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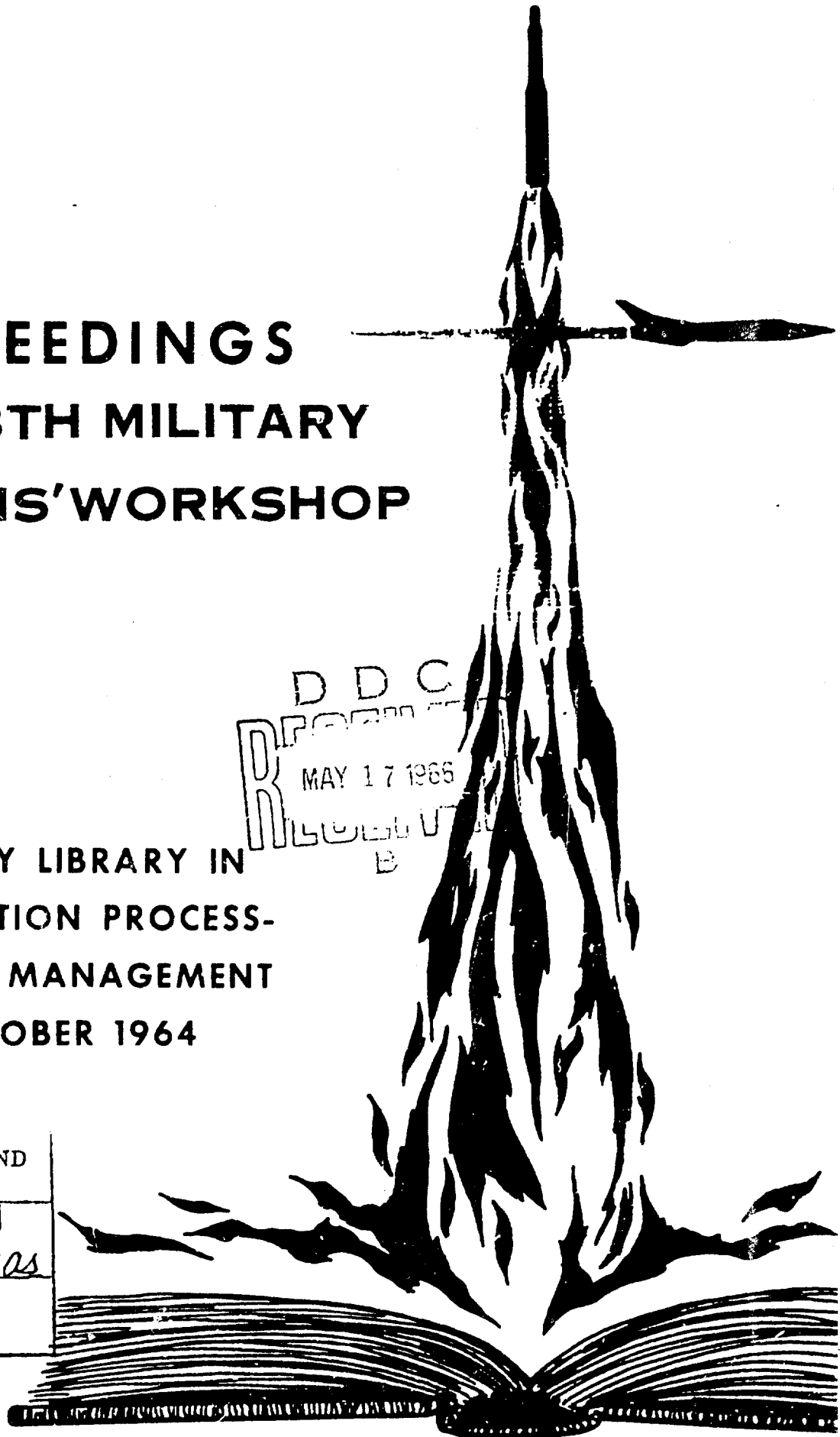
PROCEEDINGS OF THE 8TH MILITARY LIBRARIANS' WORKSHOP

THE MILITARY LIBRARY IN
THE INFORMATION PROCESS-
A REPORT TO MANAGEMENT
14-16 OCTOBER 1964

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A REPORT TO MANAGEMENT

14 - 16 October 1964

AIR FORCE WEAPONS LABORATORY
KIRTLAND AIR FORCE BASE, NEW MEXICO

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STAFF STUDY

STATEMENT OF THE PROBLEM:

The potential of military libraries in support of the information processes of the Military establishments is not being fully exploited by the library, the library user, or management.

ASSUMPTION

That we are discussing conditions which are generally characteristics of military libraries, but that there are exceptions to which the facts stated below do not apply.

FACTS BEARING ON THE PROBLEM:

A. MISSION

The library's mission is not clearly defined.

B. STAFF REPRESENTATION

The library is not adequately represented at staff conferences.

C. LIBRARIANSHIP AS A PROFESSION

The status of librarianship as a profession and the necessity for a professional librarian are not always recognized.

D. COMMUNICATIONS

Communication lines with management are inadequate.

1. The library is misplaced within the organizational structure.

2. Librarians do not adequately advise management of the library's problems, potentials, and accomplishments.

3. The librarian is not kept aware of policy formulation and programs which affect library resources and services.

E. SUPPORT RESOURCES

1. The quality of library personnel is inadequate.

2. The quantity of library personnel is insufficient.

3. Opportunities for career development are not fully exploited.

4. Buildings or building space allocations are inadequate as they pertain to floor space, desirable location (accessibility), poor design, and environmental control.

5. Insufficient attention is paid to the library's need for equipment specially designed for libraries.

6. Funds are insufficient.
7. Funding procedures are cumbersome.
8. Functions are assigned without providing proper resources.
9. Librarians are reluctant to accept responsibility within the scope of their mission, because of inadequate resources.
10. The librarian does not have enough authority and responsibility for the content of the collection.
11. Libraries maintain material extraneous to the collection, i.e., junk.

F. SERVICES

1. Libraries do not always assume an active and aggressive role in publicizing their services.
2. The quality of the library exerts an influence in the recruitment of scientific personnel.
3. The clientele does not make full use of the library.
4. Insufficient attention is paid to research in new techniques and resources, which would improve library operations.

DISCUSSION

All military libraries were considered in this Staff study. The major categories of military libraries are general (post, station or base libraries with emphasis on recreational reading services), academic (supporting professional military education and training), research (technical), and dependent school libraries. In some instances a library may provide services in more than one category. In the broadest sense the mission of a military library is: (1) to collect, organize and provide recorded information related to the agency's area of responsibility on a continuing and timely basis in response to or anticipation of request demands; (2) to provide guidance in the identification, location and use of pertinent collections which may compliment or supplement the library's resources.

CONCLUSIONS

1. The agency's failure to recognize and correct the above deficiencies where they exist will prevent it from realizing the library's optimum contribution to the accomplishment of the agency's mission.
2. The library requires a clear statement of its functions and responsibilities.
3. There is no clearly defined pattern of staff representation of the library at various levels of command within the DOD.
4. With the cooperation of management, libraries should be accorded equal opportunities with other professions for career development.

5. The library should be placed in the organizational structure of the agency it serves at that level which would insure the library's optimal performance in view of decisions and policies affecting it.
6. There is need for better defined civil service standards.
7. Active indoctrination of library patrons in capabilities and limitations of library service is essential.
8. Continuous training of the library staff in ideals of service directed to user needs is necessary.
9. Lines of communication to and from management must be short and reasonably direct to be effective.
10. The library must keep management advised of problems before the problems become critical.
11. There is a requirement to teach users to ask the right question in the right way.
12. The librarian has a responsibility to identify the real needs of the client.
13. Building of the library collection must be based on selective acquisition and weeding in line with the agency's mission.
14. Statistical standards used for various library purposes must be used with caution.
15. There is a direct relationship between the funds, facilities and equipment allocated to the library and the effectiveness of the library's operations.
16. Librarians should aggressively approach the publicizing of their services.
17. To keep current and to advance a library must keep abreast of new developments in systems and equipment.

RECOMMENDATIONS

1. That top management issue a clear statement to include the library's position in the organizational structure, its functions and responsibilities, and the authority of the librarian.
2. That the library be represented in all matters which affect it.
3. That the library be kept aware of long range policies and programs which markedly affect the direction and extent of library services and material required.
4. The library should be placed in the organizational structure of the agency it serves at that point which would ensure the library's optimum performance in view of the decisions and policies affecting it.

5. That a planned program of library indoctrination be scheduled for all incoming staff members who will be library users.

6. That librarians take more aggressive action to publicize their services by means of current awareness tools, such as...Commanders calls, briefings, bulletins, etc.

7. That management and library should join forces to develop more effective means of communication.

8. That continuing emphasis be placed on development of improved classification and qualification standards.

9. That librarians be afforded greater opportunity to enlarge their professional competence by formal education and by attendance at professional meetings and seminars at Government expense.

10. That the military librarian exert his influence on educational institutions to develop curricula more closely related to the needs of special libraries.

11. That librarians have primary responsibility for the content of their collections.

12. That librarians take continuous action to impart to their subordinates that service to clientele is of primary importance.

13. That the library be located, equipped and funded to enable it to support to the maximum the accomplishment of the agency's mission.

14. That an office of primary responsibility for library matters be established at the DOD level; in the Departments of the Army, Navy and Air Force; and at subordinate levels of command, as appropriate. Such staff offices should have the professional competence to exercise the library responsibility in matters of overall policy, planning, and staff supervision.

