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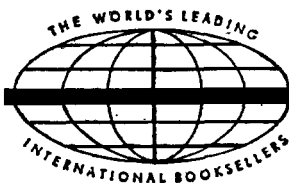
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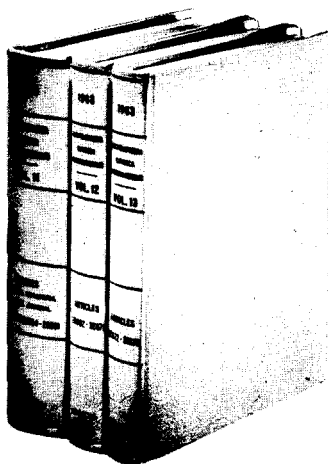
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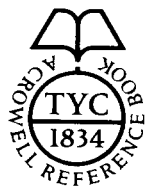
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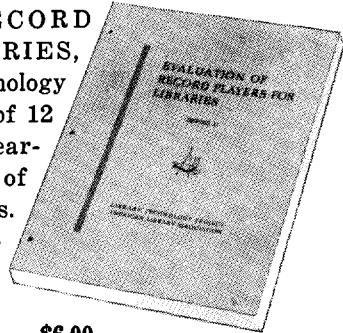
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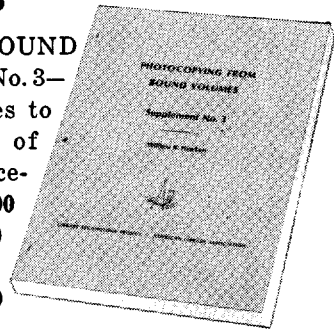
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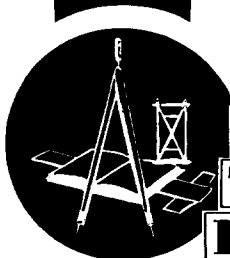
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# SPECIAL LIBRARIES

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# Preface to the Standards For Special Libraries

ONE OBJECTIVE OF SPECIAL LIBRARIES ASSOCIATION, as stated in its By-laws, is the promotion of high professional standards. This relates to the competence and endeavor of individual members; it also pertains to the characteristics and performance of service units and organizations that are called such names as special libraries or information centers. Achievement of excellence can be assisted by measuring devices. At the Association's 50th annual convention in 1959, its Professional Standards Committee took initial steps toward provision of such assistance.

The standards as here presented are not intended as a manual of operation. Neither do they set forth (except by inference) specific quantitative measures which, if followed, give automatic excellence. Following the precedent of accreditation and other similar standards, the qualities to be sought are presented instead, in a context that will point the way to their attainment. In operations of such variable parameters as special libraries, it is otherwise impossible to achieve any degree of empirical validity. It is intended that senior organizational management be given a clear guide to the elements which are present in a successful special library; the degree to which these elements are supported is directly related to the quality of operation.

It is hoped that this document will be of value to organizations considering establishment of a special library; to those reorganizing an existing facility; to professional library consultants in supporting their recommendations; to students of librarianship and information science; and to special librarians in their dialogues with executives of parent organizations. It should be understood that the phrase "special library" is not meant as strictly exclusive; the concept of "information center" as presently developing is to be read into this picture as well. Revision in the light of experience with these standards is planned.

Acknowledgment and thanks are certainly due to many individuals—far too numerous to list. Many Association members participated in Chapter and Division committees which prepared early drafts. Additional dozens completed the fact-finding survey questionnaire on which "profiles" of typical operations are being constructed; these profiles will be available later in a separate Association publication. The advisory committee to which succeeding drafts were submitted offered essential advice and modification, as did members of the Association's Advisory Council, which twice discussed the proposed standards. The successive Chairmen of the Professional Standards Committee deserve particular gratitude: at the inception, Samuel Sass (General Electric Company, Pittsfield, Massachusetts) and during the completion, Agnes Brite (New England Mutual Life Insurance Company, Boston, Massachusetts). Final production was greatly aided by the editorial assistance of Mary Allison. The key figure in the culmination of all effort was Professor Ruth S. Leonard (School of Library Science, Simmons College, Boston, Massachusetts), whose devoted concern and constancy under pressure provided the writing of the final draft, approved September 25, 1964, by the Association's Board of Directors.

*William S. Budington*

President, Special Libraries Association

# Objectives and Standards For Special Libraries

## I: Objectives

THE SPECIAL LIBRARY IS A MAJOR SOURCE OF INFORMATION IN THE ORGANIZATION IT SERVES.

The special library staff is responsible for providing the library materials and services designed to meet the information requirements of the library's clientele in fields pertinent to the purposes and work of the organization.

THE SPECIAL LIBRARY ACQUIRES, ORGANIZES, MAINTAINS, UTILIZES, AND DISSEMINATES INFORMATIONAL MATERIALS GERMANE TO THE ORGANIZATION'S ACTIVITIES.

The special library acquires materials and information for the organization's current and future needs. These materials must be organized for the most effective use by the library's clientele and staff. The library staff, when aware of the interests of its clientele, can bring pertinent materials and information to the attention of users before they are requested or in direct response to requests. Resources outside the library can also be called upon to answer users' needs.

THE SPECIAL LIBRARY SERVES ALL WHO HAVE APPROPRIATE NEED OF ITS SERVICES.

The objectives of the library regarding whom it is to serve and the services it is to provide should be clearly delineated, preferably in writing. To be effective, these responsibilities must be reviewed periodically and revised in accordance with changes in the organization's activities and advances in library and information technology.

## II: Staff

The quality of the special library's personnel is the most important factor in the effectiveness of the library as an information center for an organization. The responsibilities and qualifications of personnel who are competent to carry out the objectives and

functions of the special library are specified below.

THE SPECIAL LIBRARY ADMINISTRATOR IS RESPONSIBLE FOR ALL ADMINISTRATIVE AND PROFESSIONAL FUNCTIONS OF THE LIBRARY.

These functions are to:

1. Determine library policies consistent with the objectives of the organization.
2. Represent the library in the organization's administrative and planning sessions for the purpose of effecting changes in the library's operation.
3. Interview and make final selection of all applicants for positions on the library staff in cooperation with the responsible administrative officer.
4. Suggest salary ranges for the library staff and evaluate performance in accordance with organization policy.
5. Train and supervise all staff members.
6. Prepare job descriptions that define duties, responsibilities, and requirements of all positions.
7. Maintain effective communication with and among all staff members and keep them informed about policy matters that affect their work.
8. Provide for staff participation in interpreting the library's policies and services to the organization.
9. Establish procedures for all operations essential for the efficient management of the library.
10. Institute policies and assume responsibility for acquisitions, organization, and maintenance of the library's collection (Section III).
11. Plan, organize, and evaluate the library's services (Section IV).
12. Work with architects and planning specialists on problems relating to space and equipment requirements of the library (Section V).

13. Plan and justify a budget (Secton VI).
14. Perform or supervise the services described in Section IV.

THE SPECIAL LIBRARY ADMINISTRATOR SHOULD BE A PROFESSIONAL LIBRARIAN WHO CAN, BY VIRTUE OF HIS EDUCATION OR SUBJECT SPECIALTY, EXPERIENCE, AND PERSONAL QUALIFICATIONS, SUCCESSFULLY CARRY OUT THE OBJECTIVES AND FUNCTIONS OF THE SPECIAL LIBRARY.

The administrator of a special library should hold a degree from a library school of recognized standing and have three years of professional experience in a special library; or, he should be a subject specialist in the field pertinent to the organization's work who has demonstrated his professional competence through at least three years of professional experience in a special library. A combination of formal subject training and education in librarianship is desirable.

The special library administrator must have administrative ability and a knowledge of, or an aptitude toward, an organization's functions and special areas of activity. Other qualifications include analytical ability, capacity for investigation, and perseverance and thoroughness in searching for facts and information. Personal qualifications include judgment of a high order, flexibility, tact, poise, and initiative. These qualifications are important for all librarians.

THE SPECIAL LIBRARY ADMINISTRATOR MAY DELEGATE TO STAFF LIBRARIANS ADMINISTRATIVE AND SUPERVISORY DUTIES AND PROFESSIONAL RESPONSIBILITIES.

When several librarians are on the staff, they may be charged with one or more of these responsibilities: 1) selection of materials in special fields; 2) adaptation and implementation of cataloging, indexing, and classification principles and procedures appropriate to the library's collections; 3) reference and bibliographic services; and 4) supervision of library assistants, trainees, and clerical staff.

Such responsibilities require knowledge of the subject literature and its organization, comprehension of the library's resources, ability to interpret the collection in the light

of users' needs, and knowledge of reference and bibliographic methodology and the principles of cataloging and classification.

STAFF LIBRARIANS SHOULD BE PROFESSIONAL LIBRARIANS WHO CAN MEET CERTAIN QUALIFICATIONS IN EDUCATION AND EXPERIENCE.

A staff librarian should hold a degree from a library school of recognized standing, or he must have demonstrated the ability to adapt his subject or technical background to professional responsibilities through at least three years of experience in a special library.

SPECIALISTS OTHER THAN LIBRARIANS MAY BE PART OF THE PROFESSIONAL LIBRARY STAFF.

In large special library systems, optimum efficiency is attained through the employment of personnel who specialize in one or more of the services provided. In addition to subject knowledge, usually on an advanced level in the subject field pertinent to the organization, they require other special skills. The special positions described below may be filled by staff members who may or may not be librarians.

*The Literature Searcher* utilizes his knowledge of the organization of the subject literature and of the literature itself to make systematic searches, to locate specific facts, or to compile bibliographies. Formal library or bibliographic training is an asset in the efficient use and interpretation of the library collections, in organizing the results in bibliographic form, and in writing reports of investigations.

*The Translator* who is proficient in one or more foreign languages translates articles, reports, correspondence, and other material into English.

*The Abstractor* uses his writing and analytical abilities to summarize the essential factual content of articles and reports for card indexes and abstract bulletins.

*The Indexer* analyzes publications in depth by using special subject heading lists, thesauri of descriptors, or special vocabulary systems developed for storage and retrieval by computer or other means. The indexer

may also develop codes for machine indexing.

*The Information Systems Specialist* investigates new and changing techniques for handling information, particularly in the areas of computer programs, microdocumentation, flow charting, and statistical analysis.

#### PROFESSIONAL STAFF MEMBERS HAVE A CONTINUING RESPONSIBILITY IN FURTHERING THEIR EDUCATION.

In addition to being informed on current developments in librarianship and information technology, staff members should be encouraged and supported in programs of study and reading in the fields of knowledge related to the organization they serve. In some instances this program should take the form of formal courses; in others, self-study may be appropriate.

#### IT IS IMPORTANT THAT PROFESSIONAL MEMBERS OF THE SPECIAL LIBRARY STAFF PARTICIPATE IN PROFESSIONAL SOCIETIES CONCERNED WITH THEIR SPECIALTIES.

Staff members should be encouraged to contribute to their fields by engaging in committee work, holding office, and attending local and national meetings. Professional responsibilities include the communication of ideas and experiences through published papers and conference presentations.

#### NONPROFESSIONAL STAFF ARE RESPONSIBLE FOR THE CLERICAL TASKS THAT SUPPORT THE PROFESSIONAL STAFF'S WORK.

Some of the duties typically performed by clerical staff members are the following: ordering publications, checking in and routing periodicals, circulating materials, filing publications, cards, etc., preparing material for binding, performing photoduplication and messenger work, maintaining and requisitioning supplies, assisting in technical processing, and secretarial work.

Clerical staff members should have a high school education as a minimum and be formally trained in the use of typewriters and other business machines such as key punch. They should be selected with specific reference to the technical skills and per-

sonal qualifications needed in the jobs they fill.

#### THE PROPORTION OF NONPROFESSIONAL STAFF TO PROFESSIONAL STAFF DEPENDS UPON THE NUMBER OF PROFESSIONAL STAFF, THE SIZE OF THE COLLECTION, THE NATURE OF THE SERVICES, AND THE QUANTITY OF RECORDS MAINTAINED.

To meet minimum standards, a division of professional and nonprofessional functions is necessary. The special library must have at least one professionally qualified librarian and one clerical worker. The recommended ratio of nonprofessional staff to professional staff is three to two.<sup>1</sup> As the library expands its collection and services, the special library administrator is responsible for recommending the addition of both professional and clerical personnel.

### III: Collection

The special library's collection consists of the information sources that are acquired, organized, and administered for use by or in behalf of the library's clientele.

Physically, the collection may include a variety of forms and types of materials, not all of which are appropriate to a particular special library; books, pamphlets, preprints, reprints, translations, dissertations and theses; periodicals, newspapers, press releases, indexing, abstracting, and other services, transactions, yearbooks, reports, directories of organizations; external and internal technical reports; research and laboratory notebooks, archival materials; patents, trademarks, specifications and standards; audiovisual materials (photographs, slides, pictures, motion pictures, filmstrips, tape and disc recordings); and special collections (maps, sheet music, manuscripts, catalogs, legislative materials, clippings, microforms).

#### THE SUBJECT COVERAGE OF THE SPECIAL LIBRARY'S COLLECTION IS INTENSIVE AND EXTENSIVE ENOUGH TO MEET THE CURRENT AND ANTICIPATED INFORMATION REQUIREMENTS OF THE LIBRARY'S CLIENTELE.

The library's collection includes all basic, frequently used, and potentially useful materials. The range of subjects covered is

determined by the objectives of the organization; the depth of subject coverage in each field is governed by the nature of the organization's work. The special library administrator continually evaluates the scope and adequacy of the collection in the light of changes in emphasis or new developments in the organization's activities. Centralizing pertinent materials in the library, rather than scattering them in office collections, is important in effecting the basic goal of general accessibility of all sources of information. Occasional use of outside resources is necessary and desirable, but the criterion of immediate availability of materials demands major reliance upon the library's own resources. General reference works that supplement the library's special collections broaden the scope of the library's information services.

#### THE SIZE OF A SPECIAL LIBRARY COLLECTION DEPENDS UPON THE AMOUNT OF MATERIAL AVAILABLE THAT IS PERTINENT TO THE ORGANIZATION'S SPECIAL NEEDS.

The purpose and use of the special library's collection influence its size. Some libraries need large reference collections, multiple copies, and works that have historical value; others have highly selective collections, keep currently useful literature only, and retain only in microform older periodical sets and items of decreasing usefulness. Many libraries discard little used materials if they are available in the area. The rate and direction of growth of the library's collection should reflect the continuing requirements of the library's clientele.

#### ACQUISITION POLICIES OF A SPECIAL LIBRARY MUST BE ESTABLISHED WITHIN THE FRAMEWORK OF THE LIBRARY'S STATED OBJECTIVES.

The special library administrator is responsible for establishing specific acquisition policies pertaining to depth and extent of subject coverage, types of materials, gifts, and exchanges. He is constantly alert to new sources for procuring special materials and he systematically reviews all announcements and listings of published materials. An efficient acquisition program requires

sound business practices and well-organized acquisition records.

Libraries in organizations that issue publications may set up a program for the exchange of publications with other organizations. Procurement of individual titles or volumes on an exchange basis may be accomplished through a central clearinghouse or through cooperative arrangements with individual libraries or institutions. Both solicited and unsolicited gifts that add strength to the collection are desirable, provided no restrictions concerning their use or disposition are imposed.

The special library administrator can anticipate information needs if he is kept informed about all activities and future plans of his organization. Participation in planning sessions and discussions with subject specialists in the organization are essential to a continuing acquisition policy.

#### THE SPECIAL LIBRARY STAFF IS RESPONSIBLE FOR THE EFFICIENT ORGANIZATION OF MATERIALS AND FOR MAKING AVAILABLE THE CATALOGS, INDEXES, AND GUIDES NEEDED FOR PROMPT ACCESS TO THE MATERIALS AND THE INFORMATION CONTAINED IN THEM.

Basically, effective organization and control of materials require: 1) identification or bibliographic description of each item; 2) subject or content analysis; and 3) classification or provision for logical physical arrangement of the collections.

Policies and procedures for making materials and information accessible differ according to physical form, subject content, and use. Standard systems and procedures in cataloging and classification can sometimes be used, especially for book collections. Modifications of the basic principles of descriptive and subject cataloging and classification may be needed, however, for many special collections. The nature of informational sources in special libraries often requires the creation of unique and special systems.

Access to some parts of the collection and to special information may be through published indexes and abstracts. In many cases, a library must create its own indexing sys-

tems to meet its organization's own special needs. Greater efficiency may be attained through the use of new tools such as electronic data processing machines.

#### IV: Services

The special library functions as a service unit that provides information to further the objectives of the organization it serves. Its total service program is a dynamic one in which the staff anticipates needs and often obtains and presents pertinent information and materials before they are requested. It achieves its objective through reference and bibliographic services, flexible policies concerning loans and distribution of library materials, efficient dissemination of information, and other activities that encourage productive use of the library's resources.

