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- ☐ Evaluation of Special Librarians
- ☐ Sensitivity Training
- ☐ Time/Cost Savings
- ☐ Picture Professionalism—II
- ☐ Automated Circulation
- ☐ Cost-Effective Information

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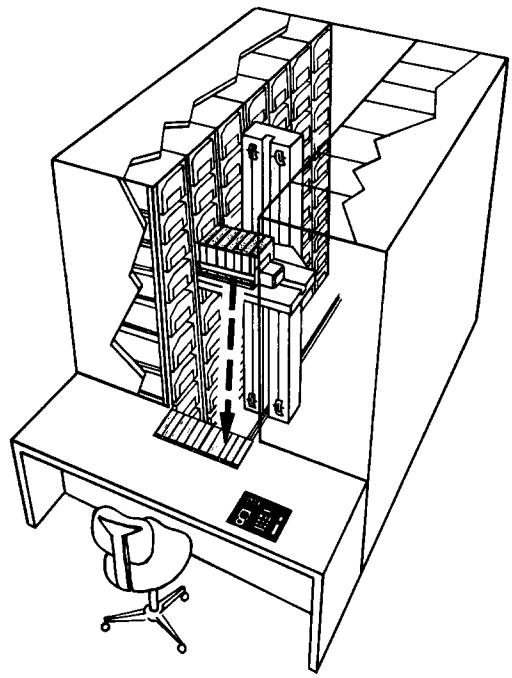

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LETTERS

A Comment from ESAN

As a regular reader of *Special Libraries,* I have had a pleasant surprise when I read in the January 1974 issue, Robert Clarke's article titled "Catalog Card Produced Bibliographies."

We have been using, for the last two years, the same system for quick bibliographies and this method has proved satisfactory to the Documentation Center at ESAN.

Also we have strongly recommended it to our local library network, which permanently is being asked for this kind of service.

We also observed, as Mr. Clarke says, the practical application on this, taking into consideration the reduction of the compilation and the clerical time.

I am sure, as it is mentioned in the article, that the absence of the cards from the catalog are not the problem, particularly because they are out just for a short period of time.

Isabel Olivera R.
Escuela de Administración de Negocios para Graduados
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Do You Have . . . ?

One of the most comprehensive U.S. and foreign patent collections exists as part of The Science and Technology Research Center, The Research Libraries, New York Public Libraries. And one of our prized collections is from Germany and dates back to the very beginning of German patent history. Unfortunately there are a number of serious gaps for a variety of reasons, one of the most obvious being World War II. Naturally we are quite anxious to fill these gaps, so that complete service to organizations and institutions which need them will be possible.

Correspondence with the U.S. Department of Commerce, Patent Office, in Washington, D.C., explains the major gaps in the following way: According to the German Patent Office, the last number printed in 1945 was 750,986 and the first number printed in 1950 was 800,001. Numbers from 769,000 through 800,000 were never used. Although 18,000 patents subsequent to 750,986 were granted prior to the close of the war, very few seem to have been printed until long after the war. No one seems to know whether or not the pre-war printing task has been completed yet. Patents originating in the new Patent Office in Munich were assigned numbers starting with 800,001. In 1957 they started yet another numbering series with 1,000,001.

Correspondence with the (West) German Patent Office indicates that extra copies of the needed patents are not available. In fact they are rather vague about the availability of any patents prior to October 1, 1968.

Thus we are anxious to learn of the availability of German Patents (by means of duplicate or low-use collections on paper or microform) which in particular fit the following gaps: 302,901—455,200 (1916–1928); 751,000—1,000,000 (1945–1956); 1,167,201—1,173,200 (May–June, 1964); 1,173,401—1,173,700 (July, 1964).

I will be most happy to answer all questions and consider any suggestions sent to me.

Robert G. Krupp
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Opposition View

Allan F. Windsor cites several advantages in microprinting the United Nations documents in his article, "New UN Microfiche Service Augurs Large Storage Economies" which appeared in *Special Libraries* [65 (nos. 5/6): 234–236 (May/Jun 1974)] and I should like to add some comments on them.

The advantages Mr. Windsor describes in his article have already been well proved and accepted among librarians. However, in order to assess the merits of microprinting the United Nations documents, we must weigh these advantages against the disadvantages it may have. My experience indicates some disadvantages in microprinted documents:

1) Documents with information which is difficult to read in microprint. Statistical and technical documents are the major component of this category.

2) Documents selected for reference use.

3) Loose-leaf documents which are kept up to date by frequent change sheets and insertions.

In general, the above categories of documents have not only poor legibility in microprint but also poor printout because they carry maps, tables, charts, diagrams, pictures,

etc., in finer print or in color. Moreover, microprint is not a preferred format for reference use.

My examination of *Microfiche Price List* of the United Nations documents shows that some of the titles listed are for reference use; for example, *Statistical Yearbook, Demographic Yearbook, Yearbook of the United Nations,* etc. A random survey of *Sales* publications of the United Nations indicates that a majority of titles of this group are either for reference use or for circulation use (monographic titles). Information of most ST/ series are statistics and therefore, microprint is not a recommended format for this category. The group of the United Nations documents to which microprint would be most adaptable are the documents whose paper quality is generally poor and whose information is not statistics. The so-called "mimeographed series," official records, treaty series, etc., would belong to this type.

As far as current and high-use documents are concerned, hard copy remains to be the preferred format among the patrons and librarians. All in all, microprint would be a preferred means in preserving retrospective and low-use documents.

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Enthusiasm Pays Off

In their "Report from Michigan" [*Special Libraries* 65 (no.7): 297–298 (Jul 1974)], Diane Worden and Valerie Noble correctly stated that the reaction to the Western Michigan University presentation was mixed. In fact, to many of us it was disappointing. However, as a result of that colloquium and the efforts of Chapter President Mrs. Elizabeth Moore, a student chapter of the Special Libraries Association has been established. Many of the students were impressed with the fact that busy librarians were interested enough to talk with them. With people like Ms. Worden and Ms. Noble in the area, I know that we will have plenty of assistance and a viable student chapter.

The moral of this story is "be careful." Enthusiasm can be contagious.

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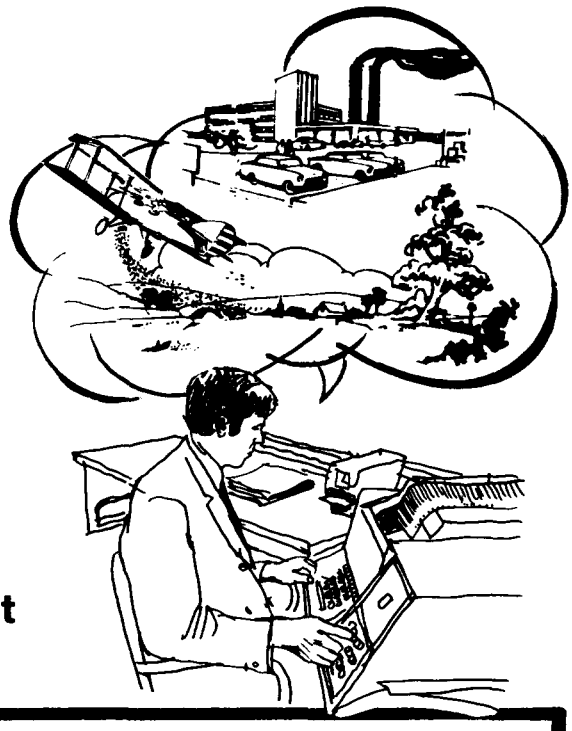

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The Evaluation of Special Librarians

Bess P. Walford

Philip Morris U.S.A., Research Center Library, Richmond, Va. 23261

■ Since special librarians usually work for nonlibrary managers, the performance of a professional librarian may be a difficult one to evaluate. This paper explains what management and users should expect in the way of services and holdings.

BEFORE the performance of a professional special librarian can be rated, one first has to establish what that particular library's responsibilities are in relation to the objectives of the organization to be served. Special libraries are information centers geared to serve a specific clientele; they are not just an organized storage area for occasional retrieval of old journals or for quick answers to urgent reference questions. They are expected to furnish in-depth searches, to use outside data banks when necessary, and compile necessary bibliographies and abstracts. Special library users need information in whatever form the information is produced—hard copy, microform, computer print-out, or audiovisual cassette. Each company needs to define the objectives for its library in terms of its own organization and goals. The evaluation of the special librarian can proceed in the light of these objectives in terms of the librarian's activities as a manager as well as those performed as a librarian.

Planning

Administration of the library in terms of these objectives is certainly a primary function of the librarian. For example, how well has long- and short-term planning been performed? Did the recommendation for additional shelving come before or after the present shelves became overcrowded? Was management informed of the need for a new clerk because of increased work load? Were shifts made in duties as a result of changing library services? Planning is a part of all administrative objectives, and planning also involves the initiation of new methods and procedures. This means that the librarian must keep abreast of new developments in the field and must see that management is kept informed of progressive library methods, new equipment, and the formation of cooperative network systems. Special libraries cannot afford to be static, but must grow and develop similarly to the organizations which they serve. It is up to the librarian to initiate and supervise the implementation of new programs.

Planning also involves the library's physical arrangement. Space must be provided for new equipment, as well as for expansion of shelving and filing. Most special librarians, sooner or later, are involved in moving the library from one location to another, or in planning for a new library in a new facility. Physical planning for a growing library is an important part of library planning. Any

planning for today's special libraries must take into account the growing use of microforms including computer output film and cooperative networks on local, state, regional, national and even international levels, and the hardware and software needed for the use of these new means of communication.

Staff and Management Relations

Supervision is another important duty of most librarians, even though in special libraries the staffs may be small in number. First comes selection of personnel suited to a specific job. Then the librarian must divide the work-load to provide the most efficient service possible. The staff members should feel that the librarian will stand up for them, give them credit for their accomplishments, and give criticism privately *and* justly. A part of communication also is the staff meetings and personal conferences. Is there ample time and does the staff feel it will receive an attentive ear when a member has a problem to relate? How well does the librarian handle problems involving human relations? The upgrading of library personnel so that positions correspond to other positions in the organization is also an important consideration.

Another important facet of a special librarian's function is presenting information to superiors. Management should feel that its communications are being received and executed *with proper emphasis* by the librarian. For example, has the librarian presented the facts to his immediate supervisor in such a way that the latter can use them in presentation to higher levels of management? Have policy changes and new procedures been effectively communicated to the library staff? Closely connected with this last item is follow-up to see that the policies and procedures have been instituted. Have the check dates been set up so that progress of each step in the plan can be reviewed?

In a small library the librarian must see that work assignments are effectively performed, that proper records are kept, and that needed forms are devised. Without statistics, facts will not be available to present to management. Budgeting and accounting are also important parts of most special library procedures. Presenting financial data so that it will be meaningful is a duty the librarian should perform with great attentiveness. Most special librarians are not dealing with library trained or library "minded" management and, therefore, must exercise special care that the terminology used in reports is easily understood. Regular reporting that is short and concise is an important means of communicating the library's present status and future planning to management.

Relationship with Users

A good relationship with library patrons is as important as a good relationship with supervisors, management, and library staff. Library patrons must have the feeling that the library is a pleasant place to visit, that they will be received warmly, that their inquiries will be taken care of promptly and efficiently and that they will be listened to if they have a complaint. Some of this is communicated by the physical environs of the library itself, some by other members of the staff; but the wrong attitude of the librarian or library staff members can spoil the whole effect and actually prevent customers from requesting information needed. Library patrons who feel "easy" with the librarian and with other members of the staff will develop the habit of dropping by for information and assistance. Even if the information or publication is not available immediately, if patrons feel that something is in the process, or that their request will be completed by a certain date, their attitude toward the library, the librarian, and the library staff will be one of respect and confidence. A failure to communicate these attitudes results in a resentful attitude or an attitude of indifference toward the library.

In a special library the act of calling patrons' attention to articles, books, periodicals, Government publications and

other material may assume more importance than the librarian's selection of material for the collection, though the building of an active, useful collection is one of the facets of good library planning. In order to maintain a working collection, the "dead wood" must be removed, so an active culling policy is needed. Most special libraries are pressed for space and cannot afford to store material which is no longer useful to the patrons. Are patrons kept informed of new information of possible value to them? Is the librarian aware of trends in the organization in order to be prepared for new developments? This responsibility cannot be overemphasized.

Proper indexing, classification and cataloging is important for any library, but in a special library the ability to get the material to the user when it is needed is paramount. In order to do this, the special librarian needs to be aware of and to use any of the newer methods of automation or semi-automation that are applicable such as computerized programs or electronic tape typewriters.

Answering patrons' questions and conducting literature searches are the most important part of daily library routine, and to be effective in these areas the librarian must be aware of possible information sources outside one's own library. Other information sources in the librarian's own organization, including specialties of the library's patrons, are important. Library resources within the city, region, and state should be well known by the librarian. Of increasing importance is a knowledge of data banks such as the regional centers of NASA, MedLine and the Smithsonian Science Information Exchange, as well as the commercially available data bases and newer regional network systems. Does the librarian keep the immediate supervisor apprised of new developments in information services?

Personal Characteristics

Personal characteristics of the librarian are important for they set the "tone" of the library staff. An attitude of enthusiasm contributes to employee morale and the staff becomes more interested in contributing to the efficacy of the library service. Emotional control is necessary. The ability to take suggestions and criticism is also important. The librarian who is not willing to make the adjustments necessary to constant change has no place in today's business world. Therefore, in addition to qualities of dependability, the acceptance of responsibility and the exercise of good judgment, the librarian must have resourcefulness, confidence, adaptability, flexibility, and a spirit of cooperativeness. When differences of opinion regarding a question do occur, a good librarian can and does compromise judiciously.

The librarian should have certain qualifications at the time of hiring—such as education, job training, and experience. However, these prerequisites are not to be considered final. Continuing education courses are a must in keeping today's special librarian up-to-date on advances and trends in the library profession. Short courses, institutes, workshops, and annual library conferences are all important in keeping the librarian informed. If supervision of others is part of the librarian's duties, courses in supervision and management are equally as important. Courses in the subject fields of the library's specialty are useful, especially to a librarian becoming involved in a new subject field. In evaluating the librarian, consideration should be given to educational training courses participated in during the time period covered by the evaluation as well as the ability to absorb and utilize this additional training.

Summary

In conclusion, the evaluation of a special librarian involves an understanding of the role of the special library in the organization, and the long- and short-term objectives of the library in fulfilling that role, as well as the need for the librarian to understand fully the goals of the organization upon which the library objectives are based. How effi-

ciently the library is organized to meet its objectives and how well the librarian and library staff serve their clientele will be reflections of the librarian's ability to keep up-to-date with technology and to provide the leadership needed to get the job done.

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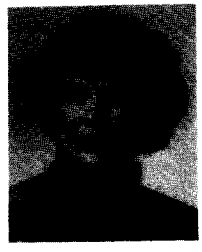

DEMENTI-FOSTER

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Sensitivity Training—A Possible Application for Librarianship

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■ Librarianship is very much concerned with communication, with improving and facilitating the flow of information from the source to the person who needs it, when he needs it. Librarians must visualize themselves, not as separate entities within an information setting, but as vital links between the client and the information he needs. We should then become aware of the various techniques being developed for dealing with interpersonal communication. Sensitivity training is just one method for studying interpersonal and group communication. Very simplistically, sensitivity training seeks to increase a person's awareness of how people relate to one another.

LIBRARIANSHIP is very much concerned with communication, with improving and facilitating the flow of information from the source to the person who needs it, when he needs it. One result of this concern for improving the flow of information has been the development of local consortia and state-wide and regional information networks. These cooperative programs have sought to improve and facilitate the flow of information and to reduce some of the duplication that has existed. However, one aspect of these cooperative communication networks has oftentimes been neglected and many times has been completely ignored—that is, the lines of communication between library staff members, between groups of librarians, and between the librarian and the client. If these interpersonal communication lines are not firmly established, a library network can not be truly effective. Cooperative programs must be based on a firm foundation at the level of individual and small group relations.

Communication or information flow problems do exist in librarianship, both in the sense of getting specific information to the client and in effectively communicating with him. As librarians, or as any person who must necessarily deal with another human being or group of people, we need to be aware of the various techniques that have been developed for dealing with interpersonal communication and for studying group dynamics within an organization. Sensitivity training is just one method for studying interpersonal and group communication. The increased use of sensitivity training and other methods for dealing with interpersonal relations suggests that more and more people are realizing that there

is a definite need for new techniques for facilitating interpersonal and group communication.