SUMMARY OF GROUP A DISCUSSION

Group A reviewed quite thoroughly the existing library programs of DOD and the three services, based upon the assumption that "military library," as defined for the purpose of the workshop discussion, includes all libraries established and operated by all elements of the Department of Defense. It became apparent that analysis of problems facing military libraries would necessarily have to be described in very general terms so that they could apply across the board. This observation also complicated the selection of an exact definition for the problem to be attacked in the staff study. Also, the group was fortunate in having among its participants professional librarians who hold staff assignments at DOD, service, and command levels, and who could present a view of military libraries from topside. Group A, therefore, kept its discussions at all times oriented to the total picture of defense library programs.

The group, after agreeing on this breadth of viewpoint, decided to list facts and conclusions in six major categories: support resources (manpower, money and materiel), services offered by libraries, lines of communication and organizational placement of the library, the profession of librarianship, the statement of mission for a library, and staff (as opposed to "line") representation. Working sections were organized on each topic. Some of the sections were able to present clearly delineated facts, assumptions, conclusions and recommendations. Others found their areas so broad they could be covered only partially in the time available.

In the consultation period for group discussion leaders just before final presentations on the last day of the workshop, it was discovered that each of the three groups had covered much of the same subjects, except that neither Group B or C had discussed, in as much detail as had Group A, the subjects of staff representation and librarianship as a profession. A summary of our work on these two topics follows.

Librarianship as a Profession

Assumptions

Attributes of a profession

1. Incorporates a body of general and specialized knowledge.
2. Accredits education leading to a professional degree.
3. Supports a professional association

Professional journal

4. Establishes a code of ethics and recognized standards of performance.
5. Is generally recognized as a profession.

Facts

1. Librarianship is a profession
2. Responsibilities of a professional librarian include:
 - a. Making decisions.
 - b. Meeting changing needs of the mission.
 - c. Insuring representation in policy formulation.
3. Opportunities for career development are available to librarians.

Conclusions

1. A qualified professional librarian should be given the responsibility for administering the library in support of the information process. The library should be adequately staffed by persons meeting the standards of the profession and capable of carrying out the necessary responsibilities.
2. The status of the librarian as a professional person should be recognized.
3. With the cooperation of management, libraries should be accorded equal opportunities with other professionals for career development such as attendance at seminars, professional meetings, and formal programs leading to an advanced degree.

Staff Representation

Fact

There is no clearly defined pattern of staff representation of the military library function at the various levels of command within the Department of Defense.

Recommendation

That an office of primary responsibility for library matters be established at the DOD level, in each of the Departments of the Army, Navy and Air Force, and at subordinate levels of command as appropriate. Such staff offices should have the professional competence to exercise the library responsibility in matters of overall policy, planning and staff supervision.

PRELIMINARY REPORTS OF GROUP A WORKING SECTIONS

Problem

The potential of military libraries in support of the information process is not being fully exploited.

Definitions

Information process

Military library

Any library established and supported by DOD or the services. The major categories of military libraries are general (post, station or base libraries with emphasis on recreational reading services), academic (supporting professional military education and training), research, and dependent school libraries. In some instances a library may provide services in more than one category. In the broadest sense the mission of a military library is: (1) to collect, organize and provide recorded information related to the Agency's areas of responsibility on a continuing and timely basis in response to or in anticipation of request demands; (2) to provide guidance in the identification, location and use of pertinent collections which may complement or supplement the library's resources.

Support Resources

1. Manpower, funding, equipment and space allocations are frequently insufficient to adequately support the assigned mission of the library.
2. Librarians have been forced to accept responsibilities for functions beyond that for which adequate resources have been provided. This has in turn impaired their ability to perform their basic mission.
3. Because of inadequate resources, librarians have been reluctant to accept additional responsibilities which could properly be included within their scope of operation.
4. Management should assure that the librarian participates positively in the recommendations or establishment of requirements preceeding the decision making on the assignment of resources.
5. Libraries which are designated to participate in a specific program or project should have supporting funds provided within the budget line item pertaining to that project.
6. The quality and quantity of professional library personnel is insufficient to meet the special requirements of the military library.

Library Services

Libraries provide services, of which, the most important are related to resources, communications, and information directly connected with the mission. The basis for this service is the Acquisition of Materials, such as, but not limited to, books, journals, documentary reports, microfilms, microcards, microfiche, recordings, maps, charts, etc.; cataloging and indexing by author, corporate author, title, subject series, contract number, project number, etc., so that complete bibliographical data will be readily available.

Specific services to support the library mission may include the following:

- a. Readers' advisory services
- b. Reference service
- c. Interlibrary loan services
- d. DDC and other documentary services

- e. Bibliographical services
- f. Abstract services
- g. Literature searches
- h. User orientation services
- i. Translation services
- j. Library publications

Assumptions

The library should not perform duties not a part of its normal functions.

Summary

To exploit these services to the greatest potential it is mandatory to have adequate study facilities, equipment, supplies and professional staff as stated in this staff study.

Lines of Communication

Facts

The potential value and use of the library considering the lead time necessary for procurement of materials and equipment is not in many cases fully exploited.

Lines of communication from and to management are in many cases too tenuous for the most effective exploitation of the library's value to the agency's mission. (The library is often unaware of changes and trends which may impact upon it.)

The library is in some instances misplaced in the organizations structure of the agency it services.

Conclusions and recommendations

The lines of communication to and from management must be short and reasonably direct to be effective.

The library should be placed in the organizational structure of the agency it serves at that point which would insure the library's optimum performance in view of the decisions and policies affecting it.

Librarianship as a Profession

Assumptions

Attributes of a profession

1. Incorporates a body of general and specialized knowledge.
2. Accredits education leading to a professional degree.

3. Supports a professional association

Professional journal

4. Establishes a code of ethics and recognized standards of performance.

5. Is generally recognized as a profession.

Facts

1. Librarianship is a profession.

2. Responsibilities of a professional librarian include:

a. Making decisions.

b. Meeting changing needs of the mission.

c. Insuring representation in policy formulation.

3. Opportunities for career development are available to librarians.

Conclusions

1. A qualified professional librarian should be given the responsibility for administering the library in support of the information process. The library should be adequately staffed by persons meeting the standards of the profession and capable of carrying out the necessary responsibilities.

2. The status of the librarian as a professional person should be recognized.

3. With the cooperation of management, libraries should be accorded equal opportunities with other professionals for career development such as attendance at seminars, professional meetings, and formal programs leading to an advanced degree.

Mission Statement

There should be issued by top management [as an organizational directive] a clear statement of the Library's position in the organization's structure, its function and responsibilities in relation to the mission of the organization and the total information flow within the organization, and the authority of the librarian.

The authority of the librarian should be broad to clearly spell out in such terms that he is placed at the center of the information flow within the organization and in a position to manage his operation with a minimum of specific controls subject to the broad determination of policy within the whole organization, particularly as concerns the procurement, organization and services of the library collections and services.

Staff Representation

Fact

There is no clearly defined pattern of staff representation of the military library function at the various levels of command within the Department of Defense.

Recommendation

That an office of primary responsibility for library matters be established at the DOD level, in each of the Department of the Army, Navy and Air Force, and at subordinate levels of command as appropriate. Such staff offices should have the professional competence to exercise the library responsibility in matters of overall policy, planning and staff supervision.

SUMMARY OF GROUP B DISCUSSION

Judging from the lively participation in the Panel discussions, Group B had 20 alert and vitally interested librarians who enjoyed three days of mental and semantic exercise. A summary can not do justice to the thinking and effort exerted during these sessions, but since they were not taped a verbatim record is not available and a summary will have to suffice. The complete staff study compiled by the discussion leaders of all three groups will reflect more clearly the extent of participation and contribution they made to the sessions.

The purpose of the workshop was "To evaluate the effectiveness of the military libraries in the information program of the Department of Defense establishments, and to inform management of the essential requirements for maintaining and improving this effectiveness."

We attempted an objective look at the whole spectrum of the Information Program in an effort to determine just how we fit into the scheme of things, and in what ways we are, and have in the past, fallen short in doing our job effectively and how in the future we can accomplish our role as librarians more efficiently. Our job as librarians is to provide library services consistent with user requirements to fulfill our role in carrying out the information program requisite to the agency's mission. We examined numerous facts bearing on this and concluded that there are certain responsibilities that the librarian has in executing this mission and some ways in which management can assist us in order that the particular agency served will realize the library's optimum contribution to the accomplishment of its mission. We have attempted to show in the completed staff study the responsibilities of both groups, the librarians and management, for accomplishing this.

Following is an outline of factors around which we developed our discussion.

1. The Problem:

Define and recognize the Library's role in carrying out the Information Program requisite to the fulfillment of the agency's mission.

2. Facts Bearing on the Problem: (We recognize that the facts stated below do not apply to all Military Libraries.)

a. General

(1) The role of the library is often inadequately defined with regard to the mission of the parent organization.

(2) Improper placement of the Library within the organization.

(3) Inadequate dissemination of the information on agency plans and programs which affect library resources and services.

b. Manpower Resources:

(1) Adequate staffing of the library organization and proper utilization of professional personnel.

(2) Need for career development opportunities at all levels.

c. Physical Resources:

Unsatisfactory procurement procedures.

3. Conclusions:

The agency's failure to recognize and correct the above deficiencies will prevent it from realizing the library's optimum contribution to the accomplishment of the agency's mission.

4. Recommendations:

a. That, if not existent, a well defined library mission be set forth in appropriate regulatory media.

b. If the library is misplaced within the organizational structure, consider placing it either as an individual staff element or as an integral part of the chief operational user element.

c. Insure free exchange of information on agency and library plans and programs.

d. Provide sufficient number of professional, sub-professional and clerical personnel to perform the library's mission where understaffing exists.

e. Establish active career development program for librarians at all levels.

f. Investigate and improve procurement procedures where dissatisfaction is felt.

