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October 1970, vol. 61, no. 8

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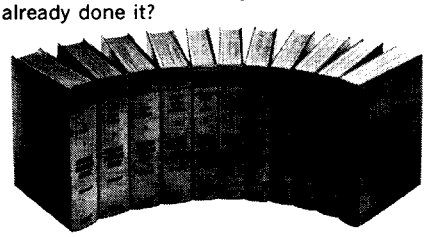

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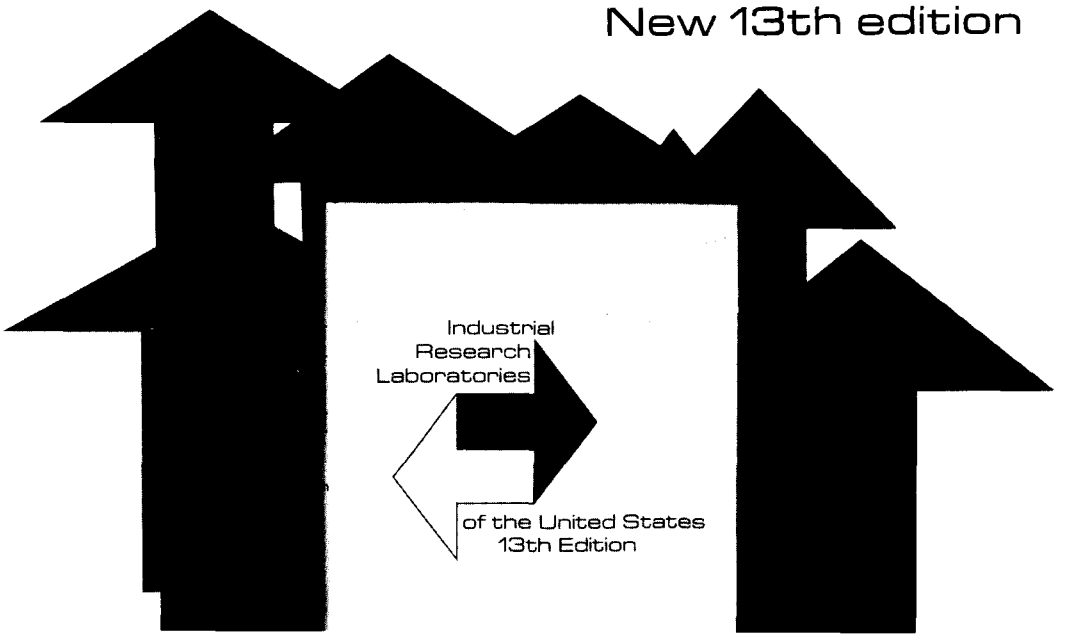

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LETTERS

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Is it possible that the anonymous South Atlantic Chapter member who wrote in the Jul/Aug 1970 *SL* issue is a plant to have us re-read your editorials? A similar necessity to re-read an additional editorial in your "P.P.S." reply might lead a suspicious individual to consider that this whole matter is a put-on to illustrate the necessity of a competent shelved or mental retrieval system.

M. T. Musgrave
Acheson Industries, Inc.
Michigan National Bank Building
Port Huron, Mich. 48060

A "plant"? Never! Even the Irving Barnaclescrapers were for real. But a competent mental retrieval system sounds good to me.
—ED.

Suggestions for Changes in the Program of the SLA Annual Conference

The SLA Annual Conference is packed with information by means of lectures, papers read, Division and general meetings. Librarians who do not attend the Annual Conference are very much the losers.

And yet, truthfully, is it primarily the lectures that impel the librarians to attend the Conference? Is it not rather the excitement of travelling, the opportunity of being with other members of SLA from different parts of the country and Canada, the opportunity to see and be seen, the sociability? My belief is attendance at the Conference would not be much smaller if there were far fewer lectures (provided, of course, expenses were paid).

Although it is a general Conference of librarians, the Divisions seem to be unrelated. And yet should not the librarians of the respective Divisions gathered together from different parts of the country and from Canada become better acquainted? Although librarians attend the Conference year after year, most of the librarians remain at the fringe. They don't get to know librarians outside several in their own Division, to know the officers of SLA, the Board of Directors, let alone talk to them. It is because mostly they are sitting in rooms listening to lectures.

The object of this letter is to recommend an Annual Conference program to bring the librarians at the fringe a little closer to the center of things; to have these librarians a little on the transmitting side, not altogether on the receiving side, at the Conference.

The proposal is that the librarians present at the Conference introduce themselves from the rostrum; that the first introductions be made, in part, during the second general session and on successive days. The proposal is that the librarian step onto the lecture platform, introduce himself or herself, giving his or her name, library affiliation, city and state of library, and whatever else he or she wishes to say in the probable two minutes allotted; quipping, complaining, recommending, talking of self, how I became a librarian, why I became a particular special librarian, like the position, don't like it, highlights in the job in the year, etc.

For a few minutes the librarian is an outstanding personality in the group. We come to know the librarian as a person, not only by the identification name badge. Such introduction is stimulating to the librarian and imparts vitality to the Conference. The tendency of the special librarians of different Divisions is to stay with those of their own Division, as though they had no connection with librarians of other Divisions. But are not all the librarians, special?

We refer here to the generality of librarians. Along with these the members of the Board of Directors should introduce themselves, editors of *Special Libraries,* etc. They are doing important work. We want to know who they are. And how and when are we going to get to know them if not at the Annual Conference?

The self introductions should not be by an alphabetical arrangement. The self introductions would be illuminating to the audience. We would meet librarians of many years' experience, students and the retired. Many of the librarians introducing themselves would never have faced such a large audience, or faced an audience from a platform before. It would be a memorable experience. On some it would have a lifelong beneficial effect, imparting self-assurance he did not have before. Of course, not all the librarians would have the chance to introduce themselves. There would not be the time. Missing out at one Conference would be something to look forward to at the next Conference.

Self introduction by the librarian from the lecture platform is one aspect of change suggested in the annual Conference program. Another is that there be more talks of general information for the librarians, collectively. Some of the Divisions have general interest, such as nuclear science, natural resources, geography and maps, newspapers, food, as do their trips, too. The lectures at the Conference might be so programmed that those in one Division could learn a little more about the others. There might be a talk on federal legislation affecting librarians and libraries. And on the Directory of Special Libraries.

There might be open discussion by librarians; librarians talking among themselves about their problems as librarians, pressure for reports, working overtime without pay, reaction to stolen books, etc.

A better informed librarian is a more useful librarian. At the close of the Conference the librarian will depart more stimulated on account of the self introduction, the larger sociability and the added knowledge.

Elizabeth Gordon
148 Chancellor Ave.
Newark, N.J. 07112

International Frustrationhood: GPO & HMSO

I'm fascinated by your correspondence on the failure of the U.S. Government Printing Office (May/Jun 1970 *SL*). In a fit of fury with our British counterpart (HMSO) I had a letter published in the *Library Association Record* (May 1970) threatening the formation of a Stationery Office User's Council and sent the editor's proof copy to the Director of Publications at HMSO. I asked librarians to send me their complaints which I then forwarded to the same gentleman and eventually secured an interview.

In November 1970 the Reference, Special and Information section of the Library Association is holding an "Action" meeting to hear HMSO present their side of the story to an audience of experienced "gripe-mongers."

I did hear a story, probably apocryphal, of a British librarian who ordered a U.S. GPO document before those two paratroopers set out to row the Atlantic, and received it the day after they arrived. He's convinced they brought it with them, and was thinking of sending them again, since the service seemed pretty reasonable.

In a more serious vein, I would welcome contact with American special librarians who suffer from the British HMSO in return for an opportunity to feed our complaints on the U.S. GPO to you. We may even form an International Frustrationhood of Librarian Customers of Government Publishing Offices.

Incidentally I don't mind the colour of your cover, but the picture confuses me.

R. D. Gee, FLA
IPC Services Limited
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It has been rumored behind closed doors that the cover "picture" is a stylized book designed without charge by a designer so well known that he did not want his name to be associated with the cover. Watch for the announcement of a new design competition!

—ED.

Requiescat in Pace

Somehow the May/June 1970 *Special Libraries* fell open at "The Need for Map Cataloging" by Roman Drazniowsky, when I picked it up. It was the first thing I read. My reaction? "That's where I came in"—just about 30 years ago. Now as I retire to let others carry on, I was, to say the least, a bit disheartened. But my blood pressure was relieved by reading Robert C. White's "Map Librarianship" which immediately precedes Drazniowsky. "A card bearing the class number, authority, title, imprint, and scale will provide good control of the collection." There speaks a map librarian!

It is granted by us benighted librarians that area is the primary approach to a map. This is done by the classification number. Then description for identification comes next. "Authority, title, imprint, and scale." That is what map cataloging is all about. The geography–minus–library people are bugged by placing these items in that order. Have they a better one? Titles are not considered distinctive enough, so the name of the responsible authority is given to separate the numerous maps of identical title. Since

the map collection is usually part of a larger organization, why not have the items of description in the same order as for other materials in the collection: "Authority, title, imprint." The disregard of these principles is shown by an antiquarian sales catalog which came in the same mail as did *Special Libraries*. Yes, it was arranged alphabetically by area, but the descriptions did not include the exact titles; only sometimes the authority or publisher was named. How is a map librarian to know if the map offered is different from others already in the collection?

Until the map curators overcome their phobia about books and maps ("never the twain shall meet"; but, aren't they all basically documents?) and the library [book] catalogers abandon the belief that catalog records of maps are unnecessary, progress in map librarianship will be an uphill battle. With the expansion of the Library of Congress MARC map program, it is almost inevitable that the "authority-title-imprint" unit card will become standard for map description as it is for monographs. Let us hope, therefore, that in the not too distant future, the "area main heading" concept will quietly and permanently be laid to rest.

Charles W. Buffum
Senior Map Cataloger
Library of Congress

Letter to the Membership

One of the hottest (it brought some members to a boil) items discussed in and out of business sessions at the Conference in Detroit was the "Association Structure." As a member of the Board of Directors, but writing unofficially, I would like to try to clarify some points to perhaps cool it down.

It must be emphasized and repeated until everyone hears: the presentation was *only* a *Progress Report* from the Committee to Study Association Structure. It has long been recognized and criticized that SLA operation is clumsy, inefficient, and sometimes inequitable. While some of this can be expected in a democratic organization, ours often seems excessive. This was the reason that the Board originally initiated the study.

This, the Third Progress Report, makes recommendations for changes which the Committee, after a good deal of serious research and study, felt might moderate some of the existing complexities. The report was presented to the Board and to the membership through the Advisory Council specifically and *only for consideration and discussion* of the *concepts,* to give membership guidance to the Committee in its continuing study to find the best effective structure which could be accepted by all of SLA. Of course, a change in structure of any kind at any time requires a Bylaws change, which automatically calls for published announcements, approval by the membership present at the Annual Meeting and then approval by the *entire* membership by mail ballot. It cannot be "put over" on anyone.

The proposals for consideration would give the membership more direct control over Association affairs rather than less, as some reactors felt. By dividing the membership of the existing Advisory Council into two parts, a Chapter Council and a Division Council, the specific interests of each could be far better handled. As proposed, the Chapter Council would consider matters pertaining to the general policies and programs of the Association; the Division Council would be concerned with the overall planning, integration and conduct of Association professional education activities in the broad general interest areas of library science, technologies and management. As proposed, two officers of each council would be voting members on the Association Board of Directors. It would enhance membership representation by improving at Association level the effectiveness of Chapter officers, and by strengthening the entire Division structure so that Division subject emphases receive adequate recognition.

The Progress Report, a copy of which all Advisory Council members have, presents an expansion of the above suggestions and presents other details relevant to the general concept. The mechanics of such a structure are not yet developed; an acceptable concept must come first.

Please remember how frustrated you sometimes get trying to "communicate." It is no easier for the Committee chairmen and the Association officers. All of our official actions are intended for the good of SLA, which means the membership. If something seems wrong, ask us until you are sure just what is meant.

Loyd Rathbun
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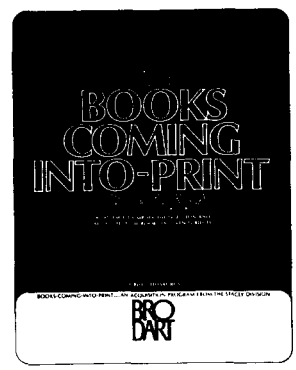

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Evaluation of Indexing

1. Introduction

Masse Bloomfield

Hughes Aircraft Company, Culver City, California 90230

■ This paper on the evaluation of indexing is the first of a series of five papers whose aim is to find a rational basis for indexing and some means to evaluate it. By reviewing the literature, some indications can be gained of what others are proposing for evaluations. An explanation of the relationship between an information retrieval system and indexing is given. Indexing must be examined separately from the entire retrieval system, otherwise too many variables enter into the evaluation.

THIS SERIES OF ARTICLES has been written with the purpose of finding some rational basis for the evaluation of indexing. By the evaluation of indexing, it is meant that some rule or generalization can be developed so that an individual index term can be judged as either an excellent term or a poor term.

At present no such rule exists. In the study by Kochen and Tagliacozzo, they say that "it is impossible to find in the literature any satisfactory description of standards for differentiating good indexes from bad indexes, or for that matter, any convincing explanation of the indexing process" *(1)*. The Kochen-Tagliacozzo study was done with book indexes. They found nothing in the literature which would tell them how to evaluate the various indexing examples they found in book indexes.

Bourne *(2)* has stated that the attempts to evaluate indexing have been rather extensive but none appear at this date to be of much value. According to Bourne none of these attempts are repeatable nor do they give results that can be compared with any other results. The evaluations to date have been such that they have shed very little light on the basic principles of indexing, nor have they shown any direction in the way experimentation should be directed toward the solution of the evaluation problem.

An aim of this paper is to locate evaluations of indexing in the literature and to compare the indexing of identical documents by several indexing journals. Included in this aim is an evaluation of the data found in the Simulated Machine Indexing *(3)* technique as an evaluation tool. This study will also compare indexing sets for identical documents generated by KWIC methods with indexing sets from printed subject indexes. The comparisons are developed as an approach to the problem of finding a rule or a generalization on how to index. The need for standards for the differentiation of good indexes from bad indexes is a need that should not go long unheeded. However, the problem is not simple.

In the comparisons of indexing, the KWIC method is used with the Simulated Machine Indexing mode integrally and is also used to compare the index sets generated by other experimenters. An observation was made on KWIC indexing by Tukey in an article by Swanson *(4)*:

John Tukey has made an interesting suggestion (in a personal communication, October 2, 1964) that KWIC indexing of titles be adopted as a basic "reference mark" with which to compare the effectiveness of indexing systems. He notes that the point of doing this might best be understood by recalling the days when weather forecasting was so crude that anyone could do about as well as the experts simply by making a forecast of "persistence" (i.e., tomorrow's weather will be just like today's). A measure of success for any given weather-forecasting technique was then taken to be the extent to which such technique could permit one to do better *than "persistence forecasting." The mere matching of persistence forecasting could be construed as failure to gain by doing more work. The intent of my foregoing calculations of recall for a statistical match of titles to questions was in much the same spirit as was Tukey's suggestion of the adoption of KWIC indexing as a "standard."*

The library profession has attempted over the last 90 years to define the process of generating subject headings for books. The first recognized attempt to define the process of generating subject headings was the work of Cutter. Since Cutter developed the *Rules for a Dictionary Catalog* in 1875, the library profession in the United States has accepted his rules with little change. Catalogers and indexers perform their work using Cutter's rules as their guide, and do their work without the absolute knowledge of what constitutes a good subject heading or a good index term. Every indexer and cataloger has an intuitive feeling about what a good index or what a good catalog should be. No one has been able to define that intuitive feeling into a generalization so that quantitative comparisons can be made between two cataloging systems or two indexes.

Several attempts have been made to try to find a systematic way of comparing indexes. In this paper, both cataloging and indexing are used interchangeably and consist of the operation of defining a book or document by a word or a series of words which abstract the meaning of the book or document in such a way that the book or document can be found again. This definition is somewhat restrictive on the normal use of the word cataloging.

Despite the failure of the library profession to find a way to evaluate indexes in a comparative way, librarians go right ahead with the task at hand. There is no call for a halt in the efforts of indexers or library catalogers. However, this work continues to lean heavily on an empirical base and tradition. Cataloging does not rest on any sound theoretical base which can be quantitatively assessed.

The looseness of rules for the assignment of subject headings or index terms is apparent in most guides to cataloging. For instance, Mann in her book *Introduction to Cataloging and the Classification of Books (5)* writes:

> *It must be stated at the outset that no hard and fast decisions leading to the choice of terms can be made which will apply to all cases. Books are not alike and subjects change as the fields of knowledge advance. New political groupings bring different geographical divisions, and inventions make it necessary to coin new words. Fortunately, experience has led catalogers to make certain rulings which furnish helpful guides to the beginner and show the practice of libraries in their attempt to satisfy readers.*
>
> *Cutter's* Rules for a Dictionary Catalog *is the only printed code in English covering the rulings for subject headings, and, while students should refer to it, their attention should be called to the fact that much of the reasoning used by Cutter was based on that formerly applied to a classified catalog and that many of the illustrations are out of date.*

The subject of the evaluation of indexing cannot be based on the rules that have been advanced in formulating index terms and subject headings. From Mann's statement above, it should be observed that there is no *one* correct method to cover any situation. Judgment is a requisite when assigning an index term.

Cutter said that: "Cataloging is an art, not a science. No rules can take the

place of experience and good judgment, but some of the results of experience may be best indicated by rules" *(6)*. Despite the fact that indexing and cataloging are an art and not a science, efforts are being made to try to evaluate the results of both indexing and cataloging.

The Relationship Between Indexing and Information Retrieval Systems

The most detailed experimentation on the evaluation of indexing has taken place at Cranfield, England, under the direction of Cleverdon. The Cranfield Experiment has been developed over the last 15 years and will be analyzed in some detail concerning its indexing in a separate part of this series. The Cranfield I Experiment attempted to compare four methods of indexing. These four methods are UDC classification, faceted classification, subject headings and coordinate indexing Uniterms. Cranfield Experiments have used the approach to the study of indexing through the retrieval process. Rather than studying the basis of indexing, Cleverdon programmed his study on a statistical analysis of recall and relevance ratios (the word relevance was later changed to precision).

Katter *(7)* has developed a diagram with Cuadra to describe the information retrieval system. This is shown in Figure 1. Katter defines the information retrieval system with six different steps, each expressing a variable in the overall system.

Using the definitions and the figure from Katter, the picture of the present state of indexing evaluation is better seen. First of all, the diagram in Figure 1 separates neatly the indexing functions from the retrieval function. Katter uses the term "representation" where librarians use index term or subject heading. The Cranfield Experiment has attempted to test the entire information retrieval system without an attempt to isolate any of the variables. Katter attempts to isolate the indexing activity shown in the right hand portion of the diagram, isolating the production of representations developed from the documents. The Cranfield Studies have not yet attempted to isolate these two distinct and separate functions involved in the entire process of information retrieval.

Katter has defined the current methods of testing indexing under three approaches: *1)* the empirical method using subjective criteria for evaluation; *2)* using a panel of experts who seldom use the same frame of reference in their evaluation; and *3)* the use of search techniques which attempt to study the indexing portion by a single number or figure of merit. The last method produces a single figure of merit which includes two different kinds of relevance. The first kind of relevance, used in the early Simulated Machine Indexing Studies, concerns the relevance which one index term has in attempting to define the relationship between it and the source document. The other definition of relevance defines a retrieved document in relation to a real or simulated user requirement. These two kinds of relevance are distinct and should not be confused with one another.

There are very few studies which restrict their evaluation of indexing to the indexing portion of the information retrieval system. This probably can be at-

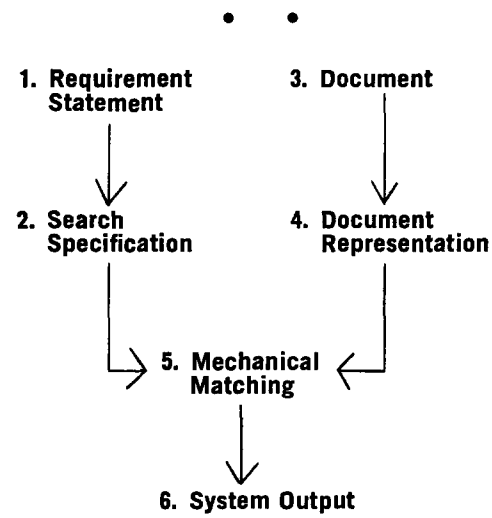

Figure 1. An Information Retrieval System after Katter *(7)*

tributed in part to the widespread use of the Cranfield methodology which emphasizes the use of search questions.