Barriers in communication are by no means confined to librarianship. From the time we are born we are bombarded with information, from our family and friends, our educational system, our social groups and our surroundings. We absorb our culture's beliefs and values concerning ourselves and our relationships with others. Most of the time we never question these beliefs. We usually interact with another person in well defined situations where rather specific roles have been assigned to each participant. We seek information or feedback on topics that are relevant to the specific role we are playing at that time. The question we would most likely ask about someone is not: "What is he like," but, "What do I do next?" or "What does he expect of me next?" Thus a perceiver in a personal interaction will usually act in such a manner as to reduce the need for information to sustain the relationship. In other words, we are satisfied to know the least amount about another person that is consistent with the role that we have been assigned and the role we have assigned to the other person.

Our complex society provides us with a large and varied group of people with whom we could interact, but at the same time the complexity and pace of our daily life has forced many of us, just because of lack of time in many cases, into self-limiting role-playing boxes. This is also true in the library. Most of the time we are so busy that it becomes easy to put off getting to know even our own staff and their needs, much less our client's.

Why Sensitivity Is Necessary

What relationship is there between providing help to clients or in running a library effectively and the concern for improving communication? Actually the relationship is close. Today's librarian does not live in an ivory tower, if he ever did, for the modern library setting should not offer a retreat from social and interpersonal problems. A library should not only be a place where people can come to obtain information, but it also should provide a setting for interpersonal interaction. The librarian should deal with the entire person and not just his information needs. As librarians, we need to deal with problems at their content level, to be sure, but in addition, we need to deal with them at the level of feelings. I am not suggesting that we should all set up psychotherapy sessions in our libraries. We should not be dealing with motives and problems of the inner self, but we can deal with interpersonal and group relationships and observable behavior.

The opportunity is already present, for the client has come to the library because he has an information need. This need may be for a specific bit of information, or it may be more loosely defined. The client may not even be sure himself what he exactly needs. Many times the librarian needs to be an interpreter of unclearly verbalized needs, and as such an interpreter, the librarian needs certain types of information from the user. This information need may exert a selective effect on what will be perceived by both parties. People absorb what information they need to function adequately. It is not enough that the information you are giving to the client is what *you* think is important, it must also be related to the client's current problems or needs. Librarians who truly want to communicate with their clients must necessarily be sensitive to their client's needs and be skillful in relating what information and knowledge they have at their disposal to help satisfy these needs. It then becomes important that the librarian realize that his behavior, his tone of voice, and his attitude all affect the client. The librarian may find exactly what the person has asked for, but made him feel so miserable in the process that he will never come in again.

Many different things determine whether real communication takes place between people. It is hard sometimes for people to admit that they do not know something, that they need help. Thus

when they come to you for help, they may already be somewhat on the defensive. Difficulties may also occur when either party feels threatened by the interview situation or by the other person. To penetrate barriers such as these, the librarian needs to put his own needs aside for the moment and tune in to what the other person is trying to communicate. If we would look at the client's responses we would be in a better position to understand his behavior and then aid him in obtaining not only what he needs but also massaging his ego. The client then leaves with a sense of well being.

Difficulties may also arise when people are ignorant of the other person's capabilities. For example, a doctor may not go into a detailed description of what he wants the librarian to check the literature for, because he feels that the librarian would not understand the technical language or the subject area. As a result the librarian does not have a clear idea of what the doctor is really after and may miss the boat completely or inundate him with information he does not need. The librarian may not understand why the doctor can not or will not pinpoint his information needs. At the same time, the librarian may assume the doctor is ignorant or uninterested in the existence of a controlled subject list for entry into the medical periodical literature which may restrict the librarian's search capabilities. In short, the client may not have an understanding of some of the problems involved in obtaining the information he needs. Neither person is really getting through or trying to understand the other's qualifications or particular needs at the time.

Another major barrier to mutual interpersonal communication is our natural tendency to evaluate and to judge the statement of the other person, or another group. This tendency is heightened in situations where feelings, emotions and past prejudices are involved. If communication does not occur there will be two ideas and two judgments completely missing each other in psychological space. Real communication does occur when we listen to the expressed ideas and attitudes from the other person's point of view, trying to sense what he is really saying, and what it means to him. In the words of a popular song of a few years ago, to "Walk a mile in *MY* shoes." Carl Rogers in his book entitled *On Becoming A Person,* suggested that true communication would be facilitated if before each person could speak up for himself he would first have to restate the ideas and feelings of the preceding speaker accurately and to the speaker's satisfaction —only then could he proceed with his side of the conversation *(1).*

In the same manner, if there ever is to be true interlibrary cooperation, we are going to have to put aside some of our own defenses, priorities, and any desires we have to build little empires of our own within our institutions. We will have to listen to what the others in the group are saying they need to function. Any type of cooperative program must necessarily have a foundation built upon good lines of communication between the members. It then becomes important that each member be able to openly react to the other members and to their ideas. It is also important for librarians to have an appreciation for how the various groups in a library may affect what goes on in the library.

Communication

What would you do if the normal structured relationships in your library broke down? How do you react to an employee or volunteer who objects to one of your requests? How do you deal with unexpressed feelings? Could you adequately deal with interpersonal problems that arise during a staff meeting? It seems clear that a heightened awareness of oneself, of how one's behavior affects the needs of others and of how one reacts to others would put one in a better position to deal with these questions.

Real communication does not come easily. Communication is not what is intended but is what actually is comprehended. Just because you have interpreted a series of words in relationship to your frame of reference does not mean

the next person will bring to the situation the exact same frame of reference. For example what do the following phrases mean to you?

1. We just had a *heavy* rap session. Does heavy mean: hard, sad, deep or long?
2. That movie was a real *rip off!* Does rip off mean: exciting, a gyp, scarey or a bore?

Communication then is a function of common meanings. There must be an overlapping of the perceptual fields of the communicator and communicatee, so that the meaning existing for one person may exist for another as well. Words are an extremely valuable vehicle for the transmission of information, but many times people do not hear what is being said to them. Even if they hear the words they may not receive the message that was intended.

Words certainly do not represent the total aspect of communication. One has to become aware of the wide range of communicative stimuli that are available to people. Since behavior is usually an external expression of an individual's internal thoughts and feelings, a person's behavior can tell you something about what that person needs and what he is trying to say to you. For instance, if you know what you are looking for, you can tell quite a bit by observing a person's facial expressions. However, if observing is to be used to increase one's sensitivity, it must be directed beyond the surface manifestations to the true nature of the individual's meaning. How are you supposed to know what a person is trying to nonverbally communicate or even what he is verbally trying to communicate? Some people can do this naturally—they are born with the knack of being sensitive to other people's needs. It is true that some people seem to be more sensitive than others, but this does not necessarily mean that they were born with this ability. Children are much more open to little things that are happening around them. Unfortunately, as adults, we tend to lose the child's habit of unprejudiced perception. Skills needed to facilitate awareness and sensitivity can be learned. A first step is just to recognize that there is a problem. Do not deny that barriers exist or rationalize or moralize that they should not be there. We need to enter into interpersonal relationships with an open mind. We will have to be able to see how our actions affect others, and accept certain shortcomings in ourselves and put them into proper perspective, so that we may be free to interact with our clients and our fellow staff members. By having a better understanding of some of the reasons why we act in a certain manner in a specific situation, we will be in a better position to truly communicate and relate to another person.

Training in Communication

Sensitivity training is just one method that may be utilized for improving interpersonal communication. It is a method that is probably not suited to everyone and in fact may prove harmful for some people. Sensitivity training would be most effective as one component of a comprehensive management development program for libraries.

Sensitivity training attempts to help a person become more aware of himself and others, to help him become more perceptive of how, consciously and unconsciously his attitudes and actions affect and influence others. In other words, sensitivity training seeks to increase a person's awareness of how human beings relate to one another. Although there are many approaches to sensitivity training, the T-group or training group is at the core of most sensitivity programs and will be discussed here.

The T-group is usually made up of a group of 10-15 people. The groups may be composed of heterogeneous people coming together to pursue interpersonal and small group phenomena or they may be made up of people with a common interest, i.e., people from the same company, or people working on a specific problem area, e.g., the development of a joint serial acquisitions program. There is no formal authority or teacher in control of the T-group, nor is there a pre-

scribed agenda, or a set amount of material that must be covered in each T-group session. There are no established goals or prescribed ways for handling the group's problems. The trainer or leader acts as an information source and as a catalyst to bring the group together. He ensures that the emotions expressed during the session will be steered into constructive channels. A trainer must also continually encourage the participants to express their opinions and feelings about what is happening in the group. He does not control what is said, but provides the necessary emotional support so that the other group members will participate. The trainer's personal qualities and confidence in the group will have a great effect on the effectiveness of the session.

The T-group serves as a vehicle for providing an individual with the opportunity to: 1) explore his behavior and increase his own self-assurance, 2) give and receive non-evaluative feedback, 3) utilize new methods for dealing with interpersonal relationships, which may be more effective in interpersonal communication, 4) explore his own values and become aware of the impact these values have on the others in the group, 5) lower his need for automatic defense mechanisms when interacting with an individual, or a group, 6) gain insight into the reasons why he acts in a certain manner in a specific situation, 7) become more sensitive to the behavior and the needs of the other people in the group, and 8) become aware of the wide range of communicative stimuli that are available to people, e.g., facial expressions *(2)*.

Each T-group does not try to accomplish all of the points outlined above. Instead, emphasis on any one or several of these points is determined by a consensus of the group each time they meet and as they continue in a session. The frequency and duration of each T-group session will vary with the people that are participating in the sensitivity program. However, practically all sensitivity training groups focus on the group process; that is, how different members are handling themselves in the group.

Basically, then, each T-group session becomes a means for the conscious examination of what are otherwise unquestioned assumptions about human interrelations. T-group sessions provide an opportunity to question these beliefs, to look at them more objectively—not to denounce them necessarily—but to understand why they have come about, why we react to them in a certain manner and what effect they have on our life and our work.

The first T-group session may arouse feelings of anxiety as the group struggles to decide what they want to talk about. Even after the topic has been decided upon, problems arise as various individuals try to assume leadership of the group. These early attempts at taking over the group usually fail, and this provides a golden opportunity to discuss why each member of the group felt such an intrinsic need for some type of leadership.

Until some semblance of trust is built up between the group members, the group will continue to turn to the trainer for guidance. The trainer will usually resist accepting the leadership role, choosing perhaps just to sit and remain silent. As the group continues together, the participants begin to realize that their past effectiveness in group situations was based on an established set of rules governing formal authority roles and procedures. Stripped of these roles and procedures, they discover that they must try different methods of interpersonal communication. They discover that they need to become more sensitive to the behavior and needs of the other people in the group so that they will be better able to deal with the group's problems. As a result of focusing on the actual group interactions the participants have a better understanding of small group functioning and how groups may affect an organization or individual people.

It should be remembered here that T-groups deal with group relationships and observable behavior and are therefore not to be confused with psychotherapy sessions which focus on motives and problems within the inner self. It is the

responsibility of the trainer to prevent the T-group from turning into a group psychotherapy session. Note also that T-groups are intended for the healthy, for people with relatively strong egos. Not everyone will benefit from participating in a T-group or in a sensitivity program, and it probably takes a special kind of person to reap maximum benefit from such a program.

Conclusion

From the number of national programs that have developed in the last decade, it is apparent that T-groups have become a device for developing more effective managers *(3)*. Both the National Training Laboratories and the Western Training Laboratories have been conducting training sessions for a number of years *(4)*. In addition, many colleges, universities, adult education programs and high schools across the country have begun to include sensitivity courses in their curricula.

Numerous studies have been devoted to measuring both the short- and long-term cognitive, attitudinal, and behavioral changes brought on through T-group exposure *(5)*. From these studies it is apparent that enough value has been seen to recommend the use of T-group training.

In reviewing the eight points that may be covered in a T-group session, it is clear that improvement on any of these points would increase productive interpersonal communication. Gibb views communication "as a people process rather than as a language process. If one is to make fundamental improvement in communication, [one] must make changes in interpersonal relationships" *(6)*.

Librarians must visualize themselves not as separate entities within an information setting, but as vital links between the client and the information he needs. To do this the librarian must sensitize himself to the needs of his clients. We must acquaint ourselves with the basic techniques and goals of sensitivity training and with the help of some of the active organizations, be open to initiating T-group sessions of our own.

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Restructuring the NASA Data Base for Time/Cost Savings

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■ An analysis of the NASA Data Base indicated that a number of fields were not being searched and could be eliminated from the record. These data included such items as: a) title security classification, b) country of origin, c) country of publication, d) personal author note, etc. The second task involved the division of the condensed data base into eight logical subject groups. One or more of the eight groups was then selected and searched, the selection dependent upon the subject content of the search problem. The results of numerous searches of the full data base as opposed to searches of the condensed divided data base are described. Statistics are given on the results of these searches, i.e., number of hits, computer time, and relevance of retrieved data.

DATA BASES have become a way of life for many individuals working in the field of library and information science. Regardless of the subject speciality of your facility, chances are that a data base is available for your use. Engineering, medicine, business, and education are but a few examples of the disciplines that have compiled and processed data for storage in machine-readable format.

On-line information systems have a remarkable capability for searching large data bases. Their application is increasing, and with on- and off-line printing capability they are an asset to any library, large or small. The standard computer tape search, however, continues to be used extensively for large multi-problem restrospective searches and it is with this type of computer search that this paper is concerned.

Data bases, as we presently recognize them, have existed for more than ten years and they are growing in size at a rapid rate. During the four-year period of January 1962 to December 1965, the NASA collection of bibliographic citations on magnetic tape grew to nearly a quarter million items. On Apr 1, 1974, this data base contained 1,030,000 records.

If you had conducted a computer search on some specific problem in 1964, you might have retrieved thirty hits; in 1966 the same search might have produced forty-five hits; in 1970, eighty, and so on. It is apparent that at some point in time the amount of data retrieved will have to be limited. To arbitrarily cut off the number of retrieved data items at 50 or 75 citations is an incomprehensive method of solving the problem; the citations you eliminated might have proved more relevant than the items you retrieved. Searching only a portion of the data base to limit recall is also a negative approach. The most effective method of limiting recall is to continue to search the entire file but simultaneously increase the specificity of the search problem.

General Dynamics Convair Aerospace Division has used the NASA tape program and its related services since 1963. The tapes are used to perform retrospective searches, and the monthly update

Table 1. Data Record Fields

Code	Description	Code	Description
001	Accession number	300	Corporate author
100*	Type of item	310	Corporate author code
110*	Security classification of item	331	Contract or grant number
120*	Downgrading authority code	350	COSATI subject category code
130*	Distribution and/or availability	360	Other subject heading codes
141*	Imprint and notes	380	Primary subject terms
160*	Announcement journal reference	400	Secondary subject terms
200*	Agency program coding	450*	Source of formal citation
210	Report number	460*	Original language
220	Unclassified title	470*	Present language
230*	Security classification of title	480	Imprint data
240*	Classified title	500*	Place of publication
260*	Subtitle	510*	Country of origin of the intellectual effort
270	Index annotation	520	Number of pages
280	Personal name	530	Availability and price
281*	Personal name role	540	Description notes, final report, etc.
290*	Personal name affiliation	560	Dissertation note
		580	Supplementary notes

tape is used as the data base for an SDI Program. As users of the NASA Data Base, we were aware of the growth that had taken place over the years. We appreciated having a very large collection to search, but we also realized that our searches were taking longer and covered more and more data.

Three goals were established that we believed would afford us not only short-term relief but lay the groundwork for more efficient use of the system in the future. These goals were: 1) to modify the record length and subsequently reduce the overall size of the data base; 2) to shorten the amount of computer time required to search the data base; 3) to increase the relevance of the material that is retrieved from the search.

To accomplish these three goals required an analysis and modification of the data base as it was received from NASA. Two major changes were made:

1) Eliminate those portions of the data record that were nonessential for the retrieval of information, or which we considered superfluous to our needs.

2) Subdivide the NASA data base into eight subject-related groups that could be searched independently.

Data Record

There was nothing we could do, as users, to expand or enlarge the physical capacity of the system, nor did we want to. We could, however, effectively use the storage that was available by eliminating from the record those fields that we considered nonessential.

An examination of the fields of the data base indicated that a number of fields were never searched and/or contained data that we did not require. Table 1 is a list of the fields that made up the NASA Data record. The asterisk indicates fields dropped during the conversion of the file. Initially, we planned to drop Code 400 "Secondary Subject Terms"; however, during our test searches, we discovered that we were missing many relevant documents so we decided to retain secondary terms as part of the record.

