal of the Chemical Society (London)*, *Chemische Berichte*, *Annalen der Chemie*, *Chemical Engineering News*, and *Industrial and Engineering Chemistry*. Our experiences are still young, but in general we can say that this method of using the literature is gaining ready acceptance by the laboratory scientist, and is proving to be a worthwhile addition to the tools available to literature science.

Our initial expectations were that journals on microfilm were not likely immediately to replace the hard copy versions of these materials in all instances. At the same time, however, it was obvious that published materials were growing at a much faster rate than we were able to add the physical space necessary to contain them. We considered raising the height of our stacks, and reducing the distance between stacks, so that more journals could be fitted in the same area; but such gains were minimal. Other suggestions included cutting back on the number of titles to which we subscribe, and removing older volumes to nonlibrary storage areas. Both of these

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Table 1. Journal Requests by Date

Up to two years old	695	74%
Two to twelve years old	197	21%
Over twelve years old	50	5%

latter approaches were obviously not suitable, because the major function of the library is to shorten the period required for the achievement of company goals, and to be as useful as possible to the personnel engaged in this activity. These suggestions would obviously have slowed the information-transfer process.

How, then, could we have our cake and eat it? How could we store more and more materials in an unchanging physical space and still keep everything readily accessible? The answer was microfilm.

We had, of course, to overcome the user's historical objections to microfilm—in most cases based on reasons that were no longer valid. The answer came with *Chemical Abstracts* in cartridges, and in readers with motor-driven film transports and rapid printout facilities. Once users became accustomed to the ease of handling cartridge-packed film, to the speed of searching *via* motorized transports, and to the convenience of rapid, on-the-spot copies, we found that our former recalcitrants were actually requesting that more journals on microfilm be obtained.

Because we still anticipated negative reactions from our nonchemically-oriented users, we made a brief study of our clients' use habits (Table I) and found that 74% of the requests were for copies of journal articles less than two years old. Accordingly, we decided that as we were able to bring in microfilm editions of these journals, we would remove the hard-copy editions of all materials that were over three to five years old. This would permit the majority of users to choose which form of publication they preferred. For journals that were more than three to five years old, however, only microfilm would be made available, and this would force the most reluctant to become acquainted with this new medium. Economically, it also made sense to retain the latest three to five years in hard copy, since it is still less expensive to provide copies of papers *via* Xerox than *via* the usual microfilm reader printer.

Because we have both *Chemical Abstracts* and *Biological Abstracts*, it appeared logical to develop a users' center for abstract journals built around these collections and serviced by two 3M cartridge reader-printers. Then, as we added film of primary journals, we planned to develop a second users' area centered on these journal collections. We would thus have a collection of primary journals on film and a separate collection of secondary film publications. Presumably, a user would check the abstract journals for appropriate references, and then move to the primary journal center to view the complete papers that had been selected.

This approach did not develop, however. We acquired primary materials at a relatively slow rate, and we therefore initially added them to the abstracts area. Since these were chemical journals, the first comments that came to us were praise for the ability to search *Chemical Abstracts* and then to be able immediately to check the journal articles without moving from the microfilm reader.

These results have changed our thinking as to the best arrangement for these materials. We are now considering a station which will contain *Chemical Abstracts* and the appropriate chemical journals in one location, and *Biological Abstracts* and the biological and medical publications in a second center. We may eventually keep all film together, but current space allotments do not conveniently provide one area of sufficient dimensions for this use.

Economically, it would appear that reinvesting in microfilm editions of journals after having purchased one or more hard copy subscriptions would put a severe strain on any library's budget. In most instances, however, purchase of the film will be offset by the money that need no longer be spent on binding. The cost of the readers and other capital equipment can be offset by savings in the purchase of additional stacks, and one can expect, in addition, to recover some investment by selling the no longer needed printed editions.

These factors, while painting a very favorable economic situation for microfilm, do not even begin to take into account the huge reduction in cost achieved by limiting the physical space necessary to house bound volumes.

In our own instance, we had reached the position—after doubling our library's area only seven years ago—where we no longer had stack space for additional bound volumes. As a result, materials that would normally have remained in this area had to be removed to less-accessible places. Not only did this impose an inconvenience on the user, but it substantially increased the amount of time that library personnel had to devote to supplying these materials and then reshelving them. We were, in fact, beginning to approach a situation where we had a dual operation, using both open and closed stacks. Moreover, the size of our staff was such that we could not afford the personnel time needed to function in a closed-stack situation.

A hidden benefit in the acquisition of microfilm editions of primary journals is that in many instances this permits the replacement of an incomplete or broken run of a journal with a complete sequence of issues. Needless to say, such an occurrence permits some additional savings, since interlibrary loans, or outside copies of material from the nonavailable copies, are then no longer needed.

A final economic offset to the purchase of microfilm editions is the practice of at least one publisher in accepting hard-copy journal issues in exchange for the film. This, of course, provides a very simple method by which the budget-tight library can begin to assemble a microfilm collection without expenditure of large sums of money.

In conclusion, it might be well to indicate the primary suppliers of these 16-mm microfilm editions of the scientific literature.

The American Chemical Society now supplies all of its publications in this format. With several exceptions, these are available as complete runs. Princeton Microfilms, Inc., is providing a steadily expanding list of publications, while Atlantic Microfilm Corp. is beginning to supply materials primarily in the medical literature field. University Microfilms, which has a very extensive collection of materials available on 35-mm film, is preparing to republish much of its collection in the 16-mm format.