OE FORM 6000, 2/69

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION

ERIC REPORT RESUME

ERIC ACC. NO.	P.A.	PUBL. DATE	ISSUE
ED 043 792			
CH ACC. NO.			
AA 000 627		Mar 70	RIEMAR71

IS DOCUMENT COPYRIGHTED? YES ☐ NO ☒
ERIC REPRODUCTION RELEASE? YES ☐ NO ☒
LEVEL OF AVAILABILITY I ☒ II ☐ III ☐

AUTHOR

TITLE
Federal Information Resources: Identification, Availability and Use; Proceedings of a Conference, Washington, D.C., March 26-27, 1970.

SOURCE CODE	INSTITUTION (SOURCE)

SP. AG. CODE	SPONSORING AGENCY
BBB02359; BBB00063	The Federal Library Committee, Washington, D.C.; Federal Council for Science and Technology, Washington, D.C. COSATI

EDRS PRICE	CONTRACT NO.	GRANT NO.
0.75;6.55		

REPORT NO.	BUREAU NO.

AVAILABILITY

JOURNAL CITATION

DESCRIPTIVE NOTE
129p.

DESCRIPTORS
*Information Needs; *Research Libraries; *Feedback; Government Libraries; Federal Programs; *Use Studies; *Information Sources; Information Utilization; Conferences; Information Services

IDENTIFIERS *Committee on Scientific and Technical Information; COSATI; Federal Library Committee

ABSTRACT The Conference was held because of a recognition by the Committee on Scientific and Technical Information (COSATI) Task Group on Library Programs and the Federal Library Committee of a fundamental responsibility to interact in a meaningful way with the non-Federal sector--the state, local and private users of Federal information resources. This interactior will continue through a variety of communications approaches. This conference offered an opportunity for a face-to-face tutorial in which all parties could present their views, their needs and their limitations. The daily program format provided morning presentations by representatives of Federal information organizations, and afternoon presentations by participants representing non-Federal users of Federal information products and services. The broad subject area covered on the first day of the conference was "Sharing Federal Information Resources with Research Libraries," and "Availability of Select Federal Information Services and Products," was covered during the second day. The discussion periods provided alternate views and candid criticisms. The needs of research libraries and the shortcomings of the Federal information resources were the two most constant topics. The value of the conference was expressed by calling for a second one. (Author/NH)

FEDERAL INFORMATION RESOURCES

Conference Proceedings

MARCH 1970

Proceedings of a Conference
on

FEDERAL INFORMATION RESOURCES

Identification, Availability and Use

Washington, D. C.
March 26–27, 1970

Sponsored by:

Committee on Scientific and Technical Information,
Task Group on Library Programs
and
The Federal Library Committee

Publication and distribution arranged by COSATI Task Group on Library Programs

Request for copies should be made to:
Chairman, COSATI Task Group on Library Programs
National Agricultural Library
Beltsville, Md. 20705

DECEMBER 1970

Federal Information Resources

Proceedings of a Conference
MARCH 26-27, 1970

Table of Contents

(continued)

Table of Contents (cont'd)

INTROOUCTION

This invitational conference, held in Washington, D.C., March 26 and 27, 1970, was co-sponsored by the COSATI Task Group on Library Programs and the Federal Library Committee. Membership in the sponsoring groups is representative of virtually all Federal library and information handling activities.

The conference derived from a recognition by both groups of a fundamental responsibility to interact in a meaningful way with the non-Federal sector—the State, local and private users of Federal information resources. This interaction has begun and will continue through a variety of communications approaches. An added approach which we felt would be useful is a face-to-face tutorial in which all parties could present their views, their needs, and their limitations. This conference met this requirement.

The daily program format provided morning presentations by representatives of Federal information organizations, and afternoon presentations by participants representing non-Federal users of the Federal information products and services. Discussion periods followed and were illuminating for alternate views and candid criticisms.

The conference served its purpose in providing a forum for the exchange of current information and a focus for discussion and action. The needs of research libraries and the shortcomings of the Federal information resources were the two most constant topics. Both the Federal and non-Federal participants realized the appropriateness and potential value of the conference by calling for a second one.

CONFERENCE WELCOME

JOHN SHERROD
Conference Chairman
Director, National Agricultural Library
Chairman, COSATI Task Group on Library Programs

Good morning, ladies and gentlemen. My name is John Sherrod, and I'm the Conference Chairman.

I want to thank all of you for coming and joining with us today. Some of you had to fight snow and rain and airline delays, and we understand a number of our guests are still on their way and will be coming in throughout the morning.

I hope this will be the first of a series of programs of this kind in which members of COSATI, and the Federal Library community in general, will be able to interact in a meaningful way with the non-Federal sector, particularly with the research libraries of the country.

We feel that the Federal government has a lot of information, a lot of data bases, a lot of sources of information; and what we are trying to do this morning and during the meeting, is to be a bit tutorial in two directions: we hope to tell you something about our information programs—some of the services and products that we have; and we hope that you, in turn, will be good enough to tell us what your problems are in terms of getting access to this material, and what we can do to make it easier for you.

We hope you will tell us also what we are doing that you don't like; or what we may not be doing that you would like to have us do.

In this way we feel sure that we can make our information resources more available and easier to use.

Again, let me welcome you to the conference, and if there is anything that we can do, please call on us.

*Conference Chairman; Director, National Agricultural Library; Chairman, COSATI Task Group on Library Programs

Proceedings of the First Day

Thursday, March 26, 1970

Morning Session:

Sharing Federal Information Resources with Research Libraries

Burton E. Lamkin, *Moderator*
Deputy Director, National Agricultural Library
Executive Secretary, COSATI Task Group on Library Programs

Participants:

Andrew A. Aines
F. Kurt Cylke
John Lofenz
Henry Dubester
Lawrence S. Papier
Paul L. Berry

Afternoon Session:

Speakers:

Neal Harlow
Richard E. Chapin
Herbert S. White

and Plenary Session

Committee on Scientific and Technical Information (COSATI)

ANDREW A. AINES
Chairman, COSATI; Col. U.S. Army (Retired)

COSATI is just a normal eight year-old committee; it was sired as the result of a chance meeting in history, of the Federal Council for Science and Technology, the President's science adviser, and some guy in a sailor suit who got away. You can take your pick.

Its mother was necessity, a burgeoning R and D budget, the explosion of literature and a need to get the Federal R and D family together to communicate about what it was doing in the R and D business. The record does not show if there was any midwife or attending physician, so we will just say that Hubert Humphrey somehow might be given a credit line in this particular area.

By FCST agreement, the most senior information person in each of the agencies was to be a COSATI member.

The primary objective of COSATI is to develop, among the executive agencies, a coordinated, decentralized scientific and technical information system for scientists and engineers and other technical professions.

Secondarily, COSATI will coordinate and obtain cooperation among the Federal and national systems for handling scientific and technical information.

To attain these ends, COSATI will employ both technical and operational personnel conversant with scientific and technical information requirements and problems.

Task forces will be selected from within and outside the Federal government.

Characteristic tasks of COSATI are to: identify problems; review adequacy and scope of present programs; establish and review new programs and measures to solve problems; recommend standards, methods and systems for uniform adoption; identify and recommend assignments of responsibility among agencies; review and make recommendations regarding resources assigned to programs of the executive agencies; and recommend management policies to improve the quality and vigor of scientific and technical activities.

FCST also pointed out to us that we should do everything we could to facilitate inter-agency coordination at management levels. You can see that this is a pretty tall set of requirements that have been put on us.

Today there are about thirty agencies within the COSATI family. There are about ten or twelve working groups and about 250 people who are involved as members, observers, chairmen, executive secretaries and members of these task groups.

There are librarians, scientists, engineers, documentalists, managers, educators and other people scattered around through the organization.

The Federal Council, of course, has several committees like COSATI working in fields of interest to the R and D community; for example, they have efforts going on in atmospheric sciences, in research programs, in university R and D—you can run down the list and find all kinds of areas where they feel there is a real requirement for coordination.

We proudly feel that COSATI is the most productive of all of the committees, and of course we recognize that we have the defect of all committees; namely, that we work with people who are doing other jobs, and who can only give a small part of their time to our functions. I find it extraordinary, however, when I go back and look at the productiveness of COSATI through the '60s, that we can, indeed, be proud of a lot of the things that our members put through and that the Federal Council agreed on.

I would like to point out that the members of the Federal Council are among the most powerful people in the Executive Branch of the Government; people like the Head of the National Science Foundation, Dr. McElroy; Dr. Seborg, of AEC; Dr. Paine, of NASA; John Foster, of Defense; and right down the line. You get an idea of the type of people, then, who are our sponsors.

Our panels and our activities are known to most of you. We have some newcomers' so I will quickly mention them to give you an idea of what it is that we think is important and the directions that we are taking.

We have a Panel on Operational Techniques and Systems. This panel seeks to look at all of the on-going programs of the Federal agencies and come up with techniques and methods for improving them. They put out products such as the COSATI Microfiche Standard. They will turn out volumes on mechanized information systems that are being used by the Federal agencies. They get involved in all kinds of stock jobs and difficult jobs that we toss at them; there is just no end to their involvement in subject category lists and descriptive cataloging. They, perhaps, would be the group most closely identified with some of the interests of the research library community.

There is the Panel on Information Sciences Technology which really looks at the cutting edge of information sciences. They have been looking at on-line systems—interactive systems; they have been looking at the different kinds of worlds inhabited by the people who are documentalists, and those who are in the library community. For the most part, however, they are concerned with the harnessing of the new technologies to aid in some of these information programs.

We have another Panel on Education and Training which seeks to fill the gap, if you will, that exists between the new technology and the older technologies. They worry about the education of those people who are in the information business and also those who are in the science and engineering areas who need to have updating in how to handle the resources that are available.

Very quickly, because I do not want to spend too much time talking about these, other panels are those on International Information Activities; Management of Information Activities; Information Analysis Centers; and, Legal Aspects of Information Systems.

Among the Task Groups we have the one that has so great an involvement here today, the Task Group on Library Programs. Then there are other Task Groups on Synoptic Data; National Systems; Technology Utilization; and, Dissemination of Information. Some of these are in process of change and some are being discontinued.

We have, for consideration, new groups that may be formed on the subjects of environmental quality, i.e., the environment in terms of some

aspects of data handling, other data systems, data processing networks, and data for the solution of socio-economic problems.

So much for COSATI products. We feel that COSATI represents an attempt, without creating a large establishment, to try to bring together those people who probably represent the world's largest generators, handlers, processors and disseminators of knowledge.

We note shifts and changes in interests that I have to report to you. The bibliographic area, which is fundamental and will always remain so in our effort, now seems to be shifting a little bit from the exact center and to be moving into areas involving data for purposive systems. We are moving into areas that involve vast new methods of technology, such as information and data from space; for example, earth resource satellite data systems—those areas where we have to handle vast amounts of data. We have to find ways of compressing and making this data more useful.

So much, then, for the type of thing we are looking forward to, and I want to reaffirm that we have always felt the importance of the research librarian in our scheme of things. Because the metabolism with which we are moving is so heightened and so rapid, there are times when it seems that we do not have much interest in this group, I want to reassure you that this is not so.

On the other hand, I think it is necessary for you to understand that you must not be a passive community; you must, as far as I am concerned, let us know what you feel ought to be done and what you can do. You ought to remind us when we are trying to undertake to do things that can be very well done within the community of the research library and not take the attitude that there is competition going on. I think we can use better communication, but the competition, if any, should be one in which we are all striving toward our common goals.