Discussion of Future Parts in This Series

An attempt will be made in this series of articles to evaluate the Cranfield Studies by a comparison of its index sets for individual documents, and not its recall results. When Cranfield is viewed in terms of its indexing alone, the study takes on far less allure as the approach the library profession should take in the evaluation of indexing.

There have been very few attempts to compare indexing sets for identical documents. This study will attempt to comment on those papers which have approached the problem of evaluation in terms of the comparison of indexing showing actual sets of index terms. The number of papers in the literature that attempt to show at least two lists of index terms for the same document are indeed few in number.

The four papers published on Simulated Machine Indexing in *Special Libraries* during 1966 *(8–11)* attempt to evaluate indexing by comparative means. In each of the four papers published on Simulated Machine Indexing, comparative lists of index terms appear for identical documents. This present study attempts to generate data on Simulated Machine Indexing which will determine whether Simulated Machine Indexing can indeed evaluate indexing comparatively. The lists of comparisons of terms will appear later with additional data concerning the Simulated Machine Indexing Technique.

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Oil and History Do Mix

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■ The Petroleum History and Research Center of the University of Wyoming was founded in 1958. The Center's primary mission is to collect, organize and disseminate the history of the petroleum industry, without geographic limitation. Since 1958, the Center has had the good fortune to receive over three hundred collections, including the papers of a number of outstanding geologists, executives, and engineers, such as: James Veasey, F. Julius Fohs, A. Beeby-Thompson, Fayette Dow, Leo Ranney, J. V. Howell, F. M. Fryxell, Thomas Harrison and Kessack Duke White. Among the corporations who have donated historical files to the Center are: Standard Oil of New Jersey, Continental Oil Company, Carter Oil Company, Standard Oil (Indiana), Sinclair Oil Corporation, Midwest Oil Company and El Paso Natural Gas Company.

PERHAPS one of the more interesting ways to illustrate the work of the Petroleum History and Research Center is first to relate three historical vignettes. While this trilogy of petroleum lore will not be à la Truman Capote, at least it may give some idea of the historical rewards that have come to Laramie.

"On a cold, bone-chilling December evening in 1880 in Franklin, Pennsylvania, the gaslights were ablaze in the Exchange Hotel. The western Pennsylvania community was holding a farewell reception for one of its 'most distinguished and illustrious citizens,' in the words of a main orator. After enduring speeches by the mayor, the president of the local bar, and the representative to the state legislature, the audience sat until nearly midnight before the guest of honor rose to respond.

"Samuel C. T. Dodd presented a ponderous appearance. Short, rotund, double-chinned, with a trim walrus mustache—to which would be added a thick set of mutton chop side-whiskers in later years—Dodd reminded one New York journalist of Grover Cleveland. He was affable, philosophical, erudite, and witty. A rather 'Scatter-good Baines' type of lawyer, with gravy on his ascot, he suggested to some an 'old time, sound, shrewd, kindly country lawyer.'

"While he would retain the posture of a small-town Midwestern lawyer all his life, he stood before his friends this evening to explain his changing his abode from Franklin to New York City. The task was doubly difficult, for he was leaving to join what many in the audience regarded as 'the enemy'—the Standard Oil Company. Typically, he took refuge in humor: 'Why, then, do I go away?

Well, as the ministers say when they get a call to higher salary, it seems to be the Lord's will.' Then there was a missionary motive: 'I expect New York has need of me—but I expect New York will be a long time finding it out. Boss Tweed is dead; John Kelly has fallen; Jay Gould seems to be busy with his stock affairs; and Beecher lives in Brooklyn. It seems there ought to be somebody living in New York.'

"In reality, Dodd had little reason to apologize to his friends. No official had ever joined Standard with less of an opportunity for accumulating a fortune. Dodd refused to draw a salary in excess of $25,000 and all Rockefeller's offers of stock options were consistently spurned. He thereby forfeited the assurance of becoming a multi-millionaire. Soon after his arrival at 26 Broadway, the Standard Oil International office, Dodd was asked to devise a legal structure wherein all the Standard operations could be carried out under one corporate entity. After considering and discarding several forms, Dodd outlined the advantages of a 'trust' operation. He recommended to the Standard officials that they create a corporation in each state in which Standard had a heavy investment. Superimposed on these state corporations would be a 'corporation of corporations,' or a trust, which would hold the voting stock of forty companies. Trust certificates would be issued to the companies on a percentage basis, according to the amount of stock subscribed, and the management of the entire organization would reside in the trustees. The dividends would be declared to the individual companies by the trustees in proportion to the number of certificates they held.

"The Standard Oil trust agreement, signed on January 2, 1882, inaugurated a new era of industrial combination. Samuel C. T. Dodd had, more than any other individual, made feasible the gigantic industrial corporation which became synonymous with American economic life for the next thirty years. Dodd cringed at being labeled 'the father of trusts,' but if he was not the father, he was the closest relative. Though, as chief counsel, Dodd gave complete loyalty to the Standard Oil Company, he did not necessarily condone all the imaginative uses of the trust device.

"Though Dodd was in and of his age, he escaped the invective widely and indiscriminately flung at the 'robber barons.' Sitting on the porch of his home in Twilight Park, in the heart of the Catskills, as a New York newspaperman found him in 1905, Dodd was the picture of contentment. He had fostered a revolution in economic association, yet he never reaped the great financial rewards enjoyed by his compatriots, Rockefeller, Rogers, Flagler, or Pratt. Looking across the Catskills from his porch, Sam Dodd was the selfsame shrewd, able, dedicated lawyer with a high sense of integrity who had said good-bye to his friends in Franklin, Pennsylvania, a quarter of a century before."

The next scene shifts fifteen hundred miles west to the center of Wyoming. Forty miles north of Casper lies a windswept rolling terrain, approximately twenty-two thousand acres of immensely productive oil-bearing sands. Geologically speaking, this oil province is a classic anticlinal dome of remarkable symmetry, easily discernible to even the neophyte geologist.

While not as perceivable as its geology, the history of the Salt Creek field has been the scene of Atlantean corporate struggles, bitter claim disputes, unbelievable fraud and wild political machinations. The first systematic development of the field came in 1889, with the arrival in Wyoming of one P. M. Shannon of Bradford, Pennsylvania. "Mark" Shannon had been a highly

successful operator-promoter in western Pennsylvania oil country. After looking over Salt Creek, Shannon decided to organize the Pennsylvania Oil and Gas Company. Then his manager, George B. MacCalmont, set about securing 105,000 acres of mineral claims.

Within a year after the arrival of the Pennsylvania group, the first well was drilled in what became known as the Shannon Pool on the extreme north slope of the Salt Creek field. At a little over a thousand feet, they struck oil. Within two years the Pennsylvania Company drilled three more wells, all productive. The amazing and enigmatic feature of this activity was ——now that Shannon had oil, what would he do with it? That question haunted a triumvirate of geologist-executives, Oliphant, Lufkin and Eckbert, whom the able president of the Standard Oil Company of New Jersey, John D. Archbold, sent to the Rockies to assess the gossip that occasionally came to his desk. In their report to Archbold, written from the Inter-Ocean Hotel in Cheyenne, Wyoming, on June 14, 1899, the three wise men from the East summed up their impressions—"Their [the Pennsylvania Oil and Gas Campany] present purpose is not altogether to make money but to demonstrate the value of the oil itself." Then in one grand summation sentence, they put the capstone on their report. "The Salt Creek valley is, in our opinion, a large area of probable producing territory, but until there is a pipeline and market for oil, there will be no profit for the Pennsylvania interests or others." It was hardly an assessment that would impress John D. Archbold to push Standard Oil into the Rockies. Shannon and associates continued to thrash about trying to find a way out of their market imbroglio. He erected a "cheese box" refinery at Casper with a skimming capacity of one hundred barrels a day. Finally, Shannon secured freight rates favorable enough to allow his company to sell crude oil in eastern Nebraska.

Four years after Archbold's mission to Wyoming, Mark Shannon resigned himself to what he had been at least subconsciously aware of for some time: his western venture was a tremendous debacle. When he started casting about for a rescue, deliverance came from a most unlikely source, France and Belgium. In 1903, an organization of European investors, guided by a Chicago man—Joseph M. Lobell, sometime tailor, erstwhile lawyer and all-time promoter—purchased the holdings of Shannon's group. In spite of Lobell, who was one of the most contriving charlatans to ever come on the Salt Creek field (and that is saying a great deal), within a decade Salt Creek had entered the ranks of one of the major oil producing fields of the United States. Mark Shannon's dream had been fulfilled, but that transformation, as the bartender said in Irma la Douce, *is another story.*

"While Salt Creek roared, five hundred miles to the North, Montana was enjoying its first symptoms of petroleum fever with the discovery of the Cat Creek field in 1919. Less than a year later, in the spring of 1920, a group of excited businessmen in the town of Kalispell, which is located at the head of the incredibly beautiful Flathead Lake in western Montana, gathered together in the Chamber of Commerce office. What had caused the furor in Kalispell was the discovery of 'asphalt-like' deposits in the crevices of a nearby canyon. When this mysterious substance had been analyzed by the state chemist, he pronounced it as hydrocarbon. This was all the assurance the prospective oil millionaires of the northern Rockies needed; the sixteen entrepreneurs quickly organized themselves into a syndicate. Obviously the first requirement for their promotion was to enlist the blessing of an expert. After making some not-so-discreet inquiries, they invited a Los Angeles-based geologist, Ralph Arnold, to look over their prospect. In selecting Arnold, they were requesting the service of one of the most renowned petroleum geologists, one with an international reputation. Upon re-

ceiving the Kalispell invitation, Arnold wired back that from his rudimentary knowledge of the area, plus a preliminary examination of geologic maps, he did not believe that there were any oil-bearing formations within fifty miles of Flathead Lake, but if they insisted he would pay them a visit for a $2,500.00 fee. Arnold promptly forgot about the incident under the logical assumption that once the size of his fee was mentioned the syndicate would lose some of its enthusiasm. A week later he was surprised to find another letter in his mailbox telling him to come immediately, that the remuneration mentioned for his services was agreeable. Reluctantly, Arnold boarded the train in Los Angeles for the three-day-long ride to Kalispell.

"Meanwhile, the businessmen, with visions of gushing oil wells dancing in their heads, had whipped up excitement to such a high pitch that many families in Kalispell began daydreaming of how to spend their newfound wealth. When the delegation met the train-weary Arnold, they decided to take him first on a ride around the beautiful Flathead Lake region; then they hosted a sumptuous dinner in his honor; finally, on the third day of his visit, they confidentially took him out to the limestone box canyon to confirm, as they put it, 'their discovery.' Arnold scrambled over the limestone formations, poking here and there with his geologic pick, scooping up several samples of the mysterious hydrocarbon substance. After a couple of hours had elapsed, Arnold commented, 'A lot of packrats in this country, aren't there.' Though this observation hardly seemed worthy of a thousand-dollar-a-day expert, his hosts readily agreed. Arnold hiked on over the country remarking enthusiastically about the grandeur of the countryside, the purity of the air and the rushing streams filled with trout. While members of the party slid sly comments into the conversation in an attempt to draw out Arnold as to his opinion of their prospects for petroleum, the Los Angeles geologist consistently parried their probings. Finally, the businessmen assumed that Arnold was keeping his assessment confidential for a more dramatic moment—specifically the mass town meeting that was scheduled for that evening. They were right!

"That night, the little Kalispell community hall was packed to overflowing with children, pets and adults, all eager to hear of the Golconda that was about to be bestowed on them. Arnold started his talk by going into a long, complex history of the origins of petroleum, the principles of petroleum geology and a description of some outstanding discoveries. After about an hour, the audience

became restless; they had not come to sit on hard benches to hear a lecture about the age and character of petroleum deposits. All of a sudden Arnold stopped his talk and said, 'You know I've done a good deal of traveling all over the country, down in Venezuela, in Mexico and the United States, and I've always found there were a great number of places that the animal flora or fauna used to interest me a lot, and one of the most interesting animals that I have ever been around is the packrat. Well,' continued Arnold, 'the packrat is a very friendly little animal. He is very prompt in all his duties, etc. When he had to do anything, he had an appointed time and place. In this particlar case of your asphalt deposit in the canyon, the packrat filled up several fissures with his excrement, and finally through the years chemical action transformed the packrat leavings into a substance of asphalt derivation.' Arnold paused, then with a histrionic flourish, he reached into his pocket and pulled out a big black chunk; waving it in the air, Arnold commented, 'I am sorry but this packrat deposit is

my report on the petroleum potential of the Kalispell region.' The meeting broke up with a spontaneous roar of laughter, followed by the fleeing of the sixteen red-faced businessmen who were the brunt of ridicule for years after. Later, however, Arnold worked with the same syndicate in the development of the Kevin-Sunburst dome which became one of the more productive fields in Montana. Even today if the name of Ralph Arnold comes up among the old timers gathered around the bar of the Elks Club in Kalispell, a smile will come over their faces, and they will inevitably say, 'Did you ever hear the tale of our packrat field?'"

At This Juncture . . .

What has this to do with the work of the Petroleum History and Research Center? Simply this, the basic historical documentation for these stories is now a part of the archives of the Center. In 1960, Mrs. Henry Noble McCracken, the wife of the long-time president of Vassar and the daughter of S. C. T. Dodd, donated her father's scrapbooks and correspondence to the Center. Unfortunately, Mrs. McCracken did not have any of her father's various books or pamphlets outlining his economic and personal philosophy that he published privately over the years. However, an appeal to Miss Mary Kay Blair, librarian of the Central Library of Standard of New Jersey, brought copies of all of Dodd's writings.*

The Salt Creek odyssey of Mark Shannon came from the minute books and records of the Pennsylvania Oil and Gas Company, which are part of our Midwest Oil Collection. The Montana experiences of Ralph Arnold were collected on a gorgeous spring day in 1959, when we made a tape recording of Arnold's reminiscences on the sun porch of his Santa Barbara home, virtually on the shore of the Pacific.

The Program at Laramie

The Center was founded in 1958, as part of the total archival activity at the University of Wyoming. In one sentence we can, with deceptive simplicity, sum up the Center's program. In essence, it is to collect, preserve, organize and disseminate the history of the petroleum industry, without geographic limitation! Superficially and in reality, those words demark an enormous task. Yet the magnitude of the assignment is sharply limited by several factors: the comparatively small amount of historical material still in existence, the cooperation we receive, and budgetary considerations. If one assumes that the preservation of the record of our past has cultural importance, one of the justifications for our Center's program appears evident when we attempt to inventory the extant historical materials. In the replies we have received over the years to our letters of invitation, we have had a constant din of such phrases as: "If you had just written five years sooner!"; "Our company implemented a records retention program over a decade ago; hence most of this material was destroyed; sorry!"; or "I now realize the things we threw in the garbage can after father's passing did have value." These responses point up one of our major tasks, which I hope will be a by-product of this paper. We, the archivists, must do a far better job of informing the public of our archival programs and facilities for preservation. We cannot expect a company or an individual to store historical data for perpetuity on the premise that someday, somebody might want it.

After one locates a rich lode of historical material, then comes what often we

* No one has been more helpful in building up our collection than Miss Blair. She has dispatched substantial amounts of literature to us, directed archival data our way, and lobbied with her friends in other companies on our behalf. I am sure that there are many librarians in New York who are convinced that Miss Blair is a paid member of our staff.

can only describe as pleading, cajoling and pestering. By now we believe we have heard all the excuses imaginable for not going down the basement stairs, up into the attic or out to the warehouse. Above all, archivists need a liberal dose of patience. I was amused recently when one of our staff was busily engaged in processing a valuable collection of legal material and came across an exchange of correspondence that we had with the donor dating back nine years. With a sigh, she remarked, "You certainly have to have persistence." However, nine years is not typical, nor is the procrastinating donor the golden mean. Actually, I am continually amazed at how much cooperation we do receive. Quite evidently the reason for the substantial size of our archives today is testimony to the generosity of our donors.

Another strong explanation for the Center's progress is due to what I believe are the unique circumstances surrounding the evolution of archives at Wyoming. As far as we know, the University of Wyoming is one of the few institutions where the archivist reports directly to the president of the university, and it is perhaps the only university where the president systematically undertakes a field program with the archivist. This is not meant as a descent into braggadocio; the only motive for mentioning this support is to illustrate the simple fact that archival development at Wyoming is considered a serious and significant part of the total academic program. This situation is far rarer than you might imagine, for to many university administrators, archivists are morticians in residence.

There are a number of complex reasons why the archival scene is different at Wyoming, but the chief of these is that over ten years ago the administration, along with the Board of Trustees, realized the public relations value of the archival program. Often trustees, as laymen, do not nor can they be expected to appreciate the total academic value of a manuscript collection, but they do appreciate and are grateful for the interest that our donors continually express in the University.

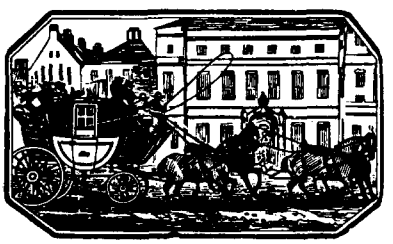
The Collections

Donors understandably ask the inevitable question: Just specifically what do you want? Frequently we reply to that question in what appears to be a most indiscriminating and catholic way, namely, "almost anything that you can send." We are not trying to be blasé when we respond in this fashion, but we strongly believe that when you ask for a person's papers, in effect what you have requested is a documentary biography. Like any biography, the more complete it is, the more valuable from an historical standpoint. However, returning to specifics, we always invite them to deposit manuscripts, geological reports, maps, photographs and other iconographic material, correspondence, minute books, diaries, field notebooks, ledgers, journals and legal documents.

Over the years we have had the good fortune to receive the personal papers of more than 40 geologists, engineers and executives. Among the most fascinating of these are those of the late Arthur Beeby-Thompson. In 1904, a group of English investors became curious about the economic potential of the Baku Oil Fields in Imperial Russia. To provide the answers to their questions, they hired a young engineer, Beeby-Thompson, who was then associated with Herbert Hoover in the latter's London office. The report Beeby-Thompson issued on Baku soon became a classic; in fact, it gave him a passport to oil fields the world over. For the next 30 years Beeby-Thompson advised clients on petroleum prospects in the Middle East, Venezuela, the American West and the Dutch East Indies. Two years before his death in 1968 at age 96, Beeby-Thompson sent his files from London to Laramie, with the comment, "You do me more honor than I deserve; the record you will find in my papers, the fun you will miss."

While Beeby-Thompson's career is among the more glamorous of our galaxy of geologists and engineers, he is only one of more than 35 who have placed their files in our Center. There is not space to describe them all, but by their

omission we certainly do not mean to slight them. For instance, two men who were at the vortex of government–industry relations during World War I and through the 1920's were Mark Requa and George Otis Smith. Requa, as petroleum engineer and confidant of Herbert Hoover, divined a sensible path through the welter of government regulations. George Otis Smith, as head of the United States Geological Survey during the 1920's, inaugurated petroleum reserve policies, many of which are still in force today. The Requa and Smith estates have recently deposited their extensive mass of family archives in the Center. A few of the other outstanding geologists and engineers whose personal papers are now at Wyoming: F. Julius Fohs, Leo Ranney, R. W. French, A. J. Kraemer, N. H. Darton, Charles P. Lupton, Kessack D. White, and E. J. McClanahan.



In the area of corporate historical records, the Center is the repository for the early minute books of the companies which were the predecessors of the Sinclair Oil Corporation. A number of historical manuscript geological files of the Carter Oil Company came to us when that company's identity was completely submerged into Humble. We have the corporate files of the Warner-Caldwell company of Titusville, Pennsylvania, and Nowata, Oklahoma. As the Warner-Caldwell company was a pioneer in the Midcontinent region, the collection offers insights into the difficulties and rewards of another Pennsylvania oil group operating in an economically underdeveloped area.

Two very strong regional companies in the Rocky Mountain area, the Midwest Oil Corporation and the Argo Oil Corporation, have placed an enormous amount of their early corporate history in the Center. Before its merger into Atlantic Refining, the Argo company was the result of a series of 30 corporate mergers ranging in operations from the Canadian border to the Rio Grande. Consequently, the historical value of the Argo records is as important as the huge continental distance that the corporation covered.

The Standard Oil Company of New Jersey has donated three very significant collections to the Center. The first is the records of James P. Martin, whose family was closely associated with the Flagler family, and, as all of you know, one of the founders of the Standard Oil Trust. James Martin dedicated his life to amassing memorabilia on the genealogy and history of the Rockefeller, Harkness and Flagler families. Another unique collection presented to the Center by Standard consists of 143 scrapbooks of newspaper clippings from 1895 to 1942. Since the selection of newspapers clipped ranged from small Western towns to Eastern megalopolises, these scrapbooks provided a day-to-day history of the oil industry from coast-to-coast for almost four decades. As many school boys know, in 1911, as the result of a government suit, the Standard Oil Trust that S. C. T. Dodd had so carefully fashioned was dissolved. The records concerning that dissolution including stock transfers, correspondence and shareholders' receipts were all transferred from New York to Laramie.