SUMMARY OF GROUP C DISCUSSION

Statement of the Problem

To determine how the role of the military library in the accomplishment of the agency's mission can be better defined, understood, and acknowledged.

Assumption

That we are discussing conditions which are generally characteristic of military libraries, and that there are exceptions to which the facts stated below do not apply.

Facts Bearing on the Problem

A. Communications

1. Communication lines with management are inadequate.

(a) The library is misplaced within the organizational structure.

(b) Management is not adequately advised of the library's problems, responsibilities and accomplishments.

(c) Librarians do not always assume an active and aggressive role.

(d) The librarian is not kept aware of policy formulation.

B. Human Resources

1. The quality of library personnel is inadequate.

2. The quantity of library personnel is insufficient.

C. Services

1. The clientele we serve does not make full use of the library.

2. The quality of the library exerts an influence in the recruitment of professional personnel.

3. Libraries do not always assume an active and aggressive role in the dissemination of information.

4. Insufficient attention is paid to research in new techniques and resources which would improve library operations.

D. The Collection

1. Libraries are forced to maintain material extraneous to the library collection, i.e., junk.

2. The librarian does not have enough authority and responsibility for the content of the collection.

3. The library does not conduct an aggressive program in purifying the collection.

E. Physical Plant and Equipment

1. Building or building-space allocations are inadequate as they pertain to:

- Floor space
- Desirable location (accessibility)
- Poor design
- Environment control

2. Insufficient attention is paid to the library's need for equipment specially designed for libraries.

Conclusions

1. It is concluded that lines of communication between libraries and management must be defined and strengthened.
2. Lack of communication on the part of management implies satisfaction with the library.
3. The library must keep management advised of problems before the problems become critical.
4. Informal communication is an effective approach.
5. Librarians should take a more dynamic approach to problems.
6. We need better defined Civil Service standards, and commensurate pay scales.
7. Active indoctrination of personnel in capabilities and limitations of library service is important.
8. Continual training of the library staff in ideals of service is necessary.
9. We need an avenue to teach users to ask the right question in the right way. The librarian has a responsibility to identify the real needs of the client.
10. There is a difference between a well-organized collection assembled to support the mission and a motley collection kept for convenience, inertia, or to pad a statistical picture.
11. Any standards based on size would tend to discourage weeding the collection.
12. It is essential that librarians weed their collections to make best use of space and time.
13. Building of the library collection must be based on selective acquisition in line with the agency's mission.
14. There is a direct relationship between the facilities allocated to the library and the effectiveness of the library's operations. As much attention should be paid to the library's needs for physical plant and equipment as is paid to those of other elements of the organization.

Recommendations

1. That the library be represented in all matters which affect it.
2. That the library be kept aware of long range policies and programs which markedly affect the direction and extent of the library services and material required.
3. That the library be organizationally placed so that it is part of the mission element of the agency.
4. That a planned program of library indoctrination be scheduled for all incoming staff members who will be library users.
5. That librarians take more aggressive action to promote their product.
6. That management and the library should join forces to develop more effective means of communication.
7. That continuing emphasis be placed on development of improved classification and qualification standards.
8. That librarians be afforded greater opportunity to enlarge their professional competence by formal education and by attendance at professional meetings and seminars at Government expense.
9. That the library profession should continue to exert its influence on educational institutions to develop curricula more closely related to the needs of special libraries.
10. That librarians have primary responsibility for the content of their collection.
11. That librarians take continuing action to impart to their subordinates that service to clientele is of primary importance.
12. That the library be located and equipped to enable it to support to the maximum the accomplishment of the agency's mission.

TECHNICAL INFORMATION SUPPORT OF THE DEPARTMENT OF DEFENSE
RESEARCH AND DEVELOPMENT PROGRAM

By

J. Heston Heald
Staff Assistant
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Department of Defense

The familiarity of the words in the title to my talk will no doubt make most of you feel that this must be an old record being played again; and when you look at me, appearing for the third or fourth time during this series of Military Librarians' Workshop, you are probably already convinced that this must be the place where "I came in."

Frankly, it would be difficult indeed to actually place before you points we have not discussed many times in the past. But there may be some new wrinkles to the old problems that can be explored. I'm reminded of the man who, many--many years after his graduation paid a visit to his old Alma Mater. In looking around the campus for familiar faces and places, he went into the office of one of his former instructors and found the old professor at his desk and still very much on the job. During the course of their visit, our friend noticed an examination paper on the near corner of the professor's desk. Looking at it with casual glances, the man thought he recognized it as the same examination that the professor had given his class many years before. So he asked the professor if such was not the case. The old pedagogist quickly answered, "Yes, that's right, it's the same set of questions--but the answers are different."

Certainly, the problems in the library profession are repetitive in nature and look pretty much the same from year to year, but there are ever-changing answers and improved methods. These changing answers to the problems make us realize that there is no room for complacency in the library profession.

I'm sure that it is the attempt to seek out improved methodology that perpetuates this workshop from year to year--and, as I see it, there is no foreseeable end. There are both new problems and new twists to old problems. The front is continually changing and requires constant surveillance. It will be my purpose to venture into only a portion of this front.

I would like, then, to begin by exploring a couple of concepts with which you have recently begun to have an awareness and then project them into some actual thinking underway in the Department of Defense.

First, information, per se, is having a change in value. We once made little distinction between information and its physical container--the book, report, article, paper--or just document, when we spoke of information retrieval. As long as documents were relatively few in number, the distinction, bibliographically, between the physical container and the contents was not of great importance; but as the number of documents grew to the point that the scientist or engineer could not consume the contents in his own special field, we were forced to recognize that there is a difference within the problems of storage and retrieval applied to information. In fact, the information problems rise to take precedent over the document. At least they are going to be much more

difficult--much more subtle. It is the bits of information or data recorded here and there, or the catalysis of these bits, that become of prime concern to the scientist. Catalogs, subject indexes, bibliographies, abstracts--and the like--long established library tools, have the document very well under control and mechanization of these tools have had a high degree of success. But, as the literature grows, these tools weaken in terms of information retrieval, and the scientist can become discouraged, if not completely lost, in a maze of documents, of abstracts, of indexes, and of complex index patterns.

On the other hand, the catalysis of information, or state-of-the-art concept, holds increasing promise as the literature increases. I might explore one thought as an example. It is within this concept that some relief from the continual growth of documents has a degree of promise. Since 1953 there have been around 400,000 technical documents added to the collection of the Defense Documentation Center. To the best of my knowledge, with some very rare exceptions, they are all still very much in existence. There is no purging program, except for discard of extra copies or reduction to microfilm size. Each document resides on the shelf with equal importance. Each has a number which is just as important as that of his neighbor. Each is represented in the card catalog or on the magnetic tapes with equally dedicated space. Each is referenced every time a bibliography is prepared in its subject areas. There have been occasional distinctions made in age, but that's about all. None ever die. This situation is not unique at DDC; it characterizes literature treatment everywhere. If we weigh documents, however, in terms of the information they contain, I believe there can be a purging system. I might risk a thought here that has plagued me for some time. Every time a well-developed state-of-the-art study or catalytic treatment of scientific information is made and documented, there should be, attendant with it, a retirement or death, if you please, of a certain number of documents that have preceded the action. The treatment would make reference to dead documents, not live ones. I realize that such a move represents a drastic departure from the ethical pattern of author accreditation, citation, and such other practices. But somewhere, sometime, we must begin the attack on the seemingly everlasting, snowballing accumulation of documents, especially in the scientific and technical fields. There are other methods of attack on the purging problem, but I won't go into them here. I only dwell on the point here in way of emphasizing that recorded information and its container, the document, while having related bibliographic paths, pose storage and retrieval problems that are growing apart. Information then is taking on a new set of values, and these values are being reflected in new programs and new concepts.

A second point I would like to make is that the use of information in scientific research and development is taking on a recognizable increase in importance. It has always been a basic ingredient in the scientific method, but it has often been relegated to a low spot on the totem pole. Secondary interest means secondary support. And if the interest goes low enough, there may be no support at all. I'm sure that most of us have seen examples of dollars poured into a research effort with nothing earmarked for supporting library or information functions. It often comes as an afterthought--something that would be nice to have if it can be afforded. Then again we've seen it when the budget is reduced, with the library first to feel the cut. But there is a heartening trend for management to take the requirements of supporting information into account in the planning phase of a project or task. In fact, effective

management itself begins with information. Mr. Carlson has stated on several occasions that information is a resource, very much like dollars, manpower, and facilities are resources, and that its effective use can be evaluated in budgetary terms. I quickly agree with the concept, and it's not just to make a brownie-point with the boss! The time may be close at hand when facilities and capabilities to provide supporting technical information will be a formal and specific factor in selection of a contractor, very much as personnel and other facilities are now weighed.

These trends in the emphasis on information in no way relieve our responsibilities for the document--the container--the medium of recording information. I am only pointing out the strong evidence that the information explosion we've all been hearing about, and living in, has really exploded into information problems quite different and apart from those of the document. The result is a force, or impact, of increasing nature, and it is one that is being given increasing concern.

One example of such concern might be the increasing use of the age-old medium, the newsletter or bulletin. Here the juicy bits of hot-off-the-press information are prepared in somewhat newspaper style and distributed to the kith-and-kin; and they are cropping up in all directions. I am sure that those well-thought-out ones will contribute effectively; that there is a place for them, and that they will live long and healthy lives. I only hope the fever for new ones doesn't go too far, or we could find ourselves overloaded with newsletters and unnecessary news repetition. Snowballing here could easily add to the jam already created in recorded information. But let us look at some other things that have been, or are, happening around us.