Subdivided Data Base

It was apparent that a significant amount of computer time was being wasted by conducting our retrospective searches against the entire NASA data base. If our topic concerned supersonic aircraft inlets, then there was no reason to be searching documents on moon rocks or satellite photography. To overcome this problem, we decided to subdivide the data base by subject area. One of the record fields, No. 360 "Other subject codes," refers to the category number that is assigned to each document appearing in STAR, CSTAR, or IAA

Table 2. NASA Subject Categories

01	Aerodynamics	18	Materials, Nonmetallic
02	Aircraft	19	Mathematics
03	Auxiliary Systems	20	Meteorology
04	Bioscience	21	Navigation
05	Biotechnology	22	Nuclear Engineering
06	Chemistry	23	Physics General
07	Communications	24	Physics Atomic, Molecular
08	Computers	25	Physics, Plasma
09	Electronic Equipment	26	Physics, Solid State
10	Electronics	27	Propellants
11	Facilities, Research & Support	28	Propulsion Systems
12	Fluid Mechanics	29	Space Radiation
13	Geophysics	30	Space Science
14	Instrumentation & Photography	31	Space Vehicles
15	Machine Elements & Processes	32	Structural Mechanics
16	Masers	33	Thermodynamics & Combustion
17	Materials, Metallic	34	General

Table 3. Subject Related Groups

Group	Category	Group	Category
1. Aerodynamics	(01)	4. Physics, Plasma	(25)
Aircraft	(02)	Propellants	(27)
Facilities Research & Support	(11)	Propulsion Systems	(28)
Fluid Mechanics	(12)	5. Chemistry	(06)
2. Auxiliary Systems	(03)	Machine Elements & Processes	(15)
Communications	(07)	Materials, Metallic	(17)
Computers	(08)	Materials, Nonmetallic	(18)
Electronic Equipment	(09)	Structural Mechanics	(32)
Electronics	(10)	6. Space Sciences	(30)
Mathematics	(19)	Space Vehicles	(31)
Navigation	(21)	Thermodynamics	(33)
Physics, General	(23)	7. Bioscience	(04)
3. Geophysics	(13)	Biotechnology	(05)
Meteorology	(20)	Instrumentation & Photography	(16)
Nuclear Engineering	(22)	Masers	(16)
Physics Atomic	(24)	Physics, Solid State	(26)
Space Radiation	(29)	8. General	(34)
		High X and N numbers	(99)

(Table 2). Fortunately these categories could be machine searched and this provided us with the capability to compile our subject-oriented data base.

After much rearranging, the 34 categories were placed in eight subject related groups (Table 3). The arrangement of the groups was based on a mixture of experience with the data base, an analysis of the location of entries in STAR (Scientific and Technical Aerospace Reports) and the results of test searches.

You will note that group No. 8 consists of Categories (34), General; and (99), High X and N numbers. The documents in Category 99 are older reports. They do not appear in STAR or CSTAR, but because of their technical value NASA included them in the data base.

To summarize our efforts, we examined the 35 record codes that made up the input to the NASA file; we retained 18 and dropped 17. Using the 34 subject categories that are assigned to each document entering the system, we had subdivided the NASA data base into eight groups.

Phase 2 of the project concerned analysis and evaluation of computer output obtained from searches using the original and the revised versions of the data base. Our objective was to acquire information relative to the three goals that had been established.

To conduct our searches, we selected the portion of the NASA Data Base for the year 1972. This segment of the base contained 79,082 records including In-

ternational Aerospace Abstracts "A72-" accession numbers, Scientific and Technical Aerospace Reports "N72-" accession numbers, CSTAR "X72-" accession numbers, and the Category 99 "High N and X Numbers." To identify the original and the revised data bases, we referred to them as File "A" and File "B," respectively (see appendix).

To determine the relevance of the material retrieved, we asked the person who requested the searches to analyze the output from File "A," and check those items he considered relevant. Inasmuch as File "A" would also include all hits from File "B," we could then determine how many documents were "missed" on File "B" and compute the percentage of relevant documents retrieved.

All searches were performed on the IBM 370 and the CDC CYBER 70. The search of File "A" included Category 99, and required only one pass of the computer. The search on File "B" required two passes, inasmuch as Category 99 cannot be merged with the subject groups and must be searched separately. The time listed for each search includes Category 99.

Conclusion

Modifications to the NASA data base were made after considerable analysis and evaluation. Approximately half the existing record fields were eliminated without disrupting or reducing our capability to search the file. As a result of this operation, a considerable amount of tape space was saved.

Subdividing the data base into subject groups proved highly successful. The retrospective search of the year 1972 using the full file required a search of only 9,723 records, or 12% of File "A."

Searching a shorter record and a substantially smaller data base provided us with a computer time/cost saving of approximately two-thirds or 68%. Examining these figures with a full retrospective search of ten or twelve years in mind indicates a substantial reduction in time and cost.

Perhaps the most impressive statistics are concerned with the relevance of the data retrieved. Considering that we only searched 12% of the file, the data retrieved from File "B" exceeded File "A" in relevance by 27%, i.e., File "A" 51.6%, File "B" 78.5% relevance.

If the documents in Category 99 could be assigned a subject category, we could include them in one of our eight groups. This would further reduce our computer time inasmuch as we presently have to perform separate searches.

Acknowledgments

The author would not want this paper to close without mentioning two individuals, Nick Caesar and Ray Livesay, who have contributed greatly to this paper. Their expertise in computer systems and programming have helped me immeasurably.

Finally a word of praise for NASA. This branch of the government has performed a remarkable service to meet the information needs of the aerospace industry. NASA provided a service where none previously existed and we certainly hope that it will continue.

Appendix

ANALYSIS AND EVALUATION OF COMPUTER SEARCH

File "A"—79,082 records
One file arranged in accession number order 35 data fields, including Category 99
File "B"—79,082 records
8 subfiles arranged in subject groups; Category 99 included in Group 8
18 data fields per record

Problem 1

Title: V/STOL Aircraft
Descriptors: A. Tilt-Wing Aircraft. B. Tilting Rotors. C. Lifting Rotors. D. Fan-in-Wing Aircraft. E. Vertical-Wing Aircraft. F. Rotary-Wing Aircraft. G. Ducted-Wing

Aircraft. H. Lift Fans. I. Short-Takeoff Aircraft. J. Vertical Landing. K. Vertical Takeoff.
Logic Equation: A + B + C + D + E + F + G + H + I + J + K $
Results of Search
File "A":
Searched: 79,082 records (35 categories, including Category 99)
Hits: 472 (19 categories)
Time: 12 minutes 23 seconds
File "B"
Searched: 26,167 records (Group 1, 35 categories, including Category 99)
Hits: 374 (4 categories)
Time: 5 minutes 45 seconds
Problems No. 2 through 8 were similar in subject content; consequently, all seven searches were run against Group 2. The total computer time for the seven searches is contained in the figures for Problem 8.

Problem 2

Title: Radar Performance
Descriptors: A. Signature Analysis. B. Radar. Clutter Maps. C. Rayleigh Distribution. D. Correlation Detection. E. Monopulse Radar. F. Pulse Doppler Radar. G. Incoherent Scattering.
Logic Equation: A + B + C + D + E + F + G $
Results of Search
File "A"
Search—79,082 Records (35 categories, including Category 99)
Hits: 127 (21 categories)
Relevant Hits: 59 (46.5%), 7 categories
Nonrelevant: 68 (53.5%)
Category 99: 25 Hits—9 relevant, 56.2%
File "B"
Searched 9,723 Records (Group 2, 8 categories plus Category 99)
Hits: 59 (5 categories)
Relevant Hits: 51 (86.5%), 5 categories
Nonrelevant: 8 (13.5%)
Category 99: 25 Hits—9 relevant, 56.2%

Problem 3

Title: Spectrum Analysis
Descriptors: J. Spectrum Analysis. K. Backscattering. M. Radar Echoes. R. Radar Signatures. S. Surveillance Radar. T. Tracking Radar. U. Search Radar. V. Background Noise. W. Clutter. X. Radar Scattering. Z. Information Theory. FF. Moving-Target Indicators.
Logic Equation: J • (K + M + R + S + T + U + V + W + X + Z + FF) $
Results of Search
File "A"
Searched: 79,082 records (35 categories, including Category 99)
Hits: 13 (5 categories)
Relevant Hits: 4 (30.7%)
Nonrelevant: 9 (69.3%)
Category 99: 1 Hit—0 relevant, 0%
File "B"
Searched: 9,723 records (Group 2, 8 categories + Category 99)
Hits: 9 (2 categories)
Relevant Hits: 4 (44%), 1 category
Nonrelevant: 5 (66%)
Category 99: 1 Hit—0 relevant, 0%

Problem 4

Title: Backscattering
Descriptors: K. Backscattering. Q. Signal Detection. S. Surveillance Radar. T. Tracking Radar. U. Search Radar. W. Clutter. AA. Radar Targets. FF. Moving-Target Indicators.
Logic Equation: K • (Q + S + T + U + W + AA + FF) $
Results of Search
File "A"
Searched: 79,082 records (35 categories, including Category 99)
Hits: 4 (2 categories)
Relevant Hits: 2 (50%), 1 category
Nonrelevant: 2 (50%)
Category 99: 0
File "B"
Searched: 9,723 records (Group 2, 8 categories + Category 99)
Hits: 4 (2 categories)
Relevant Hits: 2 (50%), 1 category
Nonrelevant: 2 (50%)
Category 99: 0

Problem 5

Title: Radar Detection
Descriptors: L. Radar Detection. P. Signal Analyzers. S. Surveillance Radar. T. Tracking Radar. U. Search Radar. V. Background Noise. Z. Information Theory. BB. Spectral Resolution. CC. Noise Threshold. DD. Radar Cross-Sections. EE. Amplitude Distribution Analysis. FF. Moving-Target Indicators.
Logic Equation: L • (P + S + T + U + V + Z + BB + CC + DD + EE + FF) $
Results of Search
File "A"

Searched: 79,082 records (35 categories, including Category 99)
Hits: 3 (1 category)
Relevant Hits: 3 (100%), 1 category
Nonrelevant: 0
Category 99: 1 Hit—1 relevant, 100%
File "B"
Searched: 9,723 records (Group 2, 8 categories + 99)
Hits: 3 (1 category)
Relevant Hits: 3 (100%), 1 category
Nonrelevant: 0
Category 99: 1 Hit—1 relevant, 100%

Problem 6

Title: Radar Echoes
Descriptors: M. Radar Echoes. K. Backscattering. W. Clutter. X. Radar Scattering.
Logic Equation: M • (K + W + X) $
Results of Search
File "A"
Searched: 79,082 records (35 categories, including Category 99)
Hits: 13 (4 categories)
Relevant Hits: 7 (2 categories), 53.8%
Nonrelevant: 6, 46.2%
Category 99: 5 Hits—3 relevant, 60%
File "B"
Searched: 9,723 records (Group 2, 8 categories + Category 99)
Hits: 10 (1 category)
Relevant Hits: 6 (1 category), 60%
Nonrelevant: 4, 40%
Category 99: 5 Hits—3 rejects, 60%

Problem 7

Title: Radar Tracking
Descriptors: N. Radar Tracking. K. Backscattering. V. Background Noise. W. Clutter. DD. Radar Cross-Section.
Logic Equation: N • (K + V + W + DD) $
Results of Search
File "A"
Searched: 79,082 records (35 categories, including Category 99)
Hits: 5 (1 category)
Relevant Hits: 3 (1 category), 60%
Nonrelevant: 2, 40%
Category 99: 5 Hits—1 relevant, 20%
File "B"
Searched: 9,723 records (Group 2, 8 categories + Category 99)
Hits: 5 (1 category)
Relevant Hits: 3 (1 category), 60%
Nonrelevant: 2, 40%
Category 99: 5 Hits—1 relevant, 20%

Problem 8

Title: Signal Processing
Descriptors: O. Signal Processing. P. Signal Analyzers. Q. Signal Detection. R. Radar Signatures. S. Surveillance Radar. T. Tracking Radar. U. Search Radar. Z. Information Theory. DD. Radar Cross-Section.
Logic Equation: (O + P + Q) • (R + S + T + U + Z + DD) $
Results of Search
File "A"
Searched: 79,082 records (35 categories, including Category 99)
Hits: 25 (6 categories)
Relevant Hits: 19 (3 categories), 76%
Nonrelevant: 6, 24%
Category 99: 19 Hits—15 relevant, 78.9%
File "B"
Searched: 9,723 records (Group 2, 8 categories plus Category 99)
Hits: 23 (5 categories)
Relevant Hits: 19 (3 categories), 82.4%
Nonrelevant: 4, 17.6%
Category 99: 19 Hits—15 relevant, 78.9%

Time (Seven Problems—Including Category 99)

File "A": 35 minutes 22 seconds
File "B": 11 minutes 01 second
68.7% savings in computer time

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Picture Professionalism. Part II

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■ Some technical aspects of picture librarianship are reviewed here. This is the second section of a two-part article [Part I—65 (nos.10/11): 421–429 (Oct/Nov 1974)] which concludes with a listing of the credentials helpful to the prospective picture librarian.

AS A RULE the library patron needs more personal help and guidance in a picture collection than in a book collection. Few picture researchers arrive at the library with an outline of a picture project and with a well-prepared plan for finding the needed illustrations. Therefore, before he can be helpful, the librarian has to go through the process of trying to wrest from the reader the topic of his research, the depth of the project, the available financial resources, and the format in which he needs his order processed.

The picture professional should explain in detail what his own collection has to offer, its good points as well as its gaps in this specific context. He should then suggest possible other sources in the area. If no other collections exist nearby, he should point out that there are other resources in the United States and even abroad.

What the librarian must bear in mind is that he has the professional expertise to enlighten and advise the reader and it is his duty to lead the searcher to the best possible image in each situation.

Figure 1.

"Base Hospital." Lithograph by George Bellows, 1918. National Library of Medicine, Bethesda, Md.

Reference service in the picture field demands great sensitivity from the librarian because he has to gauge not only the nature of the reference search but also the capabilities of the searcher.

Many historians, authors, script writers and researchers feel stymied in a picture collection because the language of pictures is not their "native tongue." The general level of visual literacy is not high among those readers who lack a background in art history, photography, architecture, or any of the other disciplines closely related to the visual fields.

These readers have to be taught to distinguish between authentic contempo-

Figure 2.

Normandy Invasion. Senior U. S. officers watching operations from the bridge of USS Augusta off Normandy on June 8, 1944. Photograph by U. S. Navy. National Archives, Washington, D.C.

rary materials and recreations; they have to be persuaded to strive for historical accuracy in their choices. Their eyes should also be opened to the wide variety of materials encompassed by the word picture: fine prints and documentary prints, artistic photographs and documentary photographs, posters and advertising art, cartoons and caricatures, architectural and engineering drawings, folk art and fine art, original drawings and illustrations, motion picture stills, and a host of other ephemeral pictures which may contain exactly the right image for the message they are trying to put across.

In addition to the pictures specifically organized to be used as visual documents, there exists the inexhaustible reservoir of illustrations contained in books, periodicals, atlases, manuscripts, music covers, and ephemera in every subdivision of a large library.

Reference Books

Every picture collection should be backed up by an adequate reference collection.

The first section of reference works should include general encyclopedias and dictionaries as well as biographical works listing those individuals included in the collections. It should also include modern and historical atlases, gazetteers and foreign language dictionaries.

The second section should consist of reference books specifically selected for

the interpretation of the collection at hand. This might consist of guidebooks and directories, iconographic compendia, books on all aspects of American and local history, or annual reports of international organizations. Because the emphasis of different picture collections differs so widely, only the picture librarian can truly choose his own specific reference books. He should also include in this category books using illustrations from his own picture files. These will show researchers how certain illustrations have been used in earlier publications.

The third section of the reference collection should be devoted to graphic reproduction processes, design, photography, and the arts of the book. This collection helps the picture librarian explain to readers the different graphic media as well as the use of illustrations in books and other publications. It is often a mystery to a reader how a photograph or a color transparency is transformed into a book illustration. Any reference work which helps to clarify this problem should be included in the collections.

The picture reference professional must keep up with all the latest publishing efforts in the field of his specialty. With the avalanche of picture books being produced today, it is hard for him to keep up with the yearly production of the United States let alone the rest of the world. Only by following *Publisher's Weekly,* professional library literature, and book review journals can he hope to keep in touch with the daily happenings of the picture world.

Picture Bibliographies

Picture specialists are called upon to prepare picture bibliographies for patrons unable to visit the collections in person.

A professional librarian anticipates the needs of his readers and begins to assemble pictures on relevant topics well in advance of the expected peak of demand. Recent popular research subjects have included "Negro History," "Women's Suffrage Movements," "Environmental Pollution," "Art Deco," and "Nostalgia for the Thirties." The most popular historical subject at present is the "Bicentennial of the American Revolution."

Figure 3.

Samuel Smith, General in Continental Army. Life portrait in oil by Gilbert Stuart, circa 1800. National Portrait Gallery, Washington, D.C.

An ideal picture list would include actual photocopies of the images but this is obviously too expensive for most institutions. A picture sheet of "Family Planning" in Jamaica produced by the World Bank Group Photo Library is an example of this type of picture list.

A picture bibliography may include a dozen pictures on a narrow subject such as portraits of a political personality or it may consist of a thousand Civil War photographs.