Perhaps I could end my comments with an idea about the kind of thing that concerns us and, I would hope, the whole community. I want to quote former President Lyndon Johnson, who made the comment on signing the State Technical Services Act, in 1965; he said:

"The test of our generation will not be the accumulation of knowledge; in that, we have already surpassed all the ages of man combined. Our test will be how well we apply that knowledge for the betterment of mankind."

I bring you greetings, then, from Dr. DuBridge, my superior, and wish you a most productive conference. Thank you.

Federal Library Committee: Background, Organization, and Projects

F. KURT CYLKE
Executive Secretary, Federal Library Committee

The Federal Ubrary Committee was established in 1965 by the Library of Congress and by the Bureau of the Budget for the purpose of concentrating the intellectual resources present in the Federal library and library-related information science community, to accomplish three main objectives:

1. achieve better utilization of library resources and facilities;
2. provide more effective planning, development and operation of Federal libraries; and,
3. promote an optimum exchange of experience, skill and resources.

Membership on the Committee is representative of the three national libraries and all the Cabinet agencies. In addition to this, there are six independent agencies elected on a rotating basis, every two years, and there are five official observers, who have been assigned. The observers include representatives from the Bureau of the Budget and the Office of Education's Division of Library Programs. We hope that the U.S. Office of Education's observer will be from the Bureau of Libraries and Educational Technology. That Bureau has been formed, but at the present time is in the process of staffing' we trust that the Director of the Bureau will serve as an observer. Guest observers have been apointed from time to time.

Now, to achieve the goals—the three goals that I mentioned—a Federal Library Committee Secretariat was established, and a Work Group/Task Force/Subcommittee operating method, similar to that of COSATI, was implemented. 'nitial funding support was received from the Council on Library Resources. It is interesting to note that the Library of Congress supports the Secretariat financially and pays the majority of expenses involved with the Committee. We are hoping, of course, to broaden the base and to involve more agencies as time goes on.

Initially, emphasis was placed upon the acquisition of research and development grants and contract funds, with much of the work done by the Secretariat, by independent individuals, by members of task forces, and by commercial, profit and non-profit firms under the direction of the specific work groups.

There are ten official Task Forces named according to their principal areas of concentration. They are the Task Forces on:

Acquisition of Library Materials
Automation of Library Operations
Education
Interlibrary Loan Arrangements
Mission and Standards
Physical Facilities
Procurement Procedures

Public Relations
Recruiting
Role of Libraries in Information Systems

The last one named I will refer to a little later. I believe it is one of the most significant groups that we have and that it is conducting one of the most significant programs.

Adjuncts to the Task Forces are formal Work Groups and Subcommitees which require an explanation to define their specific orientetion.

Interpreting Civil Service Guidelines. If you came in from outside the government as I did, and faced the Civil Service Commission and its laws and regulations and rules, I think you would find this to be a most important subgroup.

Program Planning and Budgeting. As recently as yesterday, it was determined that this group would become an Executive Commitee and act in a policy advisory capacity to the Federal Library Committee Chairman and the FLC as a whole.

Statistics Subcommittee. This group is working with the National Plan for Library Statistics, which is being developed by the Office of Education. We hope that the Bureau of the Budget and the Office of Education will concur with our belief that the Federal library community should be treated as a 51st state, rather than being divided by type of library.

Map Libraries. This is a group of people from such organizations as the Archives, Department of Defense, the CIA, National Security Agency, and so forth, who use us as a convenient mantle under which to meet. They are not an operating group of FLC, but they do use our facilities.

Now, these ten Task Forces and four working groups were organized to conform to six funclional approaches:

1. to consider the policies and problems relating to Federal libraries;
2. to evaluate existing Federal library programs and resources;
3. to determine priorities among library issues requiring attention;
4. to examine the organization and policies for acquiring, preserving and making information available;
5. to study the need for and the potential of technological innovation in library practices; and,
6. to study library budgeting and staffing problems, including the recruiting, education, training and remuneration of librarians.

Work efforts were undertaken in all these areas except technology, which is not fully explored to date.

We have had some success. Although we are very young, we are beyond the crawling stage, and I think we ere walking now. We have drawn a Federal Library Mission Statement. We submitted it to all the agencies and 90 percent of them have concurred and adopted a form of the general statement as their mission statement.

We have written an inter-library loan code which corresponds very closely with the ALA code, and this has been accepted.

We have also designed an inter-library loan form for government use which, again, closely parallels the ALA effort. That has been given a

government form number; it has been accepted, and is in use now on a widespread Federal basis.

We have a procurement manual compiled and issued,which is going into a second edition. Coming from the public library community, it was quite a shock to me to realize the involved routines required in selecting and acquiring materials—even such things as dictionaries.

The various laws and regulations which affect the Federal library community were compiled and published and issued by the R.R. BOWKER Company.[2] This is being revised now and, within a year or two, we will publish an up-to-date issue.

We implemented a recruiting mechanism for librarians. This was conceived by our Task Force on Recruiting and is being implemented through the Secretariat and a regional network.

A study of the role of the library in the information system was contracted with the National Academy of Public Administration. These are examples of our efforts. Currently we have approximately fifteen R&D projects on-going.

One of the questions to be addressed today is: What does the Federal Library Committee offer to the research libraries of the country? Well, I see two main offerings. First, we can serve as a direct entry point for the research library community and for others, into the maze of Federal library resources. Second, we can offer the generalizable benefits resulting from studies and research projects which we have encouraged other agencies to fund and to support.

This figure that I am going to repeat now is a major tribute to the Federal Library Committee, and I can say this because it pre-dated my arrival on the scene. In the three years of our infancy, we can count up more than $500,000 in research contracts and grants, which were a direct result of the Federal Library Committee's involvement with the respective agencies.

Some of these projects are on-going and you will hear about some within the next two days. One, which is called the *Study of the Development and Present Status of Automated Techniques and Proceduras in Federal Libraries*, was funded by the U.S. Office of Education, Library Research Branch a year and a half ago at a cost of approximately $74,000. The work was pursued by Information Dynamics Corporation. The results were such that a second project is being considered now; as a matter of fact, a request for proposals was sent out, a bidder's conference has been held, and the proposals themselves should be received this Friday.[3] Paul Berry, later this morning, will talk to you more about this. There will be direct products from this study which should be of use to you.

Another is the *Study of Rasources and Major Subject Holdings Available in Federal Libraries*. I know, from being outside the government, how important this is—to know what is available in the community. This study, which will be addressed by Mrs. Elsa Freeman tomorrow, will result in a printed document within six months and be of immediate assistance to you and to your inter-library loan people.

The study of libraries and extra-library information systems in Federal agencies was undertaken by the National Academy of Public Administration. This study is about to be wrapped up. It was funded by the

United States Corps of Army Engineers TISA Project, and the report will be available. It does not present a very positive picture of Federal library activities; however, I think it shows a very important picture of libraries and their role in the system. We can learn a great deal from it. This should be available within the next two or three months.

Now, these projects have all consumed monies which were provided either by the Council on Library Resources, the United States Office of Education, or the United States Army Corps of Engineers TISA project. There were some which were absorbed by the Secretariat—from Library of Congress funds.

The Library of Congress supported projects include such things as: the *Roster of Vacancies*, which we publish every month; we act as a central clearing house. We also list library school students who are about to receive their degrees, and we make this information available to prospective employers in the "Roster of Prospective Federal Librarians."

In your packages you will find an FLC organization chart and a membership list. It should be a matter of some interest to you, and it will give you a better idea of the breadth of our work than, I suspect, many of you have now.

---

[1]Burton E. Lamkin was named Associate Commissioner for Libraries and Educational Technology on July 31, 1970.
[2]Strauss, William and others. *Guide to Laws and Regulations on Federal Libraries*. New York, Bowker, 1967.
[3]System Development Corporation is pursuing this project.

The National Libraries[1]

JOHN LORENZ
Deputy Librarian of Congress

Perhaps the most important aspects of the national libraries are those involved in their very nature and being, their comprehensive collections—probably the most comprehensive ever assembled in the world—their organization of these materials, their physical facilities, their staffs—skilled in nearly every field of knowledge—and their dedication to serving other libraries and other users. They exist, are available, are vital and growing; so you might say they are alive and well and living in Washington (and vicinity). They are constantly striving to devise ways to improve and to increase their usefulness.

I suppose it would be true to say that almost every major program or development, whether in acquisition, automation, cataloging and classification, or publication, has an impact upon services of other research libraries.

Among the long-standing and best known of the national libraries' services to research libraries are:

1. The program of central cataloging, with the resulting printed cards and book catalog;
2. Inter-library loans;
3. Published bibliographies, indexes and guides to collections;
4. Photo-duplication services;
5. Exchanges;
6. Reference services in person, by telephone, teletype and mail.

There are also specialized services, such as service to the blind and physically handicapped, or the abstracting and analyzing of literature and the searching of literature, which can be provided on a contractual basis, as can many of these services.

Now, from where I sit, the services of the national libraries seem either to be superb, on the one hand, or to be absolutely lousy on the other! These are the things I hear about; I very seldom get the letters or see or hear comments that services are adequate or fair or good. You always hear the extreme.

I know the national libraries do regret the delays in service. We are constantly seeking to eliminate these delays. The reasons for the delays are not unfamiliar to you. There is a huge volume of work that has to be handled, insufficient staff to cover the workload, and occasional human and equipment failures.

On inter-library loan service, I would say that it could best be improved by the national libraries if items requested were restricted to those that cannot readily be secured elsewhere; in other words, if the national libraries were truly used as a last resort after local, state and regional resources were fully explored.

On photo-duplication: I believe copying services could be hastened if requestors supplied full and precise bibliographies and citations, and LC, I know, would greatly speed service if more libraries would establish deposit accounts, even though small, which would help avoid the delays in paper work involved in preparing cost estimates for routine copying.

Now, each of the national libraries publishes information about itself and its services and resources, and I will assume that all of you, being good librarians and information users, either know about these services or can find out about them. But the number of national library publications is really surprising. In 1968, the Library of Congress, alone, published twenty-five monographs and 188 issues of serials and continuations. Its price list now has 340 entries for such diverse subjects as the Antarctic Regions, Arms Control and Disarmament, Legal Sources of Mainland China, Official Publications of Ghana, the American Revolution, and Presidential Inaugurations.

Probably the most heavily used national library service results from their cataloging operations, particularly the LC card distribution service, with its more than 20,000 subscribers to whom over 70 million cards were distributed in the past year. Now, here again we know we have problems, and the principal problem is the rapid increase in cataloging output at the Library.

Items cataloged have increased from about 100,000 items to over 200,000 items within a three year period. This has been a result of the National Program for Acquisitions in Cataloging and Title II c of the Higher Education Act of 1965.

Perhaps the most significant thing that I will say today, and the most significant thing you might hear today, is that, in the Administration's bill to extend the Higher Education Act of 1965, they are recognizing, specifically, the importance of continuing Title II c, the Shared Cataloging Program. This is something that we had real qualms about, because of the desire of the Administration to eliminate categorical programs. I think it is a tremendous tribute to this program and to the people who have been working with it out across the country that, in a short period of time, with concentration of energy, the importance of continuation has been communicated, so that it looks as though this program will be recommended and supported by the Administration and, I trust, with that support, by the Congress.

