KEEPING A CHEMICAL LISTING CURRENT FOR RAPID REPRINTING: THE EASTMAN ORGANIC CHEMICAL FUNCTIONAL LIST*

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The problem which was faced in the planning of the booklet "Eastman Organic Chemicals Classified by Functional Groups" is similar to that encountered in many publications of the listing, compilation, or index type. It occurs where most, if not all, of the original data does not change, but revisions are necessary in order to bring the material up-to-date by means of additional information, changes in data, or removal of listings.

The particular problem was the publication of a listing of some 3800 different chemicals in which the compounds were to be arranged according to the functional group or groups in each individual molecule, and to do this in such a way that revisions could be published rapidly and cheaply. The problem, the data and the results desired were summarized.

Each chemical would be categorized according to the functional group or groups present and once this was done, these listings would not change.

If a chemical contained more than one functional group it would be listed under each group present. Some compounds, therefore, would appear in as many as five or more places.

As additional chemicals were added to our catalog, they would be added in the appropriate locations in the listing.

Conversely, items would have to be removed if any chemicals became no longer available.

It was expected that there would be 10,000 to 15,000 individual listings.

If such a listing were to be of continued value, periodic revisions would be necessary to keep the information up-to-date.

Time was important, as too great a lag between a decision to reprint and the availability of the finished booklet would result in its being out of date on publication.

Cost would be an important factor, as the booklet would be offered without charge.

The solution to this problem was found in the use of the Listomatic Camera shown in Fig. 1. By means of this equipment, plates for off-set printing may be prepared rapidly by photographic means from cards on which the desired information has been entered and which can be kept constantly up-to-date.

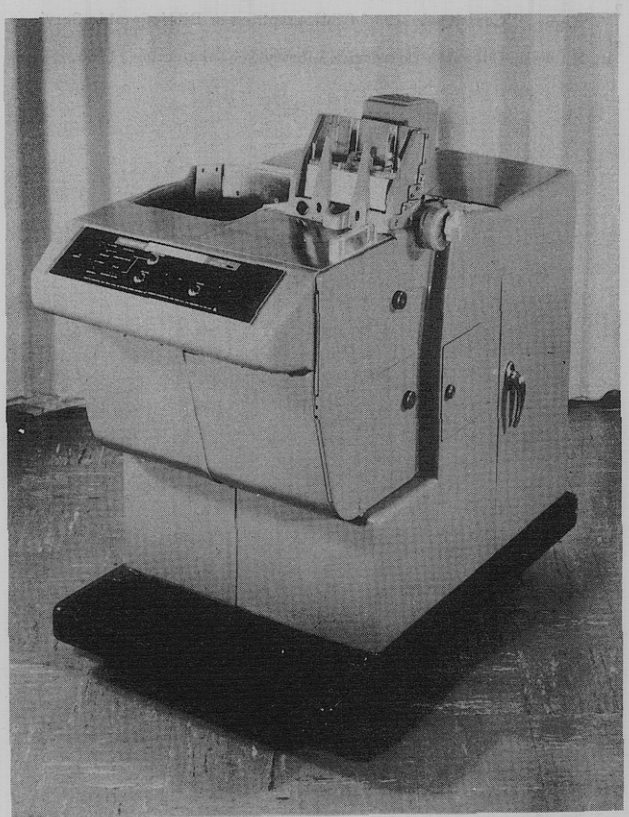

Fig. 1. The Listomatic Camera.

The cards are the familiar Hellerith Cards which are identical with those used in electronic data processing units. An area at the top approximately 3/5 of an inch in depth and 7-3/8 inches in width can be used for the entry of the material to be reproduced. This depth is equivalent to three lines of 12-point type. Either one, two or three lines of data may be used and it is not necessary that the same number of lines appear on each card. Since only approximately 3/4 inch (including the top

*Presented at American Chemical Society Meeting on March 28, 1961, in St. Louis, Missouri.

margin) of the card is used for the data, the full numerical field of the card is still available for punching in case it is desired to use the cards in electronic equipment for sorting, analysis, etc. These cards, therefore, can serve a double purpose.

The information to be reproduced is inserted in a designated area at the top of the card. From a practical viewpoint, there is no limitation on the method of recording the information. Printing from type, typing, handwriting, drawing or pasting of previously prepared copy all can be used. Typing may be done with any suitable equipment having the characters desired. The only special accessory necessary is a card-holding platen which serves to maintain the desired margin for photographing. An electric keyboard typewriter is desirable in order to assure uniformity of color in reproduction.

As many as three lines of copy may be used on each card. If more than one line is used, the card is suitably punched to activate the aperture of the camera so that the desired area is photographed.

If column or page headings are to be included as was the case in this book, similar cards for these are prepared. Indentations in the headings can be made by simply altering the indentation on the card. Almost any kind of set-up or style is possible. If spacing is desired, blank cards can be inserted, or if a one line card is used, it can be punched for one or two lines of blank area.