#### THE SPECIAL LIBRARY STAFF LOCATES LIBRARY MATERIALS AND INFORMATION PROMPTLY UPON REQUEST.

Inquiries can take the form of requests for particular publications, for specific facts or data, or for information on explicit subjects. The special library staff selects and assesses materials relevant to an individual's need. The special library's reference service relies upon the staff's special knowledge and experience, their knowledge of the subject interests and working methods of the library's clientele, the library's collection, and agencies or individuals outside the organization that can supplement the library's resources. Answers to requests may involve a time span of several minutes to several hours, or longer.

#### REFERENCE SERVICES INCLUDE LITERATURE SEARCHING, COMPILING BIBLIOGRAPHIES, ABSTRACTING, AND INDEXING.

Literature searches conducted in response to specific requests may result in a selected or comprehensive list of references, a formal bibliography, a report of the information obtained, or collected publications for examination. Guidance may be offered to a client who wishes to perform his own literature search. When necessary, the literature searcher may use the resources of other li-

braries, or the library may arrange for an outside agency to conduct a literature search.

To meet current and future needs the special library staff may on its own initiative prepare selective or comprehensive bibliographies, with annotations or abstracts. When commercial indexing and abstracting services are inadequate for a particular library's needs, the special library staff compiles continuing bibliographies, indexes, abstracts, or digests of pertinent current literature as an efficient means of providing its clientele with needed information. Provision of special indexes to sources of information and to specific data is also an important reference function.

#### THE SPECIAL LIBRARY LENDS ITS MATERIALS, WITH THE POSSIBLE EXCEPTION OF REFERENCE SOURCES AND OTHER DESIGNATED RESTRICTED ITEMS.

The library's loan service includes an efficient charging and recall system, with provision for filling clients' requests promptly. Loan policy must be flexible enough to permit maximum use of materials. The library may have a separate document control system for classified technical reports and other restricted library materials.

As a substitute for lending individual items, the library may provide photocopies. It is essential that the library comply with "fair use" practices as applied to copyright material.

#### THE SPECIAL LIBRARY PROVIDES PROMPT TRANSLATION SERVICE.

If a translation requested is not readily available, the special library calls upon a qualified staff member or a commercial translation service to furnish it.

#### NEEDED PUBLICATIONS THAT ARE UNAVAILABLE IN THE LIBRARY OR IN THE ORGANIZATION MAY BE OBTAINED FROM ANOTHER LIBRARY OR INSTITUTION.

Special libraries in communities that have large general library resources may depend upon other libraries for materials of peripheral subject interest. The staff is responsible for maintaining detailed information about sources for all types of materials and

for establishing a cooperative, reciprocal interlibrary loan program with other libraries, in accordance with the American Library Association Interlibrary Loan Code. Libraries or other institutions may prefer to furnish library materials as photocopy or in microform rather than lend original publications.

#### AN EFFECTIVE SYSTEM FOR MAXIMUM UTILIZATION OF CURRENT PERIODICAL LITERATURE IS AN INTEGRAL PART OF THE SPECIAL LIBRARY'S SERVICE PROGRAM.

The system adopted will depend upon the nature and extent of periodical use, number of users, and other local factors. One or more of the following systems may be appropriate: display of periodicals in the library, prompt routing on a regular basis to specific individuals, routing or distribution of tables of contents pages, distribution of a selected list of articles or an abstract bulletin, or purchase of multiple subscriptions for individuals or groups.

Many organizations pay for employees' memberships in societies through which journals and other publications are received. It is often possible for the library to enlarge its collection by making arrangements with such individuals to utilize these publications.

#### CONSULTING ACTIVITIES MAY BE ADDED RESPONSIBILITIES FOR THE SPECIAL LIBRARY STAFF.

As information specialists in the organization, professional staff members may act as consultants to individuals or groups who are concerned with organizing personal information files or retrieval systems. The staff may also assist research workers by suggesting other sources or agencies for materials and information beyond the scope of the library's own resources.

#### THE SPECIAL LIBRARY IS RESPONSIBLE FOR INFORMING ITS CLIENTELE OF ITS RESOURCES.

Specific items of special pertinence can be brought to the attention of individuals through the display of materials, direct routing, acquisition lists of new materials, selective lists, and other bulletins. New services provided by the staff should be publi-

cized in appropriate publications including library bulletins or the organization's newsletter or employee publication. Orientation of new personnel in the organization may include personal instruction or distribution of a brochure describing the library's holdings and services.

### V: Physical Facilities

The special library needs adequate facilities in a physical environment conducive to optimum use of the library's collections and services. In planning a new library or a relocation or expansion of existing quarters, the best results can be achieved through direct consultation between the special library administrator and the space-planning group of the organization. The special library administrator is responsible for a precise and realistic statement of the physical requirements for collections, services, and staff activities.

#### *Location*

#### THE SPECIAL LIBRARY SHOULD BE CONVENIENTLY LOCATED FOR ITS USERS.

Direct contact between clients and the library is usually necessary, although other means of communication may be used effectively.

#### LONG-TERM PLANNING FOR THE LOCATION OF THE SPECIAL LIBRARY IS IMPORTANT.

Initial choice of the library's location must permit space expansion for at least five years. As an organization grows, the scope and activity of its library may also increase. Anticipation of this growth factor will eliminate the necessity of frequent moving of equipment and materials inherently difficult to move.

#### PROVISIONS FOR THE SAFETY OF LIBRARY MATERIALS AND FOR EFFECTIVE WORKING CONDITIONS FOR STAFF AND USERS ARE NECESSARY.

The special library administrator, in consultation with the architect and engineer, must plan for the particular structural and installation features necessary for the library's service program. Special attention to the following is required: 1) floor loads



within structural allowances; 2) quarters free from machinery vibrations, outside noise, and odors; 3) adequate ventilation and moisture control for the preservation of library materials; 4) proper quantity and quality of illumination for reading, study, and reference use of library materials; 5) appropriate placement of outlets for electric equipment; and 6) the control of sound by acoustical treatment of ceilings, floors, and partitions.

### *Space and Equipment*

The layout of a functional, efficient library is the joint responsibility of the special library administrator and the space-planning group of the organization. Allocations of space vary, but they must allow for three major fields of activity: 1) space for the library's service functions, e.g., reference, reading and study, loan services; 2) space for storage, e.g., shelving and filing of the library's collections; and 3) space for technical processes, e.g., acquisition, cataloging, etc.

The amount of floor space and specific requirements for each function are calculated on the basis of standard specifications (see Appendix) and on the knowledge and experience of the special library administrator. He can also recommend both standard library equipment and equipment of special design.

### SERVICE FUNCTIONS

The reference functions of the library require equipment for the library's reference resources in a convenient location with adequate space to facilitate their use. Desk space for reference personnel, space for catalogs, indexes, and other special equipment, e.g., dictionary and atlas stands and file cabinets, for parts of the reference collection are also needed.

Necessary equipment includes a separate service desk for the loan and return of library materials. Microfilm and Microcard readers and photocopiers for the use of staff and clientele may be located in the reference and loan service areas or in an adjacent partitioned space.

Adequate table space in a quiet area must be provided for individuals who use the library for reading, study, or research. Provision for individual study tables or carrels and for ready access to current issues of periodicals is also desirable.

### STORAGE OF THE LIBRARY'S COLLECTIONS

The stack area for the book and periodical collections must be conveniently located and open for reader use. For security and proprietary reasons, a separate area to which limited access is provided may be required for technical reports, classified documents, laboratory notebooks, rare books, or archival materials.

The special library administrator can estimate present shelf requirements on the basis of standard formulas (see Appendix). He sets up retention and discard schedules, estimates the growth rate of the collection, and forecasts the number of additional shelves needed within a given time. If less used materials are retained, they may be stored in a separate stack area where space may be less valuable or floor load allowance greater.

A variety of library materials may be stored in filing cabinets. Special equipment for filing informational materials other than those in conventional "book" form is necessary.

### TECHNICAL PROCESSES

The amount of office space needed depends in large part upon the number of the professional and clerical staff who perform the "behind-the-scenes" functions of the library. This area is used for the acquisition, cataloging, classification, and indexing of library materials, physical processing of the materials, preparation of books and periodicals for binding, and general clerical and secretarial work. It should be located where the necessary noise and movement will not be distracting to the library's clients. Ample desk, table, counter, cabinet, shelf, and aisle space, and appropriate placement of equipment are necessary to provide efficient working conditions for the professional and clerical staff.

## VI: Budget

### THE BUDGET OF A SPECIAL LIBRARY SHOULD BE BASED ON RECOMMENDATIONS OF THE SPECIAL LIBRARY ADMINISTRATOR.

The initial analysis of the library's responsibilities and recommendations for budgetary support should come from the library administrator, whether the library has a separate budget or the allocations are part of the budget of a larger unit. The final budget is the joint responsibility of the library administrator and his immediate superior. They must agree upon the desired scope and extent of the library's services and the estimated and allowable costs of those services in terms of staff, library materials, supplies, operating expenses, and professional association expenses.

### IT IS RECOMMENDED THAT THE GREATER PROPORTION OF THE LIBRARY BUDGET BE ALLOCATED TO PROFESSIONAL AND NON-PROFESSIONAL STAFF SALARIES.

If a special library meets the standards for staff, library materials, and services, the portion of the library budget assigned to salaries will normally fall within the 60-79 per cent range,<sup>2</sup> provided overhead is not charged to the library budget. This ratio will assure a staff with the necessary qualifications to provide the services described in this document. Some variation in ratios must be expected for special libraries that receive a large percentage of their materials without cost. The initial budget for a new library will require a considerably larger percentage of the whole for basic library materials and capital expenditures. The initiation of programs in new subject areas will require increased expenditures for publications.

### A SPECIAL LIBRARY ADMINISTRATOR HAS THE RESPONSIBILITY AND AUTHORITY FOR EXPENDITURE OF HIS BUDGETED FUNDS.

The spending of the budget allocations rests upon the professional knowledge and judgment of the library administrator. He may himself manage the financial records necessary to carry out his responsibility for financial administration of the library. In

any case, he maintains close liaison with the organization's accounting department or business office.

### Appendix: Standard Specifications

#### STACK AND OTHER SHELF AREAS

Live load for shelving and books: 150 pounds per square foot<sup>3</sup>

#### Dimensions of shelving

##### Height

7½ feet: 7 shelves

3½ feet (counter height): 3 shelves

Width of shelf: 3 feet

Depth of shelf: 8, 10, 12 inches

#### Stack area

Each section: 7 shelves (3 feet wide)

Each range: no more than 5 double-faced sections or 15 feet

Minimum aisle space between ranges of parallel stacks: 3 feet

#### Shelf requirements

Number of volumes per foot: The following figures taken from suggestions of three manufacturers of shelving as quoted by Randall<sup>4</sup> show the average number of books or periodical volumes that occupy one foot of shelf space.

Reference	6-7
Economics	7-8
Technical and scientific	6
Law	4-5
Bound periodical vols.	5

Number of volumes per standard section (7½ feet high, with 7 shelves, 3 feet wide): Calculations should be based on shelves being no more than two-thirds full. The following figures represent the average capacity for books per standard section, 7 shelves, two-thirds full. Sections containing oversize books, quarto or larger, will not take 7 shelves. Calculations should take into account a proportionately lower figure based on the ratio of oversize books. For periodicals the number of shelves per section is usually 6 and sometimes 5. The figure for periodicals is based on one title per shelf. Calculations should be

based on 15 volumes per shelf for any title extending more than 3 feet.

Reference	84-98
Economics	98-112
Technical and scientific	84
Law	56-64
Periodical vols.	60 (6 shelves)

#### GENERAL SPACE REQUIREMENTS

(The following figures cover only the areas described and do not include overlapping aisle space.)

#### Aisles and passageways

Between reading and study tables

4 feet, if 1 chair

5-6 feet, if 2 chairs, back to back

Between tables and walls: 5 feet

Aisles at end of tables: 3 1/2-4 feet

In front of loan service desk: 4 feet

In front of card catalog: 5 feet

In front of files: 3 feet

Between facing files: 4 feet

Between staff desks: 4 feet

Between staff desks in horizontal row:

2-3 feet

#### Area for technical processes

Allotment for each person to include desks, work tables, shelves, etc., and passageways: 125 square feet

#### LEVELS OF RECOMMENDED ILLUMINATION

Location	Footcandles <sup>5</sup>
Reading room	70
Storage (shelves and files)	30
Staff areas	70

#### CITATIONS

1. Based on findings of the Special Libraries Association's Professional Standards Committee's Survey of Selected Libraries, 1964 (unpublished).
2. Derived from a study of responses to Special Libraries Association's Professional Standards Committee's Survey of Selected Libraries, 1964 (unpublished). Figures adjusted to eliminate overhead.
3. AMERICAN STANDARDS ASSOCIATION. *American Standard Building Code Requirements . . . A58.1-1955*. New York: 1955, p. 8.
4. RANDALL, G. E. Library Space and Steel Shelving. In Lewis, C. M., ed., *Special Libraries and How to Plan and Equip Them*. New York: Special Libraries Association, 1963, p. 18.
5. Based on ILLUMINATING ENGINEERING SOCIETY. *IES Lighting Handbook: The Standard Lighting Guide*, 3d ed. New York: 1959, Fig. 9-53 (p. 9: 80); see also p. 12, 21-6.

## Reference Data for Government Contractors

RICHARD S. HULEATT



A CHALLENGE confronting business and industry, which tests the resourcefulness of the special librarian, is that of readily providing required reference data for use on government bids, proposals, and contracts.

No formal courses describing methods of acquisition or the application of this data are available to a company that is a government

contractor. The many sources of data and the multitude of varying procedures for obtaining data from each procuring activity tend to confuse a contractor more often than assist him in completing of a bid or contract. Inability to readily obtain and thus be able to interpret requirements, can lead to misapplication of requirements resulting in loss of bid, proposal, or contract, rejection of the final product, or increased cost to the government and resultant loss of profit and prestige to the contractor. It is absolutely es-

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sential, therefore, that companies have a proven method for access to and storage of the data they need to use for their government business and that the data acquired is current and complete.

A prerequisite to proven and continued availability of reference data is the establishment of a single company control office to serve the needs of the entire company. Whether the control office is part of a company library, technical information center, or related area is not particularly important, although highly desirable. The major criterion is that it is a specialized information center and procedures for its administration are not applicable to a conventional library system. It is truly a special library.

The purpose of the control office is primarily to supply, control, and monitor required data to assist in the completion of specific contracts. The control office, however, consolidates *all* contract requirements for the entire company, representing considerable savings because less material and effort are needed and duplicate control offices are not required.

The following steps are suggested for those interested in providing their companies with a control office to meet the needs of their government business.

### Step 1: Definitions

The following definitions are excerpts from those contained in USAF S-1-5-1,<sup>1</sup> unless otherwise noted.

#### CONTROL OFFICE:

The office delegated at a contractor's installation to consolidate data requirements, prepare and submit requisitions, receive and distribute specifications and related publications.

1. The contractor's plant will establish *one* control office to submit requests and receive data for the installation.
2. The requirements for specifications and related publications are dependent on the assigned or contracted mission of the organizations located at an installation. Therefore, each organization within an installation will determine its requirements and submit them to the control office for consolidation.

#### REFERENCE FILE:

A temporary, limited file of specific specifications and related publications for use on a given project at operational level. Files will be established de-

pendent upon need and justification. The number of files will be held to a minimum consistent with operating needs.

#### AUTOMATIC DISTRIBUTION:

Submission of a subscription list (or requirement tables) is the means of establishing distribution of future issuances of specifications and related publications.

#### REQUISITIONS:

The method used to order requirements of specifications and related publications for initial files or one-time use only.

#### APPROVAL:

The control office will review and approve or disapprove all requirements. The consolidated requirements must be signed signifying a justified need. The signature may be that of any person charged with the responsibility of approving such requests for the installation.

#### CONTROL OF DATA:

When documents are removed from files, action will be taken to ensure that file room personnel have knowledge of the location of borrowed material.

#### PROPERTY ACCOUNTABILITY:

"Publications and forms are organizational—*not* personal—property. They will not be issued to individuals unless specifically authorized."<sup>2</sup>

## Step 2: Indexes and Reference Sources

The following is a listing of reference sources used by the control office. While as many pertinent documents have been listed here as possible, some specialized indexes peculiar to a particular procuring activity may be applicable and should be obtained also. (There are numerous such specialized departmental indexes.)

#### GENERAL

*Department of Defense Index of Specifications and Standards (DODISS)*

All material listed is available from the DOD-SSP Single Stock Point, NSD, Philadelphia. Available from Government Printing Office,<sup>3</sup> \$25 per year includes bimonthly supplements.

*FSC Listing of DOD Standardization Documents (FSC LISTING)*

Formerly vol. III of DODISS. Particularly useful for cross-referencing by Federal Supply Classification and for subscription requirements. Available from GPO, \$11 per year includes bimonthly supplements, catalog no. D 7.14/2:964.

*Defense Standardization Manual (M200A)*

Describes policies and procedures for generation and processing of standardization documents contained in DODISS. Available from GPO, \$6 for indefinite period.