In the few slides I have prepared, I hope to show, only in part, some of the thinking and some of the actions that have taken place recently in the Department of Defense. They will directly affect the library and technical information activities serving military research and development programs.

On February 18 of this year, Dr. Harold Brown, Director of Defense Research and Engineering, fixed his signature to DOD Instruction 3200.8. This instruction set into official use the DD Form 1473. For those of you who may not know about it, let me introduce it briefly on this first slide (attachment 1). The instruction provides that this form be completed and inserted as the last page in every technical report prepared as the result of research and development programs of the Department of Defense.

You will recognize this form as including the normal bibliographic elements of descriptive cataloging, plus other information essential to management as well as to the scientific community to whom the report may be of interest. It should be of particular importance to librarians--both those at the source and those at the receiving end. It represents source cataloging tailored for machine utilization as well as input to manual systems.

Slide 2 (attachment 1) shows the other side of the form where the subject matter of the report is recorded. This slide also provides space for the optional use of roles and links for those who may be employing this technique.

An outstanding feature of DD 1473 is that it now represents established DOD-wide standards. The instruction setting up the form makes it official. Use of the form is now beginning to appear in increasing numbers of reports as implementation at local levels goes into effect. In another year, use should be approaching completeness.

By that time it is very possible that accompanying computer programs will be available for those who are in position to employ computer time. A within-house DOD-wide survey and analysis of computer programs and systems design is currently being initiated. It is the purpose here to make the most of work that has already been done by a number of you people in devising an overall DOD system.

DD Form 1473 represents an approach to information through document control. Let us now look for a moment at a couple of other programs that have come into being with emphasis on information control.

On July 28, just past, the Director of Defense Research and Engineering, issued DOD Instruction 5100.45, "Centers for Analysis of Scientific and Technical Information." This instruction provides for both the establishment and disestablishment, as well as for funding and operational procedures, of information analysis centers throughout the Department of Defense, either in-house or by contract. In part, it defines these centers as follows:

"Any functional element is performing as an information analysis center if it collects, reviews, digests, analyzes, appraises, summarizes and provides advisory and other user services concerning the available scientific and technical information and data in a well-defined, specialized field."

This instruction places an established center in a position of responsibility for services concerning its specially assigned subject field on a DOD-wide basis. Establishment of a center must be with approval of the Director of Defense Research and Engineering but will be administered by a single DOD component.

There have been a number of these so-called centers in existence in the past, but they have existed with little recognition or visibility and without uniformity of purpose. The first authorization by the Director of Defense Research and Engineering recognized 22 information analysis centers. Because of the special subject, highly skilled analytical or evaluation treatment these centers must provide, they are not libraries, per se. I cannot imagine one existing that does not have a supporting library activity, however.

A second point on the DOD information front has to do with management. Just about two weeks ago, Dr. Harold Brown, by a series of memoranda to the secretaries of the three departments and directors of DOD agencies, established a new form and system for reporting information and data from all RDT&E projects, tasks, and work units. It is actually a replacement for the form many of you will remember as DD Form 613, but it carries improvements gained from experience; incorporates into one form a means to get information for several levels of management, and provides this information in machineable format. The next slide (attachment 2) shows the new form, DD Form 1498. You may wonder why I show it, or spend a moment on it at a meeting of librarians. I hope the connection becomes apparent as we take this brief look.

There are 36 elements on this form representing 36 types of information or data that may be recorded and hence retrieved. Combinations of these elements may be machine manipulated, or coordinated, to retrieve answers to such questions as, "a list of work units engaged in related subject fields;" "the kind of work being performed under any given contract;" "the amount of money going into research in a given field over a given period;" "the amount of DOD dollars going into a given geographical area;" and on and on.

Now I think you can see the reference value. The technical documents reporting results from a given effort must surely be directly related to that effort. If we look down this list of elements, we recognize several in common with the first form I showed you, DD Form 1473, the one for describing a report. Certainly, as these two forms move into operation, more direct and knowledgeable routes will be opened between management and the working scientists and engineers.

I must also point out the standardization folded into these efforts. The same vocabulary used for the major subject field reporting on the DD 1498 (attachment 3) may soon become a DOD-wide base for processing and announcing documents and as a basis for a new FOIR. More important, perhaps, is the fact that the DD Form 1498 is a joint DOD-NASA effort with the same vocabulary describing projects of each.

Now let us look at the next slide (attachment 4). This one provides us with the schematic relationships of our major DOD technical information activities. I call your principal attention to the center block--the local DOD activities. It has exactly that importance in this schematic diagram--right in the center.

A number of you might recognize this technical information office, composed of both library and report production activities, as closely resembling your very own. So, this may be nothing new. What is important is that there is now a growing recognition of this part that the local library and technical information activities have in the scheme of things.

I have already indicated to you how often in the past, and even at present, the activities represented in this center block have been pretty much hit-or-miss. Some local activities have seen this work highly important and have accordingly emphasized it with support. Others have been lesser concerned; the result being that there is wide variation in emphasis of these activities.

If information is in fact a resource, the interface, in and out, should center around activities at the local level.

I hope I have given you a few ideas about the thinking and the actions taking place in DOD to provide supporting scientific and technical information to the research and development community. You and the libraries you represent are integral parts of the pattern. Although you may represent a local activity, the large pattern will require constant vigilance, study, and coordination to the overall effort.

Security Classification

DOCUMENT CONTROL DATA - R&D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)		2a. REPORT SECURITY CLASSIFICATION	
		2b. GROUP	
3. REPORT TITLE			
4. DESCRIPTIVE NOTES (Type of report and inclusive dates)			
5. AUTHOR(S) (Last name, first name, initial)			
6. REPORT DATE		7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
8a. CONTRACT OR GRANT NO. b. PROJECT NO. c. d.		8a. ORIGINATOR'S REPORT NUMBER(S)	
		8b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
10. AVAILABILITY/LIMITATION NOTICES			
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY	
13. ABSTRACT			

Atch 1

Security Classification

14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT

INSTRUCTIONS

1. ORIGINATING ACTIVITY: Enter the name and address of the contractor, subcontractor, grantee, Department of Defense activity or other organization (corporate author) issuing the report.

2a. REPORT SECURITY CLASSIFICATION: Enter the overall security classification of the report. Indicate whether "Restricted Data" is included. Marking is to be in accordance with appropriate security regulations.

2b. GROUP: Automatic downgrading is specified in DoD Directive 5200.10 and Armed Forces Industrial Manual. Enter the group number. Also, when applicable, show that optional markings have been used for Group 3 and Group 4 as authorized.

3. REPORT TITLE: Enter the complete report title in all capital letters. Titles in all cases should be unclassified. If a meaningful title cannot be selected without classification, show title classification in all capitals in parenthesis immediately following the title.

4. DESCRIPTIVE NOTES: If appropriate, enter the type of report, e.g., interim, progress, summary, annual, or final. Give the inclusive dates when a specific reporting period is covered.

5. AUTHOR(S): Enter the name(s) of author(s) as shown on or in the report. Enter last name, first name, middle initial. If military, show rank and branch of service. The name of the principal author is an absolute minimum requirement.

6. REPORT DATE: Enter the date of the report as day, month, year, or month, year. If more than one date appears on the report, use date of publication.

7a. TOTAL NUMBER OF PAGES: The total page count should follow normal pagination procedures, i.e., enter the number of pages containing information.

7b. NUMBER OF REFERENCES: Enter the total number of references cited in the report.

8a. CONTRACT OR GRANT NUMBER: If appropriate, enter the applicable number of the contract or grant under which the report was written.

8b, 8c, & 8d. PROJECT NUMBER: Enter the appropriate military department identification, such as project number, subproject number, system numbers, task number, etc.

9a. ORIGINATOR'S REPORT NUMBER(S): Enter the official report number by which the document will be identified and controlled by the originating activity. This number must be unique to this report.

9b. OTHER REPORT NUMBER(S): If the report has been assigned any other report numbers (either by the originator or by the sponsor), also enter this number(s).

10. AVAILABILITY/LIMITATION NOTICES: Enter any limitations on further dissemination of the report, other than those

imposed by security classification, using standard statements such as:

- (1) "Qualified requesters may obtain copies of this report from DDC."
- (2) "Foreign announcement and dissemination of this report by DDC is not authorized."
- (3) "U. S. Government agencies may obtain copies of this report directly from DDC. Other qualified DDC users shall request through _____."
- (4) "U. S. military agencies may obtain copies of this report directly from DDC. Other qualified users shall request through _____."
- (5) "All distribution of this report is controlled. Qualified DDC users shall request through _____."

If the report has been furnished to the Office of Technical Services, Department of Commerce, for sale to the public, indicate this fact and enter the price, if known.

11. SUPPLEMENTARY NOTES: Use for additional explanatory notes.

12. SPONSORING MILITARY ACTIVITY: Enter the name of the departmental project office or laboratory sponsoring (paying for) the research and development. Include address.

13. ABSTRACT: Enter an abstract giving a brief and factual summary of the document indicative of the report, even though it may also appear elsewhere in the body of the technical report. If additional space is required, a continuation sheet shall be attached.

It is highly desirable that the abstract of classified reports be unclassified. Each paragraph of the abstract shall end with an indication of the military security classification of the information in the paragraph, represented as (TS), (S), (C), or (U).

There is no limitation on the length of the abstract. However, the suggested length is from 150 to 225 words.

14. KEY WORDS: Key words are technically meaningful terms or short phrases that characterize a report and may be used as index entries for cataloging the report. Key words must be selected so that no security classification is required. Identifiers, such as equipment model designation, trade name, military project code name, geographic location, may be used as key words but will be followed by an indication of technical context. The assignment of links, rules, and weights is optional.