The prime requirement of the bibliography is that entries include enough information for the recipient to decide whether the pictures fit his research project. Verbal descriptions will never do justice to visual materials. They have to be used, nevertheless, when the bib-

Figure 4.

Family Planning in Jamaica. Picture sheet. World Bank Group Photo Library, Washington, D.C.

liography is so extensive that an institution cannot afford to mail even inexpensive reprographic images to show its holdings.

In addition to bibliographies, picture specialists should prepare as many form letters and finding aids as possible to answer the ever increasing demand for pictures from school children, amateur genealogists, history buffs, and collectors of every kind of memorabilia. Serious research can only take place in an institution where routine mail is answered expeditiously by previously prepared basic picture lists.

If the picture library arranges exhibits of prints or photographs, catalogs for the shows are another important professional contribution. These catalogs serve as indices to sections of the agency's collections. Professional journals welcome articles on individual series of pictures and their contribution to scholarly knowledge.

Picture Preservation

A picture professional in an actively used collection will invariably notice signs of deterioration in the prints, photographs, and negatives. To prevent damage to the pictures it is desirable to store them in steel files. Walnut and oak cabinets are injurious to the emulsion on color film. Film negatives should always be stored separately from photographic prints, and be kept in alkaline envelopes to protect them from environmental pollution and daily handling. Readers should not be allowed to consult them. At the first sign of frilling of the emulsion on glass negatives the image should be copied onto safety film to preserve it.

If individual photographs are separately mounted, acid free Permalife paper should be used for mounting. Fine prints should be protected in mats or by acid-free folders and the image protected by a neutral cover sheet.

The Florence floods as well as other recent library disasters have given a good deal of impetus to preservation efforts in large libraries. The preservation of pictorial collections is an urgent problem for thoughtful librarians. We are at present only beginning to become truly aware of the dangers lurking in our stacks. Prints are attacked by acidification, oil stains, insect pests, water and smoke damage, fluorescent light, rips and tears, and other unforeseen accidents. We do not know all the answers to the preservation of prints and photographs. Every professional picture librarian should therefore assemble a reference guide to the present state of the art in order to keep in touch with the latest research on the subject.

Few institutions are large enough to have paper conservators on their staffs. Small libraries should seek help with their preservation problems from the large institutions which can afford to maintain a research laboratory and professional staff for preservation research.

The most radical solution to collection preservation is to refuse to allow readers to work with the original materials. They can only work with photocopies. The author considers this a disturbing

Figure 5.

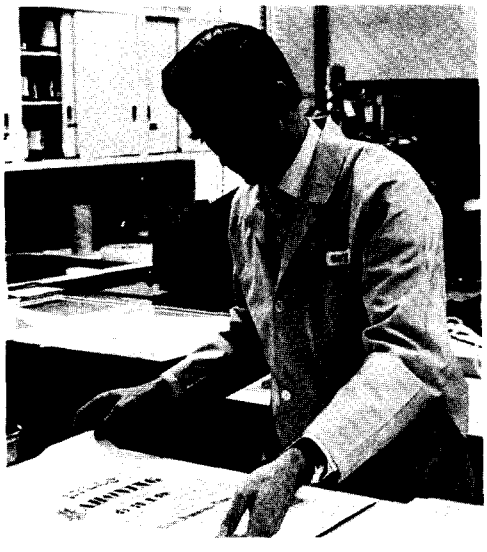
Photographs Arranged by Space Flight Number in Steel Files in the NASA Audiovisual collection. National Aeronautics and Space Administration, Washington, D.C.

Figure 6.

Accessions Unit Staff Reviewing Officer Personnel Negatives at Detachment 5 Headquarters. Aerospace audiovisual service, Arlington, Virginia. Photograph by 1361st Photographic Squadron, U. S. Air Force AAVS.

Figure 7.

Restoration Officer Drying Music Cover after replacement of missing margins by means of leafcasting. Photograph by the Restoration Office, Library of Congress, Washington, D.C.



decision because true researchers need to see the quality of the original. If the reader's photographic copy is small in size, it would also make it difficult to envision the effect of an enlargement from a tiny image. Therefore, education of the public in picture handling and close supervision seems to be the best solution to the problem.

Picture Library Administration

The budget of the picture collection is frequently controlled by the parent organization. Its understanding of the importance of the visual field is thus crucial for the existence of the collection.

Purely historical picture collections do not seem to generate as much administrative support as those which actively participate in the polemics of the day. Newer agencies of the federal government are aware of the importance of pictures to publicize their mission. This indicates that today's picture librarian has to sell the significance of his format to the organization in order to justify his budget requests.

The picture collection can generate picture awareness by organizing exhibi-

Figure 8.

Piece of Light Weight Machine Loomed Cotton. Watercolor painting shown in the exhibit "American Textiles." Index of American Design, National Gallery of Art, Washington, D.C.

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tions, preparing catalogs, and publicizing its holdings in local news media. The response to even a short newspaper story is usually a great increase in visitors as well as serious researchers.

A basic administrative decision concerns the quality and quantity of the picture collection staff. There are at present many large picture collections containing over a million photographs and slides staffed only by subprofessional visual information clerks. These employees can usually find their way around their own collections. But they cannot guide a reader in his research, nor do they have the knowledge to render help beyond the limits of their own specialty.

The author has received frequent complaints from frustrated picture searchers who do not get the help they need from some of the rich government sources. It would, indeed, be desirable to employ picture professionals in these collections to organize them to truly serve serious picture research.

Another urgent administrative problem is the question of allocating existing resources of manpower and time. In this period of picture explosion the administrator has to choose wisely between the multitudinous tasks which all seem to need attention simultaneously. Is it better to spend time and money on the materials most frequently called for or should one concentrate on preserving rare materials? Is it better to process a collection by individually cataloging each item or would cursory listing be enough? How much money should be spent for exhibits, staff travel, publications or preservation?

Staff development is an area which has not been widely discussed among picture collection administrators who never were taught picture librarianship in library school. Most trained picture librarians either started their careers in a visual field and then became librarians or developed an interest in pictures after completing library school. Both of these groups could profit from *continuing library education* programs in the picture field but almost nothing is presently available in library schools. It is therefore important for administrators to encourage picture librarians to expand their professional knowledge on their own initiative by attending annual SLA conventions, touring picture collections and museums, and participating actively in the local SLA Picture Groups. By getting to know the staffs of other picture collections, one becomes part of a professional network of specialists who can effectively help each other and the public.

Picture Professionalism

So far we have touched upon acquisitions, selection, processing, reference, bibliography, preservation and administration in picture collections. But what is the essence of picture professionalism

Figure 9.

The Apostles Simon and Judas. Passionary of the abbey of St. Martial of Limoges, France. Manuscript illumination, Man. Lat. 5301, folio 236 verso; End of X century. Paris, Bibliothèque Nationale.

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and what does it take to become a picture professional?

In addition to the more narrowly defined library science skills enumerated above, the picture professional must come to the profession with an eye for color, style, design, layout, and artistic period. He must also have innate good taste to advise patrons on the right images to tell a picture story. In addition to a library degree, the picture professional profits from a master's degree in a subject field closely related to his picture specialty.

Whether the specialization is in the humanities or any of the social or natural sciences, the professional should have a reading knowledge of at least German and French and preferably Latin or Italian as well. These languages are needed to consult the basic reference books in daily use in a picture reference collection. One occasionally meets young librarians interested in picture specialization who have never equipped themselves with the basic language tools. These aspiring specialists should know that languages are essential in picture work. Serious research cannot take place without these basic skills.

Picture professionalism does not only consist of library science, subject specialization, and a good language background. It also demands that the professional keep up with professional journals, art trends, changes in printing technology, picture reproduction rights, and everything that can be portrayed in a picture.

The most challenging and enjoyable aspect of picture librarianship is the fact that one is never fully schooled or "finished" in the profession. It is impossible to become jaded in a field where every day brings new subjects to investigate and new questions to answer.

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This Works For Us

Automated Library Circulation System Boosts Service, Control at American University

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■ An automated circulation system has been installed at American University. The output, general operation, and timesaving advantages of the system are described by two librarians at the university.

IN OCTOBER 1972, American University's innovative circulation system became operational on an IBM System/7 computer. The principal advantage of this system is that it provides a fully automated circulation system with on-line capability in handling hold requests and dealing with delinquent borrowers without the expense of a large computer. The System/7 is linked by leased line to the university's System/370 Model 145 which handles the file updating and produces daily batch outputs such as overdue notices and circulation listings.

Previously, the library's circulation control consisted of a semi-automated system which required, for each book circulated, the manual completion of a charge card and later the keypunching of this information. This was a time-consuming and expensive procedure. There was considerable congestion at the circulation desk, the error rate was significant, and both users and staff endured frequent frustrations. Clearly some alternative was necessary.

After some research, which included a cost justification study and a survey of available systems, the decision to use the System/7 was reached. The basic design of the system was accomplished by key members of the library staff, joined by a systems analyst from the university's Data Processing Center who did the "batch" programming, and a systems analyst from IBM who programmed the machine.

The basic circulation transactions—books checked out, renewed, returned, etc.—are handled at three input terminals located at the circulation desk. These transactions, as they occur, are logged on the small computer's disk file. At midnight, information on the day's library activities moves over communications lines to the System/370 host. The host uses the information to update its files, and prints out reports and notices that are delivered to the library each morning by courier.

What the System Produces

• *A daily circulation report* that tells us the exact status of every book not on our shelves. This report, which is about 240 pages long and contains an average of 13,000 entries, lists the Library of Congress call number, the seven-digit accession, or identification number that

Figure 1.
Circulation Librarian at the central processing unit.

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we put on every book; the book's author and title; the borrower's identification (social security number); and the due date.

We receive four copies of this list and place two at the circulation desk, one in reference, and one in the technical processing area. A student will usually look first in the card catalog, then go to our open stacks, and then, if he cannot find the book he wants, refer to the circulation report. Some students, however, find it easier to begin with the circulation report, because if the book they want is on it, they are saved a trip to the stacks.

• *A series of daily notices* automatically printed by the host system. One type is a "hold" notification telling a prospective borrower that a book he requested has been returned and is being held for him. Another is a "call-in" notice stating that a book has been put on reserve status and is needed immediately.

Another notice warns of books overdue after the three-week loan period. The computer will automatically print out a series of overdue notices, the first of which goes out three days after a book becomes overdue. It states: "Please return the overdue books listed above. A

Figure 2.
Librarian inserts a plastic borrower identification card into the appropriate slot of an area station at the circulation desk. Book information is fed into the system through a prepunched machine-readable card, that goes into adjacent slot.

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fine of ten cents per day will be computed from the date due to the date of the books' return. If this notice is in error, please contact the circulation desk in the library." Each notice has space to list five books.

• *A list of delinquent borrowers* that lists the accession number, LC number, author/title, date due, number of days overdue, and the amount owed. The books are arranged in separate blocks on the list according to borrower's social security number.

At the very heart of our system is a machine-readable card that is placed in a pocket in the back of each book. The card is keypunched with the accession number, the LC call number, and a brief author/title. It always stays with the book, except when it is removed briefly during the check-out and return procedures.

The Operation of the System

Charging with a book card: The student (or member of the university staff or faculty) presents the book he wants along with a plastic identification badge punched with his social security number and containing his photograph. The attendant presses the "charge" button on the terminal. The attendant then inserts the badge into the terminal and, if the borrower is not delinquent, the terminal

flashes "insert book card." The attendant then inserts the card into another slot and data about the book are instantly filed with the computer. The card goes through the terminal, is replaced in the book, and the attendant stamps the due date on a slip in the back of the book.

However, if the borrower is on the delinquent list, and owes more than $2.00, the area station will flash a red light that says "invalid patron." The attendant then checks the delinquent borrower printout to determine the problem.

Charging without a book card: The attendant presses a "partial charge" button on the terminal. He manually transcribes the call number of the book on a two-part prepunched card circulation charge form, containing a preprinted and prepunched 6-digit control number, and inserts the borrower's badge into the terminal. If the borrower is not delinquent, the panel flashes "insert 6-digit card." The attendant does so and the computer then has the control number and borrower's identification number on record.

One copy of the two-part form is stamped with the due date and placed in the book pocket and the other is held, to have the call number keypunched into it. After keypunching, these cards are run through the area station, merging the previously recorded identification number with the call number and thus readying the completed transaction for the host computer.

Return: Pressing the "return" button on the terminal, the circulation attendant puts the book card in the machine. He follows the same procedure whether the card is a permanent or partial charge. He then marks out the due date, and places the book on the pre-sorting shelves for return to the stacks.

Renewal: The attendant presses the "renewal" button, and inserts the identification badge and the book card. The computer automatically records a new due date. The attendant cancels the previous due date on the date due slip and stamps the new date.

Holds: If a book is circulating and another borrower wishes to obtain it, he

Figure 3.

Face of the area work station, part of the circulation control system. Messages guide operator, step-by-step, through the various transactions.

fills in a "hold" card. The cards are verified against the circulation listing, then keyed into the system through the operator terminal. When a book on hold is returned, or when someone tries to renew a book on hold, the terminal automatically signals "book on hold, do not renew." The terminal locks until the attendant presses a "next guide" button, showing that he has noticed the signal. He takes the book to the hold shelf and places it in call number order. During batch processing by the host, a hold notice is printed stating: "The above material which you have requested is being held for you at the circulation desk until the date specified under date due. Please bring this notice with you. If you no longer want this material, please contact the circulation desk so that the material can be released to another patron."

In addition, the book is automatically charged to the "hold" shelf with a loan period of one week. If the patron does not claim his book, it is removed from the shelf, discharged and returned to the stacks. The host system produces a daily listing showing books charged to the hold shelf for over a week.

Figure 4.

In the circulation department, an operator uses a terminal to ask the system about the status of a book.

Figure 5.

Machine-readable cards that go into each book are produced by keypunch operators at the library.

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Daily, the library receives reports that tell the number of books charged out, books renewed, or books overdue. Because American University is a member of a consortium of universities, which includes Georgetown, Howard, Catholic, and George Washington, the system is helpful in determining how often the library is used by faculty or graduate students of other institutions.

A major benefit of the system is the ease with which the library staff can be trained to use it. The area station itself guides the operator, step by step, through the various transactions. As a result, new staff members have become proficient in a short time.

The system is flexible and constantly expanding. We are now in the process, for instance, of incorporating 3,000 reserve items into the system. Presently, reserve items go out for only two hours at a time. The staff is working on a way to use the computer to control the reserve status of items for one hour, one day, three days, or seven days.

Summary

Some of the major advantages of the system are 1) faster and easier notification for "hold" books; 2) a decrease in the amount of keypunching needed for the system; 3) problem borrowers are identified at the circulation desk, so that adjustments can be reached regarding their fines or overdue books; 4) students are notified of their fines while the fines are still low. This means that the books tend to be returned sooner and borrowers are not distressed by overly large fines.

Generally speaking, the system has led to increased accuracy in the library's circulation records, more efficient operational procedures and improved control over the collection.

Plans are now being completed for a new library. While the improvements gained so far have been important for the present 300,000 volume collection, the new library, which will have a much larger collection, could not be considered without the computer system to support its growth.

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Expediting Book Acquisitions

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ONE RECURRENT problem in special libraries is that of being able to promptly acquire those books desired. Books frequently are ordered in response to an immediate need, rather than in anticipation of a future need. Particularly when individual researchers order a book as a desk copy, they usually want it now.

The telephoning of book orders is convenient from the libraries' point of view, but typically an annoyance to the bookjobber or wholesaler. At Pfizer Research in Groton, Connecticut, a system was devised that gained the cooperation of two major book dealers in accepting telephone orders without the requirement for any follow-on paper backup. Pfizer made a deposit of $500 each at Eliot Books (biomedical) and at the McGraw-Hill Bookstore (sci-tech). In return, they agreed to accept telephone orders and to deliver on the strength of the telephone call alone. Deliveries are made to company headquarters in Manhattan twice weekly, and the books are then transported to Groton that day in a company station wagon. Each bookseller encloses an invoice with the books shipped, and at Pfizer, purchase orders are then made in response to the invoices, and the invoices are paid. The $500 deposit is then essentially a permanent one, in contrast to the usual deposit account which is depleted as it is drawn against, and is then renewed.

Advantages

The advantage to Pfizer is primarily that of the speed of delivery of material ordered. Furthermore, the system results in simplicity of record keeping. It may not be conventional to make purchase orders in response to invoices in hand, but it certainly makes it easy to maintain a one-to-one relationship between purchase order and invoice rather than the usual situation where invoices and purchase orders only partially overlap.

The advantage to the bookdealer is that the prompt service on their part results in substantial business being placed with them by Pfizer. The deposit ensures that their auditors will not have qualms about books delivered only on the strength of a telephone call, and is an interest-earning guarantee of Pfizer's good faith.