*Index of Federal Specifications, Standards and Handbooks*

Available from GPO, \$1.50 per year includes monthly supplements.

*Index of Specifications Cancelled or Superseded from 1 Jan 1947 to 4 Feb 1960*

Available from GPO, 75¢ each.

*U. S. Government Purchasing, Specifications, and Sales Directory*

Available from GPO, catalog no. SBA 1.13/3:963, 60¢ ea.

*U. S. Government Organization Manual*

Available from GPO, catalog no. GS 4.109:964, \$1.75 ea.

*NBS Indexes (National Bureau of Standards)*

Available from GPO:

1901 to 1947, catalog no. C 13.4:460, \$1.25 ea.; 1947 to 1957, catalog no. C 13.4:460/supp 14, \$1.50 ea.; 1957 to 1960, catalog no. C 13.10:240, \$2.25 ea.; 1960 to 1963, catalog no. C 13.4:460/supp 23, apply.

*GPO Monthly Catalog*

Lists publications issued by the various government agencies. Available from GPO, \$4.50 per year includes monthly supplements.

*Price Lists*

Available from GPO, free on request.

Selected publications for sale by GPO:

- No. 19 Army Field Manuals and Technical Manuals
- No. 36 Government Periodicals
- No. 63 Navy, Marine Corps and Coast Guard
- No. 64 Scientific Tests and Standards
- No. 79 Aviation
- No. 82 Radio and Electricity
- No. 84 Atomic Energy
- No. 85 Defense

*Standardization Activities in the United States*

Lists many of the industrial societies; gives description and address of each. Available from GPO, catalog no. C 13.10:230, \$1.75 ea.

*Scientific Information Activities of Federal Agencies (NSF Series)*

A series of bulletins by the National Science Foundation describe the policies and practices of Federal agencies. Available from GPO at prices indicated:

NSF 59-58: Department of Commerce, Part I, 10¢

NSF 60-9: Government Printing Office, 5¢

NSF 60-56: National Science Foundation, 10¢

NSF 60-58: Department of Commerce, Part II, 20¢

NSF 60-59: Department of Commerce, Part III, 10¢

NSF 61-12: Federal Communications Commission, 5¢

NSF 62-17: U. S. Air Force, Part II, 20¢

NSF 62-19: Federal Aviation Agency, 10¢

NSF 63-16: U. S. Air Force, Part IV, 20¢

NSF 63-38: U. S. Atomic Energy Commission, 15¢

NSF 63-42: U. S. Navy, Part I, 25¢

NSF 63-43: Office of Naval Research, Part II, 15¢

NSF 63-45: U. S. Air Force, Part I, 25¢

NSF 63-53: U. S. Navy, Part III, 15¢

AIR FORCE

Air Force Technical Order Indexes (See T.O. 0-1-01 for categories)

USAF S-1-5-1: Air Force Logistics Program for Engineering Data

T.O. 00-5-2: Distribution and Storage of AF Technical Order System Publications

S-2A-1: Index of USAF Stock Lists, Department of Defense Federal Supply Catalogs and Related Cataloging Publications

AFR 0-2: Numerical Index of Standard Air Force Publications

AFR 0-4: Index of Specialized, Recurring, Miscellaneous and Other Government Agency Publications Applicable to the Air Force

AFR 0-6: Subject Index of Air Force Publications

AFR 0-9: Numerical and Functional Index of Departmental Forms

AFLCR 0-2: Numerical Index of AFLC Standard Publications

AFLCR 0-9: Numerical and Functional Index of AFLC Forms

AFSCR 0-2: Numerical Index of AFSC Standard Publications

AFSCR 0-9: Numerical and Functional Index of AFSC Forms

These and similar Air Force indexes are available through the local Air Force Contract Management District, Administrative Contract Officer (ACO), or the Air Force Plant Representative (AFPR).

Handbooks of Instruction (Air Force):

AFSCM 80-1, for Aircraft Designers

AFSCM 80-3, for Aerospace Personnel Sub-System Designers

AFSCM 80-5, for Ground Equipment Designers

AFSCM 80-6, for Ground Support Equipment Designers

AFSCM 80-7, for Aerospace Vehicle Equipment Designers

AFSCM 80-8, for Missile Designers

AFSCM 80-9, for Aerospace Systems Design

These handbooks are available on application by defense contractors to: Systems Engineering Group RTD (SEPH), Wright-Patterson AFB, Ohio 45433.

NAVY

NAVWEPS 00-25-543

List of Standard Drawings approved by the Bureau of Naval Weapons

NAVWEPS 00-25-544

List of Specifications and Standards (book form) approved by the Bureau of Naval Weapons

NAVSANDA PUBLICATION 2002

Navy Stock List of Publications and Forms.

See Check List of Effective Sections contained in this publication for applicable sections and parts.

These are available through Navy procurement activities as contract requirements dictate.

#### ARMY

##### *DA Pamphlet 310-4*

Index of Army technical manuals, technical bulletins, etc. This is available through Army procurement activities as contract requirements dictate.

##### Military Handbooks:

*MIL-HDBK-161*, Electronic Communication Equipment Directory

*MIL-HDBK-162*, Radar Equipment Directory

*MIL-HDBK-172*, Electronic Test Equipment Directory

*MIL-HDBK-216*, RF Transmission Lines and Fittings

*MIL-HDBK-300*, Aerospace Ground Equipment Directory

These and other military handbooks are available from DoD-SSP, NSD, Philadelphia, or through the procuring activity.

#### INDUSTRIAL SOCIETIES

##### *AMS Index* (Aerospace Material Specifications Index)

Available from: Society of Automotive Engineers, 485 Lexington Ave., New York, N. Y. 10017. 50¢ ea. Other SAE indexes on request.

##### *ASTM Index*

Available from: American Society for Testing and Materials, 1916 Race St., Philadelphia, Pa. 19103. Free (extra copies \$1 ea.).

##### *EIA Index*

Available from: Electronic Industries Association, Room 2260, 11 West 42nd St., New York, N. Y. 10036. Free.

##### *ASA Index*

Available from: American Standards Association, 10 East 40th St., New York, N. Y. 10016. Free.

##### *NEMA Index*

Available from: National Electrical Manufacturers Association, 155 East 44th St., New York, N. Y. 10017. Free.

##### *NAS Index* (National Aerospace Standards)

Available from: National Standards Association, 1321 Fourteenth St., N.W., Washington, D. C. 20005. \$1.

##### *AGMA Index*

Available from: American Gear Manufacturers Association, 1 Thomas Circle, N.W., Washington, D. C. 20005. Free.

##### *UL Index*

Available from: Underwriters Laboratories, Inc., Chicago, New York, or San Francisco offices. Free.

##### *MPI Index*

Available from: Metal Powder Industries

Federation, 60 East 42nd St., New York, N. Y. 10017. Free.

##### *ASME Index*

Available from: American Society of Mechanical Engineers, United Engineering Center, United Nations Plaza, New York, N. Y. 10017. Free.

Defense Standardization Manual M200A, Appendix IK, now lists all industrial societies that are cleared and approved as DOD sources.

Nearly all the industrial societies and the Government Printing Office make use of coupons for the sale of documents. As this is a convenient method of ordering documents as they are required, it is suggested that an ample supply of coupons be maintained.

#### Step 3: Establishing the Official Company Control Office

To establish that there will be only *one* company control office responsible for reference data, it is a good idea to first clear this requirement with company management. Many companies provide for a directive, manual, or outline on how to accomplish basic functions within the company to maintain a uniformity of practices. This is the area that should be completed and approved prior to attempting to establish a control office. With the support of a standard practice or procedure, there will be fewer problems explaining to others the function the office is attempting to fulfill.

A sample statement reads: "The ABC Company Control Office is the official company control office responsible for the obtaining, distribution, and maintenance of government reference data required by bids, proposals, and contracts. All requests for government reference data will be forwarded to the ABC Company Control Office for supply action." A listing of typical documents the office can provide might be added (see Step 7).

#### Step 4: Standard Procedure for Review of Data

The control office must be able to monitor all data that enters the company from various sources and all data requirements as referenced in each bid, proposal, and contract.

The basic rules for accomplishing this are:

1. The control office (or someone delegated by the control office) reviews and makes a record of all data "packages" received with bids, proposals, and contracts. A record is made of the person who will have the documents, and they are stamped with the control office identifying rubber stamp so that they will be returned there for filing after immediate use. This ensures having the material on file should the need arise at a later date.

2. Bids, proposals, and contracts are reviewed for data that is required but not contained in the data "package." This material is then requisitioned immediately in accordance with instructions as indicated by the bid, proposal or contract.

3. A memo or notice from the control office may be forwarded to the applicable bid team, marketing, or contract administration office, indicating the revisions of government documents in effect at the time of invitation for bid. (The revision of government documents in effect at the time of invitation for bid is the legal revision to which the contractor is contractually bound unless otherwise specified in the terms of the contract.) Utilization of a standard bid review form is an asset for control office records, the bid team, and for future company reference.

4. All company personnel are informed of the control office function, and all other areas are prohibited from directly contacting government agencies for data unless otherwise permitted or coordinated by the control office. This will avoid embarrassment to both the individual and the control office by ensuring that all requests for data are reviewed and justified before ordering as well as avoiding any duplicate requests for the same material.

It is this step which will determine the specific procuring activities and government agencies with which the office will be primarily in contact and those specific procedures required for ordering data.

#### **Step 5: Standard Operating Procedures**

Avoid verbal instructions for handling data for control office personnel who will be

processing material. Establish a set of rules such as how to process requests for data, how to determine the latest revision of a document, what records to maintain, what forms to use and so on. Standard operating procedures will save much time. A suggested list of procedures might include:

- 1 Charter (explain what the office is doing)
- 2 Automatic distribution of documents (such as QPL's to Purchasing—a must!)
- 3 Ordering documents (how to do it)
- 4 Ordering Air Force technical orders (spell out special ordering instructions required for certain types of publications)
- 5 Handling classified material
- 6 Maintenance of superseded or cancelled documents
- 7 Local directory for ordering data

#### **Step 6: Filing**

Some reference data files I have seen have been quite unusable because the individual responsible for initiating or maintaining them had no concept of normal filing sequence or simply filed data according to his own needs.

Data filed by the control office should be filed in the same sequence as it is found in the index for that material. Regular military specifications and standards consist of about 5 to 30 pages and fit neatly in a standard file folder for regular letter-size files. Book form documents, which are too bulky for regular files, should be placed in bookcases, in normal filing sequence. Sheet form documents, such as MS drawings or QPL's, should be placed in binders for bookcase display and kept in normal filing sequence.

There are two purposes for this "normal filing sequence." One is that the material is filed in a logical sequence and is easily located; the other is that revisions of a document may be checked readily at the time of issue against that shown in the index.

Copies of cancelled or superseded documents should be retained in the files to cover requirements of earlier contracts or for comparison purposes. A single copy of each such document should be sufficient for this purpose. Previous revisions of documents are extremely difficult to obtain, and

much effort can be eliminated by providing for their maintenance.

Indexes, guides, handbooks, and other reference sources used by the control office should be kept in a centrally located, readily accessible area. It is essential that this file be kept as up to date as possible as it is the key determining the effectivity of all other documents. These reference sources are never circulated outside the control office, although individuals may be allowed to use them freely at the control office.

Control cards should be used for each document ordered or received. Each card should note such things as the number or title of the document requested, the date ordered, who requested the data, where it is to be sent, and where it was ordered.

In addition, two charge cards should be completed. One card is kept in the file with the applicable document and indicates those individuals who have a copy of that particular document. The second card is kept in a separate file by the individual's name only. This shows the documents charged out to him. The cards will readily locate needed documents and in many cases eliminate a need for reordering.

A further control for files is the termination sheet for personnel who are leaving the employ of the company. The personnel department issues to individuals a sheet that requires the signature of the control office after all material charged out to that person has been returned.

Be sure to maintain a single file copy of each document received. Do not circulate the file copy but restrict it for reference use at the control office only. Extra copies can be made in an emergency, and many times the reordering of additional copies of a document will not be necessary.

#### **Step 7: Pointers: Suggestions— Recommendations**

The sample functional flow chart shows how data is obtained and distributed through the control office. Note that the prime contractor is often responsible for supplying data to the sub-contractor and vendors.

In requesting data, it should be remembered that each procuring activity is prima-

rily interested in furnishing information and data relative only to its own requirements.

There are two different philosophies regarding the availability of data from government sources:

1. "Documents are made available to contractors only on a 'need to know' basis relative to the performance of work under a particular contract. This means that the contractor must have the technical information in question to complete the contract. . . . Only requests for documents required for immediate usage under a specific contract will be processed by this office since the technical data files of non-government activities cannot be maintained at Government expense."

2. "Specifications and related publications may be furnished automatically to industry when the recipients are working under . . . contracts requiring the use of the data, or when it is evident that the distribution will be beneficial . . . from a research and development standpoint."

It is the responsibility of the control office to seek out those government agencies and sources which will be willing to furnish data that will be beneficial as well as those that have the responsibility of administering contracts. Many will refuse to voluntarily furnish data unless specifically required by a particular contract.

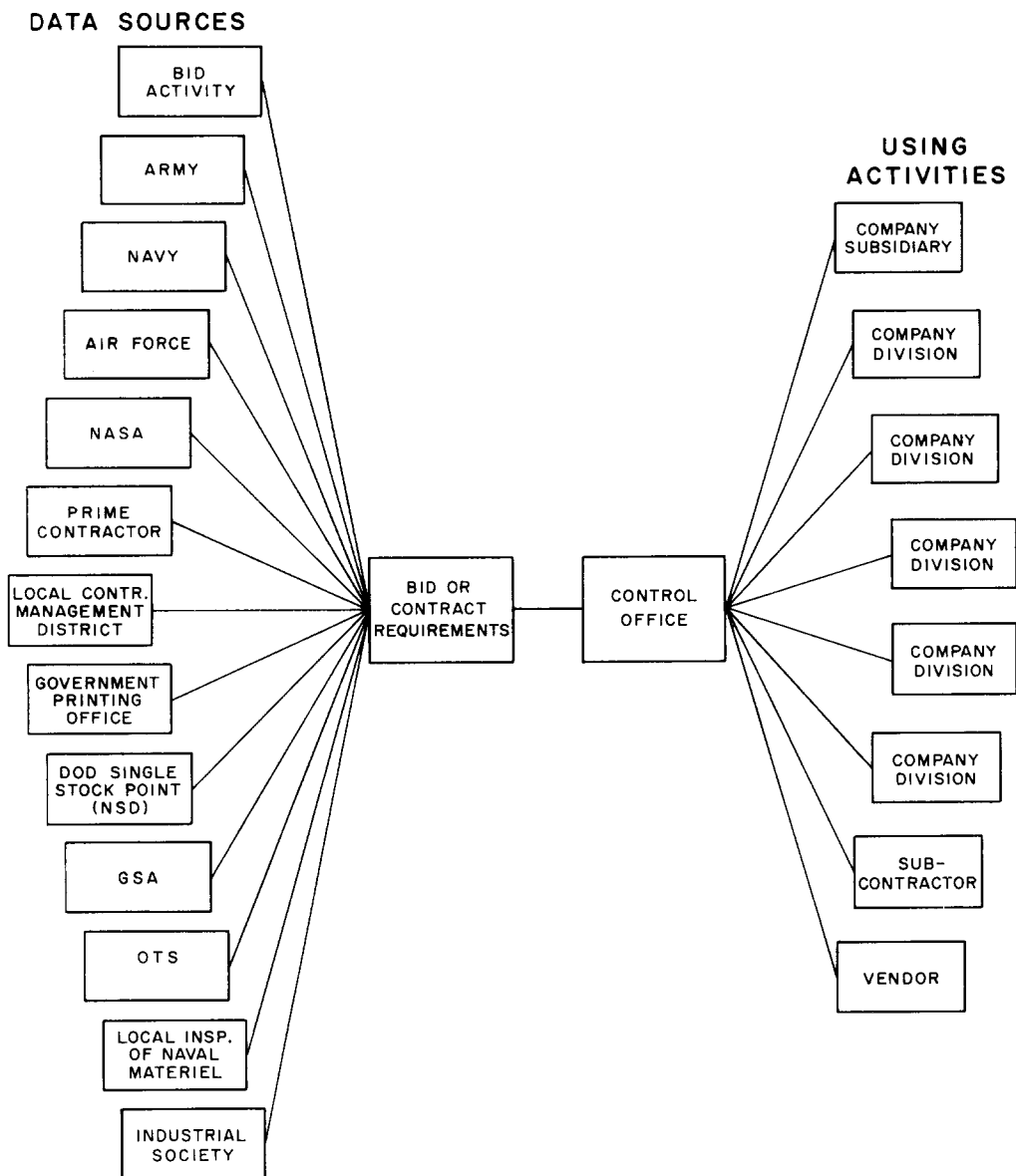
While many local government agencies will be cooperative in supplying emergency needs, do not wear out your welcome by using it as a single source for all requests. Process all requests in the proper procedure as outlined and shown in the bids, proposals, and contracts.