The cards, now arranged in the order in which they are to appear, are placed in the feeding mechanism of the Listomatic Camera from which they are fed automatically. Each card is photographed individually. As the card enters the camera, the special punch activates the lens opening to correspond to the number of lines to be photographed. This operates automatically without affecting the rate of feed. The actual rate of feed is 230 cards per minute. If three lines per card is assumed, this corresponds to 690 lines of copy per minute. In practical operation a rate of 12,000 cards per hour can be expected.

The optical system of the camera can be adjusted so that the original copy will appear actual size, reduced to as little as 55 per cent. of the original or magnified to as much as 125 per cent. of the original. After the photography, the cards are ready for filing and future use.

The film used in the camera is a special type and is available in rolls 400 feet in length and practically any width from 35 mm. to 8 inches to accommodate the column width desired in the final printing.

The result of this operation is a continuous strip of exposed photographic film which is developed to a photographic negative. This developed columnar strip is then cut to the desired column length for the planned page size. From these columns a "lithographic flat" is prepared and this is contact-printed to an offset plate for actual printing.

While this method of preparing the printing plates is the usual and the most economical, variations are possible. The printing plates for this book were made by one of these variations. For experimental purposes, and due to some late decisions regarding the headings to be used, a positive paper print was prepared from the photographic strip. From this paper print a paste-up was made for copying by a process camera. The usual lithographic techniques followed. The color variations which may be noted in this printing are due to this experimental work.

If running heads are to be used, they and page numbers can be stripped in. They could be added by cards also if one column width is to be used.

The description to this point had dealt primarily with the method of printing the original book. An understanding of this makes quite obvious the simplicity of keeping the listing current for rapid reproduction.

After the photographing operation there is still available the original deck of cards. This provides some of the most important advantages of the method. As previously stated, these cards, if suitably punched, can be used for electronic processing. In any case, they are maintained as an active file. This deck is also the means by which the listing is kept up-to-date.

As soon as notice is received of the addition of a new chemical to the catalog it is coded according to the categories in which it should appear. Suitable cards are prepared and these inserted into the correct locations in the file deck. Similarly, on the discontinuance of any item, the corresponding cards are removed. This is done immediately, on a day-to-day basis if necessary, so that the file is completely up-to-date at all times.

Thus, the problem of bringing the listing up-to-date when a revised edition is desired is avoided and more important, accuracy is improved. The day-to-day preparation, proofreading and insertion of a few cards is less likely to lead to error than an attempt to handle a great many under the pressure of a printing schedule. An error can be corrected easily by the preparation of a new card.

A change of headings, in order of appearance, or in method of listing is relatively simple because of the flexibility of this file.

A specific example will illustrate. The original listing which we published was arranged in numerical order under each heading. Comments which have been received would indicate that alphabetical order might be

preferable. All that is necessary to accomplish this change is to rearrange the card deck. If changes in headings are needed, this also may be done by a reshuffling.

When it is desired to print a revised edition, the card file which is already completely up-to-date, is again run through the Listomatic Camera and the process of preparing the printed plates repeated. It has been estimated that for a booklet of this size--52 pages, two columns 6-1/4 x 9-1/2--it would be possible to have the printed and bound book delivered in 72 hours, that is, the equivalent of three eight-hour days from the time the decision to reprint was made. Such speed would, of course, require the coöperation of the printer and binder in having presses and equipment available for immediate use.

And best of all, there would be no proofreading!

INSTITUTE FOR ADVANCEMENT OF MEDICAL COMMUNICATION

The Institute for Advancement of Medical Communication, with headquarters in New York City, has formed a Scientific Council to guide its program of research, development, and training aimed at improving communication among biomedical scientists and health science practitioners. The Council consists of 20 scientists and educators, who represent many of the disciplines and specialties contributing to, and using, the expanding pool of biomedical information.

Dr. Richard H. Orr, Director, also announces the opening of a Washington Branch at 1028 Connecticut Ave., N.W., Washington, D. C., headed by Isaac D. Welt, Ph.D., Associate Director of the Institute. Dr. Welt was formerly with the National Academy of Sciences - National Research Council, where he was Director of the Cardiovascular Literature Project. This project will be continued under the auspices of the Institute.

Other recent additions to the Institute's professional staff include Claire K. Schultz, formerly Manager of Research in Information Retrieval at Remington Rand Univac, and Eleanor M. Crouse, formerly Special Librarian at the Chemical Division of Pittsburgh Plate Glass, as Research Associates; and Dr. Jessie F. Crump and Dr. Talmadge G. Hiebert as Research Affiliates.

NSF PUBLICATION

The National Science Foundation released the eighth report in the series entitled Current Research and Development in Scientific Documentation, a semiannual publication which contains descriptions of research and development projects in the field of scientific documentation and potentially related areas. Issue No. 8 includes descriptions of 195 research projects in 122 organizations.

Copies may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D. C. Price, 65 cents.