We at Pfizer have been very pleased with the system, and the credit is due primarily to the cooperation and willingness of the bookdealers with whom we have dealt.

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Criteria for a User-Oriented Cost-Effective Information Service:

An Analysis of the East African Literature Service

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■ The East African Scientific Literature Service has expanded rapidly since it began in 1967 and is one of the most extensively used scientific services in the region. The reasons for its success are examined in the context of recent research into the habits of information users. Criteria which should be met in designing a service which will be extensively used and is at the same time cost-effective are suggested.

DEVELOPING COUNTRIES have a special need for effective access to information. Their need for techno-economic development is more urgent and extreme than in the developed countries. This creates greater pressures on their sources of information, which are themselves more limited than in the wealthier countries. The resources are rarely available to meet the cost of supplying this information by the mechanisms used in other countries.

A system which was developed in the middle sixties, with external aid, to meet a section of the information needs in one developing region is described. That area is East Africa: Kenya, Uganda, and Tanzania. The service continues to operate successfully and is now financed out of local resources and operated by local personnel. Certain criteria of effectiveness are formulated and the success of the service is discussed in light of these.

The East African Literature Service provides several facilities to users *(10)*. One of these, the Current Awareness Service, is based on periodicals received at the joint East African Agriculture and Forestry Research Organization/East African Veterinary Research Organization (EAAFRO/EAVRO) Library at Muguga, near Nairobi. The service also provides a union list of periodicals in libraries in the region, a service for obtaining photocopies from past issues of these periodicals, and certain other facilities.

A user of the Current Awareness Service receives a list of available periodicals, on which he marks the titles of interest.

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The service then supplies him with a copy of the contents page of each new issue as it is received. On returning a contents page with the titles of pertinent articles marked, he receives copies of these articles.

The service began in February 1967 and grew rapidly. In 1968, 192,207 pages were copied for users, the majority being supplied under the Current Awareness Service. It continues to be popular and successful. The cost is comparable to that of a photocopying service, although the benefits are much wider.

The Importance of Scientific Communication

The influence of good and bad information on success and failure in many fields of research has long been intuitively accepted. It has been confirmed by experimental studies carried out in recent years *(2)*. The current popularity of "STI" in the planning of industry, governments, and international agencies further demonstrates the widespread pragmatic recognition of the importance of good information for research and development. Arntz *(5)* argues that information has exactly the same importance as research and development and the financing of both should be linked.

Information is, likewise, the key to innovation in technology. The more easily information on new and better techniques can be brought to the attention of those engaged in production, the more quickly and effectively technical improvement can proceed. Information transfer is the vehicle of this exchange. Experimental confirmation of the substantial dependence of industry on information for innovation comes from studies by Allen and Reilly *(3)*, Langrish et al. *(20)*, Marquis and Myers *(23)*, Project "SAPPHO" *(36)*, and in farming by Bohlen and Breathnach *(6)*, among others.

Special Problems of Developing Countries

The "rising tide of paper" or, as it has been called with more dignity, "the information explosion" has been adequately discussed by several authorities *(4, 8, 12, 21, 37)*. Against this background, developing countries are seen to face special problems.

They have limited capacity, human and financial, to produce the information they need. One estimate suggests that they produce at present no more than 5% of the information generated annually in the world *(34)*, while less than 1% of research and development in industrial countries is specifically directed to the problem of developing countries *(13)*. The latter have, as yet, comparatively few trained scientists, nor have they yet built up the indigenous infrastructure of science, which they need to be self-reliant and independent.

Therefore, they have no alternative but to get most of their information from developed countries *(34, 13)*. Here again their resources are far from equal to the task. Their local scientists are too recently installed to have built up an indigenous network of contacts with scientists in the rest of the world and there are not enough of them to undertake all the travel, conference attendance, etc., required *(37)*.

Since they produce so little of the world's knowledge as yet and since what they do produce is of little interest to developed countries, they are not in a position to trade information *(34, 37)*. Furthermore, they are in most cases remote from the developed world which creates special difficulties and costs in obtaining the material they need.

Prior to independence, experts were almost invariably expatriates. With independence began the natural and inevitable transfer of staff to local personnel. Most of the original scientists have now left. In many cases new personnel have been hired for contract periods; none of these, however, are permanently based in the countries concerned. This process of transferring control to the local population has created a certain synapse in regard to the knowledge built up by the expatriates. Much of the latters' knowledge is embodied in reports, both published and unpublished. However, the

new experts do not have the continuity of work with the old and very often are not familiar with the work done by their former colonial rulers. It has also been reported that some expatriates have taken with them vital records, which are no longer available in the countries where the work was done *(11)*.

The most urgent problem for the developing world is technological information. What they require, many authorities agree, is information of direct practical use, and in a form which can readily be applied to promote techno-economic progress. This problem exists also in developed countries; however, the urgency is greater in developing countries; the limited resources and staff for adapting information means that they need to obtain such information in its most usable form.

The problem is made more difficult by the limited general infrastructure of these countries. Commentators often overlook the effect on information transfer of roads, phone systems, postal services and other everyday factors. Agricultural research and education centers are often remote from main centers. This means that the user of information is faced with exceptional difficulties in reaching other locations where he may be able to obtain the information needed.

All of the above factors operated in East Africa in 1965 and 1966, together with certain local problems. In this area of over 680,000 square miles having a population of 30 million, there were fewer than ten reasonably adequate libraries. These were concentrated around the capital cities, leaving most of the area poorly served. Furthermore, the centers for agricultural research and education were both numerous and widely scattered in the most remote areas *(22)*. There were well over 100 such centers, few of them near cities or good libraries, or even to each other *(10)*.

The user of scientific information has a number of channels open to him, such as personal contact, published literature, unpublished and other nonconventional literature.

Numerous authorities have drawn attention to how poor a foundation in knowledge of user needs (of the "market"), information services are often based *(17, 18)*. The philosophy adopted in designing the East African Literature Service in 1966 corresponded to that described by Gerstberger and Allen in 1968: "more investment in library holdings . . . will be wasted unless at the same time this material is made more accessible to the users. . . . The library must, in a sense, come to them" *(14)*.

Efficiency of Literature Use

Several studies have shown that information acquisition occupies a major fraction of the time of research scientists. The literature is the dominant feature of information gathering as far as the time input is concerned *(2)*. However, despite the larger input of time, written sources are much less effective both in idea generation and in problem solution than oral sources. In addition, two-thirds of the literature used is read because it is readily available on the spot, preferably in the user's own office.

It is relevant, in regard to the East African Literature Service (EALS), that, of the written sources, Allen's subjects devoted the most time to periodicals. The EALS appears to increase considerably the range of periodical materials available and to reduce drastically the time input for obtaining this material. Hence, it is likely that the EALS has greatly increased the number of messages received by its users for a given time input. Any method which increases the number of messages received by the user in response to a given input of his time is a real contribution to that user's productivity by cutting down the need for "blind, random searching" [see Van Toll *(28)*, Carmon and Park *(9)* and Gilchrist *(15)*].

It would not be realistic, however, to argue that a literature service, however effective and efficient, can fully substitute for face-to-face communication as an information transfer mechanism. The advantage of oral sources lies in the fact

that they are interactive and can adapt the message to the expressed needs of the user (Allen, T. J.—personal communication, 1973). There is, however, some evidence to suggest that an efficient literature service, by making a wide range of materials promptly and easily available, helps prepare scientists better to benefit from face-to-face discussion with colleagues. If as is especially apt to be the case in developing countries, scientists have restricted opportunities for meeting with colleagues, it is especially important that their discussions be of a high quality. It does seem possible that there is at least some "elasticity of substitution" between face-to-face meetings and literature use, although literature probably can never be regarded as fully capable of replacing discussion between experts.

Ease of Access

"Ease of Access" is the single most important criterion in the selection of a source *(14)*. Gertsberger and Allen also found no relation between the effectiveness of an information channel (judged by success or failure in research) and the frequency with which it was used.

In considering the conclusions of studies by Allen and his colleagues, it is important to emphasize once more that "success" of research is ultimately judged in terms of a successful outcome as judged by the agency commissioning the research *(2)*.

The report cited above *(14)* points out that the cost to the user has a major effect on the extent to which a service is used. This cost may include cash, time, inconvenience and psychological factors such as unfamiliarity, etc. Preferring ease of access over both ease of use and perceived technical quality, the users appeared to follow Zipf's "Law of Least Effort" *(31)*. A further finding was that the more often scientists use a channel, the more accessible it appears to them. In addition, the more they use it, the more highly they rate its quality. If a good channel is made highly accessible, it will develop a good reputation.

Objectives

A summary of the characteristics which a good information service should have, as shown from the research, follows:

- It should be accessible and easy to use.
- It should deliver a high rate of messages for a given time and effort by the user.
- It should make available a wide range of information not usually available in or near the scientist's own place of work.
- It should maintain a high level of quality in the information content.
- In a less developed region or country, more than elsewhere, a service must also be cost effective. A low absolute cost per user is essential to the East African Literature Service, not only because resources were limited but because this determined the possibility of the service being continued by the East African governments when the funds committed by the sponsoring agency were used up.

A Service Is Established

There was no comparable service in the area to study and adapt. It was thus necessary to consider and compare different methods, often with different objectives, in use elsewhere. The absence of detailed information on costs of operation made the process of comparing costs of different solutions largely intuitive. Nevertheless, the process of examination led to certain conclusions which have stood the test of time—the service continues to operate efficiently on a large scale in 1974.

Of the existing alternatives the main types of techniques traditionally used to ensure access by scientists to the periodical literature and reports are: circulation systems, photocopy services (earlier: photostats), and alerting systems (abstracts, SDI, etc.). A critical examination showed no one of these services would fully meet the objectives. One reason is the tendency to use new technology (e.g., photo-

copying) as an adjunct to traditional methods; another is the exaggeration of the intellectual content of many operations which are purely clerical in content.

Circulation Systems

Van Toll *(28)* analyzes the hidden costs of a circulation system in a university, comparing them with those of a photocopying facility. She describes the many inconveniences experienced by users under the circulation system and concludes that the photocopying method is cheaper. In the East African situation, a further factor of great importance is the large number and wide dispersal of centers where users were situated. A circulation system seemed quite unmanageable, as well as ineffective from the users' viewpoint, in this situation.

From an understanding of the slowness and complexities of the sequential circulation system, further desirable features of an effective system can be derived.

- It should operate in parallel, not sequentially; that is, all users requiring particular journal material should receive it simultaneously, thus eliminating delays.
- It should provide full texts (not a summary) of original source documents to the user, as the circulation system does (and do so promptly, which circulation does not).
- Its operation should demand the minimum of high level skills and equipment, as in a circulation system.
- It should accommodate a large number of users as effectively as a small number (which a circulation system does not).

Photocopy Services

Photocopy Services are often built around the copying operation alone. They can, however, be operated in at least three ways: 1) by making a machine available to all authorized users to copy material; 2) by providing, on request by authorized persons, copies of any available material (as in the British Lending Library); or 3) by supporting special subject queries or alerting services, where photocopies of material traced by the service center are sent to the user.

Photocopy services are extremely effective in transmitting written information to users. Moreover, their technology constantly is improving. They provide copies of original documents which the user can study at leisure and store without removing originals from the library. Their operation does not require a high level of expertise or subject specialization, except where tied in with special subject searches. Their cost is low and is mainly for actual machine use. Their main defect is that they do not go beyond being a copying service, to become an information service, and when they do, they may not do so in the most efficient way.

For instance, photocopying can solve one of the defects of a circulation system. The user can send back a serial with a request for a copy of an article or make a copy himself. It is quite possible, however, that another user will request the same article; in this case it would be most efficient to make both copies at the same time. Most services, however, do not plan for this kind of batching. Van Toll *(28)* found photocopying to be cheaper than circulation when hidden costs were taken into account. However, the system she describes provides photocopies only and is not intended to be a current awareness service.

In light of the advantages of a photocopy–information service it was decided that the East African Literature Service should also:

- provide copies of original documents for the users to keep and read at leisure (not loans);
- copy all requested articles from any current serial at one time in order to reduce costs.

Alerting Systems

Alerting Systems are services which notify users of relevant material but do not automatically provide the original

documents which must, if required, be sought by further effort and at an additional cost. This system either reproduces a selection of contents pages from the latest issues of the most widely read journals or provides the user with a relatively digestible account of work over a wide range. Abstracts journals cover broad fields (for economic reasons) to appeal to many users so any given user must search through much irrelevant material to obtain what he requires. The material abstracted is often a year or more old by the time the abstract is available so these services are not always up-to-date. They are also costly, since highly trained subject specialists must be employed to evaluate primary publications and select the abstracts; often they have to write the abstracts as well. This type of service, in the East African region, was not realistic in view of its need for high level and costly expertise and the other disadvantages.

A refinement of the abstracts system has developed in recent years. This is Selective Dissemination of Information (SDI) by computer. However, to judge by results to date, most of these systems are not as cost-effective as was once hoped *(29, 9, 30)*.

The consideration of abstract systems in general, however, did suggest further features of a suitable service:

- It should provide an efficient and convenient mechanism for selecting material of direct interest to each user and for excluding the rest (a personalized service).
- It should provide an advance alerting facility, from which the user can select a limited range of material to obtain in full text form.
- It should take the initiative in alerting the scientist, who should not be called on constantly to take the initiative in seeking material.

The Design of the System

After determining the characteristics which were necessary in an East African system, the type of operations and skills involved in the total process were examined. This led to a different type of breakdown of cost factors, primarily according to skill: 1) The expert judgment which selects relevant periodicals, articles, and other information appropriate to the interests of each user. The selection and preparation of abstracts calls for expertise at a similar level. 2) The provision of source materials (in this case periodicals) which is one of the main routine functions of a library. 3) The clerical routines involved in preparing lists of selected materials, photocopies, packaging, dispatch, etc., to the user. 4) Computer skills may also be required.

In a developing region in 1966–1967 and indeed in many other areas of the world, even today, the main considerations which require attention in designing a service are thus as follows: a) Feasibility: the possibility of obtaining the skilled personnel, equipment and funds; and b) Cost/effectiveness: Assuming that the first criterion has been met, the system should be the best that the budget can provide.

The less special skill and subject knowledge required, the easier and cheaper the scheme would be to carry through. Lancaster *(19)* points out that the professional salary level of service personnel can be a major factor in costs; this is echoed by Vickers *(29)*. Both discuss computerized services. Hess *(16)* points out that costs can be reduced most drastically by cutting down on the time input of high cost personnel. He warns, however, that work input cost reductions probably transfer costs to the user and thus lower the quality of service. It was, therefore, most important to ensure that in cutting down on expert time, the other objectives did not suffer.

- Costly and scarce professional time should, therefore, be cut to the minimum without sacrificing other objectives.

The problem of the absence of evaluation data on other systems, which might have helped us, suggested that a system of recording should be built into the ser-

vice which would provide evaluation data. This would also be needed when the time came to make the case for the East African governments to assume the financial burden of the service.

- The service should generate—as part of its normal working routine—records on the quantity and type of material supplied and the costs involved.

Evolution of the Solution

The first solution considered was the provision of a much extended range of periodicals to users at each work location. This was rejected, however, in the original proposal to the sponsoring foundation *(35)*. As Munn *(22)* points out, the cost of providing many airmail subscriptions, often duplicating each other several times, for different locations would be prohibitive. The storage and care of these at the centers would entail, if they were not to be thrown out after a short period, more space and staff than was available, thus adding to the cost. Furthermore, when the period of sponsorship ended, there would be pressure to reduce these holdings once more to conserve scarce national funds.

The second proposal to the sponsor recommended that journal materials be provided at one center only in East Africa and built up to the level required. This would keep the costs of providing source materials to a minimum. It would also permit management and evaluation at a central point. Each center would be supplied with a list of available titles, from which they were to make a selection. The titles chosen could not already be available to them. The main service center at EAAFRO would then supply each user center with photocopies of the contents pages of each issue of the journals selected. Each center would receive only those contents pages it had originally requested. Service to individuals was not envisaged.

User centers would then mark the articles of interest and return the contents pages to EAAFRO; they would receive, after a minimum of delay, the articles requested. The main burden of operating the system fell on the design and operation of the clerical system, since the use of computers was neither feasible nor appropriate. The clerical system had, therefore, to provide some 700 scientists at 130 centers throughout East Africa with prompt and convenient access to 900 periodicals. The key equipment for this was the photocopier. The object of the system was to ensure that the function could be performed at the lowest cost and with maximum reliability. To optimize the operational design, some further analysis was carried out with beneficial results.

The Clerical System

According to the original proposal to the sponsors *(35)* the service could be operated similarly to a conventional photocopying facility (although it was in fact an information service). Had this been implemented, the sequence of operations would be as follows: Each day incoming journals would be checked and copies of their contents pages dispatched to those who had requested them. In due course, these would be returned with requested articles marked. As each contents page arrived back at the service center, the journal would be retrieved; the required articles copied and dispatched to the user; and the journal returned to the library. The operation would be continuous.