The Center also holds rare and early published literature on petroleum history. The single most valuable collection of books, pamphlets and ephemera has been donated to us by Ernest C. Miller, president of West Penn Oil Company and a curator of the Center. During the past ten years, Mr. Miller has generously contributed over 5,000 books, manuscripts and documents to the Center. The Miller collection is especially valuable on the early beginnings of the petroleum industry in Pennsylvania. Among the rarer items are the following titles: *The Allegheny Pilot;* Beer's *Atlas of the*

Early Petroleum Region; the *Derrick's Handbooks of Petroleum; A Practical Treatise on Coal, and Petroleum and Other Distilled Oils,* and Le Roux, *Belgo-Americaine.* Among the manuscript material of high value in the Miller collection are: the papers of John McLaurin, outstanding journalist of the oil region; the files of the Roberts Torpedo Company, the first firm to develop the technique of shooting wells with nitroglycerin; the prospectus and scrapbooks of the Reno Land and Oil Company; and the ledgers of the Echol Oil Company, 1861; the Queen River Oil Company, 1869; and the Brooklyn Oil Refinery, 1868. The last named ledger and the name of James Fisk are inevitably linked. Fisk, not known for his gullibility except where ladies were concerned, backed his rival for Josie's hand, Edward Stokes, in the Brooklyn Oil Refinery. His investment in Brooklyn turned out to be as disastrous as his escapade with the fair Josie.

Services of the Center

We are all aware that there are a number of aspects of our work that I have not mentioned, such as the classification and organization procedures, or who uses the material once we have it on our premises. Actually, the patrons are a far more catholic group than you might think; weekly we receive questions on a myriad of subjects from faraway places. Questions such as: Was the first oil well drilled on the North American continent really in Canada? (As far as we can tell, the Drake well was the first one.) Did H. H. Rogers, the Standard Oil magnate, write a personal check for sixty million dollars, in round figures, for the payment of the Virginia and Norfolk railroad? (He most assuredly did.) What firm initiated the Dutch petroleum development in Sumatra? (A German concern drilled the first well but under a Dutch license.) I must confess, while we have tossed off answers to the above, there are obviously innumerable questions which we are never able to answer, such as the color of Colonel Drake's suit in the famous Mather photo or how many associates were with C. M. "Dad" Joiner in his pre-East Texas days.

Another large category of researchers in our Center are graduate students and faculty. Regularly, we are hosts to researchers from universities and companies across the land. One of the obligations of any depository located in a relatively sparsely populated region is to make its material readily available. Although we are not as isolated as many think (45 minutes via plane twice a day or 2½ hours by auto from Denver), due to the Age of Xerox, we are now able to disseminate our resources to individuals in Kalamazoo, Winnebago or Las Vegas. Our loan policy on printed materials is so relaxed as to raise eyebrows among our professional brethren. With the exception of very rare items (and even of these we will make copies), we will literally send almost anything—anywhere.

Conclusion

From time to time I am asked if we do not meet with hostility when we ask individuals to donate material. I always reply that very seldom do we meet hostility, although we do encounter a tremendous amount of indifference. Unfortunately, many historical records have been lost through plain neglect and failure to recognize their value. Or simply because no one expressed an interest in them. So I ask the readers as librarians —if you come across historical manuscripts such as have been mentioned—maps, ledgers, manuscripts, geological reports, photos, correspondence, etc., as well as books and other published literature—won't you please contact us first before you "weed"?

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Dr. Gressley *is director of the Petroleum History and Research Center of the University of Wyoming, Laramie, Wyoming.* *Presented at a meeting of the Petroleum Division on Jun 10, 1970 during SLA's 61st Annual Conference in Detroit.*

An Alerting Service Without a Computer

A KWOC Index Produced by Conventional Means

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■ Special libraries and research centers temporarily without computer service can produce a monthly or quarterly Key-Word-Out-of-Context Index by means of xerography, one typist, and offset printing. The technique for the development of such an alerting publication focuses on two major concerns: *1)* preparing the listing for a single final typing; and *2)* making the publication a model of communicativeness. The uniqueness of various fields of information is respected. However, insight and data are provided from the writer's experience in developing the monthly KWOC publication *Current Research and Discussion in Vocational Education.*

FOR VARIOUS REASONS many special libraries and research centers may be unable to utilize computer services at a given time but would like to produce a Key-Word-Out-of-Context (KWOC) alerting tool for a specific field of information on a regular basis. Such a procedure as that sketched here should be considered only a temporary alternative to computerization.

A KWOC index of 200 to 300 current items may be published monthly in an eight-page format if the sources to be disseminated are at hand, and if there are available one accurate typist, a xerographic machine, and access to offset printing.

The cost for such a KWOC index will vary with local printing costs, xerographic costs, and staff time invested. Offset printing cost estimates are easily available locally. In estimating the cost of xerographic copies, plan on about 320 reproductions in reporting 24 different journals, each with ten articles, each with four key words. The value of staff time can be estimated on the basis of a 4–5 day effort on the part of a professional and a 4–5 day effort on the part of the typist.

The basis for such estimates is the experience of this writer in producing a Key-Word-Out-of-Context index for the field of vocational education on a monthly basis beginning in November 1969: *Current Research and Discussion in Vocational Education.* This index has included about 550 lines, has reported about 250 items per issue and has been published in an eight-page format. Each page was reduced from an 11″ × 15″ typed manuscript to an 8½″ × 11″ offset master. The publication was printed on both sides of two 11″ × 17″ sheets and stapled at the fold.

Be sure the KWOC index you plan does not duplicate an existing KWOC index in your specific subject field. In plan-

ning for a vocational education KWOC index it was necessary to examine Educational Testing Service's *KWOC Index to Current Periodical Titles,* published since January 1968. A check on the journals incorporated revealed that practically no journals of concern for vocational education were included, with the exception of some journals concerning vocational guidance. A check on the terms "vocation," "vocational" and "vocationally" revealed that during 18 months only about 70 articles were listed under those key words.

Do not be concerned that your KWOC index appears to duplicate the work of a standard subject and author index. Such cumulating indexes are standard works in various fields of research, and KWOC compilers should not confuse the retrospective searching functions of such tools with the periodic alerting function of a KWOC index. A KWOC index is an excellent supplement to such standard subject-author indexes because a KWOC format displays the language of the titles in a way no subject analysis is able to provide. *Current Research and Discussion in Vocational Education,* for example, has as a major component the titles of reports listed in the standard indexing and abstracting journal *Abstract of Research and Related Materials in Vocational and Technical Education,* a publication of The Center for Vocational and Technical Education at Ohio State University.

Help will undoubtedly be at hand for the anticipated problems of reduction for offset printing, folding, stapling, addressing, and mailing. The compiler of a KWOC index by conventional means must focus on preparing copy necessary for a single final typing of the items.

If item slips are in correct format, correct order, and correct number, the typist should be able to produce the KWOC index in one typing. The preparation of these slips is the major task to be undertaken. Preparing the rest of the publication is relatively simple.

Specific suggestions to follow will be in two areas: *1)* How to prepare item slips that will make a single final typing possible; and *2)* how to package the KWOC publication in a meaningful format.

The Listing

The listing of a KWOC index includes: *1)* a key word or words from the title of the item to be disseminated; *2)* the complete title of that item; and *3)* the source for securing a copy of that document or article. A KWOC index produced by conventional means is simply a cumulative evolution of these three elements in reverse order from that listed.

It may help to give names to various stages of this evolution: *1)* blanks; *2)* source dummies; *3)* title slips; and *4)* item slips. Each of these will be described functionally in order that the evolution will be as clear as possible.

Blanks are slips of paper on which will be recorded the three elements necessary for a KWOC entry. Each blank must be of sufficient size to incorporate the information needed, be easily manipulated, and yet not be so big as to be bulky. A workable blank can be easily developed by drawing three lines on a $8\frac{1}{2}'' \times 11''$ sheet in such a way as to produce four long sections each $2\frac{1}{8}'' \times 11''$. There will be enough blanks if there is one available for each journal to be used.

The blanks should be used on the $8\frac{1}{2}'' \times 11''$ sheets. Cutting should take place only after all elements of the KWOC entry have been incorporated for two reasons: *1)* xerography is best accomplished with $8\frac{1}{2} \times 11$ inch sheets; and *2)* the confusion resulting from the individual slips would be overwhelming.

Source Dummies are blanks with coded sources typed at the extreme right. Included in each citation should be the journal title, the month and year of publication, and provision for a page number to be inserted later. An example of such a citation is "Ag Ed—Nov.'69: p. " When using 24 journals, the typing of source information should result in six $8\frac{1}{2}'' \times 11''$ sheets, each with four different sources indicated.

TECHNICAL Why technical illustration?	Jo In Ar Ed -- May - Jn '69:p. 11
TECHNICAL PROGRAMS The Development of Some Objective Measures of Performance for Selected Post High School Trade and Technical Programs	Jo In Te Ed -- Spring '69:p. 74
TECHNICAL TRAINING Buses Take Technical Training to Rural Schools	Am Vo Jo -- May '69:p. 74
TECHNICIANS Employment Opportunities and Training Needs for Technicians in the State of Missouri with Projections through 1970	ARM -- Spring '69 VT 003870, p. 509
TECHNOLOGICAL CHANGE Technological Change and the Journeyman Electrician, An Experimental Study in Continuing Education. 2 Vols.	ARM -- Spring '69 VT 002912, p. 550
TECHNOLOGY Industry vs Technology: An Issue for Industrial Arts	Sc Sh -- Sept '69:p. 86
TECHNOLOGY The Proposed Educational Technology Act of 1969 (Federal Programs)	Ed Tec -- April '69:p. 59
TEST Shorthand Placement Test for College Freshmen	Jo Bu Ed -- May '69:p. 350
TEST The Development of a Standardized Achievement Test for Small Gasoline Engine Instruction	ARM -- Spring '69 VT 004725, p. 524
TEXTBOOKS Textbooks for Industry	Tr Bu In -- Jn '69:p. 46
TOOL The tool bit: of cabbages and kings	Jo In Ar Ed -- May-Jn '69:p. 36
TOOLS Procedures for Purchasing Tools and Equipment	Ag Ed -- Sept '69:p. 62
TRADES On-the-Site Construction Highlights Trades Program	Sc Sh -- Sept '69:p. 94
TRAINING Report to the Government of Libya on Vocational Training	ARM -- Spring '69 VT 004913, p. 481
TRAINING On-the-Job Training, An Answer to Training Needs of Business	ARM -- Spring '69 VT 003417, p. 474
TRAINING The Choice of Specialty Oriented Training	Vo Gu Qu -- Jn '69:p. 278
TRAINING Source and Extent of Economic Commitments to Public Vocational Education in Minnesota and Their Effects on the Nature of Training Opportunities	ARM -- Spring '69 VT 004735, p. 525
TRAINING Rehabilitation Based on Work Experience Training	Am Vo Jo -- May '69:p. 57
TRAINING On-the-Job Training, The Story of OJT in Iowa	ARM -- Spring '69 VT 003611, p. 478
TRAINING CENTERS Rural Pre-apprenticeship (Tunisia) (Training Centers)	CIRF Tr Pr -- No. 1 '69:p. 11
TRAINING STATION Mike Was Right on Schedule at the Training Station	Am Vo Jo -- May '69:p. 52
TRAINING SYSTEMS A Basic Difference Between Educational and Training Systems	Ed Tec -- April '69:p. 51
TRANSPARENCIES So You Want To Create Your Own Transparencies?	Ed Le -- May '69:p. 811
TRUCKING National Trucking Industry Apprenticeship Standards for Truck Mechanics	ARM -- Spring '69 VT 003809, p. 479

WOMEN American Women	ARM -- Spring '69 VT 004690, p. 544
WOMEN Report of a Consultation on the Employment of Women with Family Responsibilities	ARM -- Spring '69 VT 004647, p. 512
WOMEN Progress Report on the Status of Women, October 11, 1963 through October 10, 1964	ARM -- Spring '69 VT 004632, p. 543
WOOD Wood Flour Molding	Sc Sh -- Sept '69:p. 60
WOODSHOP Woodshop "S"	Jo In Ar Ed -- May-June '69:p. 28
WOODWORKING Cutting Coves and Cove Mouldings (Woodworking)	Sc Sh -- Sept '69:p. 74
WORK Work Activities and Future Goals of the Affluent Suburban Male Delinquent	Vo Gu Qu -- June '69:p. 293
WORK Work Experience Programs for Behavior Modification	Am Vo Jo -- May '69:p. 24
WORK-EDUCATION Concurrent Work-Education (Programs in the 50 States 1965-66) Initial Draft	ARM -- Spring '69 VT 003561, p. 478
WORK EXPERIENCE Rehabilitation Based on Work Experience Training	Am Vo Jo -- May '69:p. 57

Sample page from a KWOC Publication, "Current Research and Discussion in Vocational Education"

• •

To be ready for the next level of KWOC item development, the compiler should next duplicate the source dummies in sufficient quantity. Experience and checking will improve one's estimate of the amount of duplication needed at this point. If the journals in your field normally have fewer than ten articles, then ten copies of the source dummies should be sufficient.

Title Slips are formed by taping or pasting titles clipped from xerographic copies of "table of contents" pages from the various journals. While mounting the title in the center of the source dummies, the pagination in the citation at the right should be filled in by hand. If a document number is available, such information might also be included in the source citation at this point. When this stage is completed, the compiler should have a title slip for each title he wishes to include.

The sheets bearing these title slips can now be duplicated in sufficient number so that there will be enough slips for recording each title key word at the left in the next stage of development. Only experience and spot checking will determine the degree of duplication required at this point. Frequently in the field of vocational education two or three

key words have been quite sufficient in alerting users to significant items; therefore, a workable standard has been to prepare four copies of title slips. Other fields may well require more key words per item.

Item Slips are now prepared by handprinting title key word or words at the extreme left of the reproduced title slips. The result should be slips which incorporate a key word or words, a title of an item, and its source in coded form. If large slash marks are made on unneeded title slips, discarding of such slips will be relatively easy. At this point the sheets can be cut and the discards eliminated.

Arranging the item slips for the KWOC index can be very easily and quickly done by two sorting stages: *1)* Sorting by alphabetic letter; *2)* Arranging words alphabetically within each stack of item slips produced in Stage *#1.*

The number of item slips prepared is of great importance. If a single final typing is to be possible, the stack of slips now before the compiler should be of approximately the right number to fit the projected size of the publication. In estimating the sufficiency of the item slips a compiler needs to know how many lines of publication are available to him, how many item slips he has, and what rate of second or third lines is typical for the titles of articles in his particular field. In vocational-technical education literature, for example, it soon became evident that in a KWOC index of 570 lines there were typically 150 second lines. Such estimates make it possible for weeding of less important key words.

If all has gone well, the typist should now have a stack of item slips that is in correct form, correct order, and correct number.

The KWOC Index as a Well-Packaged Communication Tool

The title, the format, and any explanatory material incorporated in the KWOC publication should be models of communicativeness.

The title should clearly state the scope of the field of information involved. Users probably do not care whether a key listing is a KWOC index or a KWIC index but would like to know exactly what field of information is being disseminated. This writer prefers the language "alerting service" more than "KWOC index" to interpret the function of the publication to users.

The general format for the listing will obviously be in three columns: Key word or words; title; and source. If the column arrangement and the column labels are presented clearly on page one, columns alone may guide the users on the remaining pages.

Resist the temptation to put a lengthy explanation of KWOC indexes and the sources involved at the very beginning of the publication. A KWOC format is simple and fairly obvious. No elaborate introductions should interefere with the user who is beginning to discover the function of the KWOC format. Consequently, limit the explanations on the first page to a clear title, the time of publication, and no more than a few sentences describing what the publication is trying to do.

A section of explanations is important at the end of the KWOC listing because the sources have been coded and need to be decoded. The final explanatory section could also include a paragraph on how to use the KWOC index and how to secure copies of items. The compiler may even wish to suggest standard indexing and abstracting journals by which retrospective searching would be possible in that particular subject field.

With a communicative title, with a functional format, and with helpful explanations, the KWOC publication may be intelligible and helpful to readers on their first exposure to it.

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Behaviorally Engineered Educational Environments
An Information System

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■ Efficiency and communication among the staff of a research and development organization are greatly enhanced by a library which is tailored to meet the specific information needs of the organization.

The Upper Midwest Regional Educational Laboratory has developed a complete information system as a support for its educational developmental program. The system is within the scope of financial and human resources available to low-expenditure operations, and could be adapted to other organizations. The subject classification scheme and the various operating procedures were designed so that conversion to mechanical or computerized retrieval equipment could be accomplished with ease.

A RESEARCH and development organization employing many persons on different but interdependent aspects of the same general program must have a library with several characteristics not usually found in large libraries serving many areas of interest, or in researchers' personal libraries.

Such a library is most effectively seen as an information system embedded within the larger system. The researchers' need for particular information will determine the activities performed by the information system *(1)*, with benefits derived from information balanced against cost. Activities which do not demonstrably support the organization's objectives are modified or eliminated.

Because the work carried out by the research and development organization is often highly specific and well-defined, managers of the information system should judge any acquisitions only by the material's projected contribution to the organization's effort. Doubtful material cannot be stored simply because it might be useful.

Smooth communication among staff members, who are likely to be trained in a variety of disciplines, is quite critical to the cohesiveness and success of the overall program. The information system should contribute to this communication by using only an address system based on a specific terminology which reflects the program's conceptualization.

Any organization with a large staff can develop problems in duplication of effort. The library should help to eliminate these problems in literature searching by providing a method of cumulatively recording and storing the literature-search notes of individual researchers and making these notes available to all staff *(2)*.

The Upper Midwest Regional Educational Laboratory (UMREL) has devel-

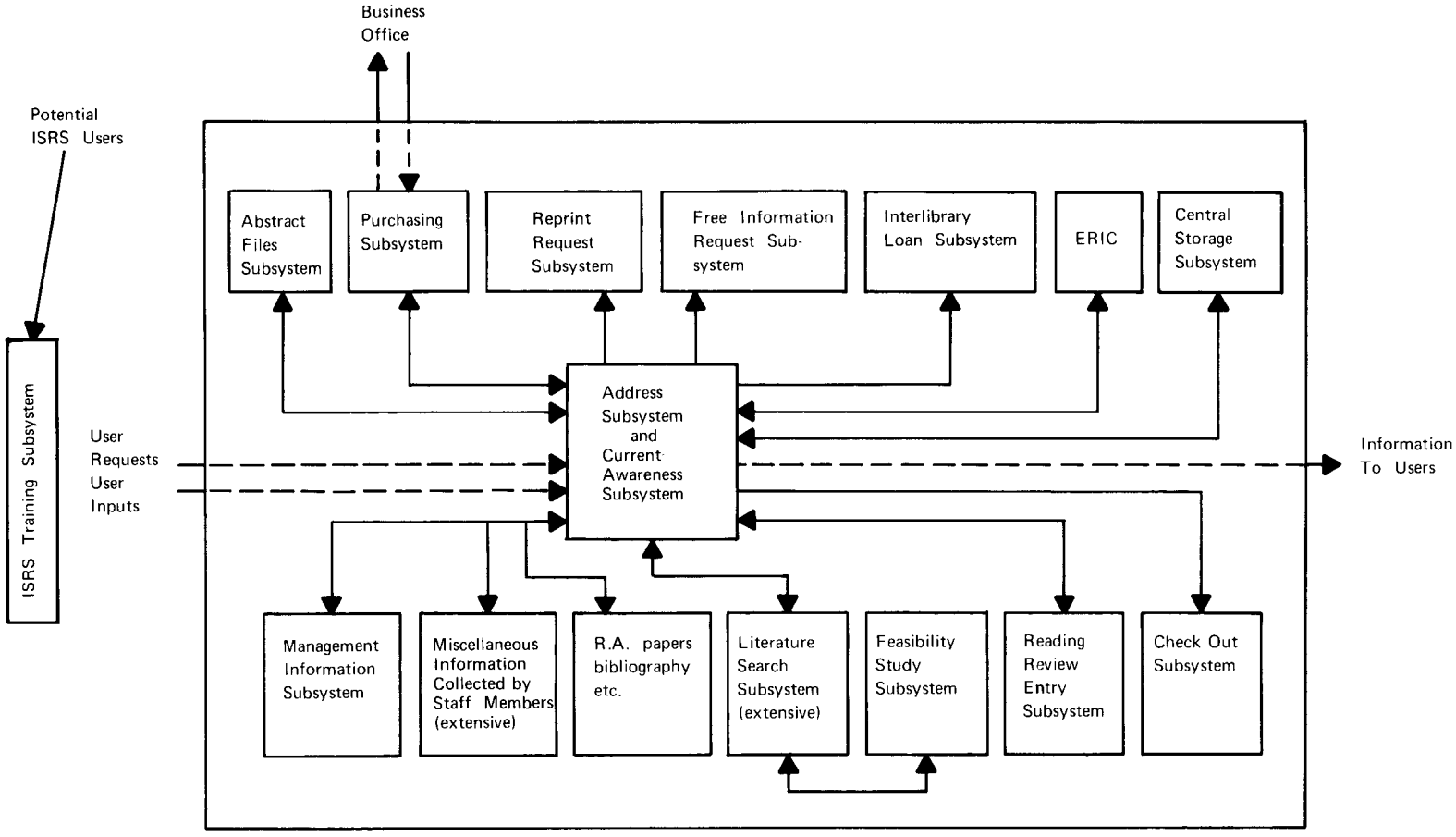

Figure 1. Management of Information Search and Recording System

oped a system which fulfills the information needs described above. The system was developed to meet the following objectives:

1. Acquire information relevant to the establishment of behaviorally engineered educational environments (UMREL's program objective).
2. Address information, including information recorded by researchers while reading professional literature, with a terminology reflecting the conceptualization of the program.
3. Provide a standard format for information recorded by researchers.
4. Store all library holdings and recorded information in a central location.
5. Train laboratory researchers in personal retrieval of information stored in the system.
6. Provide a weekly current awareness service to staff members.
7. Perform and coordinate in-house literature searches and preparation of bibliographies relevant to the Laboratory program.
8. Establish some control over the information use by staff members to *(a)* increase communication regarding the organizational program, and *(b)* enhance professional competence by effective use of information.