Contractors desiring automatic distribution of standardization documents (those indexed in DODISS) may obtain them by applying to the Director, U. S. Navy Publications and Printing Service Office, Building 4, Section D, 700 Robbins Avenue, Philadelphia, Pa. 19111. The distribution is provided by means of a subscription service arranged by FSC Classes at an annual cost of \$6 for each FSC Class ordered.<sup>4</sup>

To determine the FSC Classes required, consult Cataloging Handbook H 2-1 *Federal*



# FLOW CHART



*Supply Groups and Classes*<sup>5</sup> and the *Federal Supply Classification Listing of Standardization Documents* (see step 2). A more detailed breakdown is available through Cataloging Handbook H 2-2 for every specific category in each FSC Class. These handbooks help determine subscription requirements.

This source is recommended in lieu of any commercial agency selling the same data

because the Navy service will supply directly material as it is released while the commercial source must always act as a secondary (and thus later) source.

It is further recommended that contract requirements be ascertained to determine if the company is eligible for automatic distribution of any documents without charge via official channels. Purchase of these docu-

ments by subscription or outright purchase from either government or commercial sources can be an expensive proposition. Certain subscription costs are allowable expenses under government contracts.

A company library and control office activity differ primarily in that a library is usually responsible for periodicals, textbooks, technical notes, technical reports, DDC documents, and similar publications, which are usually purchased or are not necessarily required by contractual obligations.

A sample listing of the typical publications covered by the control office are:

- Military specifications
- Military standards
- MS drawings
- AN drawings
- AND drawings
- JAN drawings
- Qualified products lists (QPL)
- Military handbooks
- Air Force drawings
- Air Force bulletins
- Air Force exhibits
- Air Force regulations (AFR)
- Air Force manuals (AFM)
- Technical orders (TO)
- Technical manuals (TM)
- Navy drawings
- Army drawings
- Federal specifications
- Federal standards
- Cataloging handbooks
- Department of Defense publications
- Industrial Society publications (ASA, SAE, EIA, NEMA, etc.
- NASA publications, specifications, etc.

In choosing the individual who will be responsible for the control office, experience and previous association with this data is a prerequisite, but a library science degree is not necessary as courses for handling these types of materials are non-existent.

The control office is unlike any of its singular government counterparts and must therefore be as versatile as possible, be able to consolidate *all* the government agencies' data into one usable system for the contractor. Therefore, the control office must keep abreast of changes in all requisitioning procedures required or used by each agency.

#### Conclusion

The amount of time, effort, and money saved by both the government contractor

and the government in the proper establishment of the contractor's control office is of considerable significance.

The types of data received and the methods used in ordering data will vary as contract requirements and the product dictate for each company. However, all should utilize a control office as a central clearinghouse for all reference data requirements, or as Senator Humphrey has stated, "Contractors must put their own information houses in order."

Cooperative effort between the government and industry concerning the ready availability of reference data must continue to be expanded and explored.<sup>6</sup> The Department of Defense has already initiated some action toward a greater consolidation of effort concerning reference data.<sup>7</sup> More emphasis on this data will be placed at the contractor's level of responsibility in the coming future. It is the joint responsibility of both the government and industry to eliminate as much duplication of effort and waste as possible for the over-all national economy. One of the means of ensuring the proper quality and types of materials needed for government contracts lies in establishing better methods of providing reference data.

#### CITATIONS

1. USAF S-1-5-1 requires establishment of a company control office when cited in Air Force contracts. In addition, ASPR, Sect. 304.6 Appendix B, and ONMINST 5000.3 Vol. 2, Sect. 206253 also require control of data.
2. AFM 5-4, chap. 6, sect. A, 29d.
3. GPO: Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.
4. Make checks payable to the Treasurer of the United States.
5. Handbook H 2-1 available from GPO at 30 cents each; Handbook H 2-2 available from GPO at \$7 per year.
6. *Interagency Coordination of Information*, see Hearings before the Sub-Committee on Reorganization and International Organizations, Government Operations Committee, U. S. Senate, Agency Coordination Study (GPO).
7. DOD Directive 5100.36, released Dec. 31, 1962, established a basic DOD concept for handling technical information; provided for a Director of Technical Information; and also a DOD Production Engineering and Logistics Information Program.

# Analysis of Library Systems: A Bibliography

LORRAINE PRATT

THIS bibliography consists of pertinent references selected from the literature on the methodology of analyzing library systems and covers the period 1960 to September 1964. Articles dealing with time and cost studies, work measurements and sampling procedures, management methods in libraries, elements of systems design, use of graphic display techniques, and criteria for evaluating performance in an information activity are included.

## Systems Design

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Miss Pratt is Manager of Library Services at the Stanford Research Institute, Menlo Park, California. This bibliography was originally prepared for the San Francisco Chapter's all-day "Symposium on the Analysis of Library Systems," December 14, 1963, and has been revised and up-dated for publication.

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## Southern California H. W. Wilson Company Chapter Award Entry 1964

TWO MAJOR ACTIVITIES, which would not have been successful without the support of the membership as a whole, pointed up the Southern California Chapter's efforts to be a participating member of the business and professional community.

1. A joint dinner meeting was held January 24, 1964, sponsored by the Biological Sciences Group of the Chapter and the Medical Library Group of Southern California. It was held at the Los Angeles County Medical Association, and the subject was The Hollywood Museum's proposed film information clearinghouse. Over 200 Chapter members, 35 guests, and seven panel members attended.

Publicity was coordinated through the Museum's Publicity Department and the Chapter Public Relations Director to obtain maximum coverage in the press, national wire services, as well as in local radio and television media. There was no financial outlay to the Chapter except the Chapter's share of a dinner for guests (approximately \$28).

2. Career Guidance Center, at the Great Western Exhibit Center, City of Commerce, March 10 through March 20, 1964. This was sponsored by Office of Los Angeles County Superintendent of Schools, Division of Research and Guidance. Over 900 business, professional, and industrial organizations participated, sponsoring 88 booths. 45,000 students, counselors, parents from

225 public, private, and parochial schools from 45 districts and 4 counties attended.

Specific data regarding the chapter's contribution are:

a. Space rental: \$75.00 for a 10' x 20' booth. Cost was pro-rated among the three participants. Booth frame, including lights, was donated by a local firm. These can be used again next year.

b. Committees formed early in January to effect the acquisition of booth frame, art work, furniture, display equipment, literature to be distributed, transportation of equipment and art work, as well as financing, staffing, and publicity for the event.

c. Attendance and staffing: over 2000 students and approximately 500 counselors and parents took away with them some 10,000 pieces of literature. 42 members from the three participating groups were on a rotating four-hour duty for the ten-day period.

d. Major items of expense were: rental of booth (\$25 for Chapter), transportation of display equipment and furniture to and from the center (\$25), SLA brochures and other "give-aways" (\$40), postage, telephone calls (\$20), photographs of activities at booth (this cost can vary depending on the Chapter's need and/or wishes).

e. Donations and help were obtained from 19 local business and industrial firms. This is in addition to the literature and photographs supplied by SLA headquarters.

# Some Observations on the Performance of EJC Role Indicators in a Mechanized Retrieval System

F. W. LANCASTER



IN TRADITIONAL subject catalogs, book indexes, and indexes to periodical literature, the headings, or entry points, may represent quite complex interrelationships of concepts. For example, the heading FURNACES, MELTING—REFRACTORY MATERIALS, by its sequence (*citation order*) and punctuation, combines terms for three distinct *unit concepts* (the apparatus—furnace, the process—melting, and the material—refractories) yet unambiguously expresses the subject complex “refractory materials for use in melting furnaces.” Indexes or retrieval systems that employ this type of heading are best described as *pre-coordinate*, since the coordination of the unit concepts is carried out at the time of indexing.

However, in the majority of retrieval systems currently being established, particularly those employing some form of mechanical searching, entry points are made for the individual unit concepts. REFRACTORIES, FURNACES and MELTING would be three separate headings, and to retrieve a document on “refractory materials for use in melting furnaces” one must, at the time of searching, coordinate the three unit terms to discover documents that have been indexed by all three. Such a system is a *post-coordinate* system. In such indexes, there is neither punctuation nor citation order to resolve possible ambiguities.

For example, assume one is looking for a document dealing with “the sealing of

glass.” By coordinating the index entries GLASS and SEALING, one finds that only three documents in the collection have been assigned both terms. However, on examining the documents it is discovered that, in fact, only one deals with the subject of “sealing of glass.” A second document deals with glass used in sealing of other materials, and the third describes the fabrication of metal tubes, including working the tubes with a glass lubricant, and sealing the tubes by a welding process.

## Roles and Links

To prevent such false retrievals in post-coordinate systems, the devices of *links* and *role indicators* have been introduced. In conceptual analysis, an indexer “partitions” a document into its distinct themes, expresses each theme by means of a combination of terms, and links the terms together by assigning to them a common letter or numeral. The report on tube fabrication would be partitioned into its separate themes, each expressed by linked index terms, as TUBES: WORKING: GLASS: LUBRICANT and TUBES: SEALING: WELDING. Links thus avoid the incorrect retrieval of the document in response to the request for “sealing of glass” since, in searching, one asks that GLASS and SEALING both appear in the same link. The indexing of documents by partitioning into links is essentially the operation long employed in traditional library cataloging for volumes dealing with several topics.

Even when indexing with links, however, the unwanted retrieval of the document on

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*Mr. Lancaster has been working on the SHARP Indexing Project for Herner and Company of Washington, D. C. Previously he was a colleague of C. W. Cleverdon on the Aslib Cranfield Research Project at the College of Aeronautics Library in England.*

glass used in sealing other materials will not be prevented, since GLASS and SEALING will still appear in the same link. For this type of situation various schemes of *role indicators* have been devised. *Roles* show the functional relationship between index terms, i.e., they add an element of syntax. Thus, if there is a role indicator to express the idea of *agent* and another to express the idea of *patient*, i.e., thing affected, the glass sealing ambiguity can be resolved. In indexing the document dealing with the sealing of glass, we use the term GLASS and add to it the *patient role*, whereas the document describing sealing by means of glass is indexed using GLASS in the *agent role*.

### Project SHARP

Project SHARP (Ships Analysis and Retrieval Project) is an automated information storage and retrieval system designed to control the reports collection of the Bureau of Ships Technical Library.<sup>1</sup> In 1963, Herner and Company, under Contract NObs 88417, implemented Project SHARP by indexing in depth some 1,000 documents for input to the system. Tests were then conducted to measure the retrieval effectiveness of the system at this early stage of development.<sup>2</sup>

Documents input to SHARP are indexed by descriptors selected from the Bureau of Ships *Thesaurus of Descriptive Terms and Code Book*. This thesaurus was designed to be compatible with the *Thesaurus of ASTIA Descriptors*, and resembles the ASTIA compilation in its reference structure and in the degree of specificity of the descriptors. Where necessary, in the indexing of the reports, descriptors are organized by means of links. Relationships between descriptors are defined by means of EJC (Engineers Joint Council) role indicators. Descriptors are translated into alpha-numeric codes for computer manipulation. Searching, conducted on the 7090 at the David Taylor Model Basin, is effected by means of coordinations of descriptors in specified roles.

### Objectives and Method of Study

The system was evaluated by test techniques of the type developed in England by Cyril Cleverdon of the Aslib Cranfield Re-

search Project.<sup>3,4</sup> Fifty synthetic questions, based on documents known to be in the test collection (source documents), were composed by technical personnel of the Bureau of Ships. Search programs were devised for these questions by staff of the Bureau of Ships Technical Library, and the searches were run on the computer at David Taylor Model Basin. Search programs were blanket-type, each consisting of several subsearches, most of which involved logical products of two or more descriptors. The object of these all-embracing searches (which sometimes comprised six to ten, or even more, subsearches) was primarily to ensure retrieval of the source documents. The documents retrieved by each search program were submitted to the questioner, who was asked to decide for each one whether it was *relevance A*, as useful or more useful than the source document, *relevance B*, of minor relevance to the question, or *nonrelevant*. On the basis of these decisions, it was possible to derive *relevance ratios*, i.e., the percentage of total documents retrieved in a search that are judged relevant by the questioner. In addition, for 10 of the questions the entire test collection was examined to locate documents that seemed to have any possible relevance to the requests. Additional documents thus isolated were submitted to the questioner for a relevance assessment. Thus, for ten of the 50 searches, it was possible to derive *recall ratios*, i.e., the percentage of the total relevant documents in the collection that were retrieved in searching.

A detailed analysis of the search products was undertaken to determine 1) reasons for nonrecall of relevant documents, and 2) reasons for recall of nonrelevant documents. This type of analysis of retrieval performance can be of inestimable value, both in the further development of an infant system and in showing how a well-established system may be improved or at least used at optimum efficiency. The analysis of the BuShips experimental system shed interesting light on indexing requirements, system problems or defects, and optimum searching strategies. Although each one of these areas is of great interest, the purpose of the present paper is restricted to a consideration of problems

inherent in the indexing system used in Project SHARP, specifically some of the problems caused by the application of role indicators.

It was originally intended to run all the searches with and without role indicators. This would have allowed a study to determine 1) what effect role indicators had in improving *relevance ratios* of searches and 2) what effect the roles had on recall, i.e., how many relevant items were missed due to lack of agreement between indexer and searcher in choice of roles. In actual fact, however, no facility was incorporated in the SHARP computer program to readily allow role indicators to be disregarded in the logical manipulations of descriptors. The only way of doing this is to keypunch searches for co-occurrences of descriptors in every possible role. Because of the number of sub-searches involved and the consequent cost of keypunching and computer time, the idea of running the searches without role indicators had to be abandoned.

It was not, therefore, possible to obtain any data on the effect of the role indicators in improving *relevance ratios* of searches. However, by analysis it was possible to produce some interesting observations on the effect of the role indicators on the recall performance of the system.

#### Effect of Role Indicators on Recall

Of the 12 source documents that were completely missed in the 50 searches, three, i.e., 25 per cent, were missed because of problems in the use of role indicators. Altogether nine of the 46 known relevant documents missed in searching, i.e., almost 20 per cent, were lost because of role indicator problems. Of the total failures that could in any way be attributed to the system (as opposed to human failures in indexing and searching), approximately 70 per cent were traced to the role indicators. (The other 30 per cent loss was traced to problems in application of the coding system and to lack of sufficient linkages in the thesaurus.) Moreover, several of the search programs were only successful on very broad sub-searches, which also retrieved a number of nonrelevant items. In many cases, relevant

documents should have been retrieved, with very little noise, by much more precise sub-searches in which the descriptors selected by the searcher had been used in indexing the relevant documents, but the role indicators used by indexer and searcher did not match.

Here are some examples of the role indicator problems encountered. (These examples do not present either the full indexing or the full search programs but only those segments of each in which the descriptors chosen by the searcher were identical with those used by the indexer, yet the relevant documents were not retrieved because the role indicators did not match.)

Q. 34: What fairing techniques have been used for installing sonar domes?

#### INDEXER

INSTALLATION (8)	The prime activity of consideration in the report
MOLDING (8)	
FAIRINGS (2)	A device shaped or formed (in this case the object of molding)
FAIRINGS (9)	Passive recipient of the operation of installation
SONAR DOMES (4)	The application to which the fairing is to be put

#### SEARCHER

FAIRINGS (8)	The prime topic of consideration
<i>with</i>	
SONAR DOMES (4)	The application to which the fairing is to be put
<i>or</i>	
SONAR DOMES (9)	Passively receiving the operation of installation
<i>Alternatively,</i>	
SONAR DOMES (9)	i.e., both passively receiving an operation
<i>with</i>	
FAIRINGS (9)	

This illustrates a problem that arose in the use of role 8 (primary topic of consideration), which should be the most innocuous

ous of the roles but actually gave a great deal of trouble. This is not really a role indicator in the strict sense. Rather, it is a weighting device to indicate the concept or concepts of primary importance in the document. Unfortunately, the concept or concepts that appear to be of primary importance in a document may not be the concepts that seem of primary importance in a question.

In actual fact, in most of the examples given in the course materials prepared for EJC by Battelle Memorial Institute the role 8 term is a process or activity term rather than a term for a "concrete," such as a material or piece of equipment. This may be a natural inheritance due to the evolution of the present system of roles from the original set used by DuPont. Activity or process terms usually are of prime importance in the indexing of chemical engineering literature, but they are not always so in other fields.

In the above example, the indexer followed the guide given by the EJC course materials and applied role 8 to the descriptors for the processes (INSTALLATION and MOLDING) applied to the fairings. She assigned roles 2 and 9 to the term FAIRINGS, since it represented a "device shaped or formed" and a passive recipient of the operation of installation.

The report describes the fabrication and installation of a fairing *for* a sonar dome (hence SONAR DOMES in role 4). However, as the question is phrased, it implies fairings *as a means of installing* sonar domes, i.e., it implies a role 10—means of accomplishment—situation.