Consideration showed that this method would not be the least costly means of attaining the goals. It would lead to unnecessary duplication of work at several points. For instance, suppose that journal 1 arrives on a Monday and its contents page is sent to users A, B, and C, on that day. Journal 2 arrives on Wednesday and its contents page is sent to several users, including user A and user C. It would clearly be more efficient if all the journals arriving during a given period (1 or 2 weeks) were batched and the contents pages copied together; all the contents pages for a given user (user A for instance) could also be dispatched in one post. A similar analysis was ap-

Table 1.

Staff	18,556 (K. Shillings)
Xerox (copying)	81,812
Postage	5,207
Other charges (supplies, contingencies)	20,760
	126,335 (K. Shillings)

• •

plied to finding the optimum method of copying articles, with similar results.

This approach would reach its logical conclusion if all requests accumulated during a fixed period, both contents pages and articles, were dispatched to users on a fixed day and in one post. Such a modification would optimize efficiency. The returned contents pages could be filed and would be a record of the exact content and quantity of service provided from which costs could be calculated *(10)*. The time period chosen was two weeks.

Growth of the Service

This methodology was used when the service began in February 1967 and has continued relatively unchanged ever since. Service was based on 900 periodicals received at the EAAFRO/EAVRO Library. By October 1967 photocopies were running at 14,000 a month. In 1968, 192,207 pages were copied; during the fiscal year 1970, 228,930. An evaluation was carried out early in 1969 *(33)*, covering the year 1968. In addition to the above figures for quantity of service, the 1968 costs were analyzed and reported. Briefly the costs of the service in 1968 are in Table 1.

This gave an average cost of K.sh. 0.67 per page, of which K.sh. 0.42 was for photocopying. In 1967, the Kenya shilling equalled the British shilling, that is, 20 shillings equalled one pound or $2.40. The rate in 1974 is approximately 1 K.sh. equals $0.14 (17K.sh. to one pound sterling).

During the fiscal year 1970-1971, the cost of operation was K.sh. 143,000, and average cost of $.62—or less than $.10 U.S. per page. Munn points out that the figures quoted do not include the time spent by the librarian himself on the service or any portion of the subscription cost of periodicals, which are purchased primarily for the use of EAAFRO and EAVRO staff on the site *(22)*. Neither is any charge made for the use of the premises, primarily one room attached to the library. Munn suggests the true costs in 1970-1971 to be nearer to K.sh. 200,000 or about $28,000.

These costs are comparable to those of a photocopying service *(26, 28)*, although the literature service is, of course, much more than this. The survey of users carried out in 1969 revealed that the service had already become an indispensable support to many centers. This is confirmed by Schlie's study in 1972 *(25)* on relations between EAAFRO and agricultural research scientists employed by the three national governments in the region (Kenya, Uganda, and Tanzania). Schlie found that the literature service is by far the most heavily used of eight services provided by EAAFRO to these scientists (the other services: library, plant quarantine, statistical advice, herbarium, reference collections, chemical analyses, and machinery coordination). It is also the service whose use is most evenly distributed; other services tend to be more used in areas nearer to EAAFRO at Nairobi, Kenya. The methodology, it is claimed, provides a service which meets all the objectives enumerated previously. Most of the reports cited here had not been written when the service was designed and it is not suggested that they guided the design. However, several *(15, 17, 19)* include checklists of criteria for effectiveness which may be compared with the objectives developed in this paper.

At the time the methodolgy was evolved by a series of gratuitous insights which stood the test of practice, much as Popper suggests in his model *(24)* of scientific method.

Limitations

The most significant limitation is that the service is confined to the 900 titles received at EAAFRO *(27)*. It had been hoped to extend the range by including

the holdings of other main libraries, at least in the Nairobi area. This, however, was never done. The methodology, however, is not the limitation. There does not appear to be any reason why the service could not be expanded to include a substantially greater subject range and number of periodicals.

The other limitations are imposed by local conditions. One is the delay in obtaining the latest material. This arises first from the delays in periodicals reaching East Africa, especially those which come by surface post. This could be overcome by obtaining all material by airmail. Second, delays arise due to slowness of postal services within East Africa itself *(27)*.

When the East African Community took over financing the service in full in 1971–1972, it was considered impossible to continue service to centers outside the region. These included 9 in Malawi, 8 in Zambia, 3 in Botswana, 3 in Ethiopia, 1 each in Burundi, Cameroon and Nigeria —a total of 26. It is hoped that, in due course, a system of fees will be introduced permitting these and other centers to benefit from the service *(22)*.

Finally, the service has always been directed to centers rather than individual scientists. This inevitably introduces inconvenience and delays to individuals. On the other hand, a service to individuals would almost certainly increase the scale considerably. Yet such a system has been implemented in An Foras Taluntais, Ireland.

No doubt similar methods are in use in various organizations. The only one which we have been able to identify in the literature is that operated by INSERM in Paris *(7)*. Although there are some differences in method, the parallel is reasonably close.

Acknowledgments

The author expresses his thanks to D. N. Lazarus, librarian, Joint EAAFRO/EAVRO Library, Muguga, Kenya, who is now responsible for operating the Literature Service, and to his staff, for helpful discussions and correspondence during the preparation of this paper.

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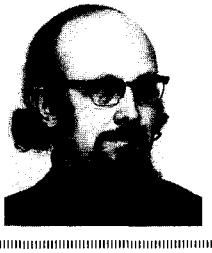

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SLA Amicus Brief Filed in the Supreme Court in the Matter of Williams & Wilkins

Special Libraries Association has filed an Amicus Brief in the U.S. Supreme Court in the Matter of Williams & Wilkins *vs.* National Library of Medicine. The SLA Brief is presented below. SLA is joining ALA in its Amicus Brief.

On Feb 16, 1972, Commissioner Davis of the U.S. Court of Claims found against NLM and NIH. On Nov 27, 1973, the seven judges of the U.S. Court of Claims in its opinion did not accept the finding of Commissioner Davis, and therefore found that the plaintiff (Williams & Wilkins) was not entitled to recover and dismissed their petition. On Feb 20, 1974, Williams & Wilkins filed an appeal to the Supreme Court. This appeal is to be heard in the term of the Supreme Court that began in October. The SLA Brief is in support of NLM and NIH.

Earlier information appeared in the following issues of *Special Libraries:* March, May/June, November 1972; March, October 1973; January, April 1974.

BRIEF AMICUS CURIAE OF THE SPECIAL LIBRARIES ASSOCIATION

Question Presented

The true question[1] posed in this case, and that which clearly affects the interests of the Special Libraries Association (the "SLA"), is:

> Whether not-for-profit academic, research, and public libraries are liable for copyright infringement as a result of their long-standing practice of making single photocopies of portions of copyrighted works at the request and for the use of readers engaged in scientific and scholarly research.

The SLA respectfully submits that the question set forth above represents the parameters of this case far more accurately than does the superficially narrow question framed by Petitioner.[2] The SLA urges this Court to consider the issues before it in their proper perspective—as vitally affecting the interests not only of governmental libraries but libraries of the private sector as well.

Interest of the Special Libraries Association

The Special Libraries Association (SLA), organized in 1909, is a non-profit educational corporation incorporated and existing under the laws of the State of New York. Its 8,500 members make it the second largest library and information-oriented organization in the United States.

The SLA represents more than 10,000 special libraries in the United States, including libraries and information centers maintained by corporations, associations, government agencies, and other individuals or groups. It further includes specialized or departmental collections within an academic or public library.

The objective of SLA is to promote and improve the communication, dissemination, and use of information in areas such as the physical, biological, technical and social sciences, and the humanities to the end that such information may serve the general welfare and the advancement of mankind. Specialized libraries emphasize information services for a specialized clientele. The Legislative Reference Service of the Library of Congress and the Supreme Court of the United States Library are prime examples of the type of specialized libraries represented by SLA.

The interest of the SLA in the present case is directly related to its vital concern that access to informational resources be protected and preserved.

The SLA is convinced that a decision in favor of Williams & Wilkins will effectively limit access to information in journals and

1. Petitioner admits (see Petitioner's Brief at 29) that the decision of this Court on the facts here present will constitute precedent reaching well beyond the instant parties.

2. Petitioner's Brief at 2.

periodicals which is absolutely essential to a functioning economy and society.

The essence of the claim asserted by Petitioner is that the making of a photocopy of a copyrighted work by a library for educational and scientific purposes is an infringement of copyright. Acceptance of this claim would effectively confine scientific, industrial, governmental, and academic research to a few major library collections and introduce an institutional parochialism utterly incompatible with the needs of our modern scientific and technological society. Moreover, it would deprive large segments of the public of the most current sources of information.

The realities of the present situation as regards dissemination of library periodical resources may be summarized as follows.

First, no single library has, or could afford to have, in its collection, no matter how large, all periodicals and journals. As a consequence, most meaningful research efforts involving journal or periodical information can be undertaken only if the collections of a number of libraries are accessible. Moreover, most research efforts cannot avoid recourse to information contained in journals and periodicals.

Second, full access to library collections of journals and periodicals is available only through photocopies. This is true because cost and space limitations dictate that libraries bind at most one or two copies and discard the rest. Libraries will rarely loan to a patron of another library a bound volume of periodicals because to do so would limit the access of its own patrons to such works.

Third, no copyright proprietor of periodical works has, until now, claimed the right to prohibit library photocopying in lieu of interlibrary loan. This, despite the fact that such practices prevailed when the Copyright Act of 1909 was enacted, were formalized in the first Interlibrary Loan Code in 1917, and have continued unquestioned for nearly sixty-five years.

Fourth, copyright proprietors of periodical works, with perhaps a bare handful of exceptions, have no capacity to provide reprints upon request and no administrative capacity to respond to requests for permission in a meaningful time frame. Many, if not most, copyright proprietors of periodical works do not even have complete sets of back issues of their own works.

Fifth, libraries will not make a photocopy in lieu of interlibrary loan if to do so would expose them to a suit for infringement and statutory damages. The cost of raising and sustaining the defense of "fair use" (unless library photocopying was *per se* a "fair use") alone would be prohibitive.

If the making of a library photocopy is an infringement of copyright, and is not *per se* a fair use of copyrighted material, then access to essential information becomes dependent entirely on the ability or willingness of the copyright proprietor to grant permission to copy or to provide a suitable reprint. There is no evidence, historical or otherwise, that copyright proprietors (with rare exceptions) are either willing or able to process requests for reprints or permissions on an individual single copy basis as is done by libraries. Nor are they required to do so under the copyright law. That law contains no provision for mandatory or blanket licensing of printed materials. Nor does it require the copyright proprietor to maintain copyrighted works in print and available. There is nothing in the copyright law to prevent the copyright proprietor from totally ignoring the requests of libraries and library users for access to his works if, in his absolute discretion, he deems a response uneconomic or inconvenient.

To ignore such requests is effectively to suppress access to the work. Moreover, suppression of access is tantamount, in the case of most journals and periodicals, to suppression of the work itself as an intellectual resource. The utility of a work, and hence its value, is not merely a function of its existence "somewhere" but of its availability "everywhere."

In substance, Petitioner is claiming the absolute right to suppress, at its will or at its whim, any journal or periodical work for which it holds the copyright. Petitioner cloaks that claim here under the disguise of a mere claim for reasonable compensation. But Petitioner cannot hide the true thrust of its ultimate goal—the ability to dictate its own economic terms because of its ability to *enjoin* any library photocopying done without the permission it seeks from this Court's decision.

We submit that neither the Constitution nor the Congress which enacted the Copyright Act of 1909 contemplated that the copyright law would or should vest such power in a copyright proprietor. Nor has such right ever been asserted or recognized in the history of copyright legislation.

In the past, when technological developments have seemed to jeopardize the economic interests of the author in his works, the Courts have looked to Congress to find an accommodation between those interests

and the public interest in access to such works. SLA believes that to the extent photocopying may be deemed such a development, the same recourse is appropriate and readily available.

The decision of this Court in this case will determine for the foreseeable future whether this nation's vast wealth of periodical and journal literature will continue to exist as an information resource accessible to all who need to know. If Petitioner is allowed to prevail, access to knowledge, and hence educational opportunity, will become merely a function of geography.

SLA does not believe such a result is Constitutionally required or socially acceptable.

Argument

The arguments upon which SLA relies in its support of Respondent may be briefly enumerated.

First, the limited monopoly powers granted to copyright proprietors should be strictly construed in a manner consistent with the Constitutional purpose of copyright, which is to promote—and not to impede—science and the useful arts.

Second, the Copyright Act of 1909 was not intended by Congress to extend to library photocopying practices in effect at the time of its enactment and continued without challenge openly and with full knowledge of copyright proprietors for sixty-five years thereafter.

Third, this Court has consistently refused to extend the copyright monopoly where the functions of the copyright proprietor are not the same as those of the alleged infringer. There exists a significant and fundamental functional distinction between publishing and library photocopying.

Fourth, even if library photocopying is found to be technically within the limited copyright monopoly, it should be excused as a reasonable and indispensable extension of the "fair use" defense traditionally available to scientists, researchers, and scholars seeking access to copyrighted works. That which such persons are entitled to do for themselves simply should not be impeded when done for them and on their behalves.

Fifth, if library photocopying practices are declared an infringement, interlibrary loan of journals and periodicals will effectively be suspended with the result that access to much of the world's most significant and current information and knowledge will become unavailable to those who need to utilize that information and knowledge.

[Citations of relevant authorities are listed in the ALA Brief and are not duplicated in SLA's.]

MEMBERS IN THE NEWS

Charlotte L. Anderson, formerly manager, library services . . . named administrator, Corporate History Research, Deere and Company, Moline, Ill.

Toni Carbo Bearman . . . named executive director, National Federation of Abstracting and Indexing Services, Philadelphia, Pa.

Lois Bebout . . . appointed associate director, General Libraries, University of Texas at Austin.

Roger P. Bristol, engineering librarian, Alderman Library, University of Virginia . . . retired. He will direct the Virginia Place Names Survey.

Charles A. Brophy, Jr., director of libraries, Battelle Institute, Columbus, Ohio . . . retired.

Portia Christian, librarian, Campbell Library, Academy of Food Marketing, St. Joseph's College, Philadelphia . . . retired.

Arlene B. Cienek, formerly pharmacy librarian and instructor, University of Georgia . . . appointed library manager, St. Mary's Hospital, Richmond, Va.

Eleanor M. Crouse . . . appointed assistant treasurer, Computer Systems Department, Bankers Trust Company, New York, N.Y.

Patricia M. Dobrosky, formerly librarian with Robert R. Nathan Associates, Consulting Economists, Washington, D.C. . . . named director of the new U.S. Customs Service Library, Washington, D.C.

Christine Franchi . . . named assistant science librarian, Science Library, Massachusetts Institute of Technology, Cambridge.

Mary McNierney Grant . . . named to head Business and Economics Division, Nassau County Research Library, Firehouse Lane, Garden City, N.Y. 11530.

Charles Guenther, chief, Technical Library, Aerospace Center, Defense Mapping Agency, St. Louis . . . received the Missouri Library Association's 1974 Literary Award for "long commitment to his art and his high achievement as poet, critic, and translator."

Robert M. Hayes . . . appointed acting dean, University of California, Los Angeles, Graduate School of Library and Information Science.

Richard D. Johnson, director of libraries, State University College in Oneonta, New York . . . has been named editor *College & Research Libraries.*

Stella Keenan, formerly executive officer of the National Federation of Abstracting and Indexing Services . . . joined University of Loughborough, United Kingdom.

Helen Kovacs, director, Medical Research Library of Brooklyn, New York . . . retired.

Anthony T. Kruzas, professor of library science, University of Michigan, Ann Arbor . . . retired.

Michael J. Lach, formerly periodicals cataloger . . . named reserve book and undergraduate collection librarian, Alderman Library, University of Virginia, Charlottesville.

Robert B. Lane . . . appointed director, Fairchild Library, Air University, Maxwell Air Force Base, Alabama.

Mary P. McLean, supervising librarian, Business Library, Newark Public Library . . . retired.

Frances McManimon, librarian, St. Joseph's Hospital, Milwaukee, Wis. . . . elected to the Board of the Library Council of Metropolitan Milwaukee.

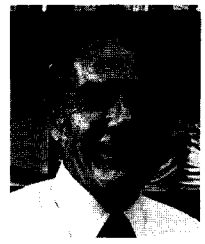
Barbara Marks, formerly chief reference librarian . . . appointed assistant university librarian for reference services, New York University, New York City.

Jean K. Martin, named reference librarian, Science Library, University of Georgia, Athens, Ga.

Edward P. Miller, chairman, Information Science Department, University of Missouri-Columbia . . . named interim dean of the university's School of Library and Informational Science.