Because of this rapid increase in cataloging output, the Card Division has been having problems. As you know, we have been applying automation to the Catalog Card Distribution Service, and Phase 1, I am very glad to say, seems to be working very well. This phase provides optical character recognition in processing and arranging order slips, and it is already having decided positive effects.

Phase 2 is taking a little longer to implement. This phase will provide on-demand printing of cards ordered, and should be in operation by the end of calendar 1970 or early 1971. In the meantime, I can assure you that everything possible is being done to maintain and possibly improve service in this difficult transitional period of going from one kind of operation to another, and we beseech your patience and further understanding.

Another national bibliographic service is provided by the National Library of Medicine through its computer-based Medical Literature Analysis and Retrieval System (MEDLARS). I am sure that most of you are familiar with this service.

But not all of the bibliographic services of the national libraries are in published form as yet. Possibly the most important non-published LC

service is the *National Union Catalog*, which records the location of over 50 million printed books, and which provides, for your libraries, a reference service to enable you to locate a book from among hundreds of locations.

Editorial conversion of the pre-1956 card files into a bibliography in book form is now well along. Gordon Williams, who has been leading this project for ALA, can tell you more about this, but about 60 of the eventual 600 volumes are now completed, and I believe that this will be the largest single publication ever accomplished.

Another development has been machine-readable cataloging, or MARC, as we know it. The MARC distribution service was begun in early 1969, and includes MARC records for currently cataloged books in English. This program is moving forward. More than 75 library systems and services are now subscribing to this service, and the data base now exceeds 50,000 records. As many of you know, we are investigating retrospective conversion as well. That is called the RECON project. It is funded now, and the immediate objective is to go back to the beginning of 1968, and see what problems we have in retrospective conversion.

I would like to say, in conclusion, just a few words about the U.S. National Libraries. Task Force, which represents the common determination of the three national libraries to develop a coordinated library automation program.

Along these lines, the directors of the three national libraries have already accepted the following recommendations from the Task Force:

> Adoption of MARC II format for the communication of bibliographic information in machine-readable form;
>
> Adoption of standard practices in descriptive cataloging;
>
> Adoption of a standard calendar date code for the representation of calendar dates in the data processing systems of the three libraries; and,
>
> Adoption of a standard language code and standard character sets for the Roman alphabet.

Priority attention is now being given to the National Serial Data Program, the ultimate objective of which is the creation of a National Data Base of machine-readable information which will identify and locate serial titles. A National Serials pilot project is now being carried out by the Association of Research Libraries with Department of Agriculture funds. The objectives of this project include production of a union list of the live scientific and technical serials held at each of the three national libraries, and production of information required for serials management.

This pilot study is intended to enable us to learn more about serials by experimenting with machine controls over these complex files at the national level and to find out more about actual costs of wider controls. The three national libraries are cooperating in the development of the necessary software, reformatting techniques, computer use, and so forth.

The Task Force is supplying policy guidance to ARL on this project. The activity, I am glad to report, is progressing well, and consideration is being given to the possibility of experimenting with the assignment of standard serial numbers, once the most economical procedures for

instituting such a system have been determined. It is the Task Force's intention to seek further funding soon, to cover the next phase of this program.

These are, obviously, just a few quick highlights. I would like to say that the national libraries are at your service, and we certainly want to serve you as well as we can.

[1] The national libraries are the Library of Congress, the National Library of Medicine, and the National Agricultural Library.

Question and discussion period

Ruth Smith Institute for Defense Analysis: Mr. Cylke, it is my understanding that the Civil Service tests for librarians are still based on old and traditional library practices. When are they going to be updated to include modern documentation and report literature?

Cylke: You may be interested to know that this was one of the first problems to which I addressed myself. As recently as last Wednesday, we had a meeting in the Library of Congress, with some people from the Civil Service Commission. This question came up.

When will this occur? That I cannot answer. But it is under discussion. The present "passed" rate of people who have taken that examination is running about 10 percent. Ten percent pass of those who have taken it.

W. Carl Jackson, Director, Pennsylvania State University Library: I would like to address a question to John Lorenz, who may not want to answer this at this stage, but I wonder if he would like to give any report on the findings of "Cataloging at Source."

Lorenz: What Carl Jackson is referring to is a discussion between the Council on Library Resources, committees of the American Library Association, and the Library of Congress, with the objective of restudying the whole proposition of what was known as "cataloging in source."

Verner Clapp has been assigned by the Council on Library Resources specifically to work with the Library in developing some guidelines for moving ahead, and several discussions have already taken place. One of these discussions has resulted in a change of name. We fell that instead of "cataloging *in* source" or "cataloging *at* source," a more accurate description of what is really wanted is: "Pre-Publication Cataloging." PPC is the acronym.

Unfortunately, Verner has been ill, and the next phase has been delayed somewhat, but we have a meeting scheduled for April 7, to carry forward on specific plans. The plan goes something like this: there will be two questionnaires on a sample basis, to libraries, to find out whether, in all of the changes that have taken place in the past ten years, libraries are still interested in pre-publication cataloging—the essential cataloging information in the book itself.

We are assured that the publishers, at this time, are more interested in cooperating with this project than they were ten years ago. We get this from both the Book Publishers Council and the educational publishers. They are willing to administer the second questionnaire to publishers to determine, precisely, their willingness to cooperate with this program and to send materials at the earliest possible stage in production to the Library of Congress for cataloging information.

I presume, if we get positive answers on both of these questionnaires—and we have some indication that there will be some funds to see us through a pilot phase, which might need to be extended over a one or two year period—that this project might very well move forward.

This time there may be a desirability of working from galley rather than page proofs. This would give us a big time jump on the previous experiment.

Also, instead of perfect cataloging being in the book—in finished, final, 3 x 5 form, (you remember the concept was that libraries may have a camera with which they can copy this card) that perhaps what is really neded is the essential cataloging information that professional catalogers have to provide. This would be the correct entry, the correct bibliographic description, etc. Anything which libraries could do from the book itself by having it in hand can be filled in by the local library after it gets the book.

Grieg Aspnes. Research Librarian, Cargill, Inc., Minneapolis, Minnesota: I would like to address my question to the Chairman of our Conference.

Any library working in the field of agriculture or any of its ramifications has found the most important Federal information resource to be the *Bibliography of Agriculture.* Why, without any public warning that I can find, was the *Bibliography of Agriculture* suspended?

Sherrod: This question comes up periodicelly. It always is a source of some concern to me that the word did not get out as well as we would have liked had we had more time.

One of the things that happens in the Federal Government is that we work on two kinds of years; one is a budget year and one is a calendar year, and when you reach a critical point, you have to work in steps of six months, and you either have to make a decision at the end of the calendar year or you have to make it at the end of the fiscal year. With the kinds of budget limitations we were faced with, we had to make a very early decision. Since publication is run on a calendar year basis, by and large, we thought that, in the long run, it would be neater to break off the publicetion at the end of the year.

We have made a number of studies that suggest that the cost of the *Bibliography of Agriculture* and our other indexing operations far exceeded the use and the value of these publications. This was a value judgment based on extensive questionnaires and surveys.

We found that there were a number of commercial organizations who were willing to take the information that was appearing in the *Bibliography of Agriculture* and make it available to the general public at a cost somewhat in excess of what the cost is to the Government Printing Office. This is in line, generally, with the Bureau of the Budget's position and that of the Federal Council; namely, that the cost of information services should be more generally passed on to the user of the information and less of it blanketed over the whole taxpayer group.

Given the assurances of these private publishers that there would be no record lost, that all we would be doing is going out of the publication business (which the private sector has complained about bitterly in past years) we would continue a complete record of everything going into the library. But instead of appearing in manual form in a bibliography, which, by the way, was taking us almost a year to get out, we would place it on a magnetic tape and make this tape available to any center, regional center, library, research center or commercial organization that wanted it.

That is, essentially, what the CAIN tapes are all about, and beginning this year now, anybody who wants to have a high-speed announcement of material received in the library can acquire this tape at a relatively low cost,

or can obtain the print-out of the tapes on publications provided by the commercial publishers.

The net result to the Library was simply this: the cost of our indexing and publishing operation was reduced about 50 percent. All of these funds, or nearly all of these funds, will go into increasing our acquisition effort. We have always had difficulty obtaining sufficient funds to keep up with the rapidly increasing cost of the literature plus the great explosion of literature. We feel that we ought to spend more money on acquisition and let the private sector spend their money and entrepreneurship on exploiting that literature. Everyone will still get better information, faster information; and the only thing you will have to do is pay a little more for it.

Warren J. Haas, Director, University of Pennsylvania Libraries, Philadelphia, Pennsylvania: Back to a point John made just now concerning this philosophy of the Bureau of the Budget to pass on to the user the cost of the information. In fact, research libraries are not users but, like yourself, are suppliers. In this case, and in the case of NASA documents a few years ago and AEC documents recently, the costs are passed on to research libraries, and I am not sure that the thinking here tracks with the facts.

Sherrod: I think with increased costs and decreased budgets, all of the libraries are inevitably faced with the problem of passing some costs on to the users. It may be like the prime interest rate in the big bank; when the big bank raises its interest rate to 8½ percent the little bank has to pass on the interest rate to the farmer.

I dare say, that as we spend more and more money to feed the poor, as we spend more and more on other kinds of social programs, that the kinds of services in the past that have been free, may, indeed, no longer be free but will have to be partially supported by the person getting the service. I can well imagine research libraries having to pass a small part of the cost on to the consumer.

The cost figure itself is not a good argument. We had, in the *Pesticides Documentation Bulletin*, and the *Bibliography of Agriculture*, a combined cost from the Government Printing Office of almost $60 a year. The cost of the two combined publications coming from the commercial publishers will be $85 a year, which I do not think is a terribly significant increase when you think that the material you get will be only half as old. So you not only will get a much better quality product; I think the price would have gone up, too. So there is a philosophical difference here, I am sure, between the free concept versus passing some of the charges on somewhere to the user. The National Agricultural Library, as an example, has had no increase in budget for nearly three years, and it is impossible to continue to run any kind of a program at the same level when year after year after year, you get no additional resources. There is no magic that will pay the increased salaries, the increased cost of books, the increased costs of maintaining a new building, and still continue service as before.

Aines: I do not think the Bureau of the Budget circular specifically talks about information services. Our office was consulted on several occasions, and we came to the conclusion that there was a tremendous amount of nuisance material being disseminated, and there had to be some way of

cutting it down. There had to be some signalling system, also, to find out who really needed the information.

The agreement that we had was that there should be some kind of charges that, somehow or other, would bring some control, but not in order to provide the funds required to pay for all the dissemination.

We also agreed that it should be experimental. The total amount of money that would be coming in, as a matter of charging for these services, would probably be so small in the long pull, comparatively, that we wondered how much harm would result from the breakdown of dissemination of information.

I want you to know that by no manner of means is this set in concrete; we are trying to look at these programs. What really happened was a terrible blow in terms of R&D funds for a lot of organizations, which probably caused this process to become somewhat magnified and aggravated. But it is not a dead issue.

Miles Slatin, Director, Lockwood Library, State University of New York at Buffalo: The philosophy I just heard sounds like what happened to public transit systems. When public transit systems began to be seen as things that had to pay their way. By increasing the cost to the users rather than generalizing the cost over the whole population, they began to fall apart. They stopped expanding and stopped providing service, and we got increases in private transportation which is clogging up the whole metropolitan East as well as the Mid-West.