RESEARCH AND TECHNOLOGY RESUME				1. GOVT ACCESSION	2. AGENCY ACCESSION	REPORT CONTROL SYMBOL
3. DATE OF RESUME	4. KIND OF RESUME	5. SECURITY	6. RESEARCH	7. RELEASE LIMITATION	8. LEVEL OF RESUME	
10. CURRENT NUMBER/CODE				10A. PRIOR NUMBER/CODE		
11. TITLE:						
12. SCIENTIFIC OR TECH. AREA				13. START DATE	14. CRIT. COMPL. DATE	15. FUNDING AGENCY
16. PROCEDURE, METHOD	17. CONTRACT/GRANT		18. RESOURCES EST.	19. PROFESSIONAL MAN-YEARS	20. FUNDS (In thousands)	
	a. NUMBER:	b. DATE:	PRIOR FY			
	c. TYPE:	d. AMOUNT:	CURRENT FY			
19. GOV'T LAB/INSTALLATION/ACTIVITY			20. PERFORMING ORGANIZATION			
NAME:			NAME:			
ADDRESS:			ADDRESS:			
RESP. INDIV.:			INVESTIGATORS			
TEL:			PRINCIPAL:			
			ASSOCIATE:			
			TEL:			
			TYPE:			
21. TECHNOLOGY UTILIZATION				22. COORDINATION		
23. KEYWORDS						
24.						
25.						
26.						
27. COMMUNICATIONS SECURITY:						
<input type="checkbox"/> * COMSEC OR COMSEC RELATED		<input type="checkbox"/> * NOT RELATED		28. GAO CODE		29. BUDGET CODE
30. MISSION OBJECTIVE				31. PARTICIPATION		
32. REQUESTING AGENCY				33. SPECIAL EQUIPMENT		
34. EST FUNDS (In thousands)				35.		
CPY:						

Atch 2

INTRODUCTION:

This form has been established under the auspices and control of the NASA-DOD Aeronautics and Astronautics Coordinating Board (AACB) through an Agreement dated 5 August 1964. It is intended to provide a compatible, standardized medium of Research and Technology information exchange between the two agencies. In addition, it provides each Agency with a mechanism for internal planning and programming. Associated with this form are the following:

a. Work Sheet for Data Elements and Codes for Research and Technology Resume (NASA Form 1122as; DOD Form 1498ws): Provides definitions and codes for each item in the Resume, through Item 26. Also serves as the originator's work sheet.

b. Punch Card Layout for Research and Technology Resume: Prescribes assignment of punch fields for Resume language on a standard 80-column ADP (Automatic Data Processing) punch card. Note: The resume will normally be converted to magnetic tape; however, this Standard Card Layout will be employed for potential Punch Card use.

c. Key punch and Machine Processing Instructions for Research and Technology Resume: Provides instructions for ADP operators so that Resume language may be suitably coded on magnetic tape or punch cards.

The currently approved master copies of the Agreement, the Resume and supporting documents dated 1 August 1964 are on file in the Secretariat of the Panel on Supporting Space Research and Technology (AACB).

EXPLANATION OF CODES:

This resume has been designed for conversion to machine language, or use in photographic data processing systems, or both. The machine language coding of information takes two forms:

a. Information which appears in various items in both *real language* and *machine language*. (Example, Item 5) D. Change. The letter D is the machine language code for the word "Change".

b. Information which appears in various items in *machine language*, only. The codes for *machine language* only are listed below.

ITEM 3 (Agency Accession):

a. The first character represents the Government Agency reporting:

A - AEC	F - Fed. Avia. Agency	N - NASA
B - Dept of Agr.	H - HEW	S - Natl. Science Fdn.
C - Dept of Com.	I - Dept of Int.	T - Treas. Dept.
D - Dept of Def.	J - Dept of Justice	V - Vet. Adm.

b. The second character represents the major subordinate echelons as selected by each Government Agency.

For Dept. of Defense:

A - Army	D - OSD	J - JCS	S - DSA
B - DASA	F - Air Force	N - Navy	W - WSEG
C - DCA	V - DIA	R - ARPA	Y - NSA

For NASA:

M - ONSF	R - OART	S - OSSA	T - OTDA
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Sample entry for the NASA Office of Manned Space Flight.

Sample

3 AGENCY ACCESSION NM 000749

UNNUMBERED ITEM UPPER RIGHT CORNER. This item is preprinted for DoD use. NASA installations may use this item for inserting installation-unique code numbers.

ITEM 5 (Kind of Resume):

NOTE: The date appearing after the word "change" is the date of the most recent prior report.

ITEM 6 (Security):

T - Top Secret	U - Unclassified
S - Secret	C - Confidential

ITEM 7 (Regrading of Report):

- (Group 1) Excluded from automatic downgrading and declassification.
- (Group 2) Exempted from automatic downgrading.
- (Group 3) Downgraded at 12 yr intervals; not automatically declassified.
- (Group 4) Downgraded at 3 yr intervals; declassified after 12 yrs.

ITEM 8 (Release Limitation):

NL No Release Limitation
FO For Official Use Only.
QR Qualified requesters only may obtain this report from Agency data centers or delegated inter-agency centers.
NF NOFORN This report is not releasable to foreign nationals.
GA U.S. Government agencies only may obtain this report directly from Agency centers or designated inter-agency centers.
OD Originating department components only may obtain this report directly from their Agency center.

DC Request through the Government/lab/installation/activity responsible for the work.

RD Restricted Data. The term "Restricted Data" means all data concerning (1) design manufacture or utilization of Atomic Weapons, (2) the production of special nuclear material or (3) the use of special nuclear materials in the production of energy, but shall not include data declassified or removed from the Restricted Data Category pursuant to Section 142 of the United States Atomic Energy Act of 1954.

ITEM 15 (Funding Agency):

This item includes:

- The same Agency digraph code as in item 3.
- Funding method:
IPR - Interdepartmental Purchase Request
MIPR - Military Interdepartmental Purchase Request
OTHER

ITEM 17 (Contract/Grant)

Entry	Type of Contract	Entry	Type of contract
A PPF	Fixed price firm	L CS	Cost sharing
B FPE	Fixed price escalation	M CPFF	Cost-plus-fixed fee
C FPR	Fixed price redeterminable	N CPIF	Cost-plus-incentive fee
D FPI	Fixed price incentive	V TM	Time and materials
J C	Cost, no fee	W LH	Labor Hour
K FALIC	Fixed amount in lieu of indirect costs		

AMOUNT. This is the full amount of the contract or grant to the nearest dollar. If this is a report on only a part of a contract, this is the portion of the contract amount that relates to the work being reported and is preceded with the letter "P".

ITEM 19 (Govt Lab/Installation Activity):

NOTE: Boxes are provided in the upper right corner of items 19 and 20 for the entry of NASA or DoD codes which identify, in *machine language*, certain of the data contained in items 19 and 20.

ITEM 20 (Performing Organization):

If the performing organization is a Government agency, the digraphs shown in item 3 are used. If the performing agency is a non-U.S. government agency, the alphabetic code, shown below, will be used preceded by the letter "U" for United States or "Z" for foreign.

Code	Organization Type	Code	Organization Type
	Academic Program		For-Profit Laboratory
A	Public or State Coll or Univ.	N	Industry Operated
B	Private Coll or Univ.	P	Private Operated
	Academic Center		Non-Profit Laboratory
C	Public or State Coll or Univ.	Q	Public or State Coll or Univ. Operated
D	Private Coll or Univ.	R	Private or State Coll. Univ. or Foundation
	Government Laboratory		Hospital Operated
E	Public or State Coll or Univ. Operated	S	Hospital Operated
F	Private Coll or Univ. Operated	T	Other
G	Industry Operated		
H	Independent		
	Not-For-Profit Laboratory		
J	Public or state Coll or Univ. Operated		
K	Private Coll or Univ.		
L	Hospital Operated		
M	Independent Operated		

ITEMS 24, 25 and 26:

Item 24: Describes "Objective"
Item 25: Describes "Approach"
Item 26: Describes "Progress"

GENERAL: A letter (U), (C), (S) or (T) appears in items 11, 23, 24, 25 and 26 to indicate the security of information shown.

NOTE: The above explanation of codes is intended to enable the reader of this Resume to understand the meaning of *machine language* inputs. Originators of Resumes should refer to the Work Sheet for Data Elements and Codes for complete instructions.