UMREL's system, called the Information Search and Recording System (ISRS), accomplishes these eight objectives through several subsystems designed to serve the particular needs of UMREL researchers (Figure 1).

Acquisition Subsystems (Objective 1)

Any staff member can request specific program-related materials. If the materials must be bought, ISRS arranges for purchase through the business office. For free reprints and unpublished manuscripts, ISRS has a *Reprint Request Subsystem*. Bibliographic data and first author's address are added to a form letter and sent out immediately, giving quick results and providing an inexpensive way of continuously updating ISRS. The *Free Information Request Subsystem* is used the same way to order catalogs and brochures relevant to the program.

ISRS storage is expanded by using outside libraries through the *Interlibrary Loan Subsystem*. Staff members request materials from other libraries in the Twin Cities area. ISRS locates the materials and arranges for check-out, weekly pickup and return.

Two additional subsystems for acquiring materials, the Educational Resources Information Center (ERIC) and the *Reading Review Entry Subsystem*, are discussed separately below.

Address Subsystem (Objective 2)

All materials acquired by ISRS except ERIC microfiche are addressed with terms from a subject classification scheme called the *Term Framework*, which reflects UMREL's program conceptualization, and is tailored to laboratory needs. It consists of twelve category terms: behavior, curriculum, management, objectives, organizational systems, populations, programed instruction, reinforcement, research methodology, simulation, stimuli, and technology—and many lower level terms within each category. Terms within each category are hierarchically arranged by meaning into four levels with cross references indicated where terms overlap conceptually (Figure 2).

ISRS addresses materials with terms as specific as possible without necessitating duplicate catalog cards to be filed under different lower level terms within the same category. For instance, if the material discusses schedules of reinforcement, reinforcement menus, and positive and negative reinforcement, the materials would receive only the address *reinforcement*, a category term, thus avoiding the use of duplicate cards for each of the lower level terms, *schedules of reinforcement, reinforcement menus, positive reinforcement,* and *negative reinforcement.*

The main topic of the material is used for the Main Entry address (ME); after translating the topic word or phrase into ISRS terminology, one of the twelve

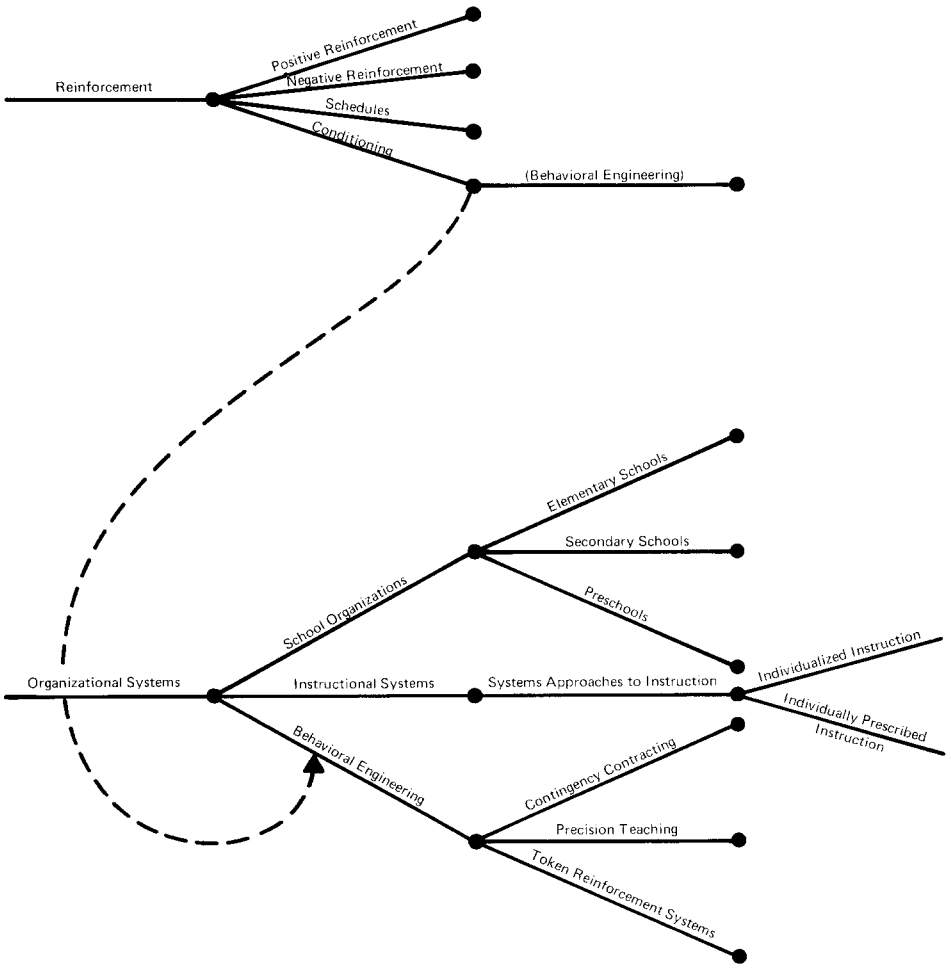

Figure 2. Tree Diagram of Category Structure for Term Framework and Overlap of ISRS Terms

categories and a lower level term within the category are chosen from the Framework as the ME. Other topics discussed to some extent in the material are also translated and used as Added Entry addresses (AE).

The set of ISRS addresses provides a brief abstract of the material on the catalog card and allows for retrieval by single or combined addresses. For example, if the material discusses a functional analysis of the behavior of elementary school principals, the ME would be *management* (category term) — *theories and strategies* (lower level term). Two AE's would be *organizational systems — elementary schools* and *behavior — measurement*. Taken together, the ME and AE's provide a brief abstract.

If a user wants all the materials dealing with functional analyses of the behavior of elementary school principals, he can look under either the ISRS terms *management — theories and strategies* or under the terms *organizational systems — elementary schools* and *behavior — measurement*. Going one step further, if the user wants only materials dealing with a functional analysis of elementary school principals in the inner city, he would use the three above addresses in combination with a fourth

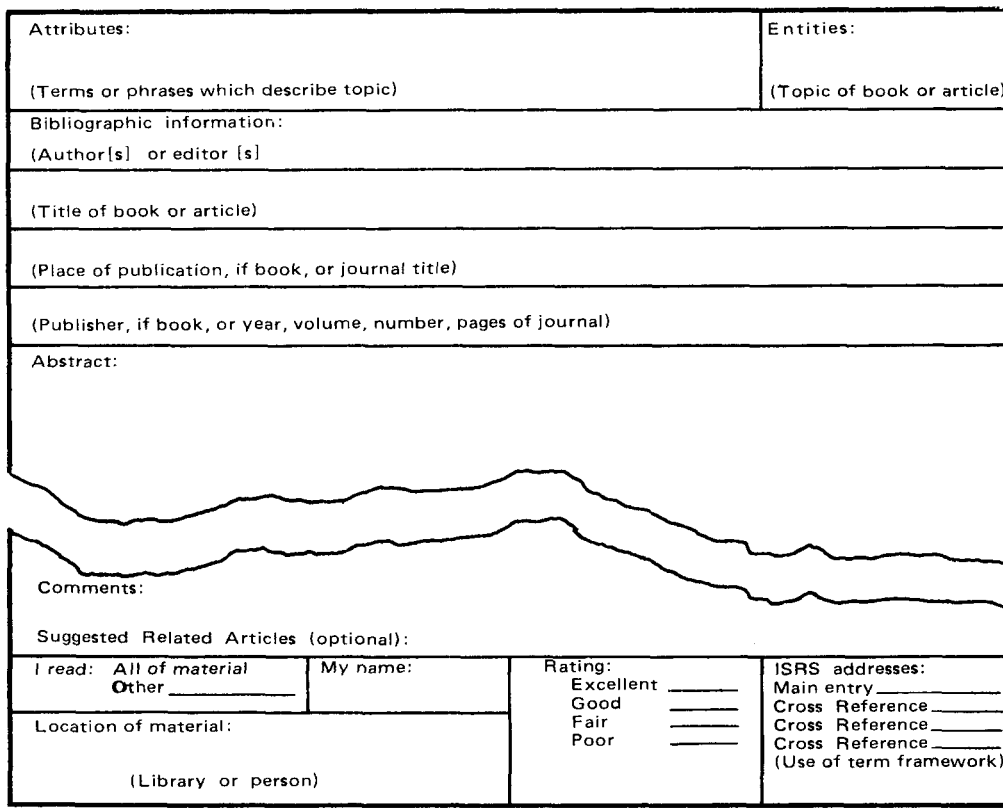

Figure 3. Reading Review Entry Form

address, *populations — urban populations.*

This information retrieval may be performed by ISRS staff, researchers, or non-professionals, as long as researchers have designated specific ISRS terms to be used. UMREL is now devising a method of coding ME and AE addresses for one-step retrieval using a coordinate-term retrieval method and mechanical equipment *(3)*.

Reading Review Entry Subsystem (Objective 3)

The Reading Review Entry Subsystem provides a standard format for recording information on professional reading and enables staff members to locate results of their own or other staff members' previous literature searches.

Entries are made on a printed form (Figure 3). At the top the researcher lists the main topic of the material ("entity") and one to five words or phrases ("attributes") which reflect the coverage of the topic in this particular piece of material. Used in combination, the entity and attributes provide an "abstract of the abstract."

The difference between this "abstract of the abstract" provided by the entity and attributes on Reading Review Entries and that provided by ISRS addresses on catalog cards should be emphasized. Reading Review Entries are not catalog cards; they are cards containing information recorded by researchers during literature searches. The actual piece of material read by the researcher may not be contained in ISRS at all; only the summary information recorded on the Reading Review Entry may be stored, with reference to the location of the entire document—personal, public, college or

other outside library. The entity and attributes are simply any words a researcher chooses to describe the material.

Catalog cards, on the other hand, address materials which *are* stored in ISRS. No space is provided for entity and attributes; the only information given besides the bibliographic information is the set of ISRS addresses. These words are not freely chosen as are the entity and attributes; ISRS addresses must come from the Term Framework. The set of addresses provides a brief abstract of the material, but it is generally less detailed than that provided by the entity and attributes and again, only ISRS terms are used.

When the Reading Review Entry form is completed the information is typed on Reading Review entry cards for permanent file and assigned an ISRS main entry (ME) address. Added entry (AE) addresses are assigned if necessary.

A Reading Review Entry is assigned the most specific ISRS address possible, and usually *only* that address, since the entity and attributes, though not chosen from the Term Framework and not used in filing, furnish a description similar to that provided by the set of ME and AE's on ISRS catalog cards. This makes more detailed addressing unnecessary.

Storage Subsystem (Objective 4)

All materials acquired and addressed by ISRS are stored in a central location in the laboratory. Except for the Reading Review Entries and ERIC microfiche, materials may be checked out by staff members for any length of time; they are recalled if needed by other staff members.

Training Sessions (Objective 5)

Staff members are individually trained to use the Term Framework and Reading Review Entry System in programed 45 minute sessions. At the same time they are trained to use the ERIC indexes, microfiche and reader-printer. ISRS clerical staff is trained by a semi-programed ISRS operating manual and chart of activities. This chart is also used for ongoing daily management of all ISRS subsystems and for collection of data on ISRS.

Current Awareness Subsystem (Objective 6)

All incoming materials are scanned for information of particular interest to users. These materials are checked out and routed to individuals or are called to the attention of the entire staff by a Current Awareness List. Entries on this list are grouped by category and lower level terms from the Term Framework, and some are annotated. Materials which are temporarily available through the Interlibrary Loan Subsystem are also listed. Weekly lists of Reading Review Entries are sent to staff members to keep them aware of what other staff members are reading.

Literature Search Subsystem (Objective 7)

Literature reviews and bibliographies on subjects relevant to laboratory programs are periodically prepared and updated by the UMREL staff. ISRS coordinates and assists these efforts. Standard literature search procedures for professionals and a method by which non-professionals can do preliminary literature searching are being developed.

The Reading Review and Literature Search subsystems are interrelated, with Reading Review Entries providing the recording system for systematic literature searching on particular topics.

An important cost-benefit feature of the Literature Search Subsystem is the *Feasibility Study* procedure. The amount of literature available on a given subject within a specified time period is estimated, and time and cost for a literature search on that subject at various depths of annotation are calculated.

Behavior Control (Objective 8)

By providing a management system for use of professional literature and a common language which reflects the pro-

gram's conceptualization, ISRS leads its users to read, record and share information related to the laboratory program.

ERIC: A Component of the Information Search and Recording System

ISRS is an attempt to provide UMREL with efficient information retrieval tailored specifically to its organization, information storage, and program objectives, a function no national information network (for example, ERIC) could carry out. Even educational networks of a more limited scope (for example, Science Information Exchange [behavioral science], ERIC Clearinghouse on Educational Media and Technology) do not use language systems precise enough to meet all the needs of the Laboratory's research.

ERIC and other information networks do provide excellent support for ISRS when integrated into the system as a component of the information storage. ISRS maintains close contact with the ERIC Clearinghouses and has a complete collection of ERIC materials. The ISRS Reading Review Entry Subsystem provides a standard abstracting and recording method by which researchers can draw information from ERIC and store it for future retrieval. Most terms in the Term Framework can be found in the ERIC Thesaurus; staff members accustomed to the language system of the laboratory are able to broaden the scope of their literature searches by referral from one term to another in the Thesaurus.

Future Plans

Plans for the future of ISRS include development of Abstract and Management Information Files, and storage of all UMREL development products, sources of program-relevant information, sources of financial support, and methods of reporting to the Laboratory's various constituents.

The use of non-manual retrieval equipment is being investigated *(4, 5)*. In this connection, data are continuously collected on various ISRS subsystems. Daily counts are taken on:

1. Check-outs and returns of ISRS materials.
2. Use of materials placed on the Current Awareness List.
3. Subject card catalog usage, by name of staff member, type of ISRS terms used.
4. Author card catalog usage.
5. Reprint requests ordered and received, by name of staff member, author and title of material.
6. Free Information Requests ordered and received, by name of staff member, publisher and type of material.

Weekly counts are taken on:

1. Materials listed on Current Awareness List, by type of material and ISRS term used.
2. Reading Review Entries sent to ISRS, by name of staff member and ISRS term used.
3. Staff members who list "Reviewing the Literature" on their weekly behavioral objectives, by name of staff member, author, and title of material read.
4. Staff members who place an Interlibrary Loan Request, by name of staff member, author, and title of material requested.

These counts will be used in combination with other data on ISRS activities (for example, feasibility studies and time-cost estimates for installation of mechanical equipment) to perform a cost-benefit analysis of ISRS as a system within the larger UMREL system.

ISRS's specific tailoring to a particular program's specialized information needs makes it unusual in the field of educational research. The system, however, provides a model which should be adaptable to any research and development organization with information needs similar to UMREL's.

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Nonprofessional Library Workers in the Science Libraries in Industry

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■ The use of the library technician, trained in the community college, has been recommended to meet the expanding needs of all libraries, including the special science library. However, both the success and the need for these library technicians are still undetermined, especially in the special science library with a small library staff.

A survey of the current conditions of the nonprofessional library worker in the science library of industy was undertaken so that the findings might contribute in some degree toward a better understanding of the problems concerned with: library education on the community college level for the nonprofessional library workers; the role or position of the nonprofessional library worker on the library staff of the science library in industry; the qualifications and requirements of the nonprofessional library worker for his position; the efficient utilization of the library staff; and management's evaluation of the manpower needs in the company library.

GREATER RESPONSIBILITIES have been placed upon the professional and nonprofessional library worker on a library staff because of advances in technology and the increase of knowledge, accompanied by automation and computerization of some library functions. These factors are especially evident in a special science library. To alleviate this situation, the utilization of the library technician has been promoted, and library technology programs have been introduced into the community college curriculum. These programs have opened an area of controversy among professional and nonprofessional library workers. Can the library technician program equip the nonprofessional library worker for the special science library? Can the library technician free the professional library worker from the burdens of routine activities that are considered nonprofessional duties? Can the library technician fit the needs and requirements of the special science library? Can the library technician relieve the manpower shortage in the special science library?

This study surveyed the background and extent of duties of the nonprofessional library worker and the professional evaluation of these workers by the library administrators in the special science libraries of industrial firms in Greater New York.

This survey was limited to a particular type of special library, the science library in industry. These libraries, employing five or more professional and nonprofessional library workers on their staff, were selected from the *Directory: Special Libraries of Greater New York, 1967 (1);* they were listed in the chemical, engineering, medicine and health, metals, petroleum, pharmaceutical, and science and technology categories. (When surveyed, some staffs were less than five. See Table 3.) No library connected with a university, or with a federal, state, or municipal agency was included. These limitations were established to obtain

consistent and homogeneous data that would be representative for this specific type of library.

Information was collected through a mailed questionnaire and through personal interviews with the library administrators of science libraries in industry. The mailed questionnaire was constructed in three parts, each independent of the others, so that data could be obtained and utilized from each part without affecting the total results. Part A of the questionnaire consisted of questions designed to procure information pertaining to the library administrator's evaluation of the training, duties, and education of the nonprofessional library worker. Part B of the questionnaire consisted of questions to be answered by the nonprofessional library worker in each library concerning his qualifications, duties, job classification and title, and salary. Parts A and B of the questionnaire consisted of a prepared list of questions that could be answered with a check (Yes or No), or in a few words.

The third part of the questionnaire—open-end questions addressed to the library administrator of each library—obtained additional information relating to the problem undertaken in this survey. Interviews were arranged with those library administrators who indicated a desire to discuss the problem in greater detail. Identical questions were asked at the interviews to elicit more information.

Twenty-one industrial science libraries in Greater New York responded to the questionnaire. This response represented 63.6% of the qualifying libraries. Data were collected for 65 nonprofessional library workers from 16 of the 21 libraries while the professional evaluation of these workers was obtained from 21 library administrators. Interviews were arranged with seven of the 21 library administrators.

Profile of the Nonprofessional Library Worker

1. 80% of these workers have had only a high school education.

2. 86% of these workers had no previous library experience, and 100% had no previous library experience in an industrial science library.

3. 29% of these workers indicated that they had a formal on-the-job training period. (The mean formal training period was almost 12 weeks.) 23% indicated that the training was continuous through job experience. 48% indicated that they had no formal on-the-job training.

4. 98% of these workers had no library clerical courses.

5. 46% of these workers were classified as library assistants; 43% were classified as clerical assistants; and 11% had other classifications. (These classifications had no relation to the type of work performed.)

6. The majority of these workers performed functions and activities generally accepted as nonprofessional library duties and activities. The most frequently listed activities were: secretarial and typing duties; and activities relating to the ordering, routing, and checking of periodicals. The next most frequently listed activities were: acquisition, circulation, and processing of books; and maintenance of various files associated with special science libraries. Processing mail, photocopying, reference service, preparing journals and books for binding, interlibrary loans, and shelving and weeding library materials were other frequently listed activities. Some of the above functions are considered professional and a small percentage of the workers were engaged in these activities.