Q. 66: Design study of a stabilized star tracker periscope

#### INDEXER

STAR TRACKERS (8) *and* (9)  
 SUBMARINE  
 PERISCOPES (2) *and* (10) *and* (4)

The source document describes a feasibility study on the construction of a submarine periscope for use in a star tracking system for celestial navigation. Star trackers were regarded as the prime topic of considera-

tion, and the passive recipients of the feasibility study. The periscopes are devices shaped or formed, and the means of accomplishing the celestial navigation. Role 4 was assigned to the periscopes because they represented the application to which prisms were to be put.

#### SEARCHER

The searcher asked for the following combinations of the key descriptors:

- STAR TRACKERS (4) *with* PERISCOPES (9) Periscopes are passive recipients, presumably of the design study. Star trackers are the intended application.
- STAR TRACKERS (9) *with* PERISCOPES (9) Presumably both are regarded as the objects of the design study.
- STAR TRACKERS (8) *with* PERISCOPES (8) Both to be regarded as prime topics of consideration in the document.

Although the source document was indexed in considerable depth, 23 descriptors in three links and 41 descriptor-role combinations, it was only retrieved by a very broad subsearch under DESIGN (8) *with* SUBMARINE PERISCOPES (4).

With most of the losses caused by role indicators, it was difficult to lay the blame clearly at the door of either indexer or searcher. The indexer chose the roles that appeared most suitable to handle the precise interrelationships of concepts contained in the document at hand. Similarly, the searcher selected role indicators to express the relationships implicit in the question. Documents were missed because the indexer's interpretation of the relationship between concepts (and

often the relationship suggested by the text) did not always agree precisely with the relationship demanded by the questioner. In the conceptual analysis of a document, the indexer cannot reasonably be expected to foresee all the relationships between concepts likely to be asked for in future questions put to the system. Likewise, the searcher cannot be expected to think of all the possible textual relationships between concepts that could have some relevance for the question being programmed. If an indexer is very liberal and puts a term into five or six roles, or if a searcher must ask for a term in five or six roles to be sure of a "hit," the system of role indicators shows signs of breaking down.

There are undoubtedly ways in which these role indicator problems can be minimized. For one thing, in an ideal situation, the same group of people should both index the documents and formulate the search programs. Under these conditions one could reasonably expect a greater coincidence between indexer and searcher in choice of roles. Another possibility is for an individual organization to redefine the scope of the EJC role indicators, using examples carefully chosen from the subject fields covered in their own collections. Of course, if in formulating a particular search program the searcher is not confident in his choice of role indicators, he can always adopt the strategy of ignoring them completely, i.e. asking for a descriptor in every possible role.

Using role indicators on a highly selective basis may prove the best solution. Recently, investigators at DuPont<sup>5</sup> also found that roles failed because they were not mutually exclusive. Lack of discrimination caused by overlapping role definitions was largely responsible for the blocking of relevant information. In a second experiment, not all terms were assigned role indicators; only roles clearly mutually exclusive were allowed, and these were only used in situations where their discriminating power was clearcut. The performance of the role indicators was considerably more successful when thus used.

#### Questionable Value of Role Indicators

The small-scale test of SHARP has highlighted the possibility of problems in the

consistent application of a system of role indicators. It is time that we seriously considered whether or not role indicators are worth their salt. It is, to say the least, surprising that so many major organizations in the United States are happily adopting retrieval systems using role indicators before anyone has undertaken a large-scale, systematic test of their effects.

Role indicators are precision promoters. Their only use is to improve the *relevance ratios* of searches. They cannot improve recall. In fact, because of the inverse relationship shown by Cleverdon to exist between *recall* and *relevance*, they will undoubtedly reduce recall. Obviously, then, if a system that will pull out everything or almost everything on a particular subject is wanted, regardless of the amount of accompanying noise, role indicators should not even be considered. On the other hand, if a system that will retrieve a small subset of highly relevant documents, with little noise, is desired, then role indicators merit serious consideration.

However, it is probably true to say that in the most common retrieval situation a searcher wishes to retrieve a large number of potentially pertinent documents with the minimum of extraneous material. Role indicators will cause some wanted items to be lost. The question now is, how good are they in screening out unwanted documents, i.e., how good are they in improving *relevance ratios*?

An experimental investigation of the use of role indicators in various subject contexts may indicate that they are of definite worth in some situations but of doubtful utility in others. It is conceivable that they *do* have great value in "tagging" chemicals in dynamic reactions or processes. On the other hand, it seems likely that, in the applied fields of technology and engineering, once a document has been conceptually analyzed and partitioned into *themes*, each theme being expressed by a group of descriptors joined by a link letter, little possible ambiguity remains.

An interesting study has recently been carried out by Sinnett<sup>6</sup> on the use of links and roles in the retrieval system of the Air Force Materials Laboratory, Wright-Patter-

son Air Force Base. Having formulated his search programs, Sinnett carried out each of 22 searches without links or roles, with links only, with roles only, and with links and roles. Using the results from the first method as a basis for comparing performance of the other methods, Sinnett showed 1) the use of links alone reduced recall by only 5 per cent while improving relevance by 14.8 per cent; 2) the addition of roles to the links further reduced recall by 5.2 per cent, while improving relevance by only 2 per cent; 3) compared with the simple method, the use of roles alone reduced recall by 4.7 per cent but improved relevance by only 2.8 per cent.

In view of the fact that the use of roles more than doubled search programming times and computer searching times (it was estimated, in addition, that they more than doubled input costs), Sinnett firmly recommended that their use should be discontinued. Instead, he sensibly recommended that increased emphasis be placed on the use of stylized statements in the application of links to indexing. In the test of Project SHARP, had we been able to run all searches with and without role indicators, it is quite likely that the results would have supported Sinnett's findings.

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#### Nominations for the SLA Hall of Fame 1965

Chapters, Divisions, and individuals are invited to present nominees for the SLA Hall of Fame. Nominations must reach the Committee Chairman by January 31, 1965, and information forms may be obtained from Association Headquarters. Each Chapter President and Division Chairman is asked to remind his group at meetings and through bulletins that nominations are encouraged. The recognition may be awarded posthumously. In documenting nominations, the following criteria for eligibility to the SLA Hall of Fame adopted by the Board of Directors on June 7, 1964 should be remembered: "SLA Hall of Fame election is granted to a member or a former member of the Association near the close or following completion of an active professional career for an extended and sustained period of distinguished service to the Association in all spheres of its activities (Chapter, Division, and National levels). However, prolonged distinguished service within a Chapter, which has contributed to the Association as a whole, may receive special consideration." The basic purpose of the SLA Hall of Fame is to recognize those individuals who have made *outstanding contributions to the growth and development of Special Libraries Association over a period of years.*

Mail your recommendation to Ethel S. Klahre, Chairman, Librarian, Federal Reserve Bank of Cleveland, P.O. Box 6387, Cleveland, Ohio 44101. Information should include name of nominee, address, brief biographical sketch, resume of specific contributions to the growth and development of SLA (with dates if possible), approximate number of years of SLA membership, and year of actual or anticipated retirement.



# CURRENT CONCENTRATES Of The Library World

## The Computer Is Coming

I am not sure just exactly what Mrs. Phyllis Calese (see *Library Journal*, May 1, 1964, p. 1888) proposes to do about her gloomy conclusion that computers will prove their economy and efficiency sufficiently to erase the profession of librarianship within 20 years. I doubt that she would advocate sabotage, and I'm not very enthusiastic about hunger strikes. As a librarian who has spent the last several years seeking to improve service to his patrons through the application of mechanized equipment in areas in which such equipment can and does improve service to library patrons, please permit me to assure her that her conclusions are wildly pessimistic and needlessly defeatist.

The proper application of computer equipment in libraries does not, and will not, decrease the need for professional librarians. On the contrary, it increases the requirement—because it permits the undertaking of professional services always desirable but not usually practically possible. Computers tend to decrease the need for professional librarians to spend their time on clerical unchallenging routines, and in the process they may eliminate the need for some of our degree-holding brethren who prefer clerical to professional tasks. If computers do this last thing for us, they will have helped us greatly in our fight to achieve public recognition of the librarian as professional. . . .

We have nothing to fear from the computer as a tool. What we must fear is that the attitude among many librarians who, because they don't understand machine systems and are too lazy to try to learn, treat the computer as some sort of evil spirit. If they ignore it, they think, perhaps it will go away.

It won't. The computer is a potential library tool just as photochargers, card catalogs, and book selection guides are.

The usage of the computer for the handling of some library problems is certainly coming. It will come sensibly, reasonably, and logically if librarians make themselves the experts, and make themselves responsible for the evaluation and application of machine equipment in their domains.

It will come haphazardly, illogically, and unreasonably only if we turn our backs on the sure reality that librarianship is undergoing dynamic and drastic change, and if we leave the field to a new generation of self-styled information specialists who may believe and teach that librarians know little about and contribute little to the handling, distribution, and recall of information, except for their ability to serve as custodians.

It is then that we get absurd examples of information systems that cost a great deal of money and produce pitiful results. . . . But we overlook the fact that these systems survive, prosper, and detract from prestige and money which should be going to forward-looking library systems.

Libraries and computers are not locked in a death struggle. There are many things good librarians do far better than machines. There are also many things that computers can do more rapidly, more accurately, and more economically than librarians.

I agree with Mrs. Calese that we must wake up to the danger before it is too late, but I don't think we mean the same danger. I do not suggest that we sally forth with axes to destroy the wicked machines before they destroy us. I do suggest that we librarians begin to learn about mechanized systems so that we can discuss the relative merits of library computer systems as we now discuss the relative merits of mending tapes.

A letter from Herbert S. White, extracted from the "Readers' Voice" in the *Library Journal*, vol. 89, no. 12, June 15, 1964, p. 2464.



# SDC Develops New Book Purchasing System



W. J. CONDON AND C. E. DENT

THE LIBRARY at System Development Corporation had a problem. User complaints about time delays in obtaining books were widespread, vocal, and, as it turned out, legitimate. A sample of recently processed orders revealed that 98 per cent took 16 or more working days (four calendar weeks or longer) from the time the library placed the orders with a vendor until the items were received by the library. The problem was aggravated by the fact that SDC is far removed from the major commercial publishers on the East Coast. On top of this, the nature of SDC's business (the design, development, and implementation of large computer-based information processing systems) is such that its information needs were often unique and, with concomitant acquisition problems, difficult to handle.

Under the former book ordering procedure, which caused so many headaches, incoming book requests that could not be filled from library holdings were accumulated and the orders split between two local book vendors. Information on each book order was typed on a list, which was mailed to the vendor. The vendor would send those items that were in stock and would order directly from the publisher items that were not in stock.

With the new system, the library phones a local vendor to determine on-the-shelf availability of a list of book titles (about ten titles are checked in one phone call). For books

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the vendor has on hand, an order is placed, requesting shipment the same day; for books *not* available from the first vendor, a second vendor, then a third, and so forth, is contacted until the title is located or it becomes apparent that it is unavailable locally. If the book cannot be obtained locally, it is purchased directly from the publisher under the purchasing procedure outlined below.

## Purchase Order Systems

Under the old system, Library acquisitions copied order information onto a special requisition form and sent it to the purchasing department. Purchasing's method for placing the order was dependent on 1) the source for the item, and; 2) whether the library provided a price for the item.


1. When the item was to be obtained from a cash-with-order source (a United States government agency, or certain nonprofit agencies):

a. If the library provided a price for the item, a check was obtained from accounts payable, and a purchase order issued with check enclosed.

b. If the library did not provide a price for the item, purchasing wrote the agency requesting the price. When the price was learned, the procedure outlined above was followed.

2. When the item was to be obtained from sources not requiring cash-with-order, a purchase order was issued requesting confirmation of price. Payment was made from the invoiced price.

For all the orders sent out by purchasing, a standard SDC purchase order form (having a format certainly not tailored to library needs) was used. For these library purchases, 85 per cent of which had a total price of less


**LIBRARY PURCHASE ORDER**  
 SYSTEM DEVELOPMENT CORPORATION  
 2500 COLORADO AVENUE  
 SANTA MONICA 4, CALIFORNIA

NO LC2073

TO: JENSEN PUBLISHING COMPANY  
1811 Exbrooke Avenue  
Spokane, Illinois

PLEASE SEND THE FOLLOWING ITEMS BY RETURN MAIL:

ITEM NO.	QTY	DESCRIPTION	UNIT PRICE	AMOUNT
1	1	AN INTRODUCTION TO SYSTEM DOCUMENTATION, by F. L. Barnes.	5.00	5.00
2	1	AUTOMATED BUSINESS STATISTICS, by A. C. Diliers.	0.00	0.00
////////////////////// TOTAL				\$5.00

VOID


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A PACKING SLIP LISTING THIS ORDER NUMBER MUST ACCOMPANY YOUR SHIPMENT. THE SHIPPING LABEL MUST ALSO SHOW THIS ORDER NUMBER. NO INVOICE REQUIRED.

NON-TAXABLE. CALIFORNIA RESALE PERMIT AB78218

SHIP TO: 2500 COLORADO AVENUE  
 SANTA MONICA 4, CALIFORNIA  
 ATTENTION: LIBRARY

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**LIBRARY ACCOUNT**  
 SYSTEM DEVELOPMENT CORPORATION  
 2500 COLORADO AVENUE  
 SANTA MONICA 4, CALIFORNIA

NO LC2073  
 902140  
 1222

Pay TO THE ORDER OF JENSEN PUBLISHING COMPANY December 15, 19 63 \$ \*\*13.00\*\*

THIS CHECK NOT VALID FOR TWENTY-FIVE DOLLARS

SYSTEM DEVELOPMENT CORPORATION

**Union Bank**  
Member FDIC

⑆1222⑆2440⑆33089⑆311⑆

The new Library Purchase Order form to the left was custom-designed for ordering library material. A major breakthrough in the system was the approval to send the vendor a blank check—signed, but with the dollar amount not filled in—when the purchase price is unknown. This use of a blank check has proved one of the most important means of improving order response-time; previously, many cash-with-order purchases required writing the vendor to obtain a price before ordering. Note that a limit of \$25 is printed on the face of the check. For items costing more than \$25, the library goes through the normal purchasing channels.

than \$10, the detailed information called for on the standard form was not necessary.

In addition to the blank check described above, other new practices were initiated.

1. Library Administration. The entire purchasing cycle, including signing the check, is administered within the library with these results:

- a. The purchasing department is relieved of the task of handling these orders altogether.
- b. Accounts payable's work is minimal. The checking account is replenished on the basis of orders issued.
- c. The receiving department no longer has to verify the receipt of library materials—the receiving verification is handled in the library.

2. Safeguards. The system was designed with safeguards:

a. The ordering and receiving functions are administered by separate persons in the library.

b. The system is regularly reviewed by SDC auditors.

c. A limit of \$25 is printed on the blank check.

3. Acknowledgment Copy. An acknowledgment copy is sent to the vendor with the library purchase order. A postage-paid envelope is also enclosed to encourage its return to the SDC Library. This acknowledgment copy serves these purposes:

- a. Notifies SDC of the price of orders that were sent out with a blank check.
- b. Informs the library of the expected shipping date.
- c. Provides other information regarding the order.

4. Follow-up. A systematic follow-up was installed. A follow-up form is sent to the

vendor after two weeks have elapsed if neither the ordered items nor the acknowledgment copy of the library purchase order has been received. If, a month after the follow-up form is sent, there has been no response, a letter is sent to the vendor. For orders going to foreign countries, the time periods for follow-ups are changed to correspond to the lengthened mail time. Foreign orders are sent airmail, and International Reply Coupons are included with the order for the vendor to purchase airmail stamps for returning the acknowledgment copy.

Not the least of the benefits of the new system has been a considerable cost saving in man-hours; the clerical effort involved in processing library orders in accounts payable,

purchasing department, and receiving has been minimized. But the most dramatic result is the vastly improved service to the SDC library user. This improved service is shown graphically in the following "before" and "after" response times:

LENGTH OF TIME (From order of item by library from vendor to receipt of item by library)	PERCENTAGES OF ORDERS	
	New System	Old System
Less than one week	4	0
2-3 weeks	47	2
4-5 weeks	27	12
6 or more weeks	22	86

Finally, user and library staff morale have gone up sharply; this has been the most satisfying result of all.

## Abstracts of Eastern European Library Literature

For explanation of this abstracting and previous abstracts, see *Special Libraries*, July-August 1964, page 394, and November 1964, page 646.

HIGH QUALIFICATION LIBRARIANS, Bistriceanu A., *Calauza Bibliotecarului*, 1964, No. 1, pp. 27-29. In RUMANIAN.

The article describes the development of facilities for training librarians in Rumania. Because of the steadily increasing demand for qualified library and documentation specialists, a new department of library science was established at the University of Bucharest in the fall of 1963. The study program includes among other subjects documentation theory, audio-visual methods in library and documentation practice, bibliography, and library history. Graduate students are given the opportunity to do research in various fields of library science and documentation. More than 350 candidates applied for admission to the school.