SCIENTIFIC AND TECHNOLOGICAL

FIELDS AND GROUPS

(Item 12, Research and Technology Resume)

AERONAUTICS

Aerodynamics
Aeronautics
Aircraft
Aircraft flight control
and instrumentation
Air facilities

AGRICULTURE

Agricultural chemistry
Agricultural economics
Agricultural engineering
Agronomy and horticulture
Animal husbandry
Forestry

ASTRONOMY AND ASTRO- PHYSICS

Astronomy
Astrophysics
Celestial mechanics

ATMOSPHERIC SCIENCES

Atmospheric physics
Meteorology

BEHAVIORAL AND SOCIAL SCIENCES

Administration and
management
Documentation and infor-
mation technology
Economics
History, law, and
political science
Human factors
engineering
Humanities
Linguistics
Man-machine relations
Personnel selection train-
ing and evaluation
Psychology (individual
and group behavior)
Sociology

BIOLOGICAL AND MEDICAL SCIENCES

Biochemistry
Bioengineering
Biology

Bionics
Clinical medicine
Environmental biology
Escape, rescue and
survival
Food management
Hygiene and sanita-
tion
Industrial (occupational)
medicine
Life support
Medical and hospital
equipment
Microbiology
Personnel selection and
maintenance (medical)
Pharmacology
Physiology
Protective equipment
Radiobiology
Stress physiology
Toxicology
Weapons effects

CHEMISTRY

Chemical engineering
Inorganic chemistry
Organic chemistry
Physical chemistry
Radio and radiation
chemistry

EARTH SCIENCES AND OCEANOGRAPHY

Biological oceanography
Cartography
Dynamic oceanography
Geochemistry
Geodesy
Geography
Geology and mineralogy
Limnology
Mining engineering
Physical oceanography
Seismology
Snow, ice, and permafrost
Soil mechanics
Terrestrial magnetism

ELECTRONICS AND ELECTRICAL ENGINEERING

Components
Computers
Electronic and electrical
engineering
Information theory
Subsystems
Telemetry

ENERGY CONVERSION (NON- PROPULSIVE)

Conversion techniques
Power sources
Energy storage

MATERIALS

Adhesives and seals
Ceramics, refractories, and
glass
Coatings, colorants, and
finishes
Composite materials
Fibers and textiles
Metallurgy and metal-
lography
Miscellaneous materials
Oils, lubricants, and
hydraulic fluids
Plastics
Rubber
Solvents, cleaners, and
abrasives
Wood and paper products

MATHEMATICAL SCIENCES

Mathematics and statistics
Operations research

MECHANICAL, INDUSTRIAL, CIVIL, & MARINE ENGINEERING

Air conditioning, heating,
lighting, and ventilating
Civil engineering
Construction equipment,
materials & supplies
Containers and packaging
Couplings, fittings, fasteners,
and joints
Ground transportation equip-
ment

MECHANICAL, INDUSTRIAL, CIVIL,
& MARINE ENGINEERING (Cont'd)

Hydraulic & pneumatic equipment
Industrial processes
Machinery and tools
Marine engineering
Pumps, filters, pipes, fittings, tubing, and valves
Safety engineering
Structural engineering

METHODS AND EQUIPMENT

Cost effectiveness
Laboratories, test facilities, and test equipment
Recording devices
Reliability
Reprography

MILITARY SCIENCES

Antisubmarine warfare
Chemical, biological, and radiological warfare
Defense
Intelligence
Logistics
Nuclear warfare
Operations, strategy, and tactics

MISSILE TECHNOLOGY

Missile launching and ground support
Missile trajectories
Missile warheads and fuses
Missiles

NAVIGATION, COMMUNICATIONS,
DETECTION, AND COUNTERMEASURES

Acoustic detection
Communications
Direction finding
Electromagnetic and acoustic countermeasures
Infrared and ultraviolet detection
Magnetic detection
Navigation and guidance
Optical detection
Radar detection
Seismic detection

NUCLEAR SCIENCE & TECHNOLOGY

Isotopes
Nuclear explosions
Nuclear instrumentation

NUCLEAR SCIENCE AND
TECHNOLOGY (Cont'd)

Nuclear power plants
Nuclear propulsion
Nuclear reactors
Nuclear weapons effects
Radiation shielding and protection
Radioactivity

ORDNANCE

Ammunition, explosives, and pyrotechnics
Bombs
Combat vehicles
Explosions, ballistics, and armor
Fire control and bombing systems
Guns
Rockets
Underwater ordnance

PHYSICS

Acoustics
Crystallography
Electricity and magnetism
Fluid mechanics
Masers and lasers
Optics
Particle accelerators
Particle physics
Plasma physics
Quantum theory
Solid mechanics
Solid state physics
Thermodynamics
Wave propagation

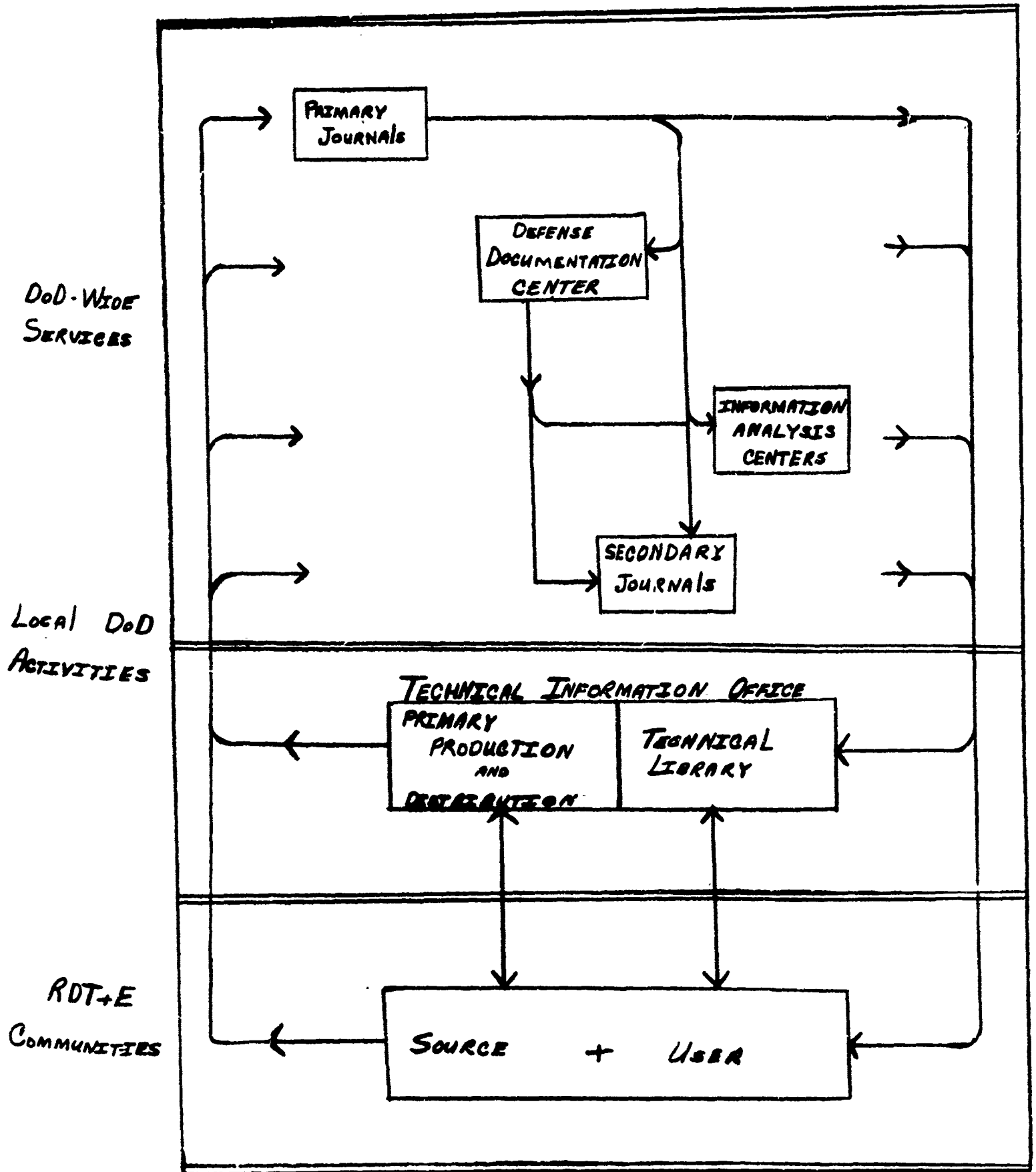
PROPULSION AND FUELS

Air breathing engines
Combustion and ignition
Electric propulsion
Fuels
Jet and gas turbine engines
Reciprocating engines
Rocket motors and engines
Rocket propellants

SPACE TECHNOLOGY

Astronautics
Spacecraft
Spacecraft launch vehicles and ground support
Spacecraft trajectories and reentry

SCHEMATIC RELATIONSHIPS
OF
MAJOR DOD TECHNICAL INFORMATION ACTIVITIES



MILITARY LIBRARIANS' WORKSHOP - OCTOBER 15, 1964

By

John F. Stearns
Chief
National Referral Center for Science and Technology
of the
Library of Congress

The theme of your workshop this year is a report to management. My theme, as usual, is the National Referral Center for Science and Technology. At first hearing, these two themes may seem somewhat unrelated, but I hope to be able to tie them together before I conclude this necessarily brief presentation.

After some two years of talking and writing on the subject of the National Referral Center, I don't want to spend too much time today on what the Center is and what it does. Many of you--particularly the Washington contingent--have already heard or read enough about it to know its purpose and functions; for others, who may not be at all familiar with the Center, these points are covered in our descriptive brochure, which is available for you here.

To review the Center's work and its application to your interests, however, I must at least review the Center's three principal tasks. The first of these tasks is the compilation of a register, or inventory, of information resources of all kinds, shapes, and sizes, in all fields of science and technology--the physical and biological sciences, engineering and technology, the social sciences, and the many technical areas that relate to all of these. The Center's second task comprises its service responsibilities, which take two forms: the answering of inquiries or requests for guidance to appropriate information resources, and the preparation and publication of directories which list the information resources available in broad fields of scientific endeavor as well as in narrower subdivisions of those areas.

The third task is one of fact finding; determining, from actual experience, what makes up the scientific and technical information complex in this country, and how interchanges take place within that complex--who uses what resources, with what success or frustration, to what degree and so forth.