7. Job titles generally originate in the personnel department of the firm, and about half of the job titles (clerical) indicated that clerical work was performed and the other half (library) could be identified with library duties. (Titles did not always reflect the type of work these workers were performing.) Table 1 gives an analysis of the different categories in job titles.

8. Salary statistics were obtained from only 14 nonprofessional library workers. (Some company policies forbid disclosure of salary schedules.) The range of annual salary of these fourteen nonprofessional library workers was from $4,000 to $8,-

000, with the mean about $5,600. Table 2 shows the relationship of salary with classification, job title, and education. (For definition of mean as used in this survey, see footnote to Table 3.)

Professional Evaluation of the Nonprofessional Library Worker

1. The mean ratio of professional library workers to nonprofessional library workers was found to be 1:1.5. This meets minimum standards as stated in *Objectives for Special Libraries (2)*. There is a recommended ratio of the nonprofessional library staff to professional library staff of 3:2 based on findings of SLA's Professional Standards Committee's Survey of Selected Libraries *(3)*. There was a total of 110 nonprofessional library workers and 87½ professional library workers in the 21 libraries. The mean nonprofessionals was 4.9; and the mean professionals was 4.2. The number of nonprofessionals on the staff ranged from one to 22, with the mode four. The number of professionals on one library staff ranged from one to 13, with the mode two. Table 3 lists the sizes of the staffs reported by library administrators in the 21 libraries surveyed; the definitions for mode, mean, and median as used in this report are in Table 3.

2. Job title was the factor that determined the salary level for the nonprofessional library worker as indicated by 65% of the library administrators.

3. 75% of the library administrators were satisfied with the educational requirements and backgrounds of their nonprofessionals.

4. 75% of the library administrators noted that there were no special knowledges required for this position.

5. The majority of the library administrators recommended an educational level of high school as sufficient for nonprofessional positions.

6. The majority of the library administrators determined their own requirements and specifications for nonprofessional positions; a majority of these administrators filled the vacancies in these positions from a list of candidates received from the personnel director.

7. 70% of the library administrators reviewed the performance of their nonprofessional library workers with formal personnel service rating reports; 10% of the administrators reviewed the performance of their nonprofessionals without formal evaluations.

Table 1. Classification of Job Title of Nonprofessional Library Workers

Job Title	Number Reported	
Library Titles*		
Library assistant	5	
Library technician	4	
Library clerk	4	
Library secretary	2	
Library services clerk	1	
Assistant librarian	1	
Reference and procurement assistant	1	
Periodicals assistant	1	
Periodicals clerk	1	
Junior librarian	1	
Circulation clerk	1	
Order clerk	1	
Interlibrary loan clerk	1	
Total		24
Clerical Titles†		
Clerk-typist	6	
Clerk-typist B	4	
Senior clerk	3	
Clerk	2	
Department clerk B	2	
General typist	1	
Secretary	1	
Senior stenographer	1	
Secretary-clerk	1	
Intermediate clerk	1	
Clerical specialist	1	
Total		23
Other Titles		
Xerox operator	1	
Editor library publications‡	1	
Total		2
Grand Total§		**49**

* Titles that indicate performance of some library duties.
† Titles that indicate performance of clerical duties only.
‡ Title given to a nonprofessional library worker by library administrator.
§ One library administrator could not give the job titles for his 16 nonprofessional library workers, because he was in the process of trying to obtain library job titles for them.

• •

Table 2. Relationship of Salary with Classification, Job Title, and Education

Salary	Classification	Job Title	Educational Level
$4,000	Clerical assistant	Library clerk	High school
4,000–5,000	Clerical assistant	Clerk-typist	High school
4,000–5,000	Secretary	Secretary	High school
4,680*	Clerical assistant	Library clerk	High school
5,000	Library secretary	Library secretary	High school
5,000	Library services clerk	Library services clerk	High school
5,000–6,000	Library assistant	Library clerk	Bachelor's
5,000–6,000	Clerical assistant	Clerk-typist	High school
5,824	Library assistant	Library assistant reference	High school
6,188	Clerical assistant	Clerk-typist	Junior college
6,448	Library assistant	Library assistant acquisitions	Some college
6,500	Library assistant	Secretary-clerk	High school
7,000	Library assistant	Clerk (25 yrs.)	High school
8,000	Library assistant	Assistant librarian (27 yrs.)	High school

* Annual salary calculated from $72 for a four-day week for this worker.

Table 3. Size of 21 Library Staffs

Total	Professionals	Nonprofessionals	Ratio Prof/Nonprof
5	2	3	1:1.5
6	2	4	1:2
12	3	9	1:3
14	11	3	1:0.27
9	5	4	1:0.8
11	8	3	1:0.37
6½	4½	2	1:0.44
5	2	3	1:1.5
3	1	2	1:2
8	3	5	1:1.66
6	2	4	1:2
5	1	4	1:4
21	5	16	1:3.2
4	2	2	1:1
9	5	4	1:0.8
35	13	22	1:1.68
8	4	4	1:1
8	4	4	1:1
11	4	7	1:1.76
7	4	3	1:0.75
4	2	2	1:1
197½	87½	110	
Mode*	2	4	1:1
Median†	3.54	3.59	1:4
Mean‡	4.17	4.86	1:1.5

* The measure of the score which occurs most frequently.
† The point on a frequency distribution which divides the distribution exactly in half.
‡ The sum of the products of each score multiplied by the frequency with which the score occurs and divided by the total number of scores.

8. The majority of the library administrators were satisfied with their own training of the nonprofessionals; these administrators preferred to train such workers on-the-job themselves. Previous library experience was not a prerequisite for these positions.

9. The majority of the library administrators believed that courses in basic library skills—while the nonprofessional library worker is employed—might be useful in training these workers. However, the administrators pointed out that these types of courses were not always available locally.

10. The majority of the library administrators agreed that formal training in basic library skills at the junior or community college level might benefit the nonprofessional library worker in the science library in industry. Less than half of the library administrators were familiar with library technology courses in the community colleges.

11. 80% of the library administrators considered the activities of their nonprofessionals more than just clerical routines that support the work of the professional librarian.

12. 70% of the library administrators did not think that the nonprofessionals performed activities that were more than clerical because of the lack of trained professional library workers on their staff.

13. 65% of the library administrators stated that their professionals performed some duties that might be performed by nonprofessionals:

Professional Evaluation of the Nonprofessional Library Worker—Open-End Questions

1. Most library administrators were satisfied with the educational level of their nonprofessional library workers. However, recommendations were made concerning the educational requirements for these workers which included formal library training in the community college and library training in basic skills at the high school level. Two library administrators believed that the nonprofessional library worker with a higher educational level would be overqualified for the position.

2. The library administrators had reservations concerning the concept of library technology courses in the junior or community colleges as the answer to the manpower shortage in the science library in industry. The reasons given were: the critical manpower shortage exists at the *professional* level, not on the nonprofessional level; library technicians would be overqualified for these positions; library technology courses in the junior or community college are not geared for the scientific or technical special library; bright individuals with the ability to think and the willingness to work with competence in the usual office skills are the primary requirements for these positions.

3. The majority of the library administrators believed that the nonprofessional library worker in the science library in industry performed more specialized routines than the nonprofessional library worker in the public or school library.

4. Most of the library administrators believed that the salaries for the nonprofessional library worker in the science library in industry were adequate enough to attract competent personnel and were competitive with other jobs on the same level (see Table 2).

5. The library administrators' answers to the library manpower shortage in the science library in industry were: better understanding of the library personnel problem on the part of management; better recruitment at the high school level; library technician training in the junior or community college; and more professional help with adequate clerical support. (Listed in the order of frequency of answer.)

Information Obtained from the Interviews

1. Management did not always understand the personnel problem in the special science library. Management's concern with the library is with the results these libraries produce, but not with the methods utilized to bring about these results. Special libraries in industry are nonproductive service units of the company. Therefore, any expenditure would have to be justified by the library administrators to management. A larger expenditure for the salaries that would be demanded by the library technician would have to show that better results could be produced before management would be convinced of such an expenditure.

2. The library administrators believed that nonprofessionals with a high school education were sufficiently qualified for the position because of the nature of the work, even though they had previously indicated that the routines were more specialized than those found in a public or school library. These administrators stated that a library technician would be expected to work on a higher level than the nonprofessional with only a high school education.

3. Library administrators believed that library technicians could be utilized on the library staff of a science library in industry if the existing setup in the libraries were modified by reclassifying and redefining the work levels by both personnel and library administrators.

4. Most of the library administrators interviewed noted that their nonprofessionals remained with the library for many years—citing good company relations and good atmosphere as part of the reason. (Administrators mentioned the tuition reimbursement toward a higher education and stock incentive plans that

some of the companies had for their employees.)

5. Most of the library administrators believed that there was not enough room for advancement for nonprofessionals because there were few library classification ratings in the company; the nature of the work was of a clerical and routine nature; and the differences between the requirements for the professional and nonprofessional library worker were great.

6. Some library administrators defined the nonprofessional as a worker performing clerical routines to support the professional librarian's work. Other administrators defined their nonprofessionals as workers not formally trained to perform activities such as cataloging and reference, but that these workers did not perform strictly clerical duties. These library workers should be able to perform some activities without supervision. In the opinion of the library administrators interviewed, the professional librarians possessed these qualifications: better attitude and responsibility to their work; experience; training; and a higher education (although not necessarily in the library field). The above accomplishments differentiate the professional and nonprofessional library worker.

Conclusions

Implications obtained from the survey indicated that the science libraries in industry have problems relating to personnel. Special libraries as service units of larger organizations produce intangible assets. Industry operates to produce a profit, and if there is need to cut a budget, the library may be the first to suffer. One library administrator stated: "Our staff expands and contracts with the fortunes of the company and has no relationship to library needs."

Another library administrator stated: "Though empirical data are lacking, there is some evidence pointing to the possibility that industrial management or personnel administration harbors a 'limited' personnel policy toward library manpower staffing. Also, when an opening does occur, industry has little problem filling these positions as some library literature has indicated. This is not true for public and academic libraries."

There is a definite need for restructuring the job classification and title scheme in the science libraries in industry. The data from the survey indicated that classification and title had no relation to the type of work performed. Some of the same classifications and job titles are used in different divisions of a company. These are the classifications that are arbitrarily assigned to the library workers by the personnel directors of the firms. A reclassification of work levels that fit the needs of the library and the library administrator would provide better vertical movement in rank for the nonprofessional library worker. The guidelines for library technical assistants formulated and approved by the Library Education Division of the American Library Association *(4)* would be an excellent basis for the reclassification of work levels and job titles for the special science library in industry.

Evidence showed management's satisfaction with the present arrangement of the library staff and the results produced. Justifications for changing the existing setup would have to be defined by the library administrators in order to convince management of the need for better qualified nonprofessional library workers for higher work levels. Better qualified personnel demand higher salaries. However, some of the routine tasks would be eliminated from the work schedules of the professional librarian, so as to leave time for more productive activities. This would result in better service as well as a savings for management.

While the concept of library technology courses in the junior or community college is excellent, there are qualifications that must be made in order to apply to science libraries in industry. The nature of the work that is involved in these libraries is regarded, by the library administrators that were surveyed, to be more specialized than the routines performed in a public or school library. The curricula for library technician training courses would have to include the routines and techniques that are peculiar to

the science library in industry before the library technician from the community college would be welcomed as an addition to the library staff. Communications and consultations between the library educator and the library administrator of the industrial science library might indeed help if the concept of library technology in the community college is to succeed.

There can be a feasible and practicable way to produce better qualified and better trained nonprofessional library workers while still maintaining the existing setup of the library staff of the special science library. Library clerical courses in rudimentary library skills could be given while the worker is employed. However, these courses should be taught by qualified instructors and should be available locally in the community high school or college.

Additional research and surveys might well be conducted before a final solution can be evolved concerning the nonprofessional library worker in the science library in industry. Recommendations are:

1. Surveys of the personnel department of the companies that have science libraries concerning their personnel policies for the nonprofessional library worker.
2. Surveys of library administrators of other special science libraries by library educators concerning the nature of the curricula of library technology courses that might be given in the junior or community college.
3. Closer communication among the Special Libraries Association, the American Library Association, administrators of special science libraries and management in order to promote better understanding of the role of the library technician in the library so as to achieve improved library services today.

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This report would not have been possible without the cooperation of the library administrators of the science libraries in industry that were surveyed.

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An Inexpensive Computer-Based System for Group-Routing Periodicals

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■ An inexpensive computer-based system for group-routing periodicals within a technical organization is described.

The computer handles all aspects of the system, including preparation and maintenance of routing forms, overdue notices, and periodic updating of customer reading interests. Management reports include title lists, showing the individuals receiving each periodical; name lists, showing the periodicals received by each individual; and a current address list.

Guidelines for the development of other group-routing systems are suggested.

GROUP-ROUTING of periodicals is a very desirable library service in certain situations. The Technical Library at Battelle Northwest serves the Hanford Plant—a large diversified atomic energy installation at Richland, Washington. The plant's laboratories are scattered geographically over a large area, with some laboratories 50 miles apart. In these circumstances, it is very time-consuming for technical people to journey to the library to read periodicals. The library was able to take advantage of a well-established, in-plant mail system—an essential to the success of the program. The plant mail system permits periodicals to be transferred from office to office and from building to building without packaging. This paper discusses the Technical Library's computer-based system for group-routing of periodicals.

The Basic System

The periodical group-routing system is based on a computer program written in Fortran V language. A significant aid in the operation of the system is a remote terminal located in the Technical Library building. Thus, data are transmitted directly to the 1108 Univac computer and printed output is obtained. The computer input for the system is keypunched cards. The input is basically a files maintenance routine in which new titles are added to the files, older ones are deleted or changed, names added to group lists, names deleted from group lists, address changes recorded, etc. Keypunch copy is prepared by the library clerk on a form designed for this purpose (Figure 1). Files are updated daily. Reports are optional and called for as needed. Routing slips, on the other hand, are supplied automatically, the printing being activated by any change in the file information, or by a data card indicating that additional route slips are needed for a title.

All periodicals routed by the system are purchased from the Technical Library's budget. One periodical subscrip-

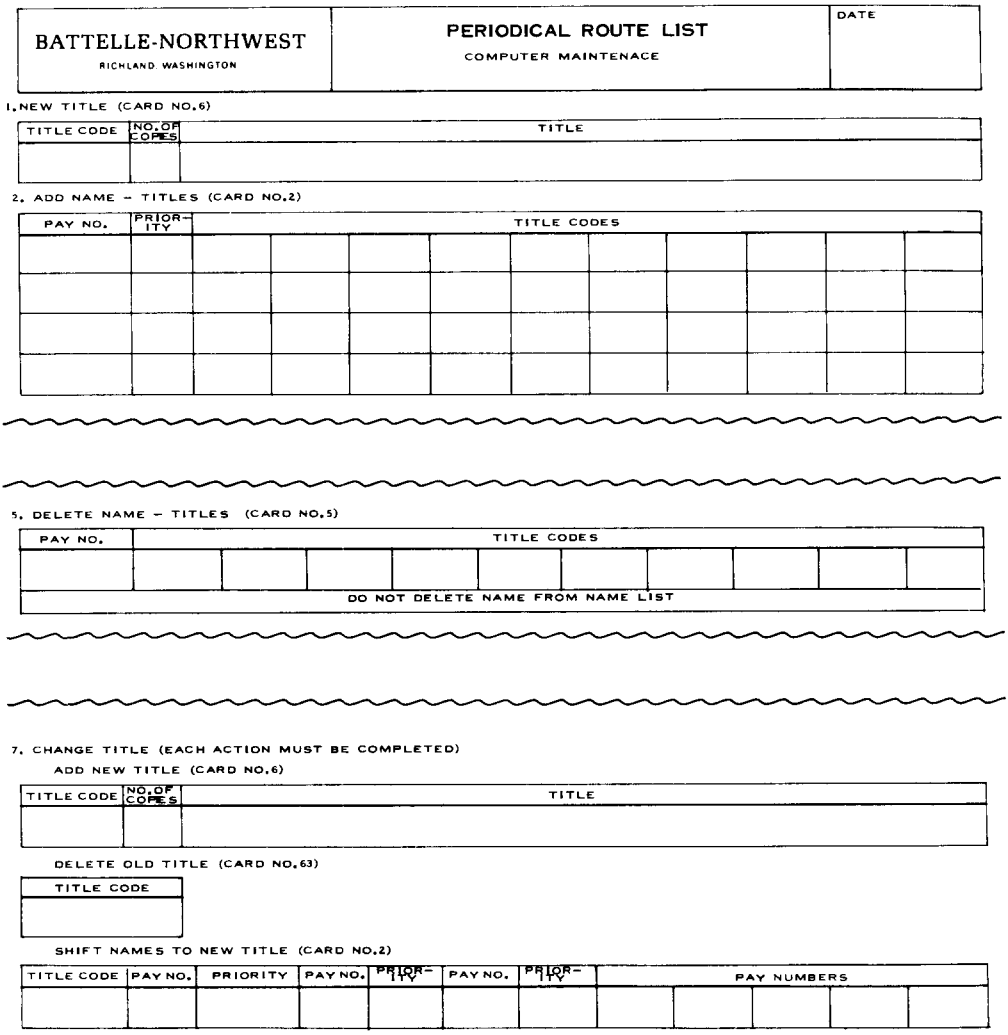

Figure 1. Information to be Keypunched

tion is maintained for each 9–10 individuals requesting a publication. In addition, Battelle Northwest staff members are allowed to purchase, with their organization's funds, periodicals for direct mailing to their offices. These are generally in highly specialized, narrow-interest fields. The two systems complement one another rather well, except in times of financial austerity. When this occurs, the library's customers tend to reduce their own subscriptions and to rely on the library's group-routing. This demand for library service often necessitates purchase of additional periodical subscriptions at a time when the library, too, is financially squeezed.

The computer costs for maintaining and running the program (not including initial programming costs) have been extremely modest, averaging $75.00 per month. This is a total cost which includes the cost of all reports, all computer file maintenance charges, and computer-printed route slips which enable the library to circulate 950 periodical titles to over 1,100 engineers and scientists.

It is interesting to note that, although an individual may request, without restrictions, that his name be added to the

route lists for particular periodicals, in point of fact the use is very reasonable. While some users read as many as 30 periodicals, and others only one or two, the average for the technical staff is about six periodicals per individual.

Computer Output Used

The machine-printed output from the system consists of five reports.

1. *Group-Routing Slips (Figure 2).* Group-routing slips are prepared four abreast on standard computer printout paper and cut apart using a paper cutter. Only four slips per copy per title are prepared in advance due to the almost continuous changes in the route lists. Obsolete slips are destroyed when updated slips are received. (At first it was thought the practice was extravagant until an attempt to revise existing slips manually proved too time-consuming.) Any changes on a routing list—address changes, deletions, additions, changes in the title of a periodical—result in a set of new routing slips. The slips are maintained in the periodical receiving file by periodical title, and are taped to the periodical when it is received in the library. The due date is stamped on the route slip, allowing three weeks for the periodical to reach all its intended readers and to be returned to the library. The periodical, with the group-routing slip attached, is placed without wrapping in the plant mail.

A number of points about the group-routing slips are of interest. The title code used is standard for our library (we use it on a number of other periodicals programs); our code pre-dates the ASTM *CODEN for Periodical Titles.* If we rewrote these programs today, CODEN would, of course, be used. In addition, the group-routing list is arranged by the computer to take into consideration the place of the reader in the plant hierarchy and the address of the individual. The first is managed by a set of three priority codes included with the computer input and, as might be expected, the top managers receive the journals first. Secondly, the computer utilizes in-

```
COPY 1                    TITLE CODE T3200

TITLE
 TECHNICAL NEWS BUL /NBS/

--------------------------------
DATE DUE
--------------------------------
ROUTE TO

1. BJ HEINEMAN                    BNW
    3760     BLDG. 300            AREA

2. AW HILDEBRANDT                 ARHCO
    271B     BLDG. 200E           AREA

3. HJ ANDERSON                    BNW
    308      BLDG. 300            AREA

4. LA BRAY                        BNW
    325      BLDG. 300            AREA

5. RW NELSON                      BNW
    FED      BLDG. 700            AREA

6. BNW TECHNICAL INFORMATION
    3760     BLDG. 300            AREA
```

Figure 2. Group-Routing Slip

formation in its address file to arrange the list so that the journal travels the most direct route from building to building.

Overdue notices are prepared by attaching a copy of the group-routing slip to a pre-printed overdue notice (Figure 3) and sending it out as a tracer for the periodical. We have not been successful in managing the overdue notices very systematically. The notice is generally sent when some customer toward the bottom of the group-routing list complains that the journal has not yet reached him.