This philosophy seems to believe that somewhere down the line, there is somebody who has more money than he had last year; and there is not—not this year, anyway. What is happening is, down the line, people have less, because we all depend on the same sources, which are largely Federal and State.

The other part of it is that the proliferation of information systems which comes all over the place— as well as information publications which come from libraries—every time one of these comes out, that increases the cost of the development of a data bank. *Chemical Abstracts* does a world of service, but it increases the cost to the chemist or the library providing the chemist, of geting that information, and there are no funds to meet that.

I think it is a very serious national problem of what kind of investment the country as a whole is prepared to make in guaranteeing free access to more sophisticated information than we have ever had before. The Census tapes may be an example of that. What are we willing to pay to invest in adequate information?

By this kind of funding policy, we may be limiting the increasing access to the information on which our social structure depends. Though we seem to be making more information available, it is becoming more expensive and more difficult to get.

Gordon R. Williams: Director, Center for Research Libraries, Chicago, Illinois: On this same point, and the view that was expressed here in general terms about passing on more of these costs to the users, I would like to suggest that there be some serious consideration as to who, really, is the user. Regarding the *Bibliography of Agriculture*, for example, it seems to me the real user of this information is the taxpayer who eats the food the

farmer produces. This is where that information finally comes around to benefit people.

The same thing is true in any other of these areas. It is not the doctor who benefits directly, it is the patient who benefits from the doctor's information.

Programs and Activities of the Office of Science Information Service

HENRY DUBESTER
Deputy Head, Office of Science Information Service
National Science Foundation

In the brief time available to me, I am going to highlight those programs and acitivities of the Office of Science Information Service and the National Science Foundation as they focus on the concerns of libraries—predominantly, the community of research libraries.

The Office of Science Information Service in tha Foundation operates its programs under the prescription of legislation which says the Office shall provide, and arrange for the provision of, information service to scientists, and do things to improve those services.

The focus, by and large, is on information services to the scientific community. Over the years these programs have evolved, developed and—if one permits a value judgment—matured. An early pattern of suporting publications, supporting the deficit operations of indexing, abstracting services, and a primary emphasis on research, has given way to a new major thrust. This thrust is aimed at the development of information systems and services. Scientific societies which represant tha scientific community can, witl. OSIS assistance develop information systems designed to serve that scientific community.

The developmental efforts are going on in the basic disciplines, and being conducted by the responsibla representative agencies or groups like the American Chemical Society, the American Institute of Physics, the American Geological Institute, etc. In doing all of this over tha course of the years, we have continuously had a concern for libraries.

There is a recognition that the research library is a rescurca for the scientist who needs information. There is a further recognition, particularly in tha very recent past, that, as these emerging information systems become operational and get "on the air," they provide the scientists with references to materials which he will have to find in the library; and as these systems get to be more productive, the scientist is geting more referances and the libraries are geting more pressura for mora services.

Libraries are a part of the general overall information system, if one can attribute a system to the patterns of information service that exist; and I think one can.

For about the last three years, we have been concerned that our efforts in the library area were not optimal—that they were not the best designed. We, ourselves, raised questions about what we were doing.

We have a rather trivial budget when one looks at the overall requirements on the national scene. Our budget is focused on services to the scientific community. When one relates the size of the budget to the actual requirements, one recognizes that those requirements cannot conceivably be met by our budget.

Secondly, in this situation, we recognize the authorized missions of groups like the Office of Education, and the work of the Council on Library Resources, and we question our role in this area. What should we be doing?

We have an Advisory Council, and we rehearsed with this Council, the situation as it exists with respect to library problems. We invited a representative of the Office of Education to explore the work of that Office, and it turned out that, when one adds up all the kinds of monies flowing from the Federal government to libraries, the total cash flow is just about the size of the total National Science Foundation budget! Just about $400 million, compared to the one-half million dollars which we were investing in scattered projects.

The concept that we have now formulated goes something like this: We recognize that, when the National Science Foundation makes grants, there is a kind of decision pattern involved. For example, if there is a controversy on a campus, as between the desire for centralized library operations versus departmental library operations, it is easy enough to see how a proposal for the construction of a building for the Chemistry Department, embodying the design for a departmental library, if supported by the Foundation, would bias a decision in favor of a departmental library—a decision possibly being made by a funding agency, where the decision locus ought to be in the university community, independent of the funding source.

Under these circumstances, it seems to us some mechanisms must be developed whereby the funds are addressed to problems, and the decisions regarding the elucidation of the problems remain where the responsibility properly rests. That responsibility does not rest with the people who provide the funds; it rests with the people who have the problem.

We recognize that there is a problem in the university community with respect to the organization of the information flow on the campus. As, increasingly, there are available information resources in the form of machine-readable records that require computer resources, there is a problem in the university community as to the locus of responsibility for the development, maintenance, operation and administration of these services. Should they be in the library? Should they be in the departments? Should they be in the computer center? We strongly desire to eschew the responsibility for this decision through the simple happenstance of having a responsibility for the money flow and want to put the responsibility for this kind of decision into the university community. We also wanted to resolve this problem while continuing to address the library problem in an effective manner, given the fact of relatively limited resources.

Our approach is the following: Our University Systems Support Program, accepts proposals from universities for the development of university-centered information systems. The universities here address the problem of information transfer in the university community as it concerns the scientific information flow.

We recognize that, insofar as the library is concerned, it is not reasonable to expect the library to compartmentalize itself with respect to science as opposed to humanities. We recognize, however, that the decision regarding the nature of the system that the university will operate, must flow from the university, not from the library, not from the computer center, not from the department that may have a given "proposal-push."

Thus, for example, we are supporting the development of a physics information system at Stanford University. This system development has its

acronym, SPIRE I, and is growing hand in hand with a library automation program supported by the Office of Education. We are supporting a developmental effort with the notion that self-sufficiency and operational responsibility will move to the University as the system becomes operational. The University intends that the operational responsibility will move to the library eventually.

In the case of a similar project supported at the University of California, Los Angeles, a similar decision has been made—not by us, and not by the library, but by the University—that tha system, when it becomes operational, will be managed and operated by the library.

In the case of the University of Georgia, a similar decision is that the Computer Center is going to oparate tha system.

At the University of Pittsburgh, the administrative complex involving the Knowledge Availability Center, a library and a dissemination activity, has placed this responsibility at an echelon which subsumes these operational entities.

Our funds are, in this sense, helping the librarias mova in phase with developments in the discipline-oriented information systems.

We have other programs; we do support research; we do support operational deficits. We tend to look at our money as seed money. Wa want to avoid, as much as possible, committing limited funds for enduring periods of time. We are not insensitive to libraries; as a matter of fact, we are suporting automation efforts at the University of Chicago and at Columbia University; a major aspect underlying our view of this support is thst it is helping develop capabilities in the library community which can feed back to some of the developments that are central to the MARC and similar programs here in Washington. In other words, we are trying to provide a basis for feedback and system improvement.

I do think that this is not the last word; change is inherent in the contemporary scene, and the program that I dascribed today will inevitably change because the requirements and the problems themselves are very rapidly changing. Perhaps a year from now, we will have a different program, or, within the same programs we will be addressing different magnitudes of money and effort.

Information Resources of the U. S. Office of Education

LAWRENCE S. PAPIER
Program Officer, Research and Program Development Branch
Bureau of Libraries and Educational Technology

The Bureau of Libraries and Educational Technology was recently formed to bring together most of the library programs in the Office of Education in order to give them the visibility and the unity that you people in the field have wanted for many years. Mr. Burton E. Lamkin is Associate Commissioner in charge of this Bureau. Despite this reorganization, not all library programs and library-related programs have been incorporated, and there are many resource-providing activities that probably never will be. Therefore, there is no one person who can speak for the specifics of library resources provided by the U.S. Office of Education.

What I will try to do this morning is to give you an overview of the funding, the data, the consultative services, the publications and the access to the publications, that emanate from the Office of Education.

For each program, I will give an indication of the scope and tell you where you may acquire more information.

There are nine funding sources provided by the Library Services and Construction Act and the Higher Education Act (LSCA). I will briefly list the scope of these and the potential benefits to you. LSCA provides four titles.

Title I seeks to enable the extension of public library service to places and people without access to such services, to the urban and rural disadvantaged, to migrant workers and to others. A total of $200 million has been provided so far for this purpose.

Title II grants matching funds for new library construction; a total of $135 million has been allocated for this purpose.

A somewhat smaller, but very stimulating program is Title III. Under this portion of the legislation, library networks are created and operated—networks that not only share resources of localities, regions and states, but also draw together school, public, academic and special libraries. Thirty-five Title III-supported telecommunications systems now connect 800 libraries, and fourteen technical processing centers have been established.

Title IV contains two different programs. Part A authorizes the provision of library materials and services to patients, inmates and residents of state-operated or substantially state-supported institutions; and Part B encourages the provision of special materials and services to physically handicapped, including the blind who, because of their handicaps, cannot use ordinary library materials.

Further information on these programs can be obtained by writing or calling Mrs. Elizabeth H. Hughey, Chief, Services and Facilities Branch, the Division of Library Programs and Facilities Branch, the Division of Library Programs of the Bureau of Libraries and Education Technology, your state librarian, or your O.E. regional program officers who provide consultation on all library programs and administration of LSCA.

Title II-A and part of Title II-B of the Higher Education Act provide resources to institutions of higher education. Under II-A, Federal grants are

made to institutions of higher education to assist and encourage them in the acquisition of books, periodicals, documents, films, micro-texts, magnetic tapes, phonograph records and other library-related materials including initial binding.

Under II-B, grants are made to establish graduate level fellowships in library education, including library-oriented information sciences. Provision is also made for the funding of institutes to provide opportunities for an intensive training experience which meets the particular needs of the participants.

Further information can be obtained from the sources I mentioned. In this case, your principal contact would be Frank Stevens, who is the Chief of the Training and Resources Branch of the Division of Library Programs.

The research portion of Title II-B of the Library and Information Science Research Program is somewhat different in that grants or contracts may be made to state governments, school districts or public or private agencies, organizations or groups, and not only to colleges and universities. We can contract with profit organizations, but we cannot give grants to them.

Further, library education is only one of several priority areas that we have. These other priority areas include; library improvement for audiences such as the disadvantaged and handicapped, library improvement through automation and new technology and through networking and other cooperative enterprise. You can obtain further information by calling me or contacting the regional program officers.

The Elementary and Secondary Education Act (ESEA) is another important area of interest, particularly in the case of Title II, and there are other possibilities under Titles V-C and VI-B of ESEA. One that was mentioned this morning, is the Library of Congress-administered portion of the Higher Education Act.

So you see that the Office of Education provides a variety of funding opportunities to the library community. We also supply, on a continuing basis, through the Division of Library programs, consultative service on these and other Federal assistance acts and agencies.

Additional information in reference to appropriate consultants can be found in the brochure, "Partnership for Library Progress," which gives you information on the appropriate regional people to contact.

A somewhat different type of resource is made available by the ERIC system. ERIC (Educational Resources Information Center), supplies research and resource documents on microfiche and hard-copy through the ERIC document reproduction service. It also provides the means to identify needed documents in published literature, through the monthly abstract journal, *Research in Education*, and its *Current Indexes to Journals in Education*.

These are not the only ERIC services: an equally important effort is the publication of significant reviews, monographs and other information analysis products.