INDEXING NEWSPAPERS AND PERIODICALS, Onodi, I., *Tudományos és Muszaki Tájékoztató* (Scientific and Technical Information), Jan. 1964, Vol. 1, pp. 9-14. In HUNGARIAN.

On January 1, 1964, a uniform method of identifying newspapers and periodicals was introduced at the recommendation of the United Postal and Telecommunication Organization of the Socialist Countries by the member nations of that organization. Groups of five-digit codes in the number range 10,000 to 99,999 have been assigned to the member countries (e.g. Hungary is assigned 25,000-29,999). Each country allots one of its assigned numbers to each of its publications. This system is intended to (1) facilitate uniform cataloging, (2) simplify administrative

procedures, (3) promote mechanization, and (4) enable standardization of coding systems among participating libraries. The paper analyzes further applications of this system in library operations.

SIMPLIFYING THE CATALOGING PROCEDURE, Salek, F., *Könyvtáros* (The Librarian), 1964, Vol. 2, pp. 77-78. In HUNGARIAN.

According to the UNESCO's suggestion, book catalogs are being eliminated in Hungarian libraries and are replaced by card catalogs. Moreover, the libraries retain copies of order forms for books and publications. In cases when the card catalog does not provide enough information, these order forms can be consulted.

WORK ORGANIZATION IN THE PHOTOLABORATORY OF A DOCUMENTATION CENTER, Gara, A., *Tudományos és Muszaki Tájékoztató* (Scientific and Technical Information), No. 3, 1964, pp. 189-195. In HUNGARIAN.

The variety of tasks performed in the photolaboratory of a documentation center requires a well-organized coordination of work. Usually these laboratories are affiliated with an enterprise or agency which determines their operating policies and procedures. The author discusses the problems of copying and processing documents with high efficiency as well as the problem of making maximum use of equipment. The work done outside the laboratory is analyzed, too. Procedures for production control and materials inventory are reviewed, and safety measures used in photolaboratories are investigated.

# Hans Peter Luhn Memorial Meeting

A JOINTLY sponsored meeting arranged by the SLA New York Chapter Science-Technology Group and the American Documentation Institute Group was held on November 14, 1964, at the New York Hilton Hotel.

The theme of the morning program was "Controlled and Uncontrolled Vocabularies." The afternoon meeting consisted of concurrent sessions dealing with "Microforms: New Trends and Hardware and Use," moderated by Loretta J. Kiersky of the Air Reduction Company with panelist Hubbard W. Ballou of Columbia University; a "Progress Report on the EJC Thesaurus and the Medlars Project," jointly moderated by Mandalay Gremis of Univac-Sperry Rand and Mrs. Sonia L. Gruen of the Albert Einstein Medical Library, with panelists Paul C. Redner of the National Library of Medicine and Frank Spaight of the Engineers Joint Council; "Information Packaging," moderated by John Markus of McGraw-Hill and paneled by Robert A. Kennedy of Bell Telephone Laboratories and Ben H. Weil of Esso Research and Engineering; and "Mechanization of Library Operations" (specifically at the University of Missouri), moderated by Content Peckham of Time Inc., with panelist Dr. Ralph Parker of the University of Missouri's Library.

The other highlights of the day were the fine luncheon talk given by the distinguished Dr. S. R. Ranganathan (who it might be noted prefers to be referred to as a librarian as opposed to a professor) and the closing remarks by Dr. Harold Wooster of the United States Air Force Office of Scientific Research. The general areas of needed research were discussed.

The morning session was prefaced by several very fitting tributes to ADI's Past-President, Hans Peter Luhn. All agreed that his driving spirit will continue to live on as an inspiration to those involved in the field of the free flow of information. Dr. Julius Frome of the National Clearing House of Mental Health gave a very thorough exposition of the advantages and the disadvantages

of building uncontrolled and controlled vocabularies. He was followed by Everett H. Brenner of the American Petroleum Institute, who delivered a joint paper, co-authored with Professor Theodore Hines of Columbia University, on the structure of vocabulary building. He stressed the similarities and the differences as well as the mutually related influences of subject heading lists and thesauri. The talk included a very detailed comparative analysis of the ASTIA, Bureau of Ships, Bureau of Reclamation, EJC, and API thesauri. Dr. Vincent F. Guiliano of the Arthur D. Little Company humorously elucidated on statistics for vocabulary building, observing that there weren't any over-all solutions to the problem of obtaining good breadth and depth thesauri. Arthur Geiger of IBM FSD concluded the session by discussing the inner complexities of computer-built vocabularies. One interesting observation was that the day was not far off when non-Von Neuman machines would be created to handle the problem of constructing erudite vocabularies. In this observer's opinion, the morning session certainly was no place for the neophyte.

The above was not the case with respect to the luncheon and the honorable guest of the day. Professor Ranganathan urged cooperation and pride in the profession amongst and by librarians, paraphrasing Wendell L. Willkie's one world theme; the good librarian felt that this is the mission of librarians, no matter what they call themselves.

In his summation session, Dr. Wooster advanced the opinion that librarians must look elsewhere for the solutions to their problems. He, as well as some others, did not, however, cover the inherent philosophical problem of the proper potential role and place in society's structure of libraries and librarians. Perhaps it is about time that the cart is placed behind the horse. *Anyone for a professional soul-searching conference?*

RALPH C. SIMON, New York Documentation  
Group Chairman  
Librarian, IBM Systems Research Institute  
New York City

# Have You Heard . . .

## "LJ" Looks at Special Librarians

The November 1, 1964 issue of *Library Journal* begins its feature section with three articles about the special librarian and a one-page introduction with quotes from the most recent SLA recruitment brochure, *Special Librarianship: Information at Work*. Paul Wasserman and John Harvey contributed "A Management Resource" and "His Characteristics and Education," respectively. The third article, "His Future—Bright or Bleak?" was written by Alan Rees. According to *LJ's* introduction, "Paul Wasserman finds a difference in work tempo in special librarianship, perhaps generated by economic pressures. John Harvey presents a none too flattering picture of the special librarian's characteristics and examines his educational needs for survival in a faster future. And Alan Rees takes a look at that future and all it portends for the special librarian."

## Document Retrieval Systems Course

The Center for Information Resources, Inc., a subsidiary of Herner and Company, Washington, D. C., will offer a course on document retrieval systems during three consecutive weeks in March 1965, under the leadership of Cyril Cleverdon of the Cranfield Project in England. Other lecturers will be Robert Fairthorne, Saul Herner, and F. W. Lancaster, all of Herner and Company. The program will outline a methodology for testing document retrieval systems, analyze test results, and apply these results to the improvement of system design and operation. A workshop will be held in addition to the lectures. Information concerning registration and fees may be obtained from the Center at 2431 K Street, N.W., Washington, D. C. 20037.

## Creative Teaching Library Established

The Minnesota Mining and Manufacturing Company of St. Paul, Minnesota, recently established a creative teaching library to serve as a resource and research center on the use of visual aids in the classroom. Materials

will be gathered in a massive program to stimulate creative effort among teachers throughout the United States. This year a creative teaching contest is expected to bring in about 200,000 entries. The reference material is being permanently cataloged, and the library will be open to educators by appointment. Further details may be obtained from the company at 2501 Hudson Road.

## IBM Graphic Retrieval System

IBM recently demonstrated a graphic data processing system, 360, which will be on the market in 1966. The system will enable a person to scan an existing microfilm image or call out an image stored digitally within a computer with a special electronic "light pen," display it on a screen, change the image with the pen, record the new image permanently on microfilm, and review a projection of the image 19 times its actual size. All sketches, drawings, diagrams, and graphs can be pre-stored in a computer and displayed on the screen in the form of lines, points, and other graphic symbols, which can be added to or deleted with the "light pen." When the pen is moved over an image displayed on the screen, it detects light from points on the screen under the pen. These responses are transmitted to the computer, which can alter its digital representation of the image.

## Health Science Facility at Western Reserve

The Center for Documentation and Communication Research, School of Library Science, at Western Reserve University has received a \$111,908 grant supported by the National Institutes of Health, to further its development of a document research facility for the health sciences. Research will continue and extend the activities of the Center's Comparative Systems Laboratory, which is designed to provide a methodology for the testing and evaluation of information retrieval systems. A series of experiments will be conducted on indexed files in the field, and user groups will cooperate in assessing the

effectiveness and utility of search outputs. A. J. Goldwyn, Executive Director of the Center, is the Laboratory Administrator.

#### Members in the News

ROBERT E. FIDOTEN, former Chief Librarian, Republic Aviation Corporation, has accepted the position of Manager, Information Services, at the Glass Research Center, Pittsburgh Plate Glass Company, Pittsburgh, Pennsylvania.

MRS. HAZEL I. IZZO, Librarian in the Technical Library at Stromberg-Carlson, Rochester, New York, since 1956, retired recently. Mrs. Izzo served as SLA Membership Committee Chairman during 1948-49.

MARY FRANCES PINCHES, Librarian and Associate Professor at Case Institute of Technology, Cleveland, was the recipient of the Case Achievement Award for making "a distinct contribution to the well-being of Case—beyond the scope of normal duties. . . ."

MRS. DOLORES C. RENZE, State Archivist of Colorado, was recently elected Vice-President and President-Elect of the Society of American Archivists.

PAUL W. RILEY, Librarian, College of Business Administration, Boston College, has recently been appointed Assistant Director of Libraries at the College.

RALPH C. SIMON, former Librarian, IBM Systems Research Institute, New York City, will become Associate Professor of Library Studies at the University of Hawaii, effective February 1, 1965.

MRS. CATHERINE CURRAN SUPINSKI, Librarian for the New York Chamber of Commerce, retired from her position recently.

MRS. NELL STEINMETZ, Librarian of the Pacific Aerospace Library, Los Angeles, California, retired this summer. She is working part-time for the Mission Bay Research Foundation, San Diego as Director of the Oceanic Library and *Oceanic Coordinate Index*.

CARL J. WENSRIICH, former Head of Professional Services at the University of California Lawrence Radiation Laboratory, has recently been appointed Head of the Reader Services Division of the University of California, Santa Cruz Library.

#### CLR Grants

The National Bureau of Standards received \$5,000 for the study of automatic indexing. The Data Processing Systems Division will carry out the investigation, which is concerned with subject analysis of documents using computer programs by methods simpler than those already developed.

An annotated bibliography of materials on Japan for use by undergraduates participating in its overseas program is being prepared by Lewis and Clark College, Portland, Oregon, with the aid of a \$1,500 grant. This project is expected to be a pilot one for other area bibliographies.

#### Coming Event

Under the sponsorship of the North Atlantic Treaty Organization, an ADVANCED STUDY INSTITUTE ON EVALUATION OF INFORMATION RETRIEVAL SYSTEMS will be held in The Hague, July 12-23, 1965. The Institute will be limited to 60 participants and is intended for those already concerned with the evaluation of experimental or operational systems or with management or operation of information retrieval systems. Travel and accommodation assistance fellowships are available, and details are obtainable from Cyril Cleverdon, College of Aeronautics, Cranfield, Bedford., England. March 31 is the deadline.

#### Future SLA Conventions

- 1965: Philadelphia, June 6-10  
Benjamin Franklin Hotel
- 1966: Minneapolis, May 29-June 2  
Radisson Hotel
- 1967: New York City, May 28-June 1  
Hotel Commodore
- 1968: Los Angeles, June 2-7  
Statler-Hilton
- 1969: Montreal, June 1-5  
Queen Elizabeth
- 1970: Detroit, June 7-11  
Sheraton-Cadillac
- 1971: Seattle
- 1972: Boston
- 1973: Houston
- 1974: Cincinnati

# Off the Press . . .

## Book Review

LIBRARY CATALOGS: CHANGING DIMENSIONS. *Ruth French Strout* ed. Chicago: University of Chicago Press, 1964. 127 p. \$3.75

As the title indicates, this book describes the many changes in the long and honorable life of the library catalog through several centuries up to the present time and also gives a brief glimpse into the future. Its slim size is deceptive for it presents an exceptional amount of information on the subject. The nine well-edited papers it contains were given at the 28th Annual Conference of the Graduate Library School of the University of Chicago in August 1963; the papers were originally published in the *Library Quarterly* in January 1964. It is recommended for those seeking a proper perspective on the catalog, both in card form and book form. Readers may regret its lack of information on the more advanced methods of preparing book-type catalogs such as computer-operated photocomposition machines, etc.

Two papers are strongly historical in nature, tracing the development of the catalog in America and in Europe, respectively. Both papers are well documented, particularly the European account. Duplicate catalogs are discussed in two papers, one for the public library and one for the university library. The public library paper is restricted to the Los Angeles County Public Library, particularly its use of punched card equipment to prepare a variety of book catalogs for all the 117 libraries in its system. The duplicate university catalogs, which the other paper describes, are essentially supplemental to the card catalog and include both card and book form, although the latter are not the most advanced types.

The Library of Congress is represented by two papers. The first traces the development of the National Union Catalog and also the Library of Congress catalogs, giving full treatment to the many book catalogs involved. The other paper describes the analysis of the LC catalog that was made in connection with the recent automation survey in that library. Both papers are filled with statistics that would probably be difficult to locate in any other published source. A paper on the relation of library catalogs to indexing and abstracting services gives much information on the use of computers, ranging from KWIC-type indexes to the role of indexing terms in a computer system. Another paper describes a mythical computer system that gives direct answers to requesters. A paper dealing with the sources used to supply the information needs of current scientific workers is done in a competent manner, but it seems out of place in this volume.

ELLIS MOUNT, Science and Engineering Librarian  
Columbia University, New York City

## Study on "Physics Abstracts"

The American Institute of Physics has recently published *The Journal Literature of Physics* by Stella Keenan and Pauline Atherton of the Documentation Research Project, which was supported by an NSF grant. This comprehensive study of the publication of physics literature was made by analyzing the 1961 issues of *Physics Abstracts*. Information on 405 journals from 39 countries, a total of 20,287 articles, was collected. For each article, the year of publication, number of authors, language of article, type of abstract in *PA*, and placement in subject categories in *PA* are now available in machine readable form. The data have been used to rank journals and countries in order of contribution to *PA* as a whole and to each subject field within physics. A profile for each country and each journal, in terms of coverage in *PA*, is presented in tabular form as well as the distribution of the subject content of physics journal literature throughout the world. The data reported will be used as a basis for evaluating and improving the coverage of the world's physics literature. A review of the data by subject specialists from all fields of physics and by librarians and documentalists from each country represented is planned, and comments from readers of the report will be welcomed.

## Aerospace Abstracts Index

The semi-annual index to all issues of *International Aerospace Abstracts* for the first half of 1964 is now available from Technical Information Service, American Institute of Aeronautics and Astronautics, 750 Third Avenue, New York 10017. The second of four cumulated index volumes for 1964, this semi-annual volume will be followed by a third quarter index and an annual cumulative index. A subscription to the cumulative indexes is \$25 a year in the United States and possessions and \$33 elsewhere.

## Bibliotherapy Workshop Issue

The "Proceedings of ALA Bibliotherapy Workshop, St. Louis, June 25-27, 1964," has been published as a special issue of *AHIL Quarterly*, vol. no. 4, Summer 1964. Guest editor was William K. Beatty, SLA Director and Librarian at Northwestern University Medical Library. Contents include the position papers of the discussants in the fields of library service, occupational therapy, activity therapy, psychiatry, sociology and social work, nursing, and psychology. Session discussions and summary are also included as are names of the attendees, AHIL officers, and "The History and Purpose of the Bibliotherapy Workshop" by Ruth M. Tews. The *Quarterly* is published by the Association of Hospital and Institution Libraries, 50 East Huron Street, Chicago 60611.



## UDC Revised Engineering Section

The British Standards Institution, responsible for the English version of the Universal Decimal Classification, has published a completely revised and updated section on electrical engineering [B.S. 1000 (621.3)]. This section now is 67 pages and includes a 15-page index. Abridged edition B.S. 1000 A contains a full introduction to the use of UDC and a synopsis of the whole system. Copies of *Electrical Engineering* cost £2 and are available from the BSI Sales Branch, 2 Park Street, London W. 1. Postage is extra to nonsubscribers. The *Abridged English Edition* of the UDC is £3, and the complete *Guide to the Universal Decimal Classification* is 15 shillings.

## Special Documentation Issue

The February 1964 issue of *Electro Technology*, the journal of the Society of Electronic Engineers in Bangalore, India, was devoted to documentation. Guest editor was S. R. Ranganathan, and Hubert H. Humphrey, United States Senator from Minnesota and Chairman of the Subcommittee on Reorganization and International Organizations, wrote a special message of greetings. Articles covered aids to retrieval, the field of documentation, specialist libraries, the training of documentalists, and technical writing. Also included was a bibliography of current literature on documentation appearing in electronic and allied periodicals.

## Russian Book Reprints

Micro Photo Division of Bell & Howell Company, Cleveland, Ohio 44112, plans to reprint books selected from *Russia and the Soviet Union: A Bibliographic Guide to Western Language Publications* by Paul L. Horecky, scheduled for publication by the University of Chicago Press. This work has been prepared under the auspices of the Coordinating Committee for Slavic and East European Library Resources. It is expected that the reprints, which will be available some time in 1965, will be of good readable quality for scholarly use and study.