2. *Annual Update Listing (Figure 4).* This listing, prepared annually, gives all the library's customers an opportunity to update their periodical requirements; new titles can be added, those no longer needed deleted, and the mailing address and name verified. The listings are prepared two abreast on standard printout paper. They are then cut in half, folded to expose the addresses of both the customer and the library, and mailed. The

PERIODICAL

OVERDUE

NOTICE

BATTELLE-NORTHWEST

TECHNICAL LIBRARY

3760 BLDG.

300 AREA

SOMEONE

IS

DELAYING

THIS

PERIODICAL.

IS

IT

YOU ?

PLEASE RETURN

PROMPTLY. THE

LIBRARY HAS A

WAITING LIST.

BB-1100-068.1 (10-69)
AEC-RL RICHLAND, WASH.

Figure 3. Pre-Printed Overdue Notice

```
MAIL TO                          RETURN TO                    ∠ 17 69
WW SCHULZ                        PERIODICALS                    30052
2225   BLDG                      TECHNICAL LIBRARY
200W   AREA                      3760 BLDG
BNW                              BNW

THESE PERIODICALS ARE ROUTINELY MAILED TO YOU
THROUGH THE TECHNICAL LIBRARY GROUP ROUTING SYSTEM.

  1 ACTIVITIES REVIEWS
  2 CHEMICAL REVIEWS
  3 CHEMIST ANALYST
  4 CHEMICAL ENGINEERING AND MINING J
  5 INDUSTRIAL + ENGINEERING CHEMISTRY PROCESS DESIGN + DEVELOPM
  6 INORGANIC CHEMISTRY
  7 J OF INORGANIC AND NUCLEAR CHEMISTRY
  8 J OF METALS
  9 J OF PHYSICAL CHEMISTRY
 10 METALLURGIA
 11 MINING ENGINEERING
 12 REACTOR AND FUEL-PROCESSING TECHNOLOGY

 WE WISH TO MAKE CERTAIN THAT THESE PERIODICALS ARE
PERTINENT TO YOUR PRESENT JOB RESPONSIBILITIES.  PLEASE REVIEW
THIS LIST, INDICATE TITLES NO LONGER NEEDED, AND RETURN TO THE
LIBRARY.  PLEASE VERIFY YOUR NAME AND MAILING ADDRESS
```

Figure 4. Annual Update Listing

applicable address is simply circled or arrowed.

3. *Periodical Distribution List (Figure 5).* This listing, arranged in title order, shows the name and payroll number of all individuals receiving periodicals in the group-routing system. The report is used to answer inquiries and it provides convenient information on the use of various periodical titles. The copies are evenly distributed among the recipients, except for position priority and building location—which may skew the distribution slightly. For example, if there are nine people in one building on the list for a particular periodical, one copy would probably be used to serve the entire group.

4. *Personnel Periodical List.* This listing, arranged by payroll number, name, address, and contractor, is a record, by code number, of periodicals routed to each individual. The computer program permits up to 50 names on a single periodical subscription. This is necessary because, in the case of very expensive periodicals, we waive our normal nine-names-per-subscription rule and permit successive group routings; that is, when the periodical comes back to the library from the first group-routing, it is sent out on another. The computer program accommodates up to 20 subscriptions per title. When we have more than 20 subscriptions per title, the coding is altered slightly so the computer handles each group of 20 subscriptions as a different title. The Personnel Periodical List pro-

BATTELLE NORTHWEST
TECHNICAL INFORMATION
PERIODICAL DISTRIBUTION LIST

TITLE CODE N8134 4 COPIES
TITLE- NUCLEAR ENGINEERING INTE
RNATIONAL

52732 BN FEMREITE
51623 JM GOFF
30528 JP CORLEY
30008 SH BUSH
33194 TW EVANS
51506 EC BENNETT
30535 EA ESCHBACH
53051 HS DAVIS
03583 A BRUNSTAD
30033 JM ATWOOD
31354 DR DOMAN
53303 JD AGAR
30047 CL BROWN
30983 WL BUNCH
30948 DE BAKER
50577 JA COWAN
33318 RG BAUMGARTEL
32587 DL CONDOTTA
51617 EL ETHERIDGE
32801 BJ HEINEMAN
51512 RG GEIER
50026 WJ DOWIS
53453 I THIERER
30519 RJ ANICETTI
33965 FJ LEITZ

Figure 5. Periodical Distribution Lists

vides ready information concerning periodical use by individuals.

5. *Personnel Address Listing.* This is a listing by name, payroll number, address, and contractor, of all individuals on the group-routing plan. The program can accommodate 2,500 names. This listing is extremely useful and every effort is made to keep it current and correct. It is also used to prepare labels for other mailings to the library's customers.

Minimizing Problems

As with all systems, there are some problems. The computer performs good-naturedly and without trouble, but the people involved do not always do so. There are delays in the forwarding of the periodical by readers who are on vacation, who are on trips, or who simply do not find time to do their reading. Another problem results from delays caused by unscheduled additional routings. Sometimes a supervisor on the library's group-routing will do some further routing within his organization after he has received the periodical.

Early in the life of the program we began to have trouble with group-routing of weekly publications. In most weeklies, the information presented is very current and greatly in demand. Delays in the routing of weekly periodicals resulted in many complaints. Finally, group-routing of weekly publications was stopped and those who needed this information in a hurry were encouraged to subscribe to their own copies.

At one time, due to shortages of funds, we routed our only copy of a journal, leaving no reference copy available in the library for the first few weeks after publication. This caused problems, because customers who traveled to the library from the more remote areas would find that the periodical they were interested in was routing. This problem was resolved by maintaining the position that the library *must* have a reference subscription of all periodicals being group-routed, and that this copy must stay in the library at all times.

In an early effort to control the growth of the routing lists, we considered requiring supervisors to approve the addition of names to the group-routing lists. This turned out to be a very sensitive matter. Technical people tend to read rather broadly and resent having someone else decide that a particular periodical is or is not relevant to their work. This was made a voluntary matter, and, as indicated earlier, in general it has worked out quite well. The average reader on the route list receives six periodicals.

As with any well-accepted library service, the demand for it continues to increase and the principal problem finally comes down to providing a level of service that adequately meets the need, and is within the staff and budget limitations of the library. We found the following guidelines useful:

- Eliminate group-routing of all weekly publications, and encourage

direct subscriptions paid for by funds other than those of the library.

- Eliminate group-routing of highly specialized and narrow-interest items. Again, encourage direct subscriptions, paid for by the user.
- Eliminate group-routing of very expensive publications, those costing more than $100.00 per year, for example. These are probably best read in the library.
- Eliminate the group-routing of periodicals written for a general readership, and to which one might normally expect staff members to have personal subscriptions. Titles such as *Fortune* and *Scientific American* come to mind.
- Have a reference copy in the library of *all* periodicals subscribed to by the library. Copies for group-routing should be in addition to the reference copy.

It is probably unfortunate that many special libraries have decided against group-routing, for it can be a very worthwhile service.

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This Works For Us

Microfiche Adaptor for Microfilm Reader

Lois W. Brock

The General Tire & Rubber Co., Akron, Ohio 44309

WE HAVE FOUND letter-size acetate page and sheet protectors useful in viewing microfiche on our regular microfilm reader.* We stumbled on this idea after trying to read U.S. Patents by slipping the microfiche under the lens. We could read them but occasionally we scratched off some of the emulsion—and the text. To protect the film we decided to insert it in an acetate page protector. Besides preventing scratches this gave us a bonus of easier handling. Instead of working with our fingertips, we were able to get a good grip on the jacket and move it around with ease.

* 3M Filmac 400.

The next problem was non-uniform focus on some microfiche that tended to curl. To remedy this we taped a 7″ × 10″ piece of glass (from an old picture frame at home) inside the jacket. The weight of the glass flattens the film and the whole field is in focus.

Thinking we could refine this "apparatus" still further, we tried two 8″ × 10″ sheets of Plexiglas hoping to get protection, transparency and weight all in one. This approach was more cumbersome however. So the idea was discarded in favor of the glass inside the jacket technique.

Commentary on

Mending Tape for Maps

YOUR READERS may be interested to know that the use of Scotch "Magic Mending Tape" as suggested in "Repair and Preservation of Map Materials" [*SL* 61 (no.4): 199–200 (Apr 1970)] may cause problems if a later attempt is made to laminate the map. *Maps—Their Care, Repair and Preservation in Libraries* referred to in Mr. Easton's article mentions the satisfactory use of Scotch "Magic Mending Tape" Number 810. However, in 1963 the Minnesota Mining and Manufacturing Company (3M) revised the formulation of the tape. The properties are explained at some length in a letter from Mr. R. L. Jentink of 3M appearing in the January 1963 "Editors Forum" of *The American Archivist.*

Briefly, Mr. Jentink states that the formulation was changed "to improve the adhesion, give better roll appearance, and increase the already excellent aging properties. Unfortunately, this new adhesive is practically insoluble in even the strongest solvents. This, of course, presents a problem when preparing a document for lamination."

Maps likely to be laminated at some future time should only be repaired with materials which can be easily removed before lamination.

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SLA's Role in Professional Research

WHAT IS SLA'S ROLE in the research effort of librarianship and information science? What is the scope of the Association's responsibility to seek solutions to professional problems? What is a feasible level of participation for a specialized professional organization, the majority of whose members are concerned primarily with getting their individual jobs done?

The SLA Research Committee has examined these questions during the past year and prepared a position statement which was approved by the Board of Directors at its Fall 1969 meeting. Underlying this statement are two basic concepts. The first is that SLA has different levels of responsibility in relation to different kinds of research for librarianship and information science. The corollary is that SLA must, in cognizance of the realities of its available resources, define different levels of participation related to these different levels of responsibility.

Statement of the Role and Scope of SLA Involvement in Research*

Levels of SLA Responsibility

SLA's major continuing responsibility to professional research is in relation to special librarianship, to special libraries and to itself as an organization. It is unreasonable, perhaps even undesirable, to think that any other organization be expected to have this direct and unique a responsibility to our own specialization and to the organization that supports this segment of the total profession.

SLA also has a significant responsibility for library research related to activities important to special libraries and to users of special libraries. This responsibility, however, is shared with other kinds of libraries concerned about the same or closely related problems. Many problem of administration, methodology of service, bibliographic control and cooperation are common problems of research libraries generally, whether these libraries are based in industrial, federal, business or academic environments. Most users of special libraries are also users of public, state, academic—possibly even school —libraries.

Finally, SLA has a responsibility to basic theoretical research in library and information science and to the development of appropriate methodologies for such research. This responsibility is shared with all branches of library/information science, with all types of libraries, and with all other library/information associations.

Levels of SLA Participation

Participation through direct funding from Association resources is necessary in support of the concept of unique responsibilities of the Association. To demonstrate the importance of the commitment, more than a token amount must be allocated. Research must be considered both in relation to the totality of the Association's resources and in relation to the Association's other commitments.

Participation through granted funds should be utilized where the Association's interests overlap those of other kinds of libraries. At this level of participation the Association would be taking a position of leadership and would be representing, to some extent, the interests of other kinds of libraries as well as its own interests. In seeking such funds, SLA must be able to show that, though it is taking the initiative, the results of its sponsored research would be valuable to more kinds of libraries than only special libraries in the private sector.

Participation through cooperation with other interested agencies in seeking funds from outside sources for basic and commonly needed research is also essential for a fully-developed SLA research commitment,

* As approved by the Board of Directors, Sep 1969.

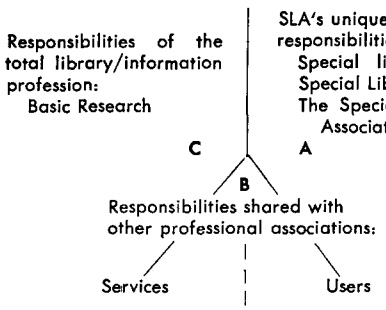


Figure 1. SLA's Responsibility for Library/ Information Science Research

though it is expected that activity at this level would be less intensive than at other levels.

Apologia for the Statement

Although these suggested levels of responsibility are not mutually exclusive in every instance, they represent defensible categories. All are of concern to SLA, but they are, in the role and scope statement, categorized in such a way that the area of research for which the Association has unique responsibility stands first. The degree to which SLA shares responsibility with other segments of the profession for other categories of research is shown in the succeeding paragraphs. Another way to represent the concept is to picture the relationship as it is shown in Figure 1.

The realities of SLA's available resources, the Association's existing commitments, and the nature of the concept itself all suggest that SLA cannot hope to provide total funding commensurate with the expressed responsibility. Indeed, it is possible that only the smallest part of the total funding ultimately to be expended by SLA may come directly from the Association's own resources. This idea and the concept of levels of participation through funding are shown in Figure 2.

In summary, the role of SLA in professional research is that of leader, innovator, monitor and evaluator; and the scope of SLA's involvement is one that combines depth in areas of unique responsibility with breadth of total involvement through cooperation with other professional groups. The Research Committee sees its continuing responsibility as that of defining progressive levels of refinement of this commitment, complete with procedural specifics, and of providing continuous evaluation of SLA's involvement in professional research.

Pauline Atherton
Theodore Peck
Constance Pfaff
Robert V. Williams
Martha Jane K. Zachert, Chairman
SLA Research Committee

	Direct SLA Funds	Other funds granted to SLA	Other funds granted to cooperating groups of professional organizations
Unique SLA Responsibilities	P	P	M
Responsibilities Shared by SLA and Other Associations	S	P	P
Responsibilities of the Total Profession	M	M	P

P = Primary amounts of funds
S = Supplementary amounts of funds
M = Minor amounts of funds

Figure 2. Sources and Levels of Funding in Relation to Levels of SLA Responsibility for Library/Information Science Research

CHAPTERS & DIVISIONS

Biological Sciences—*The Reminder,* the Division's bulletin, is again being published. Mrs. Constance Uzelac, editor, requests information and articles from the membership. Send material to Mrs. Uzelac at University of Southern California, School of Medicine Library, 2025 Zonal Ave., Los Angeles, Calif. 90033.

Greater St. Louis—On Oct 7, the Chapter toured the Ralston Purina Company. Future meetings are planned for Dec 1, Christmas party; Feb 1971, joint meeting with St. Louis Library Club, tentatively with the NMA; and Apr 1971, joint meeting with the Heart of America Chapter.

Illinois—Dr. Alex Ladenson, chief librarian of the Chicago Public Library, discussed the Chicago Public Library in the 70's at the Chapter's Sep 22 meeting.

Indiana—In cooperation with a number of other organizations, the Chapter helped plan the 17th Annual Purdue Conference for Student Library and A-V Assistants. "The Exciting World of Media" was held Jul 19–23 for teenage leaders interested in the library and audio-visual media professions.

Minnesota—The Chapter held a joint meeting on Sep 29 with the Minnesota Chapter of ASIS. Daniel and Marilyn Lester, of Mankato State College, described their automated list of government serial publications since 1789, as well as their two week experience in the Supt. of Documents Library.

New Jersey—The Chapter presented its first summer school scholarship for study at Rutgers library school's three week summer session to Betsey Lee Toyzer. On Sep 23, the Chapter joined **Princeton-Trenton** at an "Information Hardware Fair." SLA President-Elect Efren Gonzalez made an official visit to the Chapter at the Oct 22 meeting.

New York—The Geography and Map Group held a meeting Sep 30 at the American Geographical Society. The speaker was James Randi, author of a forthcoming book about Inca and pre-Inca civilizations, *To the Eye of Heaven.*

Pacific Northwest—A day-long workshop on "Structuring Effective Interpersonal Relationships" was held Apr 25 as part of the Chapter's continuing education for librarianship. The workshop utilized study methods, small discussion groups, and role playing techniques to explore the dynamics of human relations.

Philadelphia—The Chapter participated in the Pennsylvania Library Association's 1970 conference Oct 21–24. The theme of the conference was "Tooling Up for a Decade of Progress" with an emphasis on "New School for Librarians."

Rio Grande—At a joint colloquium with the **Colorado Chapter,** Sep 25–27 at Ghost Ranch, "Communication Between the Library and Its Public" was discussed. Before the colloquium, on Sep 25, a development plan for New Mexico libraries—a result of the Interlibrary Cooperation Planning Conference held Sep 13–15—was presented for Chapter members.

The Oct 30 meeting considered "The South Central Regional Medical Program." Future meetings include a tour of museums in Santa Fe in January, and an annual business meeting at the New Mexico Library Association Meeting, Apr 13–15.

South Atlantic—The Emory University Library was the site of the Chapter's first fall meeting on Sep 23. David Estes, Special Collection Librarian, conducted a tour of the Special Collection Library.

At the 24th Biennial Conference of the Southeastern Library Association, Nov 4–7 in Atlanta, there was a meeting/luncheon on Nov 6 to organize a Special Libraries Section. Edward D. Taylor, President of Taylor-Carlisle, spoke on "Book-trade."

Southern California—At a dinner meeting on Sep 24, the Chapter heard Wyman H. Jones, city librarian of Los Angeles, speak on "26 Days with the LAPL, or Adventures in the Library Game."

Upstate New York—The Chapter's first meeting of the 1970/71 season was held Sep 25–26. Friday evening was an open board meeting and Saturday afternoon was lunch and the general meeting, with Florine Oltman as guest and main speaker.

Washington, D.C.—Cosponsored by DCLA, the Chapter held its first meeting of the year on Oct 15. A panel of librarians discussed their visit to the Soviet Union for the IFLA annual meeting.

Dr. Martin Wohl, Director Transportation Studies, The Urban Institute, spoke at a joint meeting of the Social Science, Transportation, and Sci-Tech Groups on Sep 23. On Nov 14, Sci-Tech, Geography and Maps, and Biological Sciences toured the Environmental Science Services Administration.

Oklahoma Reports

IN A MARKED DEPARTURE from the usual afternoon programs, the Oklahoma Chapter has planned a series of all-day workshops for 1970/71.

This change was motivated by the realization that most members must travel at least 50 miles to attend a session—and some as many as 150 miles. "These all-day sessions will make a member's absence from his work more worthwhile," commented Ed Miller, president.

Working with the Reference Divisions of Oklahoma Library Association, the program committee of SLA has scheduled three workshops on information sources in government documents, business and finance, and pollution and environment. They are designed for librarians as continuing education in specialized fields of interest and for library trainees and students.

Mrs. Carolyn V. Miller, Librarian, Public Service Company of Oklahoma, Tulsa, and Dorothea Ray, Chairman of the Reference Division of Oklahoma Library Association and Reference Librarian of Central State College at Edmond, were co-chairmen for the session on Government Documents held at Central State College Oct 23. Appearing on the program were the Honorable Hanna Atkins, Oklahoma State Representative from Oklahoma City; Mrs. Marguerite Howland, Government Documents Librarian at Oklahoma State University; and Heather McAlpine, Interlibrary Loan Librarian at Oklahoma State University.

The Business and Finance Workshop will be held at Tulsa City–County Main Library Feb 12, 1971. In charge of this workshop are Donna Lemon, Business and Technology Librarian for Tulsa City–County Library, and Miss Miriam Lashley, Associate Librarian in the Business and Technology Department of the Tulsa Library.

In conjunction with the annual meeting of the Oklahoma Library Association will be a pre-conference workshop entitled "Pollution and Environment" with V. Vern Hutchison and J. Lorene Fuller in charge. Miss Hutchison is Librarian for the U.S. Bureau of Mines at Bartlesville and Miss Fuller is Librarian at Robert S. Kerr Water Research Institute in Ada. This workshop will be held in Lawton on Apr 15, 1971.

Jo Ann Lauderdale
Ardmore Public Libraries
Ardmore, Okla. 73401

MEMBERS IN THE NEWS

James C. Andrews, formerly director of the Argonne National Laboratory Library, Argonne, Ill., has been appointed to head the library of The Univ. of Texas at Dallas.

Thomas G. Basler . . . from librarian of The American Museum of Natural History to librarian of The New York Academy of Medicine.

Wesley T. Brandhorst . . . from principal information scientist, Leasco Systems and Research Corp., Bethesda, Md., to director, ERIC Processing and Reference Facility, Leasco.

Richard H. Corson, previously associate librarian in charge of educational communications, has been named librarian of the State University of New York Maritime College to succeed **Dr. Joseph N. Whitten.**

William P. Dagger has accepted the position of headquarters librarian, Canada Dept. of Agriculture. He was formerly at the Ministry of Transport Library.

Patricia F. DelMar, film librarian of the Long Beach, Calif. Public Library, is the 1970 president of the Audio-Visual Division of the California Library Association.

Don Dorrance, formerly head librarian of the Bendix Corp. Aerospace Systems Division research library, is now technical services librarian of the Milwaukee Public Library System.

Mrs. Shirley Echelman, research librarian at Chemical Bank, N. Y., has been appointed to the faculty of Rutgers University's library school. She will teach "Sources of Information in Business and Economics."