I'd like to leave operational details for the question-and-answer period, but I do want to give you some idea of where we stand in carrying out these tasks. With respect to the inventory responsibility, we have identified some 12,000 discreet information resources in industry, in government, and in the academic and professional world. We have been in contact with about 7,000 of these resources, and have obtained adequate descriptive information on about 4 to 5,000 of them. (This last figure represents the present total of completely processed entries in our register.) In our referral service, requests are running from a low of about 40 to a high of 70-plus per week, with an average in the neighborhood of 50 per week. Although we have a total of 30 people, half of them professional, only 4 of our professional staff members spend full time on the referral-service process, so our present work load keeps us reasonably busy. We know from experience that we can raise the work load level at

almost any time by concentrating on further publicity, but we have intentionally been going slow in this respect to permit concentration of effort on our input activities, and on the preparation of our first directory. This volume, which will list about 1,100 information resources in the physical and biological sciences and engineering, is at the Government Printing Office now; with Congress in recess, and the Warren Report out of the way, we hope it will be published sometime next month.

We are barely beginning efforts in our third task of fact finding and analysis. We have maintained, however, ever since we set up shop, a continuing user survey--a "one-to-one" feedback arrangement under which we try to find out from every requester we serve how he made out in his search for information--whether he got the information he needed, where and under what circumstances he found it, what difficulties he encountered, what he thinks of our referral service, and so on.

What is this feedback program telling us? Basically, so far, it's telling us that a lot of people seem to appreciate the sort of service we provide. More interestingly, however, it's beginning to suggest some possibly significant points for further investigation.

One of these, which I personally find the most interesting, is a possible difference, or at least distinction, between what we have come to call direct information services and indirect services. By "direct," we mean an information activity that provides a direct and factual response to a specific technical inquiry; by "indirect," we mean an activity that answers a question with a reference list, a bibliography, or a stack of reports--in other words, one which answers questions indirectly by identifying or providing literature which--hopefully--will contain the factual information desired.

Many information resources, of course, provide both kinds of services, just as many of the questions that come to us require both kinds of services for effective satisfaction.

Here, I'd like to mention the fact that, while our referral service attempts to emphasize the direct type of resource, we have the cooperation of the Science and Technology Division of the Library of Congress in covering the indirect side. That is to say, whenever we receive a request requiring reference service, we can send it directly to the Science and Technology Division which can frequently identify for a requester the specific bibliographic guidance which we don't give. We have other similar arrangements with the Science Information Exchange, wherever our response as to "who knows what" can be supplemented by their "who's doing what where" records, and with the new Federal Clearinghouse for Scientific and Technical Information, which has replaced the Office of Technical Services in the Department of Commerce, with regard to technical reports of Federal origin.

No status report is really complete without an indication of problem areas. In our case, our biggest problem is with the inventory, because of the difficulty of defining just what we mean by "information resource" and the further difficulty of identifying and finding out about all the significant information resources that exist. For perhaps obvious reasons, these difficulties are particularly bothersome with respect to the Federal Government. Among Government agencies, for the very obvious reason of bulk, one of the areas of greatest complication is the Department of Defense itself.

We haven't yet worked out any mutually acceptable definition of the sort of DOD resources we should list, and consequently haven't been able to make any substantial headway in identifying and finding out about these undefinables.

Which brings me, however tardily, to the chief point I wanted to make here today--the point which helps tie together your theme and mine.

The point is, that just because we in the National Referral Center can't yet identify DOD information resources and provide effective referral service to them is no sign you, as military librarians, can't. All libraries are, and always have been, referral centers to some degree, limited only by the time they can expend on such efforts and by their primary reliance upon their own collections or sources of information. From our experience, it seems fairly clear that the more any library can do in this regard, the more value it has.

Considering the number of "direct" resources that exist in the military services and among their research and development contractors, and considering the far greater number of your patrons who could profit from contact with those resources, it seems to me you have a fine field of endeavor. And even if it's a bit late for this year's "Report to Management," success in such endeavor might make a persuasive item in your future reports.

LIBRARIANS, EAST AND WEST

By

Harold Wooster
Director of Information Sciences
Air Force Office of Scientific Research
Office of Aerospace Research

Last February an invitation from the United States Information Service to lecture in India coincided with my desire to see how information problems in America appeared from a completely different perspective. I was also interested, in view of the emphasis from certain quarters on the need for a great big information center in the United States, in seeing how INSDOC, the Indian National Scientific Documentation Center, was actually working out in practice. Incidentally, since most of the libraries I have grown up with use dictionary catalogs and either Dewey or Library of Congress classifications, I was interested in seeing how classified catalogs and both Universal Decimal and Colon classifications work out in practice.

My detailed trip report, "India, 1964," is available from my office. Time permits only a few highlights here.

I found that perhaps the most useful single thing INSDOC does is to guarantee to obtain for any Indian scientist a copy of any journal article published anywhere in the world. He may have to wait 6 months to get it, he might be able to get it only in microfilm, but he does get it. For one accustomed to the perennial U.S. complaint of too much information, it was refreshing to find that people were willing to go to such lengths to obtain single journal articles.

I found that Colon Classification was used only in the trail of Ranganathan and his students. The majority of special libraries in India now use Universal Decimal Classification. There is a certain tendency, I will admit, to change classification systems with each new librarian. Ghosh at the Geological Survey of India Library has 3 classification systems, one on top of the other. There are rumors of yet another library in India which has 5 superimposed classification systems with a librarian busily inventing a sixth.

I found that UDC, and even more, Colon Classification, with their lack of the central authorities we have become accustomed to, throw far more responsibility on individual catalogers and individual libraries (and there is always the occupational hazard to an Indian librarian of Ranganathan suddenly appearing and saying, "Report to me tomorrow and tell me why you assigned that number to that book"). I got the impression that, far more than in this country, much of the subject indexing was taken care of by the assignment of shelf numbers.

I found that I could probably live with a classified catalog. In subject searching I really only want the catalog to put me in the right section or sections of the stacks. Since the classified catalog is essentially the shelf list of the library I am beginning to wonder if, for the small libraries, the trouble and expense of dictionary catalogs are worth it.

As a complete and very pleasant surprise, I discovered one of the best military libraries I have ever seen at the Indian Army's Electronics Research and Development Establishment (LRDE) in Bangalore. Perhaps the closest equivalent of LRDE in this country is the Signal Corps Laboratory in Fort Monmouth, New Jersey.

The success of this library is due to two people: the librarian, Desmond Tellis and even more to the Commander, Brig Gen Chakravarti, who started LRDE when it was only a group of transient, temporary barracks and built it up into a first class research establishment.

LRDE's problems and opportunities stem from India's non-alignment. This means that they can let Russia and the U.S. go ahead with costly development programs, then build their own gear to combine the best features of each and adapt them to Indian conditions. This takes a first class information service. Gen Chakravarti writes well and feelingly of the need for "Information Engineering" putting the right information in the right place at the right time.

The secret weapon of the Technical Information Division at LRDE is people, not Colon Classification. LRDE has 6 laboratories, Radio, Radar, Electronics, etc. There are 6 desks in the library with 6 young men in white shirts writing away. I told Tellis that they weren't doing their jobs if they were sitting at desks in the library. He confided that they

were brought in for my visit, that normally only 2 or 3 would be there. The men have B.S. degrees in Science or Engineering. Each spends full time as liaison agents with one laboratory. About half of this time is spent in the library looking for interesting stuff in incoming journals, and doing specific bibliographic searches. The other half of the time is spent in the laboratories talking to the troops and finding out what they are interested in. This system passes one critical operational test; when manpower cuts are threatened the laboratories say "You can't fire these people, they're working for us. We'll hire them if you don't have the space."

The idea is not new. Lachlan MacRae does it beautifully with his desk men at the Defence Research Board in Canada, but I suspect that the ratio of library staff members used for full time liaison activity is unusually high for U.S. installations.

I found one other thing in the libraries in India - an almost morbid preoccupation with professional status.

On my second morning in New Delhi, I was having breakfast at my hotel with a Brahmin schoolteacher turned business man. In the course of the conversation he said "Yes, I have a librarian--if I want a book, I say to him (clapping his hands), 'Bring me the book,' and he brings me the book. I do not expect him to be able to read the book or to be able to understand the book, all I expect him to do is to be able to put it in a place where he can get it and bring it to me."

Perhaps in reaction to this, I found that librarians in India had developed essentially the same pattern that we have. There were the figurative Brahmins of the Indian Library Association (ILA), found mostly in public and university libraries; there was IASLIC, the Indian Association of Special Libraries and Information Centers, and finally as a Farradane frosting, there was talk of forming an Institute of Information Scientists.

Why does one see this pattern in both America and in India? The pattern of librarians, special librarians, documentalists and information scientists. I submit that the answer may be found in one word. Hubris. Pride--and what we are now seeing is Nemesis. Pride going before a fall. Hubris may seem an unfair accusation to a profession which calls itself a service profession and which boasts of how humble it is. Hubris may seem an unfair accusation to someone who has never seen an outraged bull librarian clashing horns with a scientist who wants a book on permanent loan; or who has never spent three hours on a faculty club board of governors arguing whether Miss X is a "professional librarian" and therefore eligible for membership or not; or for that matter, who has never applied for membership in a special library association and been told that one is eligible only to be a probationary student affiliate or some such thing.

This pluralism has been growing for some time. In 1893, when a British librarian, James Duff Brown, visited the U.S., he found that in U.S. libraries "The staff outnumbered the readers; the women did most of the work; whilst the men took most of the credit."

Brown thought that the ultimate aim of the American librarian was: "Let us systematize our methods, write and talk constantly about them, let us bulk largely in the public eye and impress ourselves on the public

mind as a state necessity, and the upshot will be such a recognition of our own professional and personal merits as will enable us to live like capitalists and even run for Congress."

I feel certain that most of you would endorse this statement 100 per cent if I were to substitute "Information Centers" for libraries.