## Engineering Index Changes

Engineering Index, Inc., the abstracting and indexing organization serving the societies forming the Engineers Joint Council, will, in January 1965, pilot-mechanize the electrical-electronics and plastics sections of *EI* with fully automated memory-and-search adjuncts. Index tapes will be stored for a monthly current awareness publication and also for an index for retrospective search and retrieval. The indexes will be cumulative on a semi-annual and annual basis. Battelle Memorial Institute has contracted to assist in the modernization project which will make first public use of the EJC's *Thesaurus of Engineering Terms* published in the summer of 1964. The *Thesaurus*, \$16.50, contains over 10,500 terms arranged alphabetically and presented to show synonymous, hierarchical,

and other relationships as well as necessary definitions. Prices and further details are available from EJC, 345 East 47th St., New York 10017.

## Articles on Hospital Libraries

The June 16, 1964 issue of *Hospitals* contains a special section, "Health Communications," which is devoted to various aspects of hospital libraries. The articles include: "Hospital Libraries: Underdeveloped Base for Continuing Education," by Scott Adams; "A Survey of Current Hospital Library Resources" by Raymond H. Giesler and Helen T. Yast; "Blueprint for a Professional Hospital Library," by Henry T. Gartland; and "Portrait of a Hospital Library. Reprints of Mr. Scott's article may be obtained from him at the National Library of Medicine, Public Health Service, Department of Health, Education, and Welfare, Bethesda, Maryland. Reprints of the other articles are not available, but copies of the issue may be ordered for 50 cents from the American Hospital Association, 840 North Lake Shore Drive, Chicago 60611.

## Thesis on Private Special Libraries

Florence E. Johnson's "Private Special Libraries as a Public Resource in Metropolitan Chicago," a thesis submitted for an M.A. degree from the Graduate Library School of the University of Chicago, is available on loan from SLA Headquarters. Mrs. Johnson is a librarian in Chicago's Municipal Reference Library. Her thesis, completed in June 1964, is an attempt to determine the extent to which private special libraries (as opposed to those in public or university libraries) in metropolitan Chicago act as a public resource. The data obtained from 104 libraries identifies the staff, physical resources, and policies and records the particulars about outside requests made by the public during the control period.

## Bliss Classification Bulletin

The H. W. Wilson Company has recently published vol. 3, no. 1, September 1964, of *The Bliss Classification Bulletin*, which is being distributed to all libraries that have adopted the system. This issue contains a substantial number of additions to the BC in electronics, automatic control, instruments for mathematical calculation, and analogue computers. These additions take the form of four complete schedules, each providing detail almost totally absent in BC. Copies of this issue of the *Bulletin* are available gratis to interested persons as long as the supply lasts.

## Book Price Correction

The price of *How to Locate Technical Information* by Virginia A. Sternberg, reviewed in the October 1964 issue of *Special Libraries*, page 586-7, was incorrectly given as \$1. The correct price is \$4.95.

## "Oceanic Coordinate Index"

The *Oceanic Coordinate Index*, a guide to national and international current oceanic literature, was published in September 1964, the first of a bi-monthly series. Sponsored by the Mission Bay Research Foundation of San Diego at its Oceanic Library, 7730 Herschel Avenue, La Jolla, California, *OCI* is computer-produced, and every article indexed in *OCI* will be microfilmed and xerox copies made available to subscribers at 30 cents each. The indexing method is based on the Uniterm Coordinate Indexing System. Mrs. Nell Steinmetz is Director of the Oceanic Library and the *Index*.

## New Jersey Chapter Membership Directory

The SLA New Jersey Chapter has issued its 1964-65 Membership Directory, which may be purchased from Mrs. Rita L. Goodemote, Schering Corporation, Bloomfield, New Jersey 07003, for \$1. The 40-page, 8½ x 11 booklet consists of three sections: a list of Chapter officers, committees, and Sustaining members; an alphabetical list of organizations, and an alphabetical list of members with home addresses.

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## New Serials

GERMAN MEDICAL RESEARCH (*Deutsche Medizinische Forschung*), is a bilingual, monthly, international publication containing scientific reports from hospitals and departments for medical research in Germany. The journal is published by Verlag für Gesamtmedizin in Berlin and is distributed in the United States by International University Booksellers, Inc., 30 Irving Place, New York 10003. Articles are written in English and German, and the annual subscription rate is \$18 postpaid.

INFORMATION DISPLAY, the journal of the Society for Information Display, is published bimonthly by Information Display Publications, Inc., 160 South Robertson Boulevard, Beverly Hills, California, at no charge to Society members and \$12 a year to nonmembers. This new journal concerned with display systems and related technology appears to have above-average interest for special librarians. Although the first issue (vol. 1, no. 1, September/October 1964) displays an unusually

large number of typographical errors, there is no question about the technical competence of the first articles, which deal with the subjects of illumination of various displays in command centers and control of distribution of screen illuminance from a slide projector through proper design of the illuminating condenser.

#### REPROGRAPHY COMMITTEE

NUCLEAR PHYSICS, a translation of the newly announced USSR Academy of Sciences journal, *Yadernaya Fizika*, will be published monthly by the American Institute of Physics beginning in July 1965. The journal will be devoted to experimental and theoretical research on the physics of the nucleus, application of nuclear methods to other areas, cosmic rays, and elementary particle physics. The subscription price for one year is \$70 in the United States, Canada, and Mexico and \$74 elsewhere. Orders and inquiries should be sent to Department S at the AIP, 335 East 45th Street, New York 10017.

PREPRINT ABSTRACTS is an annotated bibliographical listing of the reproduced manuscripts that are available in the library files of the Preprint Center, 3025 Shattuck Avenue, Berkeley, California. When a manuscript is submitted, the Center duplicates the manuscript and makes it available at a minimum cost. *Abstracts*, which is sold for \$1, lists speeches, articles, research reports, and other unpublished documents of a scientific, educational, technical, scholarly, literary, or business nature.

### RECENT REFERENCES

Prepared by JOHN R. SHEPLEY

#### Librarianship

CANADIAN LIBRARY ASSOCIATION. *Proceedings, 19th Annual Conference, Halifax, Nova Scotia, June 7-12, 1964*. Ottawa: 63 Sparks St., 1964. iv, 96 p. pap. Apply.

Theme of the conference was "Libraries and Canadian Dualism." Speeches, section reports, committee reports, and workshop summaries. Summary proceedings, general sessions reports, and resolutions are in *Canadian Library*, vol. 2, no. 2, September 1964.

GARRISON, Guy. *A Statewide Reference Network for Wisconsin Libraries*. Madison: Wisconsin Free Library Commission, 1964. ix, 111 p. pap. Apply. (Distributed by Free Library Commission to libraries in Wisconsin. Limited number of copies available to libraries and agencies in other states.)

A report prepared by the Library Research Center, Graduate School of Library Science, University of Illinois. Recommends that cooperative systems of libraries, similar to the present Wisconsin Valley Library Reference System, be established to cover the entire state. Tables, distribution maps, bibliography.

INTERNATIONAL FEDERATION OF LIBRARY ASSOCIATIONS. *Proceedings of the Council (Actes du*

*Conseil)*, 29th Session, Sofia, September 1-6, 1963 (Publications Vol. XXVIII). The Hague: Martinus Nijhoff, 1964. 285 p. pap. 30 Swiss francs or 28.20 Dutch guilders.

Text of the proceedings alternates between French and English, with Russian and Bulgarian speeches translated into one or the other language. Resolutions are in French, English, and Russian.

LEYLAND, Eric. *Libraries in Schools*. New York: Philosophical Library, 1964. 143 p. \$4.75.

A practical British handbook addressed primarily to teachers faced with the problem of setting up and administering a school library. Chapters on policy, planning and equipment, book selection, classification, cataloging, circulation, etc. Suggestions for further reading, book selection aids. Index.

LIBRARY TECHNOLOGY PROJECT, AMERICAN LIBRARY ASSOCIATION. *Evaluation of Record Players for Libraries, Series II* (LTP Publication No. 8). Chicago: 1964. (68 p.) pap. illus. \$6. (L. C. 64-7692)

A general discussion of record-player equipment, followed by 12 reports on individual players as evaluated by the United States Testing Company. Machines selected are priced from \$100 to \$200 and designed for use with headphones. Supersedes LTP's first report, *The Testing and Evaluation of Record Players for Libraries*, published in 1962.

NATIONAL LEAGUE FOR NURSING. *Guide for the Development of Libraries in Schools of Nursing*, 2nd ed. New York: 10 Columbus Circle, 1964. iii, 19 p. pap. 75¢.

A checklist for nursing school librarians.

*Notes on State Library Association Activities, 1963-1964*. New York: Grolier, Inc., 1964. (21 p.) pap. Apply.

Prepared in connection with the ALA conference in St. Louis, June 1964. Brief summaries of activities of 41 state associations during the past year.

RICHARDSON, Ernest Cushing. *Some Old Egyptian Librarians*. Berkeley, Calif.: Peacock Press, P. O. Box 875, 1964. 93 p. pap. \$2.25. (L. C. 64-22396)

Reprint of a lecture and supplementary paper first published in 1911 by Scribner's. The author (1860-1939) was a well-known librarian and Egyptologist. Limited edition, 1000 copies.

YOUNG, Virginia G., ed. *The Library Trustee: A Practical Guidebook*. New York: R. R. Bowker Co., 1964. [x], 184 p. \$7.50. (L. C. 64-16780)

Articles by various hands cover the duties and qualifications of library trustees, organization of the library board, policy-making, relations with librarian and staff, law and finance, public relations, censorship, etc. Reading list; index.

#### Bibliographic Tools

*Civil War Maps in the National Archives* (National Archives Publication No. 64-12). Wash-

ington, D. C.: General Services Administration, National Archives and Records Service, 1964. xii, 127 p. pap. illus. 75¢. (L. C. A64-7308) (Available from Government Printing Office)

Describes approximately 8,000 maps, charts, and plans relating to the Civil War and to be found in the Cartographic Branch of the National Archives. Part I is an over-all listing and description of these records; Part II gives detailed descriptions of selected items of special interest. Index.

FANNING, David C. *Market Research* (Library Association Special Subject List No. 44). London: The Library Association, 1964. 22 p. pap. 70¢ (53¢ to Library Association members).

Brief bibliography with occasional annotations. 125 items, arranged by subject, and including textbooks and periodicals.

FORTESCUE, G. K. *British Museum Subject Index*, 7 vols. London: H. Pordes, 529b Finchley Road, 1964. \$36 per volume.

A series of five-yearly indexes to British and foreign works published since 1881 to be found in the British Museum. Nineteen volumes have been published to date—seven are out of print and are here reprinted in a limited subscription edition. The periods 1901-1905, 1906-1910, 1911-1915, 1916-1920, 1921-1925 are each represented by one volume; 1936-1940 is in two volumes. Volumes may be ordered singly or in sets. All other volumes of the *Index* are available through Pordes.

HEINZ, Grete and PETERSON, Agnes F., comps. *NSDAP Hauptarchiv: Guide to the Hoover Institution Microfilm Collection* (Hoover Institution Bibliographical Series: XVII). Stanford, Calif.: Hoover Institution on War, Revolution, and Peace, 1964. xii, 175 p. pap. \$4.50. (L. C. 64-17344)

Guide and index to the central archive of the German Nazi Party (NSDAP)—Nationalsozialistische Deutsche Arbeiterpartei, microfilms of which are held by the Hoover Institution in some 240,000 frames. Arrangement is by subject groups and by provenance. Two additional collections, on Streicher and Himmler, are included although not part of the Hauptarchiv. Index. Ordering procedure and price list of reels.

HOFFMAN, Hester R. *The Reader's Adviser: An Annotated Guide to the Best in Print in Literature, Biographies, Dictionaries, Encyclopedias, Bibles, Classics, Drama, Poetry, Fiction, Science, Philosophy, Travel, History*, 10th ed. rev. New York: R. R. Bowker Co., 1964. xxii, 1292 p. \$20. (L. C. 57-13277)

Updated, enlarged, expanded, and elephantine. Index.

KRUGER, Arthur N. *A Classified Bibliography of Argumentation and Debate*. New York and London: Scarecrow Press, Inc., 1964. 400 p. \$9.75. (L. C. 64-11791)

4,223 entries of books, articles from debating and speech journals, master's theses, and doctoral

dissertations, arranged by subject classification, with cross-references when the subject overlaps. Emphasis is on works published in the United States in the 20th century. Author index.

LIBRARY OF CONGRESS. Reference Department. General Reference and Bibliography Division. *John Fitzgerald Kennedy, 1917-1963: A Chronological List of References*. Washington, D. C.: 1964. viii, 68 p. pap. 30¢ (L. C. 64-60056) (Available from Government Printing Office)

Writings by and about the late President up to the close of 1963. Arrangement is by year, divided according to whether Mr. Kennedy was author or subject, and with books, articles, speeches, reports, papers, etc., all jostling one another under these two headings. Includes translations and book reviews. Not intended as a definitive bibliography, however; the compilers themselves state that it was assembled to meet an immediate and pressing demand. Index.

LEIGH, Robert, comp. *Index to Song Books*. Stockton, Calif.: P. O. Box 4054, 1964. 237 p. \$4.95.

A title index to over 11,000 copies of almost 6,800 songs in 111 song books published between 1933 and 1962. Includes only song books giving both words and music, published in the United States, and likely to be found in library collections. Alternate titles and memorable lines are cross-indexed. No author or composer entries. An approval copy may be had by writing the author.

MARSHALL, John David. *Louis Shores: A Bibliography*. Tallahassee, Fla.: Beta Phi Mu, Gamma Chapter, Florida State University Library School, 1964. 31 p. pap. \$2 (\$2.25 for mail orders).

Lists the writings of the Dean of the Florida State University Library School—separate publications, forewords to other works, contributions to other works, and journal contributions—and includes a biographical appreciation by N. Orwin Rush and a hitherto unpublished essay by Dr. Shores himself.

MAXWELL SCIENTIFIC INTERNATIONAL, INC. *Most Significant New Books on Chemistry/1963*. Long Island City, N. Y.: 44-01 21st St., 1964. 53 p. pap. mimeo. Gratis.

An annual publication. 139 books, with annotations or review quotes, and generally limited to pure chemistry, with books on applied chemistry and chemical engineering to be listed in a forthcoming publication. Also lists new reference works and bibliographies.

———. *Most Significant New Books on Education/1963*. Long Island City, N. Y.: 44-01 21st St., 1964. 43 p. pap. mimeo. Gratis.

141 books, similarly annotated. Limited to books on the theory and practice of education, the history of education, and school and teaching organization. Directories, annual handbooks, and school or college textbooks omitted. Select list of new bibliographies and reference works published in 1963.

———. *Most Significant New Books on Mathematics/1963*. Long Island City, N. Y.: 44-01 21st St., 1964. 34 p. pap. mimeo. Gratis.

111 books, limited to pure mathematics. Publications on applied subjects, computing, etc., to be covered by a separate annual bibliography. Emphasis is on British and American publications, but a number of German, French, Dutch, and Swiss titles are included. Again, a special listing of new bibliographies and reference works.

MIDWEST INTER-LIBRARY CENTER. *Rarely Held Scientific Serials in the Midwest Inter-Library Center*, Supplement I. Chicago: 5721 Cottage Grove Ave., 1964. 44 p. pap. Gratis.

First supplement to the basic list published in 1963 (see *Special Libraries*, February 1964, p. 124). Lists serials abstracted in *Chemical Abstracts* and *Biological Abstracts* and acquired by the Midwest Inter-Library Center under a program designed to increase the availability of foreign scientific information to U. S. scientists. Basic list is also still available for the asking.

MUGRIDGE, Donald H., comp. *The Presidents of the United States 1789-1962: A Selected List of References*. Washington, D. C.: Library of Congress, 1963. xviii, 159 p. pap. \$1. (L. C. 63-61781) (Available from Govt. Printing Office)

Lists nearly 1,500 books and articles on the Presidency and individual Presidents. Individual Presidents are listed chronologically with sections on "Writings" and "Biography" under each. Included are references to wives and Vice-Presidents. Subject and author-title indexes.

MURPHY, T. C. and MASON, E. Francis, comps. *Communism: A Selected Bibliography*. Port Hueneme, Calif.: U.S. Naval School, Civil Engineer Corps Officers, U.S. Naval Construction Battalion Center, 1964. iv, 65 p. pap. mimeo. Apply.

Prepared as an aid to school faculties undertaking courses on communism. 572 items—books, Congressional and other reports, periodicals—arranged under subject headings.

OKO, Adolph S., comp. *Spinoza Bibliography*. Boston: G. K. Hall & Co., 1964. Prepublication price \$30; after October 31, 1964, \$40; 10% additional charge for outside the U.S.

Over 6,000 references to Spinoza's works in the original and translations, as well as to books, treatises, and articles dealing with his philosophy in many languages. Cards are arranged under such subject headings as "Works," "Philosophical works with references to Spinoza," "Non-philosophical literature and Spinoza," etc.