More information about ERIC can be obtained by contacting Harvey Marron, Chief of ERIC at the Office of Information Dissemination, and/or the ERIC Clearinghouse in your subject areas, such as the ERIC

Clearinghouse for Library and Information Sciences, or the Clearinghouse on Higher Education.

In the case of the Clearinghouse for Library and Information Sciences, I think it is very important that the library community participate in determining what information analysis products and reviews are needed in the field, and to supply necessary documents that you think might be of interest to the community.

ERIC provides the documents and information while the National Center for Educational Statistics (NCES) provides data. I am sure you are all aware of the compilations that have appeared on college and university, special and public libraries and if you are not familiar, the National Center for Educational Statistics will be glad to hear from you.

So that is the picture. OE can help with funding, consultative services, documents, state-of-the-art reviews. I would also like to point out again a major source of information—those state and regional representatives indicated in the brochures which have been distributed and which are also available on request.

FLC Automation Package Concept: Research Library Applications

PAUL L. BERRY
Director, Reference Department, Library of Congress
Chairman, FLC Task Force on Automation

It would be a great pleasure to be able to tell all of you this morning that the Federal Library Commitee's Task Force on Automation had found all the solutions to the problem of applying electronic data processing techniques to the activities of research libraries. It would even be pleasant to report great progress in dealing with the problem in the Federal library community. Atthough neither of these things is possible, I do hope that what I can report is indicative of some effort toward both objectives and at least, will assure you that the needs of the non-governmental research libraries—indeed, the totat library community—have been considered an essential part of the efforts of the Task Force.

Before describing the character and extent of the Task Force efforts, however, I'd like to make a few comments about the general context of activities of this Task Force.

Application of machine methods to library work has a long history, as all of you know. Certainly the various active projects of the early 1960's, and the general optimism about the wonders of the new generations of computers had as great an effect on Federal libraries during the past decade as upon non-Federal libraries. This infectious condition was felt by the Federal Library Committee members as they were organizing in 1965. At the same time, there was ferment in the general library community. The Association of Research Libraries established an Automation Commitee; the American Ubrary Association had several interdivisional committees, and later created a separate division; library schools added courses; there were numerous conferences and meetings; the three nationat libraries began a coordinated effort several years ago. The FLC's Task Force was estabtished and has operated during the ferment of the 1960's. At the moment there appears to be a "cooling-off" of the ferment, if the number of cautious voices is a true indication. One of tha more disturbing evidences was the discontinuance in January of the ARL Automation Committee—a committee which, in its early period, seemed to offer hope for coordination of the efforts of the research library community. Despite these evidences of counter-reaction in library automation, we are still convinced of the soundness of the concept that electronic data processing holds promise in tibrary applications. Perhaps we have been too hasty or overly optimistic in the past, but we certainly cannot abandon the pursuit.

What is the Federal library community doing? Among other things, it is still working toward some sort of answers through the Federal Library Committee. As Mr. Cylke has reported earlier, the Committee was established in 1965, with power to recommend policies to achieve better utilization of Federal library resources and facilities, and to promote more effective planning and operation of Federal libraries. To this end, the Committee is authorized to examine and evaluate existing Federal library programs, including study of the need for and potential of technofogical innovation in library practices. The Task Force on Automation, in

particular, was established to review and report upon the status of automation applications in Federal libraries; to encourage development of compatible automation systems where feasible; to furnish guidance to Federal administrators and librarians on automation problems in libraries; and to provide liaison between Federal libraries and other groups interested in the application of automatic data processing to information and document retrieval. Obviously, these objectives are very laudable and quite ambitious, but they imply a greater degree of "activism" than has actually been possible with a group of volunteers who have full-time duties with their own agencies.

The Task Force on Automation has set for itself the long-range goal of development of a generalized system design for practical automated applications tailored to the needs and role of the Federal library community. It is expected that the design will take the form of a description of a model system with sub-system modules which may be combined or coordinated for particular library situations. An additional aim is to establish a study and design sequence for the sub-systems, for step-by-step implementation of the general system within the Federal library community. This automated package concept, then, is the future objective of the current activities of the Task Force.

Because of the voluntary and advisory character of the Task Force, it directed its early efforts and limited resources largely to the collection of information about Federal library automation. The group recognized that some libraries are already operating such systems, some are planning systems, and many are seeking guidance in applications. It felt, however, that a great accumulation of experience in library automation was to be found in the Federal Government, and that study of this wealth of experience would benefit not only the Federal agencies but the library and information services community as a whole.

The studies conducted and guided by the Task Force, then, constitute the initial steps in the long-range goal of development of several generalized systems for different types of libraries.

The first phase of the Task Force's efforts consisted of a preliminary survey of the literature of library automation to reveal developments, trends, and gaps in the area of automating library processes and operations. This phase produced a report in 1965 entitled, *Summary Reconnaissance Paper on Trends Toward Library Automation Based on an Initial Analysis of the Literature.* This report was an appraisal of current activities in terms of their adequacy for procedures and services over the next five years, and the development of an extensive description of the functions that Federal libraries will be expected to encompass in the future. One conclusion of the report was that there has *been* considerable activity *in* the mechanization of conventional library operations, and more recently more involvement with the automation of search processes on divergent subject matter. Libraries were engaged in the mid-1960's to a lesser extent with the last broad phase of automation, relating to the different kinds of services that computer technology can make possible.

The second phase in the series of studies undertaken for the Task Force provided an analysis in depth and a history of the experiences of Federal libraries in automating their services. The study used the case

history approach and reported on the background, beginning steps, further developments, and eventual conclusion of individual operations and installations. Interviews were conducted with persons cognizant of and, in some measure, responsible for initiation and operation of selected programs and projects. The results of the study, described in a 1969 report entitled, *Development Trends in Federal Library and Information Center Automation*, showed that administrative factors have great bearing on the level of automation; that is, the extent and success of library automation have been affected by level of funding, favorable organizational position, and the existence of an explicit mission statement to disseminate information. Also, those Federal libraries with large document holdings (i.e., non-book holdings) automated those collections more often than libraries without such a ratio of holdings.

The third phase of the Task Force's efforts is about to get underway and will build on the data already collected in the previous phases and on other studies and reports that have been published. The objective is to develop definitions of library functions and operations which are susceptible to automation, both those now being automated in Federal and other libraries and those not now being automated or scheduled for automation. At the same time, the study will seek to describe current techniques in automation which, though possibly developed for other uses, are potentially useful in library applications. Another objective will be to establish criteria to be used in making determinations as to feasibility, functions to be automated, types of hardware and software to be used, internal or external services, and extent of involvement with other systems. The result of this phase, hopefully, will be a manual providing guidelines of value to library staff attempting to determine the technical and economic feasibility of automating single or multiple functions in a library. A list of required computer capabilities that are or should be available to meet library needs should also result.

The long-range portion of the Task Force's program might be considered to be concerned with "*how* to automate," once the earlier phases had suggested answers to questions as to *when* and *what* to automate. It is felt that specific guidelines would be most useful to individual libraries in coping with the many and difficult problems that arise in moving from non-automated to automated processing. The objective of this effort is to develop perhaps several models—or several sets of models—with a hard-core system for Federal libraries and adequate instructions for a particular library to adapt the basic package to its own operations. The products of this phase of the Task Force's efforts should include explanation of the use of equipment now available, the possibilities in time-sharing systems, and the advantages in compatible systems design.

It is in this later area that the necessity for coordination and the importance of strengthening cooperative efforts already underway become evident. A particular question, for example, concerns whether it is better for an individual library to use in-house equipment or to cooperate with regional processing centers and data banks. This will require the Task Force to look into methodology for the future and the potentials of developing technology for information networks and inter-library communications.

As the Task Force on Automation moves toward its goal, it works to keep in touch with related activities in the library and information service community. The fact that the results of studies sponsored by the Task Force will benefit the total library community has already been noted. In the same way, the results of research and development efforts going on elsewhere have great importance for the Federal library problem. A case in point is the National Libraries Task Force and its efforts to coordinate systems planning and to develop compatible procedures for the three national libraries.

The FLC Task Force on Automation will also provide for the sharing of experiences in automation projects. At the present time, this effort takes the form of guiding the studies on current automation activities and the case histories of particular operations and organizations which note the factors involved in automation programs. Concurrently, the Task Force sponsors or participates in workshops and conferences aimed at discussing common problems and offering potential solutions of wide range and interest. Future efforts of the Task Force will seek to strengthen the channels of communication among Federal library staffs in order to further the exchange of experience and know-how with automation procedures.

The exchange of information also takes place between the Federal library community and the research library world outside the Federal establishment. The two have much in common. Many of the conclusions reached in the studies already conducted have their counterpart in non-government areas. In particular, the technical factors found to be of importance in Federal libraries should also apply to academic or special libraries. Perhaps the greatest differences between the two will be found in non-technical areas: the spectrum of administrative control and coordination, of motivation and funding support will range widely outside the Federal community. However, cooperative efforts between the two should be directed to solution of the problems common to them both. Practical considerations affecting the acceptance of automation by libraries include the need to remain operative during conversion to automated procedures; the need to demonstrate, in advance, the advantages of automation, such as improved user service; and the requirement to solve problems of standardization and compatibility. Integration of resources and cooperation in communication will insure that libraries do not remain isolated and separate from one another. By working together where feasible, by sharing experiences and knowledge, by learning from each other, the Federal library community and the research library community will reach their common goals more easily and more certainly, and will attain real progress in library automation.

Problems Impeding the Effective Utilization of Federal Information Resources by the Research Library Community

NEAL HARLOW
Dean Emeritus, Graduate School of Library Services
Rutgers University

This conference has been called by the COSATI Task Group on Library Programs "to explore ways in which Federal information sources may be better utilized by the research library community." This is the immediate interest of the Task Group, whose long-term concern is "to improve communication, to stimulate cooperation, and to foster joint planning and programs among the various Federal agencies and the nation's research libraries."

This is straightforward, and it sounds as if we could all just sit down comfortably together, hold hands, and begin lifelong planning. Here is the Federal government on one side and the research libraries of the country on the other; what is to interfere with a joyful and fruitful relationship based upon intimacy and confidence? As we all well know by now, not every pair can make a successful marriage; and what neither God nor man has thus far joined together no man need put asunder.

I believe, therefore (as a minister's son and signatory to many a marriage contract) that, before the main agenda is taken up, some basic assessments and readjustments need to be made on both sides or even this preliminary "date" (to revive an old courting term) will be a failure. As in most human relationships, many fundamental problems are emotional in nature, not intellectual, and are not readily resolved by reason. Being without a degree in psychiatry, or a couch, I shall not attempt to extract admissions of neurosis from either side of the house but, as a librarian often does, rely upon printed sources.