Why do we have the present position of librarians in the position of lonely fortresses high on mountain tops secure within the impregnable walls of their professional standards whilst the stream of STINFO's and information centers passes them by? I submit that the simple answer is HUBRIS. There is the hubris of professional standards. There is the hubris of what goes into a proper library. Books and periodicals, but definitely not reports. There is the element of the bibliographic snobbery--a report does not look like a book, and in most cases you get it for free. AFOSR figures show that the average report costs some \$20,000 to produce. Twenty thousand dollars when defined as the cost of a research project divided by the number of publications it produces. If one prints 100 copies of such a report the unit cost will be \$200. This makes an expensive publication by book standards, even if you do get it for free.

There is the proper desire to keep the numbers of individual books purchased to a minimum so that one can buy more separate books. I offer by contrast the practice of one librarian at an electronics systems division who runs essentially a report library. If one of his scientists wants a book, he buys that book out of petty cash and gives it to the scientist. If three want the same book, he buys three books.

Most serious of all the problems which librarians face is they have allowed themselves to develop a we-they relationship to their users, the hyphen representing the charging desk, when actually, they should band with their users in a common cause against management.

It is difficult to realize, but for all practical purposes, management is functionally illiterate. The higher you go in the management chain the more illiterate they are likely to be. This is a simple function of the fact that management has little time to read but tends to rely upon oral briefings. With the possible exception of the role of the library as a showplace for visitors, management usually could care less whether the library is good or bad. They might even prefer less service if it means more books on the shelves. This is not to say that managers did not know how to read or use a library before they became managers, but by and large they now just have no time for libraries.

What can librarians do about this parlous situation? Managed by administrators who do not love them, bypassed by successive waves of special librarians, documentalists, information scientists and the like? I submit that librarians have been more concerned about preserving their "prestige" for whatever it is worth than in taking advantage of their major strengths.

For instance, a librarian, certainly one trained by Ralph Shaw, has had far better training in management per se than any of his managers are likely to have had. For example, at the Indian Statistical Institute in Calcutta, a student of Shaw's, J. Saha, is both librarian and business manager! I particularly call to your attention the paper on information centers presented by Ralph Shaw at the recent meeting of the American Documentation Institute in Philadelphia. Ralph discusses the argument that information centers have

to be designed by and operated by scientists. As Ralph writes "While the judgement portion of the operation unquestionably requires scientists, the administrative function calls for a high order of administrative ability to other than scientific operations and if scientific, to many operations outside the field of competence of any single scientist... With all due respect to science and scientists a man may be a great scientist without knowing or caring anything about ordering books or documents or data sources of other types, or organizing them for use, or supervising staff, or any of the other myriad skills that are involved in administering an information center."

One of the strongest resources of the librarian is personal involvement and meeting users information needs. One of my laws for information systems is:

$$P \times R = K, \text{ or, if you prefer, } P = K/R$$

where P represents the personal involvement of the librarian, and R the resources at his/her disposal; K is used in the usual sense of a more or less constant value representing the service afforded to the user. A personally involved librarian, with a minimum of reference material under direct control but with access to the information resources of the nation can run rings in customer service around the large, impersonal information centers, with lots of resources but little personal involvement with the user.

Libraries should use information centers far more heavily than they do. Information centers have one common characteristic--they cost a lot of money, and almost no one knows about them, except for a small in-group of users. All too often the centers find themselves trapped in the position of the young girl from St. Paul, who went to a birth control ball, She bought all the devices at exorbitant prices, but no one ever asked her at all. The cost effectiveness of information centers as measured by my primitive cost accounting method, which consists of dividing the annual cost of operation by the number of questions asked and answered, runs amazingly high. Operating cost is a fixed cost. The only way to increase the cost effectiveness is to increase the services provided. I assure you that the information centers will be grateful to have you use them.

Subject indexing is one place where "conventional" methods may have a big advantage over the new fangled ones. The situation is actually rather ironic. None of us, with the exception of a few perverted linguists, are really interested in the words in a document as such except as an author uses them to express his thoughts or concepts. A curious switch today is that the scientists of the information centers who claim to understand the concepts of a document are using the words to index the document in various keyword thesaurus or coordinate indexing systems. It is the librarians whom the scientists claim never really can understand the concepts of a book who are using the concepts to index.

I would like to see us involve our users more in subject indexing of the books in our collections. As it stands we index once and for all on Olympus and treat our catalog cards as if they were engraven on tablets of stone.

I do not think my own relationships to books are that unique. I am usually grateful if I get one good idea out of a book or if I find one useful table in a book. For example, when I was involved in statistical work one of the more useful tables was Snedecor's "F" table for measuring the significance of ratios to variances. For some years, this table was something you found in the back of a peculiar diversity of books on social science, agronomy and the like and

not in statistics books. It was up to me to discover where, in any given library, the table was hidden. An entry on "F" tables would have been helpful if the librarian knew that it was important.

I propose the following experiment. When one catalogs a book, make a few spare cards for additional subject entries. When the user returns the book, you ask him what ideas he got from it or what pages he found particularly useful and make new subject cards accordingly. If you wish to sound modern you may call this 'Cybernetic' or 'dynamic' cataloging. If this system works out it should serve two useful functions. It would make a far more useful (in the operational sense) subject catalog and perhaps, psychologically, even more important than this, let the user feel that he had been turned loose on Mount Olympus to participate in the cataloging.

I think it is important to get your users on your side to make a common cause against management. Management, as all of you who have read the Bell Report and subsequent studies of how to keep in-house scientists happy know, is a little afraid of their staff scientists. If you can get your scientists to make a common cause with you against management, instead of your present practice of fighting with your users on one hand, and your administrators on the other, you will have most of your battles won before you start.

There is one simple method of accomplishing this which is worth far more than the trouble it will undoubtedly cause. Appoint an informal advisory committee from amongst your users. Of course you will stack the committee in your favor but I would also be sure to have on it (and I'm speaking of the in-house situation now), a. The best scientist in the laboratory regardless of his rank or GS rating. b. Two or three of your steady customers (I would be surprised if the scientists in 'a' were not also among those numbered in 'b'). c. One or two senior lab chiefs, group leaders and the like who should use the library and don't.

Innocently ask their advice on things like book procurement, loan policies, especially permanent loan policies, reference services, and the like. Expect arguments and disagreements and free advice that will make your gorge rise (but maybe it's not so unreasonable when you cool down). Don't be afraid of making the library controversial. Perhaps the worst thing that can happen to any library is to be quietly forgotten. As the draft of your staff paper shows, you feel already that you don't have much to lose and after all, you can always get a better job somewhere else. SUMMARY: Hubris breeds Nemesis. Strong opinions breed equally strong counter-opinions. In the Hegelian dialectic, thesis breed antithesis.

Is it possible that librarians have been so busily defending their sacred field against the encroachments of the special librarians, the documentalists, the information centers and the information scientists that they have forgotten that these are their allies; that they have forgotten that their users are even stronger allies; that the non-librarian administrator who understands neither the problems of the library nor the library problems of the user is perhaps the foe against whom all should make common cause.

I wonder also if the answer might not be found somewhere in the simple lines by Edwin Markham:

"They drew a circle and shut me out
Heretic, rebel, and thing to flout
But love and I had the wit to win
We drew a circle that took them in."

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Ruth A. Longhenry, Army War College

Dwight C. Lyman, Naval Underwater Sound Laboratory

P R O G R A M

WEDNESDAY - 14 October 1964

0800 Military bus transportation from Hilton Hotel to
Kirtland AFB, Technical Library, Bldg. P-419

0830 - 0935 Registration - Coffee and Conversation
Conference Room, Bldg. P-419

0945 - 1100 Official Welcome and Briefings
Conference Room 3, Bldg. P-413

1105 - 1200 Tour of Technical Information Division

1200 - 1345 Luncheon, Kirtland AFB Officers' Club

1400 - 1615 Panel Discussions

Group A: Conference Room 1, Bldg. P-413
Group B: Conference Room 2, Bldg. P-413
Group C: Conference Room, Bldg. P-419

1630 - 1745 Cocktail Party, Kirtland AFB Officers' Club

1745 Military bus transportation to Hilton Hotel

THURSDAY - 15 October 1964
(Cole Hotel)

0830 - 0930 General Session (Lolita Room)

Topic to be announced.
Heston Heald, Special Assistant to the Director of
Scientific and Technical Information, DDR&E

The Library's Role in Referral Services
John F. Stearns, Chief, National Referral Center

0930 - 1000 Coffee Break

1000 - 1200 Panel Discussions

Group A: Pine Room
Group B: Copper Room
Group C: Foyer Lounge

1200 - 1300 Luncheon

THURSDAY - 15 October 1964 (Cont'd)

1300 - 1500 Panel Discussions
1500 - 1515 Coffee Break
1515 - 1630 Panel Discussions
1830 Cocktails (Walnut Room)
1930 Dinner (Walnut Room)

Guest Speaker: Dr. Harold Wooster
Air Force Office of Scientific Research

"Librarians East and West--Have They Missed the Twain?"

**FRIDAY - 16 October 1964
(Cole Hotel)**

0830 - 1030 Panel Discussions

 Group A: Pine Room
 Group B: Copper Room
 Group C: Foyer Lounge

1030 - 1045 Coffee Break
1045 - 1200 Panel Discussion Leaders' "Wrap-Up" (Copper Room)
1200 - 1300 Luncheon
1300 - 1445 Presentation of THE Staff Study selected by the
 Discussion Leaders (Lolita Room)
1445 - 1500 Coffee Break
1500 - 1600 Business Meeting (Lolita Room)

Charles R. Knapp, presiding
Industrial College of the Armed Forces

ATTENDANCE LIST

JOHN ARMSTRONG (A)*
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