Efren W. Gonzalez is now manager, Science Information Services, at Bristol-Myers Products, Hillside, N.J.

Gladys M. Hodapp, formerly librarian and senior examiner at Continental Insurance Companies, has been appointed reference librarian of The College of Insurance in New York.

Paul Howard was awarded the Joseph W. Lippincott Award for notable achievement in librarianship at ALA's Annual Meeting.

Mrs. Marlene Hurst, University Microfilms, was elected secretary of the American Society of Indexers for 1970/71. **Herbert Landau,** Auerbach Corporation, was chosen treasurer, and **Dr. Theodore C. Hines,** Columbia University School of Library Service, is a Director.

Steven Jaffe . . . appointed librarian at Consolidated Edison Co. of New York.

Mrs. Florence E. Johnson, formerly librarian at the Chicago College of Osteopathic Medicine, has been appointed serials librarian and instructor at the University of Oregon Medical School.

Bernard B. Lane has been appointed visiting lecturer for the academic year 1970/71 at the University of Washington's library school, Seattle, Wash.

Katherine M. Markee . . . from Reference Services, Purdue University, to personnel officer, Purdue University Libraries.

Anne McCann has been elected treasurer of the Drug Information Association for 1970/71. She is Chief, Vocabulary Group, Central Retrieval Index, Files Information Facility, Food & Drug Administration, Washington, D.C.

Dr. Virginia E. Murray has resigned as director of the Graduate School of Library Science of McGill University effective Mar 26, 1970.

Mrs. Jeanne B. North has joined Stanford Research Institute, Menlo Park, Calif., as a research analyst in the Augmentation Research Center.

George Piternick . . . from associate professor to professor, University of British Columbia's library school.

Calla M. Pringle, attorney and head of the Detroit Bar Association Law Library since 1961, has been appointed law librarian and assistant professor at the University of Detroit School of Law.

Jeannette Privat is librarian for the fledgling library at Seattle-First National Bank. The library, which is now over one year old and in full-scale operation, was the subject of a feature article in *Bankoscope,* the staff publication of the Seattle-First National Bank.

Dr. Charles W. Sargent of the University of Missouri's library school at Columbia was awarded a grant of $99,177 by the National Library of Medicine to train health sciences librarians. The grant, awarded for five years and funded for two, is for five fellowships for each of the two years.

John Sherrod, director, U.S. National Agricultural Library, has been appointed chairman of the Federal Library Committee's Executive Advisory Committee. **Mrs. Elsa S. Freeman,** director of the Library, U.S. Dept. of Housing and Urban Development, **Robert W. Severance,** director, Air University Library, and **Erik Bromberg,** director, Office of Library Services, U.S. Dept. of the Interior, have also been appointed to the Committee.

Ted Slate, chief librarian at *Newsweek,* has been appointed to the U.S. Committee for the American Library in Paris.

Paula M. Strain . . . to manager, library services, Washington Administrative Operations, The MITRE Corp., McLean, Va.

Mrs. Elizabeth R. Usher, chief librarian, Metropolitan Museum of Art, was re-elected to a five-year term as trustee of the New York Metropolitan Reference and Research Library Agency, Inc. **Donald C. Anthony,** Associate Director of Libraries, Columbia University, was elected to a four-year term as trustee of the organization.

Lois Weinstein . . . from acquisitions/circulation librarian at the Villanova Law Library, to general reference librarian, Drexel University Libraries.

Olive Whitehead was awarded the Achievement Award of the Special Libraries Council of Philadelphia and Vicinity.

Bill M. Woods was chosen president-elect for 1970/71 of the National Federation of Science Abstracting and Indexing Services. **Ben H. Weil** was elected treasurer of the Federation and **Everett H. Brenner** is a member of the Board.

Burton E. Lamkin

Burton E. Lamkin has been named Associate Commissioner for Libraries and Educational Technology in HEW's Office of Education.

Lamkin will direct the Bureau of Libraries and Educational Technology which was established last February to help the Office of Education develop more effective ways of delivering instructional services to the American education community. The Bureau administers programs that provide federal assistance to public libraries, schools, and colleges for library construction, services, research, and training; for the construction of educational broadcasting facilities; and for the training of educational media specialists.

A native of San Antonio, Texas, Lamkin received his BS in chemistry in 1955 and his MSLS in 1957, both from the Univ. of Denver. From 1955–61, he was research librarian for Honeywell, Inc. in Minnesota. For four years he was librarian and library manager for IBM Corp., San Jose. From 1966–69 he was chief of the library and information retrieval staff for the Federal Aviation Agency in Washington. Until his new appointment, Lamkin served as deputy director of the U.S. Dept. of Agriculture's National Agricultural Library in Beltsville, Md.

Active in SLA Chapter, Division and Association affairs, Lamkin presently serves as the Association's Representative to AFIPS and as a member of the Board of Directors.

SLA Authors

Alexander, Gerard L. and Joseph Nathan Kane. *Nicknames and Sobriquets of U.S. Cities and States.* Metuchen, N.J., Scarecrow Press, 1970. 456p.

Blair, Keith. Special Libraries in the Next Decade. *California Librarian* (Jan 1970).

Daniells, Lorna M., comp. *Business Forecasting for the 1970's: A Selected, Annotated Bibliography.* (Reference List, No. 26, Mar 1970) Boston, Mass., Harvard Univ., Graduate School of Business Administration, Baker Library, 1970, 48p.

Plummer, Beverly J. Special Libraries Are a Special Joy. *Ford Times* 63: (no. 6) 55–59 (Jun 1970).

Rocq, Margaret Miller. *California Local History: A Bibliography and Union List of Library Holdings,* 2nd ed., rev. and enl. Stanford, Calif., Stanford University Press, 1970. 611p.

Rogofsky, Murray. Naval Oceanographic Office Library. *The Newsletter—National Oceanographic Data Center* (no. 4) 8–9 (Apr 1969).

Smith, Katherine R. Serials Agents/Serials Librarians. *Library Resources & Technical Services* 14 (no. 1) 5–8 (Winter 1970).

Titcomb, Margaret. *Dog and Man in the Ancient Pacific, with Special Attention to Hawaii.* Honolulu, Hawaii, Bishop Museum Press, 1970.

Contributions to the SLA Scholarship Fund (June 1969—July 1970)

Chapters	
Pacific Northwest	$ 50
Southern California	308
Divisions	
Insurance (June 1969)	1,000
Insurance (June 1970)	1,000
Newspaper	50
Science-Technology	2,500
Organizations	
Atlas Chemical Industries	250
Bell Telephone Laboratories, Inc.	100
E. I. duPont de Nemours Technical Library	100
Gale Research Company	10
Kater-Crafts Bookbinders (from sales of *Los Angeles Restaurant Guide*)	980
Time, Inc.	400
H. W. Wilson Foundation	4,000
In memory of:	
Gertrude Cannell & Daniel Hill	50
Guy Marion	25
Helen Mary Pyle	10
Ann Rand	25
Lucy Schotter	30
Catherine A. Simms	155
Contributions by individuals	545
	$11,588

SLA Scholarships 1970/71

THREE $2,500 scholarships were awarded by Special Libraries Association for the 1970/71 academic year. The scholarships are for graduate study in librarianship leading to a degree from a recognized program in library or information science. The three winners, chosen from a field of 68 applicants, were announced at the Annual Meeting in Detroit on Jun 10, 1970 by Jeanne M. Keogh, chairman of the SLA Scholarship Committee.

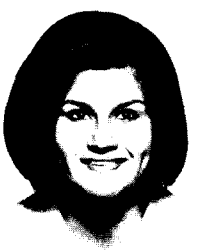
Stephanie Lynn Mallory (Akron, Ohio) received her B.A. in Spanish in June from the University of Akron, Akron, Ohio. Since librarianship has been her "one goal for the past ten years," her employment in the University of Akron Law Library throughout her undergraduate college career further intensified her desire. A member of Sigma Delta Pi (Spanish honorary), she feels that her knowledge of Spanish and French will certainly aid her in either a government or industrial library. At present, cataloging is her major interest. Miss Mallory is attending the School of Library Science of Case Western Reserve University in Cleveland, Ohio.

Mallory

Stark

Martha Jean Stark (Uniontown, Ohio) received her B.A. in chemistry in June from Hiram College, Hiram, Ohio, where she was a member of a local woman's honorary and recipient of various awards and scholarships. Miss Stark attributes her decision to become a research librarian to her summer employment in the Research Library at General Tire & Rubber Co. in Akron, Ohio. She plans to seek employment in reference work and administration in a chemical research library after completion of her graduate work. Miss Stark is attending the Indiana University Graduate Library School.

Josephine Theresa Zoretich (Alhambra, California) received her B.A. in history from California State College at Los Angeles in 1969. Employment in the Research Library at Jet Propulsion Laboratory, Pasadena, California, where Miss Zoretich is currently employed part-time, first introduced her to the work of a research library. Having experienced "the pulse of a library"—cataloging—she plans to find her career in that field. Miss Zoretich is attending the School of Library Science at the University of Southern California.



Zoretich

Nominations for 1971 SLA Awards

Nominations for two SLA awards are due by Jan 4, 1971. Individuals, as well as Chapters and Divisions, may submit nominations. All nominations must be completely documented within the definitions of the purposes of the two awards. Forms and instructions for nominations have been distributed to all Chapters and Divisions. Additional forms are available from the Association's New York offices.

The SLA Professional Award. The highest recognition granted by this Association is awarded after consideration of *all significant contributions made to librarianship and information science.* The definition of the SLA Professional Award is:

> "The SLA Professional Award is given to an individual or group, who may or may not hold membership in the Association, in recognition of a specific major achievement in, or a specific significant contribution to, the field of librarianship or information science, which advances the stated objectives of the Special Libraries Association. The timing of the Award shall follow as soon as practicable the recognized fruition of the contribution."

The SLA Hall of Fame. In documenting nominations, the following criteria for eligibility to the SLA Hall of Fame should be remembered:

> "SLA Hall of Fame election is granted to a member or a former member of the Association *near the close or following completion of an* active professional career for an extended and sustained period of *distinguished service to the Association in all spheres of its activities (Chapter, Division, and Association levels).* However, prolonged distinguished service within a Chapter, which has contributed to the Association as a whole, may receive special consideration."

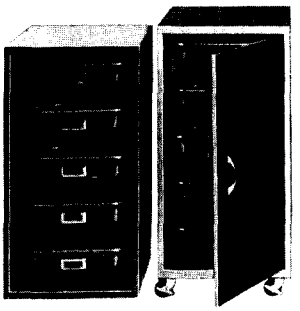
The basic purpose of the SLA Hall of Fame is to recognize those individuals who have made *outstanding contributions to the growth and development of Special Libraries Association—as a whole—over a period of years.*

Mail completed forms to: **Herbert S. White, Chairman**
SLA Professional Award and Hall of Fame Committee
Institute for Scientific Information
325 Chestnut Street
Philadelphia, Pa. 19106

The Board of Directors of the Special Libraries Association at its Fall Meeting announced the detection of misappropriation of funds at its New York Headquarters offices. Proven losses to date are covered by insurance.

The persons suspected of being responsible are two former clerical employees; their cases are in the hands of the District Attorney's office. None of the present employees are implicated, and the Board has expressed confidence in the revised control procedures which have been implemented by its Headquarters management personnel. These matters are under the continuing surveillance of the Board of Directors.

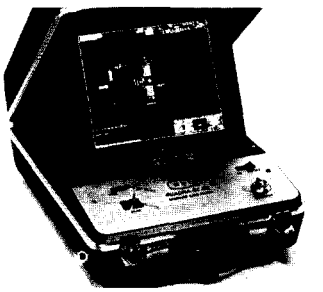
HAVE YOU SEEN ?



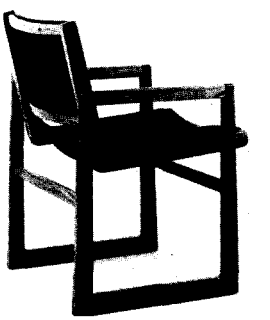
Tray cabinets, both mobile and stationary, for storing and distributing business forms, stationery, etc. are now available. Models feature five or ten trays—with or without swivel casters and locking door. For more information, write: H. Wilson Corp., 555 W. Taft Dr., South Holland, Ill. 60473.

A facsimile transceiver sends and receives letter-size documents over ordinary telephones at a speed of four minutes per page. The Xerox 400 Telecopier is portable, weighing only 18 pounds, and is equipped with a specially designed carrying case. Available from Xerox, Rochester, N.Y. 14603.

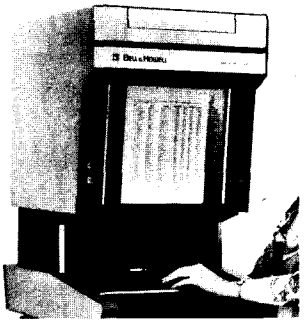
A steel sliding adapter is available for use in hanging file systems to eliminate the necessity for special binders or hanging folders. The adapter slides easily over the ends of the Channel Master mechanism. For details, write: Boorum & Pease, 84 Hudson Ave., Brooklyn, N.Y. 11201.



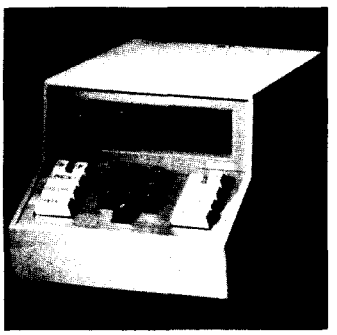
Portable microfilm readers weigh less than 20 pounds and operate from the cigarette lighter in a car or truck or an electrical outlet, and are also available with a built-in rechargeable battery. Models are available for aperture cards, cartridges, reels or microfilms. For information, write: Microfilm Products Group, Washington Scientific Industries, Long Lake, Minn. 55356.



A sleigh base chair, upholstered in fabric or vinyl, is available with or without arms. Part of "La Chaise" line, the chair is said to be scientifically designed for correct seating positions for maximum comfort. For details, write: Jens Risom Design Inc., 505 Park Ave., N.Y. 10022.



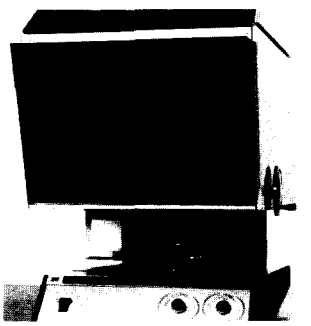
A microfilm reader/printer accommodates COSATI, NMA and tab card-size formats as well as standard 4″ X 6″ microfiche and 5″ X 8″ jackets. The Reporter provides dry electrostatic positive or negative film within 8 seconds. Interchangeable lenses are available for 18X, 21X and 24X magnification. For information, write: Micro-Data Division, Bell & Howell Co., 6800 McCormick Rd., Chicago, Ill. 60645.



Two digital display devices, both compatible with Microstar readers, are available from Kodak. The Recordak image count display, IC-D, and the Recordak image control keyboard, IC-5, electronically display the number of each image as it passes through the Reader. The IC-5 automatically stops the film at the keyed-in image, and the IC-D lets the operator stop the film himself. For information, write: Eastman Kodak, 343 State St., Rochester, N.Y. 14650.

A total microfilm system designed for engineering documentation is available. The system has components capable of processing and reproducing computer originated microfilm, including a microfilm camera as the key unit. The individual units are also compatible with other microfilm systems. For information, write: Itek Business Products, Rochester, N.Y. 14603.

The Unimark System is a means of producing professional-looking labels easily. The system, which includes a lettering machine, lettering guides, lettering pens, and Unimark Tape, sells for $29.95. For more information, contact: Dennis Stevens, Marketing Director, Unimark Systems, Division of Uniline Corp., 33450 Western Ave., Union City, Calif. 94587.



A large-screen reader-printer produces high contrast, black on white enlarged Dry-Silver hard copies in only 9 seconds. Only heat and light are used to make prints, so no liquids are necessary, thus keeping cleaning to a minimum. The 500C model accepts 3M 16mm cartridges, and the 500M model accepts 16 and 35mm roll film, aperture cards and microfiche. For information, write: 3M Company, Microfilm Products Division, Dept. MiO-30, St. Paul, Minn. 55101.

HAVE YOU HEARD ?

Health Sciences Libraries

The American Medical Association and the Medical Library Association have compiled a comprehensive survey of health science libraries. *Directory of Health Sciences Libraries in the United States* is available for $3.00 prepaid from the Medical Library Association, Suite 2023, 919 N. Michigan Ave., Chicago, Ill. 60611.

Information Center Survey

Scheduled for publication in the Spring of 1971 is a reference book that will describe and classify activities and organizations active in various aspects of library and information services. Organizations that wish to be included in *Encyclopedia of Information Systems and Services* may write to Dr. Anthony T. Kruzas, Rm. 212, Winchell House, School of Library Science, Univ. of Michigan, Ann Arbor, Mich. 48104.

Dues Increase

The Medical Library Association has announced a new dues schedule to begin in 1971. Active and associate members in the U.S. and Canada will pay $30 per year; institutional members will pay $75 per year; life members will pay $600. All other categories will remain the same.

Theatre Library Association Award

Authors, publishers, and members of the Theatre Library Association are invited to submit nominations for the 1970 George Freedley Award. Books nominated must have been pubished in 1970. Submit nominations by Jan 15, 1971 to Louis A. Rachow, The Walter Hampden Memorial Library, 16 Gramercy Park, New York 10003.

African Reference Material

Libraries interested in study books and research material concerning the African Hemisphere, particularly colonial history, ethnology, social development and economic progress, may write to Christian S. König, Reyer Anslostraat 1, Amsterdam 1013, Netherlands.

ALA Executive Director

The Executive Board of the American Library Association has named a Search Committee to help find a successor to David H. Clift, Executive Director, who will retire in the summer of 1972. The timetable calls for nominations by Feb 15, 1971, and eventual choice by midwinter 1972 at the latest.

Libraries for Underprivileged

An agency for the development of more effective library services for the disadvantaged and handicapped has been established at Columbia University. Funded by a grant from the Rockefeller Foundation, the Library Development Center will serve as a national advisory facility to which libraries and antipoverty agencies can turn for help in setting up library services for disadvantaged groups.

Lightweight Projection Screen

A daylight rear projection screen (screen size 7.5″ X 5.5″) is available from TMC. It weighs one pound and lists for $13.50. For information, write: T.M. Visual Industries Inc., 25 W. 45th St., New York 10036.

Crime Library

Tarlton Law Library at the Univ. of Texas at Austin is assembling a library to fight crime. Materials relating to law enforcement will be collected and made available to the Texas Criminal Justice Council, local and regional planning agencies in the criminal justice field, and students and faculty in Texas academic institutions.

Environmental Bibliography

The April/June and July/September issues of *Business and Technology Sources, Bulletin of the* Business Information and Science and Technology Departments of the Cleveland Public Library, present a sampling of material available on the environmental aspects of the Great Lakes Basin. Copies are available for 25¢ each issue from Order Dept., Cleveland Public Library, 325 Superior Ave., Cleveland, Ohio 44114.

East Carolina University

East Carolina University Graduate School has announced an MLS degree program beginning with the Fall 1970 quarter. The emphasis is on the multi-media approach to library work, including print and non-print material.

Fire Protection Manual

Manual for Fire Protection for Archives and Record Centers is available in tentative form for $1.00 from the NFPA Publications Services Dept., 60 Batterymarch St., Boston, Mass 02110. The new manual is applicable to bulk storage in large areas from 50,000 cubic feet to the largest archives and records centers.

Australian Libraries

Australia's first public library was built in 1825. In 1968, the Australian National Library was opened and houses 2,500,000 books. It was established to assist research and inquiry of all kinds, with emphasis on information about other countries. As a tribute to Australia's thriving library system, plans are underway to erect a memorial later this year.

Microfilm Market Study

Creative Strategies, Inc. has published a research study of two segments of the microfilm industry—alphanumeric COM recorders and automatic retrieval devices. The Microfilm Market Study is priced at $300 (or it can be purchased in conjunction with other studies or CSI's Investment Planning Service) from Creative Strategies, Inc., 885 N. San Antonio Rd., Los Altos, Calif. 94022.

Middle East References

The 1970 General Directory of the Press and Periodicals in Syria ($10.00) and *The 1969 Bibliography of the Middle East* ($25.00) are available from The Syrian Documentation Papers, P.O. Box 11, Damascus, Syrian Arab Republic.

Aluminum Abstracts

An international aluminum information service, *World Aluminum Abstracts,* is available. The monthly abstract journal is sponsored jointly by The Aluminum Association and the Centre International de Developpement de l'Aluminium (CIDA). Nonmember U.S. subscription rates are $75 per year (public and university libraries, $50) and are available from The Aluminum Association, 750 Third Ave., New York 10017.