About COSATI

First, about COSATI. The National Advisory Commission on Libraries[1] (which is now nothing if it is not pregnant) has publicly reported that COSATI "has already damned itself in the eyes of a good many by the independent course it has taken, and in so doing it has damned other units of this type." Not news to librarians, if this comes as a surprise to COSATI it emphasizes how awkward the personality problem really is. The Commission continues in more detail: "Its standard of descriptive cataloging deviates from the standard used by the rest of the American library world, which means that most libraries will be unable to incorporate the cataloging product . . . automatically into their catalogs." In considering the problem of creating a network for information and document handling, "no mention of the role . . . of the Library of Congress or the other national libraries was made . . . Indeed, COSATI . . . rejected the Library of Congress as the manager of a centralized facility"; and it contemplated the establishment of one or more additional national libraries . . . thereby suggesting a further complication in the development of national library leadership." COSATI "has shown little interest in the

broader national library picture," and its sole interest in science and technology points to "one of the most important problems regarding Federal involvement . . . the lack of a central authority within the Federal Government to deal with the total information and library problem." No matter that COSATI's charter was limited to science and technology and that its "user group" was the executive officers of the government bureaucracy (not librariarians or even scientists)—a host of librarians, au *couchant*, and under questioning, have spoken these bitter accusations. Even Alvin Weinberg,[2] Chairman of the President's Science Advisory Committee, who never thought of libraries unless pressed, had little faith in the "centralized judgment of a Government bureaucracy" as a means of developing information systems, compared with the "initiative of scientific societies."

About Libraries

And now, from Washington, comes another set of descriptors. The most broadside attack upon libraries has probably been the charge that research libraries are satisfied to perform an "archival function," leaving other services and developments to new and non-traditional organizations. One of the greatest handicaps to progress in the information field, from the Federal point of view, is the disorganization within the ranks of the "private sector" and the resulting "inability" (according to John Sherrod)[3] "of Federal planners to interact meaningfully with identifiable spokesmen" from the non-government community. The Federal government, he says, "in its understandable haste to establish national information goals and to implement new programs to achieve these goals has outdistanced the rest of the team . . . and until means are found for stimulating private interests to a point where they *are* . . . capable of meaningful interaction with Federal programs as represented by COSATI, there will be continuing misunderstanding, distrust, and a most unfortunate lack of meaningful progress in the information field." As many of the high level functionaries in the Federal Executive agencies are known to have only the slightest experience with actual libraries, so practitioners in libraries are regarded as being narrow and unimaginative in information systems, more concerned with the health and regulations of their own institutions than with the needs of the research community, lacking in actual knowledge and experience in research, and, while ready to accept government subsidy, overly sensitive about the possibility of what is called Federal "participation." It does not matter that the private sector in a democracy is by definition "disorganized"; that it is easier—in Washington—to erect a new edifice on cleared ground, using special appropriations, than it is—in the field—to rebuild a thousand already occupied structures with contingency funds; and that until computers can spew out patterns of information on a broad and lavish scale rather than strings of bibliographic references, a lot of very large collections are going to be required in libraries across the country. A legion of government agents have concluded that libraries and librarians are inert and obsolete and that it would be far better, if they could, to circumvent them entirely.

Obstacles to Cooperation

And now comes a sub-committee of COSATI to the research libraries pushing cooperation. The committee is not packed with members of the Federal bureaucracy (8 out of 18), nor by any means do its members all

represent science and technology (about one-third). Having the Federal Library Committee as co-sponsors of this Conference is artful one-upmanship, for they look for all the world like fellow librarians. But who on this government-anointed sub-commitee of the high-and-mighty Commitee on Scientific and Technical Information will call the tune? Things may be getting tough all over (using a phrase from the 1930s), and somebody may be out scouring the backwoods looking for local political support.

But then, why did not the Association of Research Libraries, some combination of ARL and the American Council of Learned Societies, the Joint Committee on National Library Information Systems (CONLIS), ALA/SLA/ASIS, or one of the interested scientific academies take this precise initiative? The research community is hardly yet surfeited with relevant information, nor are libraries unaware that backup from the vast Federal resource would be meaningful. Research and development in libraries is going on, supported by Federal funds; and "demands" are being made by librarians upon government (particularly upon their kind in the Library of Congress), but these have often been piecemeal, unilateral, and benefiting a limited clientele. Much of the importuning for national information programs has indeed come from Federal agencies—as it has in the past for rural electrification, highways, and equal rights and representation.

If the "public" and "private" sectors in the information field are to form a more agreeable and productive union, I believe that at least three criteria must be satisfied by both parties: (1) there must be *respect* among individuals and groups; (2) a high level of *credibility* must be maintained in communication, and (3) the significant areas of *compatibility* must be identified and focused upon in their dealings. Respect is based largely upon past performance and upon the confidence that resides in trustworthy individuals. Credibility in communication has something to do with frankness, intelligibility, specificity, and (maybe above all) substance and the relationship between promise and execution. Compatibility relates both to ends and means.

To my mind, in order to bring this tempting alliance about, the Federal agencies need to develop a more genuine (that is, pure) interest in the needs of research libraries and their clientele, to focus sincerely upon their objectives rather than always upon the agencies' own vaunted "missions" (how many times have we heard presentations from government agencies which have been imperious, misleading, uninforming, and even downright menacing!) There must be greater openness in communication—both more openness and more communication—not giving colleagues in the research libraries the same handout that goes to the Congress, if that must be different. And some basis must be worked out upon which a coordinate structure for continuing, practical cooperation as colleagues can be built—a viable family relationship.

Heads of the research libraries in the private sector (if they can conceive of themselves as not being in the public domain) also have their homework cut out if they are to co-inhabit the house of information. They

need to regard their local library more as a chain store than as their castle, reduce their machinery for defense, and sublimate some of their rivalry in building collections to developing the total system. They need to cultivate less the hierarchical figure of a father (I am not thinking only of the elders of the ARL) and more that of a leader among professional equals, focusing their institutions' atention upon the needs of users rather than upon the sometimes independently spawning requirements of the establishment. Since political environments in the Federal and private sectors are ruled by greatly varying traditions, styles, and expectations (reflecting aspects of the American value system), a much greater tolerance is required to differing forms of behavior and expression. In general, more versatility in dealing with change and a greater susceptivity to the attitudes and findings of research—though they impugn our dearest assumptions—would quicken our senses and improve our dispositions as partners.

Problem 1—Affinity

Because of reciprocal provocation, there is an inflammable area of contact between the Federal and private segments of the information field which we need to explore, disarm, and pacify before sitting down at the negotiating table. Among all of the problems of utilizing Federal resources fully and creatively, this has perhaps evoked the least constructive attention and the greatest amount of confusion. Most of the technical difficulties can be eventually licked with brains, energy, and money, but *affinity* (by which I mean in this case a bilateral working arrangement not dependent upon might or coercion) comes only with appreciation and good will. *Principal Problem No. 1* in utilizing our total informational resources is, then, to convert our normal reaction to each other from "affront" to "affinity." (We may need, by the way, a study of the social structure within which Federal and other informational personnel exist, as revealing as that made of the behavior of librarians and faculty in Patricia Knapp's Monteith College Library Experiment.[4])

Problem 2—User Satisfaction

Most of us by now will concede that libraries are systems and, as such, are enclosed within larger systems or environments. Certainly one of the greatest inducements to use Federal resources (and seduction may be warranted at this stage) is inherent in this concept.

David Easton[5] (a political and behavioral scientist) has visualized a model of political life which is pertinent to us. In his terms, if anything is accomplished in a political system, "demands" must flow through "channels" and be transformed into "outputs." At intervals along these channels are "decision points," or "gateways," at any of which the demands may find themselves held up or completely stopped by "gatekeepers." Because of the large number of potential gatekeepers in a democratic society they are a potential source of what he calls "stress" in the system. Failure of output results when gatekeepers, or authorities, fail to take action to meet relevant demands; and even when no specific demands have been made such failure can occur because existing outputs may have been inappropriate. Authorities at the decision points, he notes, may be relatively incapable of response to cues fed to them through the system, except, say,

to those received from people of their own kind. Output failure may be a major factor in the decline of support in a system; and support may be a major variable in linking the system to its environment.

Another instructive model, related specifically to libraries, is offered by N.R. Baker[6] to describe the relationships among the library, its users, and its "funders". Information fed back through the system from funders and users can be regarded by the library as constituting either opportunities for learning or as attempts at control, creating a dilemma which only the library can resolve by initiating some appropriate interaction. The expectations of users regarding library policies, he points out, are always "need-specific," that is, oriented toward the users' information requirements; and any action taken by funders and the library should be "user-specific," or focused upon users' needs. Feedback from users can be effectively utilized by the library in bargaining with funders; but the whole environment (of library, users, and funders) determines what the functions of the system are, and the costs and benefits of each step in the operation must be taken into account.

R. H. Orr[7] has come up with the valuable concept of the user's "primary library" which provides the contact between him and the information system as a whole. The sole responsibility of such a library is to make it possible for its core of users to tap the total store of recorded information as readily and effectively as possible within whatever practical limitations are imposed by the environment (not by the organization). The proportion of its clientele's total needs that a primary library can satisfy at any given time reflects its users' current perception of the cost and effectiveness of its services, compared with other mechanisms in a competitive system; and the proportion will change whenever this perception changes.

In cost-benefit analysis, as applied to users of an information service, "benefits" are defined in terms of needs satisifed, "costs" as factors inhibiting oportunities for rewards. A user's estimate of the relative cost-effectiveness of alternative sources of information, according to Orr, may not be very good—it may be biased by habit, incomplete knowledge, and attitudes based upon inadequate trials; but, good or bad, his estimate determines what means he employs. Recognizing that the library is competitive with other formal and informal mechanisms provides a functional basis for assessing services; and measuring the library's capability to meet all requests which would be made *if users had* no *other alternatives* is the real test of performance.

Cumulatively, these concepts of systems (by Easton, Baker, and Orr) emphasize (a) that an institution in a social/political environment must respond to relevant needs if it is to receive public support—and that some authorities may be relatively incapable of relevant response; (b) that the environment of an information system determines what its functions are—with feedback providing the data needed for appropriate decisions; (c) that the responsibility of a user's primary library is to insure his access to all available information—within limitations imposed by the environment, not by the organization; and (d) that a library's usefulness reflects the individual user's current notion of its cost and value to him, compared with other information sources—and whether a user's estimate of the cost-effectiveness of competing services is good or bad, it will determine what source he employs. All of the studies emphasize the

transcendental importance of service in determining a library's function and support.

To this a COSATI-sponsored investigation of a large number of user studies (by the Systems Development Corporation[8]) adds a list of attributes which should be common to all information systems: they should be easy to use by the most and least motivated; their services should be clearly understood; changes should be evolutionary; they should support searching by users as well as dissemination by staff; and they should assure quality control, should train users, make user-studies, and expedite oral communication.

According to another perceptive study, by Ralph Blasingame[9] (Professor of Library Service at Rutgers), the objectives of e confederated information system should be determined by its users and funders, working with librarians; the system should be designed to increase both total resources and total utilization, eliminating barriers; it should supplement, not limit the activities of participants; it should be multi-centered, to maximize energy and local responsibility; it should function on more than one level; and it should have a sensing mechanism to promote continuing improvement.

W.J. Goode[10] (a sociologist) further refines the concept of user-orientation by arguing that librarians tend to give their clients what they like rather than what they need and thus yield a central meaning of service, a commitment to run personal risks in order to fulfil a high obligation to society, to educate the reader and public. Dan Lacy[11] (of the National Book Committee) points out that libraries, like other public institutions, "respond to a calculus of demand—as contrasted with a calculus of need—almost as sensitively as does the private economy." Other commentators have described librarians as being "suplier-oriented" or "medium-oriented" rather than "user-oriented." And the COSATI study, already mentioned, concludes that we do not yet know enough about the needs of users "to completely formulate a design for an information system" to satisfy them.