BEARMAN

CROUSE



MILLER

SANDERSON

Camille A. Motta . . . named cataloger, Engineering Libraries, Massachusetts Institute of Technology, Cambridge.

Sue E. Sanderson, senior cataloger, Army War College Library, Carlisle Barracks, Pa. . . . retired.

Helen Schroyer, formerly libraries archives specialist . . . appointed instructor, library science, documents and special collections, Purdue University Libraries, West Lafayette, Ind.

Robert W. Severance, director Fairchild Library, Air University, Maxwell Air Force Base, Alabama . . . retired.

Marilyn Walker . . . promoted to assistant humanities librarian for technical processes and references, Massachusetts Institute of Technology, Cambridge.

Arthuree Wright . . . promoted to associate science librarian, Massachusetts Institute of Technology, Cambridge.

Jeannette B. Yates, librarian, Naval Weapons Station, Yorktown, Pa. . . . retired.

John S. Cook, chief of the Marine and Earth Sciences Library, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Rockville, Md. . . . Jul 14, 1974. He had been a member of SLA since 1947.

David J. McCarthy, librarian, Gray & Rogers, Inc., Philadelphia, Pa. . . . died Aug 6, 1974. Active in the Philadelphia Chapter, he assisted in the preparation of two editions of the "Directory of Libraries and Information Sources in the Philadelphia Area." He had been a member of SLA since 1952.

Kenneth H. Fagerhaugh, director of Carnegie-Mellon University libraries, died suddenly on Jan 30. A member of SLA since 1948, he was awarded the Pittsburgh Chapter's Award for 1956/57 after serving for a year as Chapter vice president (1953/54). He also served as Conference Chairman, 47th Annual Conference (1956) and was a member of the Board of Directors (1951/54).

He began his professional career as assistant in the Physics Library of the University of Michigan (1940). He was employed in the documents and files section of the Clinton Laboratories, Oak Ridge, Tennessee (1942/48); as a chemist with the DuPont Corporation; as librarian with Rohm & Haas; and as technical librarian with the U.S. Army Quartermaster Corps. He was research librarian directing the Research Information Service at John Crerar Library (1948/50) and assistant librarian (1950/52). He has acted as a library consultant for Washington and Jefferson College, the Middle States Association of Colleges and Secondary Schools, Rensselaer Polytechnic Institute, and the Polytechnic Institute of Brooklyn, N.Y. He held many positions as a member of the American Library Association, the American Society for Engineering Education, the American Documentation Institute (now the American Society for Information Science), the Pittsburgh Bibliophiles, and the Pittsburgh Regional Library Center. He also was a member of the Society of Technical Editors and Writers and Phi Kappa Phi fraternity, and he received the Distinguished Service Award from Luther College (1969).

Josephine I. Greenwood

A contribution of $1,000 for the SLA Scholarship Fund was received in honor of Josephine I. Greenwood from her sister, Mrs. Marion Disbrow, Tuckahoe, N.Y. Additional contributions have been received from friends.

Josephine I. Greenwood's death on Oct 3, 1973, in New York, after a short illness, shocked and saddened her many friends. She had been librarian at the Consolidated Edison Company of New York until her retirement in 1962.

Jo, as she was affectionately known, was particularly esteemed by members of the New York Chapter and Public Utilities Section of the Sci-Tech Division, now Public Utilities Division, with whom she cooperated most closely, and many of these librarians are personally grateful for the inspiration and assistance she offered when they were beginning their careers. She had a vibrant personality. Her enthusiasm for special libraries was infectious and stimulating. To those who knew her during her most active years, she was the librarian who could be counted on to strip away nonessentials and get to the basic problem at hand. Because of this, she was much sought after to serve on committees; their assignments she willingly accepted.

She began her library career as a teenager when she was a special student at the Columbia University Library and for six years served her apprenticeship under Isadore Mudge. In 1917, she became assistant librarian at the Consolidated Edison Company in New York City and a year later was appointed librarian. During that time, she never ceased library services within her own company, on radio and TV programs, as a consultant to other organizations, and as a teacher and helper to young beginning librarians. In Special Libraries Association, Jo was particularly active in the New York Chapter and the Public Utilities Section of the Sci-Tech Division. In the former, she held office as Secretary-Treasurer, 1926–27, President, 1932–33, and Director, 1947–48; in the latter, she was Section Chairman, 1949–51, she originated and was first editor of "News and Notes," 1955–60, and Chairman of the Union List of Serials Committee, for the second edition, 1966, to mention a few of her contributions. She also served the Association as a member of the Executive Board, 1933–34, and as Treasurer, 1939–41. After her retirement, she donated hours of her free time to working on the Archives at Association Headquarters.

Having made these outstanding contributions to the growth and development of Special Libraries Association, Jo was named to the SLA Hall of Fame in 1963.

Hers was an exceptionally creative and distinguished career for which she will be remembered but, above all, her warm and generous nature and her loyalty to her friends will be remembered always by those who knew her personally as well as professionally. We cherish the memory of a lovely lady with a gentle wit and true charm, and are all happier and richer for having known her.

Clara M. "Jane" Ray
Retired Librarian
Virginia Electric
Power Co. (VEPCO)

Alyce Nantz Mackin (1909–1974)

The passing of Alyce Nantz Mackin on June 30, 1974, is a sad loss not only to the San Francisco Bay Region Chapter of the Special Libraries Association but also to the community of which she was a part. A native Californian, Alyce was born in Santa Cruz 65 years ago, and for the past 55 years resided in San Mateo County. She graduated from San Mateo Junior College, Oregon State University, and the University of California at Berkeley.

Starting her career as a public librarian, she served as Head of Circulation at the Burlingame Public Library, Assistant Order Librarian at the Kern County Library in Bakersfield, and Documents Librarian at the San Mateo County Free Library in Redwood City. She then entered the special library field in 1960 as Head of Philco's Western Development Laboratories Library in Palo Alto, and in 1967 became Head Librarian of the Eimac Division of Varian Associates from which she retired in October 1970.

As a dedicated librarian and citizen, she was an active member in several library associations and community organizations in addition to the Special Libraries Association. To our Chapter she will always be remembered for her work as Director 1966–1968, when she served as Hospitality and Program Coordinator, for her loyal attendance at all meetings wherever they were held, and especially for her work with the forthcoming revision of the Union List of Serials. Because of her unselfish efforts with the necessary details of updating this Chapter publication, the Union List will be dedicated to her memory. As a professional librarian, civic-minded citizen, and compassionate human being, Alyce Mackin will not be forgotten.

Raphaella Kingsbury
President, San Francisco Bay Region Chapter

Jewell Maurice

Jewell Maurice, supervisor of Technical Processes, Scientific Library, Eli Lilly and Company, died June 10, 1974. Having been employed by Lilly in 1946, she had served in her present position for the past 27 years.

Her professional career before employment at Lilly included Reference Librarian, School of Medicine Library, Louisiana State University, and Chemistry Librarian, Indiana University. While at Indiana University, she was compiler (with L. S. McClung) of *Bacteriological Reviews*, Index to Authors and Subjects, v.1–10, 1937–1946. While at Lilly she was responsible for the annual indexes to *Diabetes Abstracts*, 1946–1951, and to the journal *Diabetes* during its earlier years.

She had been active in the Special Libraries Association since joining in 1950. Ms. Maurice held various committee appointments and chairmanships within the Pharmaceutical Section, culminating in Vice-Chairman and Chairman of the Section, 1954–1956. She served on the research committee of the Indiana Chapter, 1949–1965, and for many years until her death had been Chapter Archivist. She was also a member of the Medical Library Association, serving twice as secretary of the Pharmacy Group.

Those who knew her well will miss her personal warmth and her great appreciation of life's finer aspects, especially beautiful music.

Louise C. Lage

Marguerite E. McLean, librarian, Group Health Cooperative of Puget Sound, Seattle, Wash. . . . died on Aug 16, 1974. She had long been a member of SLA and had been active in both the Insurance Division and the Biological Sciences Division. A member of the Pacific Northwest (i.e., Puget Sound) Chapter almost from its inception, she had held various offices in the organization.

Helen D. Wiederrecht, head librarian, Corporate Library, United Brands, Boston, Mass. . . . May 30, 1974. She graduated from Simmons in 1968 and had been a member since 1969.

Washington Letter

October 12, 1974

Freedom of Information Act Amendment

The threat of veto hangs over H.R.12471, the Freedom of Information Act Amendment which was nearing enactment last September when House and Senate conferees were close to final agreement on differences between their two versions of the bill. Presidential criticism at that time kept the bill in conference and resulted in language changes geared specifically to meeting objections on the issues of who would discipline uncooperative government officials, court review of government agency decisions on withholding classified information, and how to protect confidential sources.

The conference report was filed in the House on Sep 25 (H.Rept.93–1380) and in the Senate Oct 1 (S.Rept.93–1200) where it was immediately approved by voice vote. Subsequently the House passed the bill on Oct 7 sending it to the President for approval.

White House Conference on Library and Information Services

On Oct 2 the House Rules Committee granted a rule for the consideration of S.J.Res. 40, providing for a 1977 White House Conference on Library and Information Services. Scheduled to be voted on before the proposed Congressional recess on Oct 12, the measure was not reached in the rush of last minute legislation. However, due to the deferral of the recess because of the President's veto of legislation cutting off aid to Turkey, there is still a chance that the bill will be enacted before the Congress recesses for the November elections.

Congress and the James Madison Memorial Library Building

Because of the urgent need for additional House office space, consideration is being given to taking over at least part of the Library of Congress James Madison Memorial Building for House offices when the building is completed in 1977. Over 200 congressmen have signed a petition urging this action, and the matter has been referred to the Joint Committee on the Library.

Although the House needs additional space, the Library of Congress is in an equally desperate space situation. Its staff and collections are dispersed throughout the metropolitan area. Scholars and researchers from all parts of the country, who come to Washington to use the collection, have encountered delays in pursuing their work because crowded stack conditions have complicated normal access to library materials.

Senator Howard Cannon (D. Nev.), chairman of the Joint Committee on the Library, and Senator Lee Metcalf (D. Mont.), chairman of the Joint Committee on Congressional Operations, both oppose this method of solving congressional space problems. Senator Metcalf presented his views on the matter in some detail and urged the Congress to "take all steps necessary to prevent any action which would delay occupancy of the James Madison Memorial Building by the Library of Congress." The complete statement appears in the *Congressional Record,* Jul 29, 1974, p.S13605–S13606.

Copyright

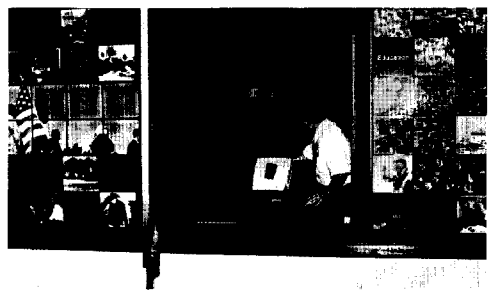
Because the general copyright revision bill (S.1361) passed by the Senate is not ex-

pected to pass the House this session, interim legislation was introduced and passed by the Senate on Sep 9. This legislation provides for the extension of expiring copyrights until Dec 31, 1976; makes permanent the law prohibiting sound recording piracy; and establishes a National Commission on Technological Uses of Copyrighted Works. The second and third provisions of the bill are part of the general revision bill, S.1361, and the first would be superseded by its enactment. Representative Robert W. Kastenmeier (D. Wis.), chairman of the House subcommittee which handles copyright matters, has indicated that he hopes the House will take up the interim copyright package (S.3976) by the end of this year.

Ruth Fine
Washington, D.C.

Sound Projection System at LBJ Library

A continuous use projection system at the Lyndon Baines Johnson Memorial Library presents highlights of LBJ's political career to library visitors. The project uses six Technicolor Model 100B sound projectors which operate with continuous loop film cartridges. The 8mm system is available through technicolor's Audio-Visual Systems Division, 299 Kalmus Dr., Costa Mesa, Calif. 92626.



HAVE YOU HEARD ?

New Computer-Readable Data Files

Chemical Abstracts Service has announced the January 1975 introduction of files which will incorporate citations, abstracts, and indexing terms for current chemical and chemical engineering literature. The subject areas are: energy sources, production, and use; ecology and the environment; production, properties, and applications of industrially important materials; and agricultural and soil chemistry and the production, preparation, preservation, and consumption of food. The *Chemical-Biological Activities* will also be expanded in 1975.

ANSI Change

The title of the PH5 Standards Committee has been changed to Micrographic Reproduction. The priorities of the committee have also been changed to "Standardization of terminology, definitions, sizes, formats, quality, apparatus and procedures . . . of microform reproductions."

Goals and Objectives Outlined

The office of University Library Management Studies of the Association of Research Libraries has published a paper generally stating operational issues which should be considered in designing and implementing a "goals and objectives program."

Fourth, Definitive Edition

Poole's *Documents Office Classification.* 4th ed. is now available from the U.S. Historical Documents Institute, Inc., 1647 Wisconsin Avenue, N.W., Washington, D.C. 20007. Price: $265.00

Metric Reference

The second of five volumes is now ready. *Metric System Guide,* volume 2, deals with legislation and regulatory controls—both federal and within the states. Publisher: J. J. Keller & Associates, Inc., 145 West Wisconsin Avenue, Neenah, Wis. 54956.

Office Systems Information Service

Datapro Reports on Office Systems, an annual subscription information service covering office products, services, and the companies that supply them is available from Datapro Research Corporation, 1805 Underwood Blvd., Delran, N.J. 08075. Subscription price: $350/year.

New Union List

The State Historical Society of Wisconsin has announced, "Undergrounds," a union list of alternative publications in libraries of the U.S. and Canada by James P. Danky. Other countries are also included. Cost $12.95. Write: The State Historical Society of Wisconsin, 816 State Street, Madison, Wis. 53706.

In Paperback

The *Library Binding Manual,* which was first published in 1951 by ALA, has been updated and is now available in paperback. It is printed on acid-free paper. Cost: $2.95 prepaid. Write: Library Binding Manual, 88 Needham Street, Newton Highlands, Mass. 02161.

Media Guide

A new *Buyer's Guide to Environmental Media* is now being published by the Environment Information Center, Inc., 124 East 39th Street, New York, N.Y. 10016.

New From NBS

The National Bureau of Standards has published *Research Considerations in Computer Networking to Expand Resource Sharing* by Dennis W. Fife. Progressive stages of resource sharing are identified and future needs for networking experimentation and research are among the topics included in the 24 pages. Price $.60. LC 74–600089.

Engineering Standards

The James Jerome Hill Reference Library, St. Paul, has begun a project to increase the accessibility of engineering standards in the Minneapolis-St. Paul area. They would like to compare notes with any library which has undertaken a similar project. Please contact Marilyn Mauritz, J. J. Hill Reference Library, 80 West Fourth Street, St. Paul, Minn. 55102 or (612) 227–9531.

REVIEWS

Computer-Based Reference Service, by M. L. Mathies and P. G. Watson. Chicago, American Library Association, 1973. $9.95.

I rarely come across any writings in the field of information retrieval that I cannot find considerable fault with. Much of the literature is, I feel, poorly written or deliberately obscure; some is completely inaccurate. The book by Mathies and Watson, both of UCLA, is a rare and welcome exception. It is a logically presented, clearly written and accurate discussion.

The book grew out of a preconference seminar on computer-based reference service organized by the American Library Association in 1971. The objective of this tutorial was to introduce librarians to the use of computers in the conduct of literature searches (i.e., to what is commonly referred to as computer-based "information retrieval" or, as the authors have chosen to call it, computer-based reference service). To satisfy this objective, the authors chose to base their tutorial on the workings of a particular information service, namely the Educational Resources Information Center (ERIC) of the National Institute of Education.

The present book is, therefore, a detailed description of the operations of ERIC. But it is more than this, for it can serve the purpose of a useful introductory text on modern methods of information retrieval, with ERIC drawn upon as an example of a large operating system.

Using ERIC as a model, then, the authors discuss the flow of work in a computer-based system, document processing (including accessioning and descriptive cataloging), vocabulary development and control, indexing philosophy and techniques, and searching procedures (a discussion of binary numeration, boolean logic, and the construction and refinement of searching strategies). The book also includes a description of MARC, the 1970 census tapes, and some other machine-readable data bases.

All of this is clearly presented in terms that the librarian should be familiar with. In fact, the authors have taken pains to draw analogies, where appropriate, between activities in a computer-based system and in "traditional" library practice. In my opinion they have met their objectives very well.

I have only one minor criticism to make. The book would be even more useful, I feel, if the authors had devoted some space to a discussion of on-line retrieval systems and how these differ from off-line, batch processing operations. Since the ERIC data base is now available for on-line search (e.g., through Lockheed and the System Development Corporation) it would have been useful to contrast the techniques of searching off-line with the techniques of on-line, interactive searching. The authors mention the on-line search capability but do not elaborate on it and, in fact, the term "on-line" does not appear in the index. In contrast, the book tells me

more than I really want to know about the mechanics of document processing in ERIC.