PEDDIE, R. A. *Subject Index of Books Published up to and Including 1880*, 4 vols. London: H. Pordes, 529b Finchley Road, 1964. 745, 857, 945, 872 p. \$225 complete set.

Limited re-print edition of 1,000 copies. Includes many continental and foreign works as well as those in English. Single volumes available for a short time only to libraries already holding part of the set at approximately \$60 per volume.

SCHRAMM, Wilbur. *The Research on Programed Instruction: An Annotated Bibliography* (OE-34034, Bulletin 1964, No. 35). Washington, D. C.: U. S. Department of Health, Education, and Welfare, 1964. v, 114 p. pap. 50¢. (Available from Government Printing Office)

Studies in the field of programed instruction published since 1954. Author contributes a general introduction comparing and summarizing significant findings. Author index.

SHERROD, John, comp. *Popular Books on Nuclear Science*. Oak Ridge, Tenn.: U. S. Atomic Energy Commission, P. O. Box 62, 1964. 18 p. pap. Gratis.

Two lists: books for adults and for elementary and high school students, all by U.S. authors and in print as of December 1963. Most aspects of nuclear science are covered, except for military applications. Adult books selected only from those published since 1958. Directory of publishers.

SMITH, R. E. G., ed. *Newspapers First Published before 1900 in Lancashire, Cheshire and the Isle of Man: A Union List of Holdings in Libraries and Newspaper Offices within that Area*. London: The Library Association, 1964. 47 p. pap. \$1.47 to members; \$1.82 to non-members.

Not a bibliographic guide but a location list of existing files. Part 1 gives names and addresses of the libraries and newspaper offices whose holdings are represented in the list; Part 2 lists the newspapers arranged in alphabetical order of towns. Indexes of places and newspaper titles.

STECKLER, Phyllis B., ed. *American Scientific Books, 1963-1964: A Basic Selection of Scientific, Technical and Medical Books as Entered in the American Book Publishing Record*. New York: R. R. Bowker Co., 1964. (x), 250 p. \$8. (L. C. 62-18243)

Covers the period April 1963-March 1964, supplementing the previous two editions. Juveniles and texts below the college level excluded. Arrangement by Dewey decimal classification. Subject, author, and title indexes.

SYRACUSE PUBLIC LIBRARY. *Gold Star List of American Fiction, 1963*. Syracuse, N. Y.: 1964. 82 p. pap. \$1.25.

The 49th annual listing of recommended novels, arranged by author and title and also under subject headings.

TELEVISION INFORMATION OFFICE. *Television in Government and Politics: A Bibliography* (TIO Bibliography Series No. 3). New York: 666 Fifth Ave., 1964. iii, 62 p. pap. Apply.

Annotated listing of books, articles, theses and dissertations, and government reports dealing with the effect of television on American politics. Directory of publishers; no index. Pamphlet format.

TILTON, Eva Maude, comp. *A Union List of Publications in Opaque Microforms*, 2nd ed. New York and London: Scarecrow Press, Inc., 1964. 744 p. \$15. (L. C. 64-11788)

7,640 entries, arranged by author, and including both American and European publications. Prices given in most cases. Directory of publishers; index.

TURNER, Mary C., ed. *Libros en Venta en Hispanoamérica y España*. New York: R. R. Bowker Co., 1964. 1,891 p. \$25.

Lists over 87,000 books in Spanish, publications of more than 800 publishers in 19 countries. Each book indexed by author, title, and subject, with publisher and price, following the same format as *Books in Print*. Subject index and directory of publishers.

UNION OF INTERNATIONAL ASSOCIATIONS. *Bibliography of Proceedings of International Meetings Held in 1958*. Brussels: Palais d'Egmont, 1964. 400 p. cloth \$10; pap. \$8.

Covers 1,620 reports produced in connection with 1,180 international conferences, congresses, symposia, roundtables, etc., including specialist and technical meetings held under the auspices of the United Nations. Summary of contents in English and/or French. Author, subject, UDC indexes.

*United Nations Documents Index: Cumulative Checklist, Volume 14, 1963*. New York: United Nations, 1964. viii, 245 p. pap. \$4.

Consolidates the 12 monthly issues of the *United Nations Documents Index*, listing in document symbol order all documents and publications issued by the United Nations during the year.

U. S. DEPARTMENT OF COMMERCE OFFICE OF TECHNICAL SERVICES. *PL-480 Translation Program, Part I: Agriculture, Food, Fishes, Forestry* (OTS Selective Bibliography SB530). Washington, D. C.: 1964. 18 p. pap. 10¢.

The PL-480 Translation Program is financed with currencies in Israel, Poland, and Yugoslavia under the terms of the Agricultural Trade Development and Assistance Act of 1954. As of January 1964, approximately 112,000 pages of translation from Russian, Polish, and Serbo-Croatian have been completed under the program, and are available to the public. Part I lists translations on animal husbandry, fishes, food, forestry, pest control, plant cultivation, soils, and agriculture in general.

———. *PL-480 Translation Program, Part II: Biological Sciences* (OTS Selective Bibliography SB531). Washington, D. C.: 1964. 12 p. pap. 10¢.

Translations made under the above program and covering biochemistry, botany (for forests, see Part I), microbiology, neurology and psychiatry, pathology, physiology, radiobiology, zoology (for fishes, see Part I), and general biological sciences.

———. *PL-480 Translation Program, Part III: Earth Sciences* (OTS Selective Bibliography SB532). Washington, D. C.: 1964. 8 p. pap. 10¢.

Climatology and meteorology, geodesy and geology, hydrology, oceanography, soil science (see also Part I), and general earth sciences.

———. *PL-480 Translation Program, Part IV: Science and Technology* (OTS Selective Bibliography

SB533). Washington, D. C.: 1964. 19 p. pap. 10¢.

Chemistry, engineering, machinery, materials, mechanics, metallurgy, nuclear physics and nuclear chemistry, physics and mathematics, patents.

*Union List of Periodicals in the College and Special Libraries of Greater Springfield, Massachusetts, 1963*. Springfield, Mass.: [1964]. 136 p. \$3. (Available from Miriam H. Root, 31 Maple St., Springfield 3, Mass.)

First comprehensive union list of periodicals in the greater Springfield area. Locates approximately 2,000 periodicals and holdings in 18 libraries; contains volumes, dates, and broken files. Can be used as a supplement to the *Union List of Serials and New Serial Titles*.

UNITED STATES SENATE SUBCOMMITTEE ON INTERGOVERNMENTAL RELATIONS OF THE COMMITTEE ON GOVERNMENT OPERATIONS. *Metropolitan America: A Selected Bibliography*. Washington, D. C.: Government Printing Office, 1964. v, 37 p. pap. Apply.

Annotated listing of books, reports, and monographs, both general and specialized, covering broad ("Origin and Growth of Cities," "Metropolis in Ferment," "The Shape of Things to Come," etc.) and particular ("Metropolitan Organizations," "Decisionmaking," "Air Pollution," "Urban Renewal," etc.) aspects of urban life. Index.

WALFORD, A. J., ed. *A Guide to Foreign Language Grammars and Dictionaries*. London: The Library Association, 1964. 132 p. pap. \$4.20; \$3.15 to members.

Evaluates grammars and dictionaries in print for French, Italian, Spanish, Portuguese, German, the Scandinavian languages (including Icelandic and Faroese), and Russian. Excellent presentation; concise annotation; additional notes on special publications (commercial and technical, bibliographies, etc.) and gramophone records. Index.

WILFORD, Enid L. *Architecture, Building and Engineering* (PACAF Basic Bibliographies for Base Libraries). San Francisco: 1964. vi, 72 p. pap. spiral binding. Apply. (Available from Commander-in-Chief, Pacific Air Forces, ATTN: PFPPS-P, Command Librarian, APO 953, San Francisco, Calif.)

Suggested books for the Air Force base library. Annotated. List of periodicals; author-title index. Supersedes PACAF bibliography *Architecture, Building and Engineering*, dated May 1, 1960.

WITHERELL, Julian W., comp. *Official Publications of French Equatorial Africa, French Cameroons, and Togo, 1946-1958: A Guide*. Washington, D. C.: Library of Congress, 1964. xi, 78 p. pap. 50¢. (L. C. 64-60029) (Available from Government Printing Office)

Publications issued during the Fourth Republic by the government of French Equatorial Africa and its four component territories (Chad, Gabon, the Middle Congo, and Ubangi-Shari), the French Cameroons, and Togo, with selected documents of

the French Government relating to its administration of these countries and United Nations publications bearing directly on the trust territories of the French Cameroons and Togo. 405 entries. Index.

PARKHI, R. S. *Decimal Classification and Colon Classification in Perspective* (Ranganathan Series in Library Science, no. 11). Bombay: Asia Publishing House, 1964. xix, 545 p. \$15.50. (Distr. by Taplinger Publishing Co., 119 West 57th St., New York)

A comparative study of the Dewey Decimal Classification system and the Colon Classification developed by S. R. Ranganathan. Index.

#### Dictionaries

DUNNER, Joseph, ed. *Dictionary of Political Science*. New York: Philosophical Library, 1964. xxii, 585 p. \$10. (L. C. 63-15600)

Terms current in political theory and practice, summaries of important historical events, descriptions of nations, brief biographies of political figures. A loose hodge-podge that does not come up to its title.

KOTZ, Samuel. *Russian-English Dictionary of Statistical Terms and Expressions and Russian Reader in Statistics* (University of North Carolina Monograph Series in Probability and Statistics No. 1). Chapel Hill: University of North Carolina Press, 1964. xviii, 115 p. \$7.50. (L. C. 64-16840)

Over 5,000 terms current in Soviet statistical science or drawn from closely related fields such as the theory of games, queueing theory, information theory, etc. Part II, the Russian Reader in Statistics, contains short sentences with interlinear translation. Appendix lists Russian transliterations of names of some Western statisticians and mathematicians. Selected bibliography.

MARTON, Tibor W. *Foreign-Language and English Dictionaries in the Physical Sciences and Engineering. A Selected Bibliography 1952 to 1963* (National Bureau of Standards Miscellaneous Publication 258). Washington, D. C.: U. S. Department of Commerce, 1964. 189 p. pap. \$125. (L. C. 64-60041) (Available from Government Printing Office)

An unannotated list of over 2,800 unilingual, bilingual, and polyglot dictionaries, glossaries, and encyclopedias, the majority having English as the source or target language. Entries, arranged under 49 subject headings, are listed alphabetically by language within each subject, and within each language group by author. 47 foreign languages represented. Bibliographic references; author, language, and subject indexes.

SPRINGER, Otto, ed. *Langenscheidt's New Muret-Sanders Encyclopedic Dictionary, Part I, English-German, vol. 2, N-Z*. New York: Barnes & Noble, Inc., 1964. vi, 885-1844 p. \$17.50.

The two volumes together contain 180,000 main entries in English, with what would seem to be ample translation, sample usage, and idiomatic

expressions. Biographical and geographical sections are included among the numerous appendices. The German-English part, likewise in two volumes, is still in preparation.

#### Directories

AMERICAN GEOLOGICAL INSTITUTE. *Directory of Geoscience Departments in the Colleges and Universities of the United States and Canada*. Washington, D. C.: 1444 N St., N. W., 1964. vii, 151 p. pap. \$3. (L. C. 52-63089)

Replaces the 1962 edition of the same title. Information on 325 departments offering a major in geology, geophysics, oceanography, and related sciences. Major marine institutes and departments of oceanography are included for the first time, except those whose courses are primarily in marine biology. Includes an alphabetical listing of 2,100 faculty members, a section devoted to colleges that offer some courses in the geological sciences but not at present a major, and finally data on the availability of financial assistance at the degree-granting institutions.

CATTELL (JAQUES) PRESS, eds. *Directory of American Scholars*, Vol. IV: *Philosophy, Religion and Law*, 4th ed. New York: R. R. Bowker Co., 1964. xii, 220 p. \$15. (L. C. 57-9125)

Fourth and final volume of the series. Approximately 4,200 biographies.

*Directory of British Scientists, 1964-65*. New York: R. R. Bowker Co., 1964. xxx, 2003 p. \$20.58. (L. C. 63-11074)

About 45,000 biographical sketches, a 50 per cent increase over the 1963 edition. Lists of scientific societies and their journals, other scientific periodicals, and research establishments; subject index.

*Greek Who's Who, 1962*. Athens: Greek "Who's Who" Publishing Co., 9 Valaoritou St., 1962. 576 p. pap. \$8.

In Greek. 2,500 biographical sketches of prominent personalities in all walks of life.

LONG, Marie Ann, comp. *Directory of Library Resources in Wisconsin*. Madison: Wisconsin Library Association, 1964. (136 p.) pap. \$1.50 (Available from Madison Public Library, 206 N. Carroll Street, Madison, Wisconsin)

Libraries in Wisconsin arranged alphabetically by cities, with address, telephone, librarian, hours, policy, special services, and resources. Subject index.

STEPHENSON, G. R. comp. *Directory of Northern Special Library Resources*. Ashington, Northumberland, England: Library Association, Reference Special & Information Section (Northern Group), 1964. (24 p. pap. mimeo. \$1, free to contributors). (Available from Treasurer, Northumberland County Technical College Library, Hawthorn Road, Ashington, Northumberland)

Lists industrial and scientific libraries and technical colleges in Cumberland, North Cumberland,

Durham, and Teesside, with name of librarian, hours, subject interests, special collections, photocopying facilities, and lending procedures. Index.

UNITED STATES AIR FORCE, OFFICE OF AEROSPACE RESEARCH. *Air Force Research Resumes*, 1963, vol. 4 (OAR-016). Washington, D. C.: 1964. viii, 578 p. pap. Apply. (Available from U. S. Department of Commerce, OTS, Washington, D. C.)

Formerly entitled *Basic Research Resumes*. Describes over 2,100 active in-house and contractual research efforts (research efforts, not publications, as is stressed in the Introduction) supported by the OAR, arranged under 24 broad subject headings and indexed by contractor, principal investigator, and contract number.

VON BUSSE, Gisela, ed. *Handbook on the International Exchange of Publications*, 3rd ed., rev. Paris: UNESCO, Place de Fontenoy, 1964. 768 p. pap. \$7.50.

In English, French, Spanish, and Russian. Analyzes the development of exchanges in 124 countries and territories, and lists 94 national exchange centers and 149 bibliographical information centers. Select list of current international directories; subject index; index to countries.

WASSON, Donald, comp. *American Agencies Interested in International Affairs*, 5th ed. New York and London: Frederick A. Praeger, 1964. x, 200 p. \$5.50. (L. C. 64-22497)

Published for the Council on Foreign Relations. Lists purposes, organization, activities, staff and membership, finance, study facilities, and publications of more than 150 United States groups engaged in the study and dissemination of information on world affairs. Also lists over 100 foreign chambers of commerce and information bureaus. Subject and personnel indexes.

*Who's Who*, 1964. London: Adam & Charles Black; New York: St. Martin's Press, 1964. 36, viii, 3390 p. \$25. (L. C. 4-16933)

The 116th issue of the famous annual.

*Yugoslav Scientific Research Directory*, 1964 (OTS 64-11452). Belgrade: Nolit Publishing House, 1964. 590 p. pap. \$6. (Available from OTS, U. S. Department of Commerce, Washington, D. C.)

Data on Yugoslav institutions sponsoring scientific research, research institutions grouped by scientific discipline, academies of sciences, universities, auxiliary scientific institutions, international scientific relations, scientific unions, leagues, societies, etc. Laws governing the organization and financing of research; register of legal prescripts, 1945-1962. Index of publications: subject, geographical, and alphabetical indexes of scientific institutions; index of names.

#### Encyclopedias

*Encyclopedia of Polymer Science and Technology: Plastics, Resins, Rubbers, Fibers*, Vol. I: Ablative

Polymers A to Amino Acids. New York: Interscience, 1964. xviii, 893 p. illus. \$40 subscription, \$50 single copy. (L. C. 64-22188)

Planned as a full coverage of polymer science and technology. Properties, methods, manufacturing processes, as well as broad treatments of theoretical fundamentals. Subjects of each article are discussed strictly from the polymer point of view. Many cross references; charts, tables, diagrams, illustrations. Lengthy bibliographies appended to each article; all articles signed.

#### Miscellaneous

GATLAND, K. W. *Spacecraft and Boosters: The First Comprehensive Analysis of More than Seventy U. S. and Soviet Space Launchings*, 1961. London: Iliffe Books Ltd.; Los Angeles: Aero Publishers, 1964. 296 p. illus. \$13. (L. C. 64-15746)

Details of all known launchings, successful and unsuccessful, carried out in 1961. Satellites, space probes, and test-vehicles are arranged chronologically, followed by a section on launching vehicles in alphabetical order. Further volumes are planned. Index.

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CATALOGER—Science background preferred. Lehigh University. Department well organized with adequate clerical assistance. Library has newly established Center for the Information Sciences. Beth-



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