If there is any question, therefore, about the appropriateness of applying tests of user-satisfaction to any particular library—that is, to our own—let us remember that even our most highly focused and best efforts, based upon the most current scientific knowledge and the strictest concept of professional accountability, are likely to miss the target. *Principal Problem No. 2* in utilizing Federal informational sources is for librarians to make the radical shift toward a consumer market which will both require and support dissemination on a comprehensive scale. (Does it not scare you a little to think that we might have to wait until this revolution comes about before we shall really need or be able to pay for a national information network?)

Problem 3—Organization

The last major imperative I want to propose relates to two styles of organization (described as "functional" and "operational"); and it expresses an outlook which has been haunting me since I first read Norbert Wiener[12] a long while ago (emphasizing that the structure of an organization is an index of its expected performance) and more recently articles by E. R. Graziano[13] and M. L. Bundy[14] (who approach library

organization from disparate points of view which must somehow be united.) *Functional* organization in libraries—traditionally characterized by having divisions for Acquisitions, Processing, Reference, and Circulation, with an enveloping atmosphere called Administration—has grouped operations around the roles and activities common to categories of people. The "reference function" institutionalizes the roles of people who provide instruction and assistance to those who use the library's organized resources; "processing" embraces the activities of people who catalog, classify, maintain the catalog, and dispatch materials to the bookstacks; and so forth. These functions (and functionaries) tend to become highly compartmentalized, competitive and defensive, focusing upon their own navels, and failing to recognize other categories of people whom they theoretically support. Every organizational arrangement has its characteristic limitations, and dividing people into camps for whatever cause tends to generate centripetal forces, contests, and games. It has been argued that functional organization is logical and therefore reasonable in the Aristotelian scientific tradition which was dominated by formal logic and the impulse to classify.

Operational organization, in contrast, perceives the library as a system of processes rather than as the classified activities of groups of people. To illustrate this approach, an operational definition of "work" (as in physics) would not use the terms "labor" or "productive effort" but a formula describing a transfer of energy, and it would be applicable to jet engines, man, or beast. Operationally-defined processes in libraries are built around the capabilities of machines to carry out a core of operations which they can do better than people—and jobs which they will therefore inexorably be performing in libraries in the coming years. Lacking the broad and integrated capabilities of humans, the machines (be they computers or typewriters) will not carry out discrete "functions" but repetitive processes of narrow scope which may be common to operations in a number of traditional library departments. In order increasingly to utilize the machine, therefore, library processes must be re-defined and reorganized as interrelated operations. From the point of view of *structure*, operational organization is machine-centered, not man-centered, with man being eliminated from the repetitious jobs he should not do. This need not dehumanize the library; the machine will always require human instruction and, particularly, the imposition of human values; and some de-*personalization* of contacts in the library, as in the city supermarket, can produce a more humane setting by enhancing the user's privacy (for example, by substituting signs and automata for unhelpful and overwrought people).

Having once integrated the library's operational processes under the management of systems analysts, we are not at the end of the line but at the start. With these basic operations now clearly identified as a supporting or "auxiliary" enterprise, information services to people—like the fruit of a tree growing from a hardy stock—can be seen as the true output of the system. Being able to depend upon this operational base to the full extent permitted by the developing state of the art, the "information" divisions can be transformed into first-class professional organizations, run essentially like teaching or research departments in a university, with committees to deal

responsibly with common policies and to represent the professional view to technicians and administrators. Administration will lose some control, to be picked up by staff, but will achieve its goals—and the quality of administrative leadership will be a highly critical factor in bringing change about. From the point of view of this paper, powerful forces of growth will be released; the nature of the library enterprise will be clarified; staff will be freed to define purposes, develop programs to which they can be committed, and to serve clientele; organizational conflict can be more readily resolved; and personal ambition better harnessed to the improvement of library work—in sum, libraries will be able to zero-in on solving Problem No. 2, above: to perform effectively in a consumer environment, using all available resources.

As Henry Ford's first assembly line initiated trends which led to thruways, physical mobility, suburbia, oil slick, junk heaps, and smog, so the promise and perils of technology will assuredly proliferate for libraries. The alternatives to realigning the existing organizational pattern to cope with these phenomena may be to place the whole library enterprise in increasing jeopardy. *Principal Problem No. 3*, in utilizing our total informational resources, is to dump the outmoded, authoritarian, military-industrial type of organization and, by setting up an operationally-defined system, create an ecological environment in which professional service to users can flourish. (Note that this will require leaders, and an upheaval among professional staff—and John W. Gardner[15] who believes that leadership in the United States is on the wane, contends that we are today in less danger from Men of Destiny than from leaders who do not lead.)

Another Problem—Concept of Information

There is no end to problems, but there is to this speech, and I mention only one other very briefly. I believe that the flexibility of our thinking in this field is hampered by the narrow concept we entertain of the meaning of "information." If we quit being uneasy about our fidelity to "the book," "media," "science," "the humanities," and "the machine," and think of information in Norbert Wiener's generic terms as "a name for the content of what is exchanged with the outer world as we adjust to it and make our adjustment felt upon it," the problem would quietly steal away. Information would then embrace content in all of its formats, in all areas of human knowledge and action, and in all of the individual and institutional agencies for its dissemination. (It would not sanctify the Federal government's preponderant interest in science and technology, nor excuse the Task Force for limiting its devotion to "technical" information.)

Providing Adequate Information

You may be surprised that I would suggest to the research libraries of the country that their principal problems are in the realm of ideas, giving such weight to the somewhat abstract concepts of credibility and good will, consumer values, modes of organization, and the meaning of information. Suppose, nevertheless, that you are persuaded of their importance, even of their rank at the top of your scale of priorities, that is, that they are accepted by you at the *conscious* level. It would still be necessary, in psychological terms, for them to become *internalized* so that they will govern thinking subconsciously. Only then (when they are no longer faint desires or fragile

preferences but hardy convictions) are they likely to connect with action—and that is what James Reston would call the "problem-problem."

I am happy to draw your attention, while in the nation's capital city, to the latest book by Art Buchwald (of the Washington *Post*), *The Establishment is Alive and Well in Washington*, and particularly to his introductory "Confidential Note." Therein he maintains that every successful writer today must turn out a pornographic work, and his introduction constitutes a sterling first installment toward what he hopes will become required reading for the Suoreme Court. If I were thus inclined, I would have referred, suggestively, to the long record of intercourse among research libraries, sanctified only by common law. Unhappily, this alliance has only aspired to the conjugal state of *allogamy*, or "cross-fertilization," and has hardly ever been *exogamous*, having liaison outside the clan. But quickening desires and expectations may soon force a whole new range of intimacies and compromises in a state of *hypergamy*, or marriage above one's station. In order to improve our genes and heighten our potency, we need to consummate a formal union with the whole family of information resources represented by the Federal government—a groovy, unisexual arrangement wherein both halves are equal, both share in decisions, and both provide financial support.

This sounds almost like a happy ending, but I am not so certain. If—as cybernetics and perhaps physics imply--the tendency in the universe is for confusion and disorder to increase, and this trend can be temporarily and locally reversed within small human enclaves only by people who live in an environment with adequate information, then libraries and all other information agencies are obliged to satisfy these needs or fail in their purpose. We are experiencing today an apparently accelerating rate of social disorganization which might be significantly reduced by the infusion—at a relatively low energy level, compared with police power—of adequate information. This will require more competence and greater aggressiveness in the use of all information resources in an effort to influence public behavior to the degree now achieved only by advertising and journalism. Possibly—just possibly—we could thus become a major variable in keeping the world living, if not always happily, ever after.

---

[1]Knight, Douglas M. ed. *Libraries at Large*. New York, Bowker, 1969, p. 365-366 Report of the National Advisory Commission on Libraries.

[2]President's Science Advisory Committee. *Science, Government, and Information*. Washington, Gov't. Printing Office, 1963; 52 p. "The Weinberg Report." Weinberg, Alvin M. "Second thoughts on scientific information." *College and Research Libraries*, v.25, p. 463-471, Nov. 1964

[3]Sherrod, John. *The Federal Viewpoint*. Mimeographed paper, read at the annual meeting of the American Association for the Advancement of Science, Dec. 28, 1966; 7 p.

[4]Knapp, Patricia B. *The Monteith College Library Experiment*. New York, Scarecrow Press, 1966; Chap. 2, "The Analysis of social structure," p. 19-38.

[5]Easton, David. *A Systems Analysis of Political Life.* New York, Wiley, 1965

[6]Baker, Norman R., and Nance, Richard E. "The use of simulation in studying storage and retrieval systems." *American Documentation,* Oct. 1968, p. 363-370.

[7]Orr, Richard, et al. "Development of methodological tools for planning and managing library services. Pt. I, Project goals and approach." *Bulletin of the Medical Library Association,* v. 56, p. 235-240, July 1968

[8]Systems Development Corp. *Recommendations for National Document-Handling System.* Systems Development Corp., 1965, Chap. 8, p. 1-11

[9]Blasingame, Ralph U. *Feasibility of Cooperation for Exchange of Resources Among Academic and Special Libraries in Pennsylvania.* University Park, Pa., Institute for Public Administration, Pennsylvania State University, 1967; p. 21-25 Pennsylvania State Library Monograph. No. 5.

[10]Goode, William J. "The librarian: from occupation to profession?" *Library Journal,* v. 31, p. 306-320, Oct. 1961

[11]Lacy, Dan. *The Dissemination of Print.* Mimeographed paper delivered at the Symposium on Library Functions in the Changing Metropolis, Endicott House, May 29, 1963, sponsored by the National Book Committee and the Joint Center for Urban Study at MIT/Harvard.

[12]Wiener, Norbert. *The Human Use of Human Beings, Cybernetics and Society.* New York, Doubleday Anchor Book, 1956

[13]Graziano, Eugene E. " 'Machine-men' and librarians, an essay." *College and Research Libraries,* v. 28, p. 403-406, Nov. 1967

[14]Bundy, Mary Lee. "Conflict in libraries." *College and Research Libraries,* v. 27, p. 253-262, July 1966.

[15]Gardner, John W. "The anti-leadership vaccine." Carnegie Corporation of New York, *Annual Report,* 1965; p. 3-12

Structured Priorities To Meet The Needs of the Research Library Community

RICHARD E. CHAPIN
Director of Libreries, Michigan State University

Let me talk briefly on some things that I see as priorities (we will leave out that adjective) and then throw the discussion open to you.

As was said this morning, the Federal Library Committee is working on priorities. If you read the literature of national libraries, you will find out that there are a number of priorities. They were discussed in the Association of Research Ubraries in the San Francisco Conference in 1967; they have been written in *Library Trends*; there have been UNESCO statements; and the National Library Commission has recently come up with some priorities.

So let me take first, just as an outline, the four recommendations of the National Advisory Commission on Libraries.

The first recommendation was to redefine the responbilities of the Library of Congress to serve as a principal reference and research arm of Congress, thus serving the nation through this body.

Now, I don't think any would disagree that the Library of Congress is a national library. I think we would also all agree that, as a national library, it has a first responsibility to someone else, and this first responsibility is Congress. I do not know how we are going to get around this. I think that this will always be a problem. The Legislative Reference Service might very well develop eventualty as a Library of Congress, i.e., for the legislative branch, and then let the Library of Congress get on with the business of being a national library.

But we have to accept the fact that L.C., right now is a creature of Congress and will remain a creature of Congress and, no matter what we want, they will do it only if Congress will let the Library of Congress do it; and not as a response to us as research libraries

The second thing listed in the National Advisory Commission is: a National Library function to assemble, maintain and provide national availability for comprehensive national research collections of materials for all countries, in all fields of knowledge except for those for which the National Library of Medicine and the National Agricultural Library have accepted responsibility.