Nevertheless, this is a useful book. Besides serving its prime function, of introducing librarians to computer-based information retrieval, it provides the first complete and lucid description of ERIC, and it is likely to be a valuable supplementary text in teaching information retrieval in schools of library science. In teaching information retrieval it is meaningful to use one or more actual systems as models. Until now, only MEDLARS was described in the necessary detail. The present book is therefore a useful alternative or complement to *Principles of MEDLARS* (National Library of Medicine, 1970) for teaching purposes. All-in-all it is a welcome addition to the literature.

F. W. Lancaster
Graduate School of Library Science
University of Illinois
Urbana-Champaign, Ill.

Review of Federal Library Operations in Metropolitan Washington, by the Comptroller General of the United States. Washington, General Accounting Office, 1973. Available from GAO as Report No. B-174013. 44p. $1.00.

This is one of the few government reports which is willing to make strong statements about some aspect of the library world. One of the reasons why this is so may be the non-librarian authorship. The people in the General Accounting Office do not have any vested interests in library collections in Washington, D.C. They do have a deep interest in bringing efficiency into government libraries.

One of the conclusions made in this report was that a central depository for little used materials be established for the Washington area. Having a central depository would result in savings for annual space by $920,000. This is a strong, logical recommendation. However, there is no mention in this report about a "national lending library" concept. The persons preparing this report were not aware of the need for a national lending library nor were they willing to interpret their central depository as a first step toward the national lending library concept.

Another conclusion made in this report is that more microfilms should be used in federal libraries. This is a good recommendation. Periodicals are being microfilmed. In the majority of cases, roll film is the material used for filmed journals which may or may not be the most efficient way to handle them. The Defense Documentation Center, NASA and AEC base their systems on microfiche and then switch their reductions about once every five years to confuse the users. This conflict between microfilm and microfiche will have to be resolved. The using library should need only one piece of equipment to read and print from a standard microform. There was no strong statement in this report about a single standard microform.

Other recommendations include: 1) central direction to coordinate the selection of research projects; 2) encouragement of cooperative agreements to acquire library materials; and 3) encouragement of the integration of federal agency information systems. These are all fine and good recommendations.

However, the report does not go far enough in its coverage. There is no specific mention of the overlapping coverage of government abstracting and indexing publications. There are five of these publications which have considerable overlap. These are: 1) Defense Documentation Center's *Technical Abstract Bulletin;* 2) Atomic Energy Commission's *Nuclear Science Abstracts;* 3) National Aeronautics and Space Administration's *Scientific and Technical Aerospace Reports;* 4) National Technical Information Service's *Government Reports Announcements;* and 5) Government Printing Office's *Monthly Catalog.* In some instances, a single report will be listed in all five journals. In some instances, a single report will not be listed in any journals and should have been. Not only is there overlapping among these government indexing and abstracting agencies, there is no standard bibliographic description nor is there a single thesaurus for subject headings.

I keep thinking that it is practical to put all the bibliographic information concerning government documents into one computer and have one publication cover all the government published and government sponsored documents listed in one source. No such objective can be found in this GAO report.

Once government produced or government contract produced documents were indexed in a single standard announcement and indexing system, then it would be possible to restrict the entire indexing and abstracting industry to one organized and uniform system. I have stated this objective in print before and expect little action to implement it.

I conceive of a single on-line computer storing all the bibliographic information needed to produce all the periodical and report indexes in the United States. Once the bibliographic information is stored in one computer, many different abstracting and indexing tools can be produced in hard copy as well as providing an SDI service and on-line searching. That computer system is not here yet, but could be.

The GAO report reviewing federal library operations in Washington is fine as far as it goes. It shows a strong approach to solving some of the duplication of library services of the federal government. I think it did not go far enough.

Masse Bloomfield
Hughes Aircraft Corporation
Culver City, Calif. 90230

PLACEMENT

"Positions Open" and "Positions Wanted" ads are $2.00 per line; $6.00 minimum. Current members of SLA may place a "Positions Wanted" ad at a special rate of $1.50 per line; $4.50 minimum.

In each membership year, each unemployed member will be allowed a maximum of two free "Positions Wanted" ads, each ad to be limited to 5 lines including mailing address (no blind box addresses), on a space available basis.

There is a minimum charge of $11.00 for a "Market Place" ad of three lines or less; each additional line is $4.00. There are approximately 45 characters and spaces to a line.

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

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

Special Libraries Association reserves the right to reject any advertisements which in any way refer to race, creed, color, age, or sex as conditions for employment.

POSITIONS WANTED

Entry level library position—sought with newspaper, publisher, or other media. MLS, BA (radio speech), MA with honors (religion), some Ph.D. work in American History. Box S–217.

MLS, BS (Chem,Bio)—2 yrs. exper. in university science libr. Seeks position in metro. N.Y. or L.I. area in industrial, medical, or university library. Charlotte Green, 249-25 Van Zandt Ave., Little Neck, N.Y. 11362.

POSITIONS OPEN

Coordinator of Supportive Services—The responsibilities of this position include supervision and administration of policies and procedures of all Medical Center Libraries. The development of special collections including supervision for History of Medicine and Audiovisuals. The development of educational activities and the coordination of intramural and extramural programs with regard to regional activities. Educational requirements: MS in LS, prefer medical library training program or Medical Library experience; 3–5 years experience required. Minimum basic background in library computor systems is essential. Salary: Ranging from $12,000–$14,500 (available immediately). Contact: Nancy Lorenzi, Medical Center Librarian, University of Cincinnati, 231 Bethesda, Medical Sciences Building, Cincinnati, Ohio 45267 (512/872–5651).

Librarian, Physics–Mathematics–Astronomy Library—Responsible for operation of PMA Library with collection of 40,000 volumes, 850 serial titles, 250,000 AEC microfiche. Subject fields of library include computer science. Duties include collection development, reference service and user education, supervision of clerical staff, management of SPIN current awareness service.

Qualifications: MLS from an ALA accredited program; minimum three years science library experience at professional level. Academic background in subject field covered by the library is desirable. Position available immediately.

Salary dependent on experience and qualifications. Send résumé including current salary and salary requirements, academic credentials and the names of three professional references to Constance A. Moore, General Libraries, MAI 2201, The University of Texas at Austin, Austin, Texas 78712. The University of Texas is an equal opportunity, affirmative action employer.

Library Educators—Three openings for assistant professor, School of Library Science, the University of Michigan, September 1975. Requirements: MLS plus doctorate (or at least candidacy status) in library science, or the equivalent, experience in teaching and/or library work. Teaching load: three graduate classes (or sections) per term plus normal student advising and committee assignments. Competence in two or more of the following areas: building library collections, reference materials, bibliography of science, special libraries, scientific and technical libraries, and design and production of media. Salary: $14,000 for academic year (Sep-May) with added 2/9 for spring to summer half-term (8 weeks); TIAA, Major Medical, Blue-Cross, Blue-Shield, etc. Send vita and preferred teaching areas to Russell E. Bidlack, Dean, School of Library Science, The University of Michigan, Ann Arbor, Michigan 48104. The University of Michigan is a non-discriminatory, affirmative action employer.

POSITIONS OPEN

Science Reference Librarian—Reference responsibilities, including selection of materials, liaison with faculty and students in designated subject area, class instruction, plus leadership responsibility in a technical activity. Qualifications: MLS or equivalent professional degree and minimum of two years professional experience, preferably in a science library. Science subject background highly desirable. Faculty status, some moving expenses, TIAA/CREF. Salary $10,600 up, depending on qualifications. Open December 1. Send résumé to Dr. G. Donald Smith, Director of Libraries, Washington State University, Pullman, WA 99163. An equal opportunity/affirmative action employer.

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.

Foreign Books and Periodicals—Specialty: Irregular Serials. Albert J. Phiebig Inc., Box 352, White Plains, N.Y. 10602.

INDEX TO ADVERTISERS

STATEMENT of ownership, management and circulation (Act of August 12, 1970: Section 3685. Title 39. United States Code).

1. Title of publication: Special Libraries.

2. Date of filing: September 11, 1974.

3. Frequency of issue: Monthly except double issue for May/June.

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7. Owner (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.): Special Libraries Association, Inc., 235 Park Avenue South, New York, N.Y. 10003.

8. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: none.

9. For optional completion by publishers mailing at the regular rates. Not applicable.

10. For completion by nonprofit organizations authorized to mail at special rates. The nonprofit status of Special Libraries Association and the exempt status for Federal income tax purposes have not changed during preceding 12 months.

11. Extent and nature of circulation:

	Average no. copies each issue during preceding 12 months	Single issue nearest to filing date
A. Total no. copies printed (net press run)	11,580	11,600
B. Paid circulation		
1. Sales through dealers and carriers, street vendors and counter sales	577	56
2. Mail subscriptions	10,652	11,089
C. Total paid circulation	11,229	11,145
D. Free distribution by mail, carrier or other means		
1. Samples, complimentary, and other free copies	90	45
2. Copies distributed to news agents, but not sold	None	None
E. Total distribution (sum of C and D)	11,319	11,190
F. Office use, left-over, unaccounted, spoiled after printing	261	410
G. Total (sum of E & F—should equal net press run shown in A)	11,580	11,600

I certify that the statements made by me above are correct and complete.

JANET D. BAILEY, Editor
Special Libraries

SPECIAL LIBRARIES

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special libraries

Volume 65

1974

Special Libraries Association
235 Park Avenue South, New York 10003

Volume 65 Jan–Dec 1974

ERRATA

Sep 1974 (Membership Directory), p.24s, col. 2 (Bylaws)

In Article II, Section 1 of the Bylaws, third from last line, omit numeral "25."

Sep 1974 (Membership Directory), p.26s, col. 2 (Bylaws)

Article IV, Section 4. Omit the words "Advisory Council" from the first sentence.

Sep 1974 (Membership Directory), p.27s, col. 2 (Bylaws)

Article V, Section 3, should read: "The Chapter Cabinet shall hold two regular meetings annually at the call of its Chairman, one of which shall be held during the annual Association Conference. Special meetings may be held upon call of the Chairman or upon written request of 15 members of the Chapter Cabinet. Joint sessions with the Division Cabinet may be requested by the Chapter Cabinet Chairman or the Association President. Meetings of the Chapter Cabinet shall be open to all Association members."

Article VI, Section 3, should read: "The Division Cabinet shall hold two regular meetings annually at the call of its Chairman, one of which shall be held during the annual Association Conference. Special meetings may be held upon call of the Chairman or upon written request of 8 members of the Cabinet. Joint sessions with the Chapter Cabinet may be requested by the Division Cabinet Chairman or the Association President. Meetings of the Division Cabinet shall be open to all Association members."

Instructions for Contributors

General Information

Special Libraries publishes material on all important subject areas and on all methods and techniques for "Putting Knowledge to Work." New and developing areas of librarianship, information science and information technology are sought. Informative papers on the administration, organization and operation of special libraries and information centers are solicited. Scholarly reports of research in librarianship, documentation, education, and information science and technology are appropriate contributions. Bibliographies and bibliographic essays, discussions and opinions that are intended to be authoritative or that reflect original research are also published. Professional standards, salary information, education, recruitment and public relations are other representative subjects for inclusion. Controversy is not shunned.

As the official journal of the Association, *Special Libraries* also publishes reports of business of the Association and its subunits, as well as news of its members and for its members.

Contributions are solicited from both members and non-members. All papers submitted are considered for publication. Papers are accepted with the understanding that they have not been published, submitted, or accepted for publication elsewhere. *Special Libraries* employs a reviewing procedure in which manuscripts are sent to two or three reviewers for comment. When all comments have been received, authors will be notified of acceptance, rejection, or need for revision of their manuscripts. The review procedure will usually require a minimum of eight weeks.

Types of Contributions. Three types of *original* contributions are considered for publication: full-length articles, brief reports or communications, and letters to the editor. New monographs and significant report publications relating specifically to library and information science are considered for critical review. Annotations of the periodical literature as well as annotations of new monographs and reports are published—especially those with particular pertinence for special libraries and information centers.

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Manuscripts

Organize your material carefully, putting the significance of your paper or a statement of the problem first, and supporting details and arguments second. Make sure that the significance of your paper will be apparent to readers outside your immediate field of interest. Avoid overly specialized jargon. Readers will skip a paper which they do not understand.

For each proposed paper, one original and three copies (in English only) should be mailed to the Editor, *Special Libraries*, 235 Park Avenue South, New York 10003. The manuscript should be mailed *flat* in an envelope of suitable size. Graphic materials should be submitted with appropriate cardboard backing or other stiffening materials.

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Format. All contributions should be typewritten on white bond paper on one side only, leaving 1.25 inches (or 3 cm) of space around all margins of standard, letter-size (8.5 in. x 11 in.) paper. Double spacing must be used throughout, including the title page, tables, legends, and references. The first page of the manuscript should carry both the first and last names of all authors, the institutions or organizations with which the authors were affiliated at the time the work was done (present affiliation, if different, should be noted in a footnote), and a notation as to which author should receive the galleys for proofreading. All succeeding pages should carry the last name of the first author in the upper right-hand corner and the number of the page.

Title. Begin the title with a word useful in indexing and information retrieval. The title should be as brief, specific, and descriptive as possible.

Abstract. An informative abstract of 100 words or less must be included for full-length articles. The abstract should amplify the title but should not repeat the title or phrases in it. Qualifying words for terms used in the title may be used. However, the abstract should be complete in itself without reference to the paper or the literature cited. The abstract should be typed with double spacing on a separate sheet.

Acknowledgments. Credits for financial support, for materials and technical assistance or advice may be cited in a section headed "Acknowledgments," which should appear at the end of the text or as a footnote on the first page. General use of footnotes in the text should be avoided.

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Figures should be lettered in India ink. Charts drawn in India ink should be so executed throughout, with no typewritten material included. Letters and numbers appearing in figures should be distinct and large enough so that no character will be less than 2 mm high after reduction. A line 0.4 mm wide reproduces satisfactorily when reduced by one-half. Most figures should be reducible to 15 picas (2.49 in.) in width. Graphs, charts, and photographs should be given consecutive figure numbers as they will appear in the text. Figure numbers and legends should not appear as part of the figure, but should be typed double spaced on a separate sheet of paper. Each figure should be marked *lightly* on the back with the figure number, author's name, complete address, and shortened title of the paper.

For figures, the originals with three clearly legible reproductions (to be sent to reviewers) should accompany the manuscript. In the case of photographs, four glossy prints are required, preferably 8 in. x 10 in.

References and Notes. Number all references to the literature and notes in a single sequence in the order in which they are cited in the text. Cite all references and notes but do not insert reference numbers in titles or abstracts.

Accuracy and adequacy of the references are the responsibility of the author. Therefore, literature cited should be checked carefully with the original publications. References to personal letters, abstracts of oral reports, and other unedited material may be included. However, the author should secure approval, in writing, from anyone cited as a source of an unpublished work. Be sure to provide full details on how such material may be obtained by others.

References to periodicals should be in the order: authors, article title, unabbreviated journal name, volume number, issue number, inclusive pagination, and date of publication.

Smith, John and Virginia Dare / Special Librarianship in Action. *Special Libraries* 59 (no.10): 1241–1243 (Dec 1968).

Smith, John J. / The Library of Tomorrow. In *Proceedings of the 34th Session, International Libraries Institute, city, year.* 2v. city, press, year published.

Featherly, W. / Steps in Preparing a Metrification Program in a Company. ASME Paper 72-DE-12 presented at the Design Engineering Conference and Show, Chicago, Ill., May 8–11, 1972.

References to books should be in the order: authors, title, city, publisher, year, pagination.

Brown, Able / *Information at Work.* New York, Abracadabra Press, 1909. 248p.

Andrei, M. et al. / *The History of Athens.* The History of Ancient Greece, 10v. New York, Harwood Press, 1850. 1,000p.

Samples of references to other types of publications follow.

Chisholm, L. J. / "Units of Weights and Measure." National Bureau of Standards. Misc. Publ. 286. C13.10:286. 1967.

Whitney, Eli (to Assignee), U.S. patent number (date).

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Articles may range in length from about 1,000 words to a maximum of 5,000 words (up to 20 typed double spaced manuscript pages). Provide a title of one or two lines of up to 35 characters plus spaces per line.

Insert subheads at appropriate places in the text, averaging about one subhead for each two manuscript pages. Keep the subheads short (up to 35 characters plus spaces). Do not use more than one degree of subheads in an article. Provide a summary at the end of the article.

Write a brief author note, and include position title and address. In the author note, include information concerning meetings, symposia, etc., where the paper may have been presented orally. Also submit recent glossy black-and-white photographs of the authors.

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