Magnetic Tapes

The Clearinghouse for Federal Scientific and Technical Information has announced the availability of magnetic tapes of its U.S. Government Research and Development Reports announcement journal beginning with the Jan 10, 1970 issue. Annual subscription rate for 24 issues is $1,500 prepaid.

Engineering Bibliography

The Engineering Societies Library has published *The Reference Collection of the Engineering Societies Library.* Issued as *ESL Bibliography No. 17,* it is available for $7.50 from the Library, 345 East 47th St., New York 10017.

Library Technical Assistant Description

A limited number of copies of *Job Description and Certification for Library Technical Assistants* are available for $3.00 from Mrs. Noel R. Grego, Library, Rm. 311C, Chicago State College, Chicago, Ill. 60621.

Pharmacy Librarians in AACP

Pharmacy librarians have been granted section status in the American Association of Colleges of Pharmacy. The proposal was approved by the Executive Committee of the Conference of Teachers of AACP and became effective Jul 1, 1970.

Librarianship Centennial

In preparation for the centennial observance in 1976 of American librarianship as an organized profession, *Journal of Library History* will sponsor Library History Seminar Number IV, Feb 25–27, 1971. Several sessions will be devoted to contributed papers in general library history. Send abstracts of 100–300 words to Director, Library History Seminar IV, School of Library Science, Florida State Univ., Tallahassee, Fla. 32306.

Tapes of ERIC Files

Magnetic tape copies of the files of the Educational Resources Information Center (ERIC) are now available for sale (authorized by USOE, DHEW) from LEASCO Systems & Research Corp. The available files consist of Report Résumés, Journal Article Résumés, and Thesaurus of ERIC Descriptors. Contact LEASCO Systems & Research Corp., 4833 Rugby Ave., Bethesda, Md. 20014.

Hospital Librarian Institute

On Jul 29–31, 1970, the American Hospital Association and the Catholic Hospital Association conducted an institute on library service management in Chicago. The institute was planned to help librarians in hospitals develop managerial proficiency in their jobs.

Computer Librarian Trainees

Four one-year Traineeships in Computer Librarianship for the period Sep 1, 1971–Aug 30, 1972 are available at the Washington University School of Medicine Library. The program is conducted under the auspices of the National Library of Medicine and provides a stipend of $5,500 plus allowances for dependents. For further information, write to: Dr. Estelle Brodman, Washington University School of Medicine Library, 4580 Scott Ave., St. Louis, Mo. 63110.

Naval History Division Headquarters

The Naval History Division has moved to Washington Navy Yard, 9th and M Sts., S.E., Washington, D.C. 20390. The Library is housed in Building 220, and the Operational Archives in Building 210. *U.S. Naval History Sources in the Washington Area and Suggested Research Subjects,* which describes the resources of the Archives, will be available upon request in late 1970.

Fordham Library Director

Miss Anne Murphy has been appointed director of the Fordham University Libraries—the first woman ever to hold the position.

Consulting Firm Move

Nelson Associates, educational consulting and research firm, has moved to 815 Connecticut Ave. N.W., Washington, D.C. 20006.

Changed Title

Information Science Abstracts, formerly *Documentation Abstracts,* is now published bimonthly and will feature a greater number of abstracts than previously. Subscriptions are $40.00 ($25.00 for individual members of SLA, ASIS, and ACS Division of Chemical Literature).

Search and Deliver

The Minneapolis Public Library, in cooperation with the Greater Minneapolis Chamber of Commerce, is providing a *Search and Deliver service for a trial period* of one year. Patterned after the service of the John Crerar Library in Chicago, it will serve the business community of Minneapolis at a rate of $18 per hour.

COM Service Center

National Cash Register Company has opened a commercial Computer Output Microfilm (COM) service center at 3100 Valleywood Drive, Kettering, Ohio. The facility provides capabilities for large-volume filming, duplicating, and phototypesetting.

Canadian Publication

Information Science in Canada, a quarterly publication, is available for $8.00 a year from Pendragon House Limited, 71 Bathurst, Toronto 135, Canada.

University of Chicago Scholarship Aid

The University of Chicago Graduate Library School will offer approximately 30 scholarships and fellowships for graduate degrees, including medical librarianship, for 1971/1972. The deadline for applications is Feb 1, 1971. Write: Dean, Graduate Library School, University of Chicago, 1100 E. 57th St., Chicago, Ill. 60637.

Bibliography Award

Nominations for the Eunice Rockwell Oberly Memorial Award, administered by the Agricultural and Biological Sciences Subsection of the Association of College and Research Libraries, are due by Mar 15, 1971. The award, consisting of a citation and cash award, is made to the American citizen who compiles the best bibliography in agriculture or related sciences in the two-year period preceding the year of the award. Send nominations to Fleming Bennett, University of Florida Libraries, Gainesville, Fla. 32601.

A Quick History Review

Let's Drink to That is a compendium of little-known events—both real and imaginary—that have occurred throughout history. The events are listed chronologically for each day of the year for the ostensible purpose of "Providing an Excuse for a Party." The collection, assembled by Joyce Post, is published by the Terminus, Owlswick, & Ft. Mudge Electrick Street Railway Gazette, Box 8243, Philadelphia, Pa. 19101.

COMING EVENTS

1971

Jan 6–12. International Association of Orientalist Librarians, Library Seminars . . . in Canberra, Australia. *Theme:* International Cooperation in Orientalist Librarianship.

Jan 16–Feb 13 (Five successive Saturdays). **Library Public Relations Workshop** . . . at St. John's University, Jamaica, N.Y. Applications: Dr. Milton S. Byam, Chairman, Dept. of Library Science, St. John's University, Jamaica, N.Y. 11432.

Jan 18–23. ALA Midwinter Meeting . . . in Los Angeles.

Jan 26–27. Institute on Library of Congress Music Cataloging Policies and Procedures . . . in Coolidge Auditorium, Library of Congress. MLA Institutes Committee Director: Vernon Martin, Morningside College, Sioux City, Iowa 51106.

Jan 27–30. SLA Board of Directors and Advisory Council . . . at the Hilton Palacio del Rio, San Antonio, Texas.

Jan 28–30. Music Library Association, Midwinter Meeting . . . at the Hotel Continental, Washington, D.C. MLA Institutes Committee Director: Vernon Martin.

Feb 3–5. Indexing in Perspective Seminar . . . at Pratt Graduate Library School, New York. Cosponsored by ALA's Resources and Technical Services Division and National Federation of Science Abstracting and Indexing Services.

Feb 13–Mar 13 (Five successive Saturdays). **Practical Indexing in the Sciences:** Conventional and Automated Techniques 815 . . . at UCLA. Write: Mrs. Carolyne Malloy, Arts and Humanities Extension, Room B305, Murphy Hall, University Extension, UCLA, Los Angeles, Calif. 90024.

Feb 18–19. Doom of the Book? . . . in Rüschlikon-Zurich, Switzerland. Write: Gottlieb Institute for Economic and Social Studies, The Green Meadow Foundation, 8803 Rüschlikon (near Zurich), Switzerland.

REVIEWS

Legally Available U.S. Government Information as a Result of the Public Information Act. Kerbec, Matthew J., ed. Arlington, Va., Output Systems Corp., c1970. 2v. $86.00. LC 70-108181.

The Public Information Act was passed in July 1967, releasing enormous amounts of U.S. government information, chiefly in the class of official agency records, for public inspection. Presumably, any librarian worth his salary would want to be made aware of his ability to tap these new resources. Mr. Kerbec has produced a work which provides the instructions on how to get at this wealth of Federal data. Unfortunately, it will cost you eighty-some dollars and a large degree of digging to get to all the goodies.

The compiler reports that these volumes are "the result of a two-year research program involving over a million pages of rules, regulations, notices, directives, organization descriptions and records." A portion of those million pages was a result of the Act, which directed every government agency, with few exceptions, to establish rules and procedures for allowing public access to its files. Volume I includes the Department of Defense and the National Aeronautics and Space Administration; volume II, all other U.S. government agencies. This work results in being a very expensive reprinting of a vast amount of material that has been culled from other publications—*U.S. Government Organization Manual* (USGOM), *Code of Federal Regulations* (CFR), and the *Federal Register* being the principle sources.

Each agency section begins with what is labeled a "subject index"—in reality a table of contents of organizational units of that agency with the addresses and telephone numbers of the information offices of each. This information can be found in USGOM. The arrangement within the sections follows that of the USGOM, with the material from the Manual being reprinted totally, including the list of representative publications of the departments and agencies. The *U.S. Government Organization Manual* costs $3.00 from GPO, if you don't already have it in your collection.

The parts of these volumes which are the result of the Public Information Act are those which are of most immediate interest, and those which have not until now appeared anyplace except in the *Federal Register* or the *Code of Federal Regulations.* Under each agency listing is given the regulations for the availability of data for public inspection and copying, fees and charges, forms to be used and arrangements to be made, and procedures for appeal in the event of initial unavailability. This material issued in a single volume for a considerably less

amount of money would have proved invaluable.

Appendices referring directly to the publication of government information and to the Public Information Act appear. Three of the appendices are reprinted entirely in each volume. This is odd since there are no textual references to the appendices, nor does there seem to be a separate price per volume which would justify a duplication of forty pages.

Of course this is nit-picking. Those forty pages could have been put to a much better use—like an index. That's right. There is no inclusive subject-agency index to these two volumes numbering some 700 pages. A good reference librarian might be able to find his way around in this mass of data with minimal trouble. I am not a good reference librarian, so I had to fuss a bit. Pity our poor library patrons who are not nearly so familiar with the intricacies of our bibliographic tricks. My suggestion is to use the index from the *U.S. Government Organization Manual.* Even though the pages won't match, the USGOM will tell you to look for the Office of Civil Defense, for example, under the Department of the Army (v.I). That is the only way you would ever find it in Kerbec. I am surprised that since virtually everything else in USGOM had been reprinted, the index with very little editing wasn't also reprinted.

Large public libraries, university libraries, and depository libraries should probably have this set available, because it will save a lot of leg work when the public and students agitate for this type of information. Much material has already been centralized into these volumes. I do not think industrial libraries need this title. Other special libraries will have to make up their own minds, depending on their needs for government data. I keep thinking of all that money for these volumes. You do, too, before you buy.

Bill Petru
Hewlett Packard
Palo Alto, Calif. 94304

How to Use a Library—A Guide for Literature Searching. Bloomfield, Masse. Reseda, California, Mojave Books, 1970. 33 p. + iii. $2.50.

This manual is aimed at assisting the library user—the research worker or university student, in particular—to find books, journal articles, reports or press citations in his subject area by acquainting him with major secondary sources of information.

For books, three tools are explained in some detail: *Subject Guide to Books in Print, Cumulative Book Index,* and the library card catalog. A few additional book listings are mentioned and Winchell's *Guide to Reference Books* is cited as a source of many more.

For journal literature, *Reader's Guide to Periodical Literature* and similar indexes, *Engineering Index,* and *Science Abstracts A: Physics Abstracts* are described and sample entries shown. *Chemical Abstracts* is also mentioned. A list of citation journals taken from *Ulrich's* provides rather broad coverage of the best-known sources.

It is pointed out that report literature is probably more complex from the searcher's standpoint but can be pursued by means of four government services: *U.S. Government Research and Development Reports (USGRDR); Scientific and Technical Aerospace Reports (STAR); Nuclear Science Abstracts;* and *Monthly Catalog of U.S. Government Publications.* Two of the journals, *USGRDR* and *STAR* are more fully described.

Secondary sources for retrieval of newspaper information and for finding titles of compiled bibliographies are noted. Twenty special guides to the literature of limited subject areas are listed. Examples of bibliographic style are also presented.

This small attack upon a very large subject —the subject of all the places where one may find literature referenced—is surprisingly well done for its intended reader. Examples have been chosen to illustrate various formats and arrangements, and the door has been opened for the reader's finding of additional sources.

A few questionable statements should be corrected. The subject headings of only some card catalogs parallel those of *BIP.* Libraries can borrow books only when another library makes them available for loan. Winchell's *Guide to Reference Books* is a dated source of major bibliographic tools, and does not list them all; at least the supplement should be mentioned. Some reference books do not have an index in the back. *STAR* is not strictly biweekly. However, these criticisms are trivial in comparison with the usefulness of the information provided.

Explanations could have been more succinct, but no doubt the author felt that a leisurely and sometimes repetitive presentation was better for the user who was not already jaded with library experience. Conciseness of the whole is gained by limiting the number of examples.

Although this booklet should not be informative to the librarian, each library—special, university or large public—should have a copy of it in the reference area for the use of patrons. Mr. Bloomfield, a technical librarian at Hughes Aircraft, points out that, "It is not designed to make you into an experienced literature searcher, but it should provide you with enough information to find most of the current information on any topic. At any point in your search where you feel help is needed, don't be afraid to ask the reference librarian."

Dorothy I. Sweitzer
Jet Propulsion Laboratory
California Institute of Technology

BIBLIOGRAPHIES

Astronomy and Astrophysics: A Bibliographical Guide. D. A. Kemp. Hamden, Conn., Archon Bks., 1970. xxiii, 584p. $25.00.

Bibliographies on Fabric Flammability. Sidney H. Greenfield, Elizabeth R. Warner, and Hilda W. Reinhart. Washington, D.C., Natl. Bur. of Standards, Inst. for Applied Tech., Office of Flammable Fabrics, 1970. v. 30p. pap. 40¢. NBS Tech. Note 498. (Avail. from Supt. Doc.)

Bibliography: Community Mental Health Planning. Marvin Strauss, comp. Monticello, Ill., Council of Planning Librarians, 1970. 5p. pap. $1.50. Exchange Biblio. #117.

The Bibliography of Africa. Proceedings and Papers of the International Conference on African Bibliography. J. D. Pearson and Ruth Jones, eds. N.Y., Africana Publ. Corp., 1970. xii, 362p. $17.50.

A Brief Guide to Sources of Scientific and Technical Information. Saul Herner. Washington, D.C., Info. Resources Press, 1970. ix, 102p. pap. $4.25.

LIBRARY AND INFORMATION PRACTICE

Academic and Legal Deposit Libraries: An Examination Guidebook, 2d ed. Donald Davinson. Hamden, Conn., Archon Bks., 1969. 100p. $4.50.

Conversion of Retrospective Catalog Records to Machine-Readable Form. A Study of the Feasibility of a National Bibliographic Service. Prepared by the RECON Working Task Force. Washington, D.C., Libr. of Congress, 1969. x, 230p. pap. $2.25. (Avail. from Supt. Doc.)

The Development and Testing of Materials for Computer-Assisted Instruction in the Education of Reference Librarians. Thomas P. Slavens. Ann Arbor, Mich., Univ. of Mich. Sch. of Libr. Sci., 1970. iv, 178p. pap. Final Report, Contract No. OEC-5-9-320560-0043.

Fundamentals of Special Librarianship and Documentation. A. K. Mukherjee. Calcutta, India, IASLIC, 1969. xv, 260p. $6.00. IASLIC Manual No. 1.

Information Handling in the Life Sciences. Council on Biological Sciences Information. Washington, D.C., Div. of Biol. and Agric., Natl. Research Council, 1970. 79p. pap.

Institutional Library Services: A Plan for the State of Illinois. Social, Educational Research and Development, Inc. Chicago, ALA, 1970. xv, 110p. pap. $3.50.

PLACEMENT

"Positions Open" and "Positions Wanted" ads are $1.50 per line; $4.50 minimum. Current members of SLA may place a "Positions Wanted" ad at a special rate of $1.00 per line; $3.00 minimum. There is a minimum charge of $10.00 for a "Market Place" ad of three lines or less; each additional line is $3.00. There are approximately 45 characters and spaces to a line.

Copy for display ads must be received by the tenth of the month preceding the month of publication; copy for line ads must be received by the fifteenth.

Classified ads will not be accepted on a "run until cancelled" basis; twelve months is the maximum, unless renewed.

POSITIONS WANTED

Science Librarian—Female, 25, 2 years reference experience in government technical library, BA in math, MLS. Desires a change, available now, no location preference. Box C-145.

POSITIONS WANTED

Advertising–Marketing Librarian—Would like to work part-time, either mornings or two full days in Manhattan. Box C-154.

Science Librarian—15 years experience as special librarian. Wish to relocate in University Library, rural area required. Box C-155.

Map Librarian—Young man desires position in map library after graduation from library school in Feb 1971. In charge of topographic map collection at undergraduate college. Box C-156.

Part-Time—Cataloging, bibliography or research work wanted in humanities. 20 years experience. San Francisco Bay Area only. Box C-157.

Technical Literature Analyst—E.E., P.E., available in N.Y. vicinity, one day per week. Call Mr. Hardwick at 201-673-0283.

POSITIONS OPEN

U.S. Geological Survey Library—Washington, D.C., one of the outstanding geoscience libraries in the world, invites applications for the following positions: Reference Librarian, GS–9 ($9,-881) or GS–11 ($11,905); Catalogers (2), GS–9 or 11; and Exchange and Gift Librarian GS–11. Travel and moving expenses authorized. Requirements: Civil Service status; graduate library degree. Proficiency in one or more foreign languages. Experience or training in one or more of the earth sciences is required for the Reference position and is desirable for the others. Supervisory experience helpful. Candidates with MLS automatically qualify for GS–9; GS–11 calls for minimum of one year of experience at the GS–9 level or equivalent. Particularly interested in energetic, innovative individuals who are eager to assist in developing new programs and procedures leading to a more effective utilization of the Survey's collections and who are experienced enough to help carry them out. Applicants should submit a detailed SF 171 application form, available from any Post Office. This is a career position in the competitive Federal service. Please send applications to or request further information from: George H. Goodwin, Jr., Chief Librarian, U.S. Geological Survey, Room 1033, GSA Bldg., 18th & F Sts., N.W., Washington, D.C. 20242. Phone: 202-343-3863. The Geological Survey is an equal opportunity employer.

Assistant Head Cataloger—Biology and Agriculture. The H. W. Wilson Company in New York City has an immediate opening for a librarian with several years of cataloging and supervisory experience to assist the Editor on the Biological & Agricultural Index. B.S. or M.S. in biology or related sciences required. Excellent benefits. Salary negotiable. Direct résumé and inquiries to: Personnel Office, The H. W. Wilson Company, 950 University Avenue, Bronx, New York 10452.

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Librarian—Responsible for the operation of a small medical library. Provides assistance to technical and management personnel by conducting library research and preparing bibliographies. Develops and installs procedures, systems and services best fitted to the requirements of the Company. Minimum 3–5 years experience in a business or technical library. Should have supervisory experience. Excellent benefits. Send résumé and salary requirements to: W. B. Tucker, Becton, Dickinson and Company, Rutherford, N.J. 07070.

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University of California Library—*Map Librarian, Librarian III ($9,840–$11,952).* In charge of map collection of 107,000 maps, aerial photography and atlases in Sciences-Engineering Library. Responsible for acquisitions and cataloging of maps. Library degree and minimum of two years professional experience in map library. Academic background in geology, geography or cartography desirable.
Government Publications Librarian, Librarian III ($9,840–$11,952). In charge of collection of 130,600 government publications (U.S. and California State depositories, plus selected international, foreign, state and municipal documents). Coordinates collection policies and services. Library degree and substantial professional experience with government publications. Apply to Miss Katherine C. McNabb, Associate University Librarian, Library, University of California, Santa Barbara, Calif. 93106.

Two Assistant Librarians—Needed in large and growing southern university law library. Law library experience not needed. Apply Box C–159.

Cataloguer—Subjects include architecture, city planning, and landscape architecture. Miss Caroline Shillaber, Librarian, Graduate School of Design Library, Harvard University, Cambridge, Mass. 02138.

THE MARKET PLACE

Back Issue Periodicals—Scientific, Technical, Medical and Liberal Arts. Please submit want lists and lists of materials for sale or exchange. Prompt replies assured. G. H. Arrow Co., 4th & Brown Sts., Philadelphia, Pa. 19123.

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Chemical Abstracts—Vol. 42 (1942) through vol. 71 (1970). Includes 4th Decennial Index (1937–1946). Over 270 volumes bound in black with gold lettering. All inquiries answered. Geron-X, Box 1108, Los Altos, Calif. 94022.

INDEX TO ADVERTISERS

STATEMENT of ownership, management and circulation (Act of October 23, 1962; Section 4369, Title 39, United States Code).

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2. Mail subscriptions	9,497	9,468
C. Total paid circulation	9,497	9,468
D. Free distribution (including samples) by mail, carrier or other means	65	65
E. Total distribution (sum of C and D)	9,562	9,533
F. Office use, left-over, unaccounted, spoiled after printing	1,778	1,467
G. Total (sum of E & F—should equal net press run shown in A)	11,340	11,000

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F. E. McKenna, Manager, Publication Dept.
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