Let's lump these all together and say, in effect, that *the* National Library—being the Libraries of Congress and Medicine and Agriculture—should have everything that there is to have from all countries on all subjects.

They also should provide national availability of these materials. We heard John Lorenz say today that they would be very happy to provide national availability, but try some other people first; work your way up; they will provide national availability when all other means have been tried.

I was at a meeting yesterday with the Agriculture people and found that they will provide national availability if we go through forty-eight other

steps along the way. But eventually, we will get the materials and we will have a national librery, and materials will be provided.

What do we mean by the National Agricultural Library, the Library of Congress, the National Library of Medicine? What do we mean by materials? Do we mean monographic materials? Do we mean serials? What about the report literature? Wha' about the limited circulation mimeogrephed reports, the surveys, and such materials.

Probably, the best source of information on studies of the ghetto ara not in the Library of Congress but in the HUD Library. Certainly reports on new techniques in education are going to be in the education librery and not in the National Agricultural Library.

We have a large hidden library in Washington consisting of some six-million volumes, roughly, with a large number of librarians to make these materials availabla. Today, tomorrow and the rest of this meeting, do we hear from these people? We are hearing abo·t committees, and about this and that and so forth; but will we hear about this hidden library of some six-million volumes that is here in Washington?

Another priority that the National Commission lists for a national library is to catalog those materials promptly and offer its catalog cards for sale to other libraries. Now, I say, "amen." And I want you to know, John Sherrod and John Lorenz, that this means make cards available, not magnetic tapes.

John Lorenz pointed out today that we have twenty thousand people who subscribe to Library of Congress cards. We have seventy people who subscribe to the MARC tapes. Nothing has happened to the MARC tape program; it has not broken down; it is expanding rapidly, using up large sums of money. But in the meantime, the card production program is almost at a standstill.

I would recommend that you read Bill Locke's article, "Computer Costs for Large Libraries," in the February 1970 issue of *Datamation*. He writes about the storage costs of materials. We store a book in the traditional library fashion for two cents per megabit. We can store cards in the traditional card catalog for thirty cents per megabit. If we start storing on magnetic tape, in offline storage, it is seven dollars and forty-seven cents per megabit, and if we store on a disk it comes to two-hundred and thirty-seven dollars per megabit.

Well, let's say that Bill Locke was wrong plus or minus 50 percent. This is still a very, very significant figure of how useful these kinds of tapes are to us in our ongoing library operetion.

Now let's go back to the cards for a minute. I do not know how many of you are familiar with the fact that the card system has broken down. *Cataloging Service Bulletin* No. 87 says: "For a number of months, subscribers to the library's printed catalog card service have encountered great delay in obtaining cards from the card division." I was working on a little book in 1968 and ordered one card, one specific card I wanted to use as an example in this book. That card was delivered to me last month. Now I would say that there is a slight delay in this.

They go on to say that an immediate solution to the present crisis is being sought through a massive reprinting program of out-of-stock cards. They will begin with '69 and go back to '67 and '68, and sometime have it

back to '65 and '55. These are the books you are cataloging at the present time. Now, how do you get these cards? They are not available at the Library of Congress.

For cards that are available you now have to use the new order forms. We used to send in one copy of our own order form, and that would constitute an order for a Library of Congress card, but not now. Automation has taken over, and there are general instructions; there are instructions for typing the card; and there are instructions if you do not type it (you hand print). You have to have it in machine readable form, so to order cards from the Library of Congress, we have to go to a separate routine—another "subroutine" in our whole program.

Now it would seem to me that this is a priority. There are twenty thousand users, and having cards available to us from our national library should have a very, very high priority

We should put a high priority on cataloging, and not only the monographic materials. We get everything cataloged that is published in Luxembourg, but we do not have catalog cards for the mimeographed reports that are published in Chicago and in Denver on housing problems, on transportation and on other current problems.

There should be some sort of a priority given to reaching beyond the copyright type of materials for cataloging purposes; in getting down to the research reports that we cannot make available to our users unless we have something in the card catalog.

The next recommendation from the National Library Commission in the way of priorities is to provide basic national bibliographical reference and copyright services and bibliographic access to serials, to the reports, and so forth. Now, I shall tell you all the story of the *Bibliography of Agriculture*.

I was at a meeting with John Sherrod in January, and he mentioned casually that they were going to discontinue the *Bibliography of Agriculture*, and I pulled out my notebook, and I made a note: "Check on the *Bibliography of Agriculture*." Then he mentioned it again, and I said, "John, you really mean you are going to discontinue this thing?"

And he said, "The decision's been made."

This was in January. I mentioned this to some of the faculty members on my campus; and they said, "Oh, impossible! They couldn't do that. They wouldn't do that! We use it all the time."

So in February, we had a meeting, right here in this room, and, sure enough, John announced that they had discontinued the *Bibliography of Agriculture*.

Well, nothing has been heard about the *Bibliography of Agriculture* since that time.

I cannot convince my catalogers that this has been discontinued. They won't close the entry; they won't believe me. No one really knows it yet. No one has been told officially that it has been discontinued.

Yesterday, I saw something that had been received from Collier-MacMillan saying that they will publish the *Bibliography of Agriculture* for a price of $85.00 per year. They did not say how much a cumulation would cost us at the end of twelve months, but it is not going to be $85.00 as a final cost.

I know John mentioned that there are a number of studies that have been done. The only thing I saw mentioned is in the current issue of *College and Research Libraries* which mentioned a study of the overlapping coverage of the *Bibliography of Agriculture*. The researcher took fifteen different bibliographies to find out how much they overlapped with the *Bibliography of Agriculture*, and they found that 54 percent of the entries in the *B of A* were not covered by these fifteen other sources.

Well, with one blow we have gotten rid of the *Bibliography of Agriculture* and one of the other fifteen sources, which is the *Pesticides Information Bulletin;* so we have lost both of these.

Now, it seems to me that this Conference would have made for a much better feeling, on the part of the research community particularly, if we would all agree, (and I am sure that we *would* be in agreement) that providing bibliographic services is one of the responsibilities of a national library system.

There are three big responsibilities: the collections; the card service; and the bibliographic services.

The collections we have, thanks to the lobbying of a lot of people who can take credit for the expanded cataloging and acquisition program.

The card service we have; it does not work.

And the bibliographies are discontinuing, or will be made available to you only on tape. I think that it is important for the national libraries to recognize that this taped information does not do us much good. We do not have the programmers: we do not have the equipment; and, we cannot handle it.

I wonder, how we get better service? What is it we want out of a national library?

We look at the SATCOM report, the Weinberg report, and all these reports. You can spend all day reading these national reports of how to handle the information problem, but it does not help us very much in our day-to-day operations. But I have wondered why we do not have better relations with the other Federal libraries in Washington, D.C. Why can't we relate with HUD? Why can't we relate with Labor? Would we be better off having our Labor librarians here meeting with the people at the Labor Department Library than having us here again to discuss some reports once they have been distributed at the registration table?

There is a hidden national library here with some five or six million volumes. There is a specialized talent and probably better collections than we have at the Library of Congress in the specialized and the report areas.

It seems to me that there should be some mechanism for environmental questions to be answered from Interior, and the segregation questions answered from HUD and the traffic questions answered from Transportation.

How do we relate to this group?

Now, this is a meeting to permit the research library people to talk to the national library people about what you want. You have been very, very nicely cut out of being on the program. I am supposed to represent you all. I

am certainly not speaking for very many of you, so I have ten minutes left of my time. John, if you do not mind I am going to turn my ten minutes over to the audience and ask: What is it that you want out of the national libraries that you are not getting?

Questions and Discussion

Question: Dr. Chapin, you raised some awfully interesting questions. Why don't you take a crack at trying to answer this? What do you want out of the Federal libraries?

Chapin: I want cards. I want cards and bibliographic services. And these, to me, are the two most important things that the research library community in the field can have. It is not magnetic taped bibliographic services that I want. I want *printed* bibliographic services that I can *use*.

Harlow: Dick, don't we first want to know what is going on in the Federal libraries and these other agencies?

Chapin: Well, that is the purpose of this meeting, I suppose.

Harlow: Well, but this meeting will come to an end tomorrow night.

Question: I want fewer access points for bibliographic information. Why can we not have a single or a centralized bibliographic source instead of so many as we now have?

Chapin: John Lorenz should answer that one, but John's gone. Why do we have to go to all these different places? Can this be centralized in any way?

Jerrold Orne, Director, University of North Carolina Libraries: The efforts of many of the agencies are to establish a system, and they have not been coordinated well enough. There is not any central form of input, and it cannot be centralized, it cannot be brought together, until they are standardized.

Dick, the largest piece of the pattern is the MARC Program which established a format. Now, the MARC format is imperfect, as everyone recognizes, but there are still variants from it. There will be for some time to come because it is a very complex problem. There is just no hope of any kind of central system until everyone agrees on what they are going to put into it and how they put it in.

Now, they are working at it; we are all paying for it; and we are all suffering with it, because no one of us in the research library can independently develop such a central format to make a store. We are hoping that someone will; and I think the pieces of the pattern are beginning to come out now.

Presently, there will be more standardized elements. There will be better agreement—or some agreement at least— on what has to be put in, and there may be some possibility there. It is a long, long way off, and you are right in saying it is not helping anyone.

Right now, John Lorenz spoke of something like eighty subscribers and you spoke of the tape subscribers. Well if you take those eighty tape subscribers, I doubt that you could find eight who are using the tapes for a practical application. But they still subscribe, and they will still go with it in hope. That is all there is—what it is now. You realize, I am sure, that most of us have abandoned all hope of getting cards, as such, from the Library of

Congress. In my library, we went to independent production five years ago. We buy no cards from LC. What we want, and what we get and use, is the card content. It does not matter what the form; it is not tapes for us. The Title II-C file and the increase from a hundred thousand cards to nearer to two hundred thousand cards current output has brought to my library, an increase in usefulness in the rank of, say, from forty percent to eighty percent.

Now, that is important to me. We are getting it, and I certainly cannot deny that the Library of Congress is doing an enormous service with this.

Chapin: I agree with you, and I would say that you and I have an advantage over some of the smaller libraries in that we do have the Title II-C cards. You know, some fifty libraries have these. Now, what are the other twenty thousand subscribers doing that John talked about? The national library in centralized cooperative cataloging has some responsibilities to these twenty thousand users, it would seem to me. I recognize these as great problems to the Library of Congress. As far as I am concerned, I am one of the fifty people getting these cards, and this is fine, but if I were not one of those fifty that would be a different mater it would seem to me.

Orne: If I could take a couple more minutes: There is an extended responsibility. I do not believe you can lay it all to the Library of Congress. I am in a state university library, and a month ago we initiated a program which is also described in a note I saw about something going on in Western Michigan.

A month ago, we initiated a program in North Carolina where my library is accepting requests for cards in the form of any bibliographic slip that we can identify in the LC file or in our own catalog—the North Carolina Union Catalog. We will pull a card and make the copies they want. We are just experimenting. We have had a dozen orders of this kind to date and we are already behind. We are beginning to find out what it takes to do bibliographic searches. We tried it as an experiment, and I think the states, or perhaps some other unit, must take some part of the responsibility for passing on the information that has to come out of central catalogs: but it is information, not cards.

Chapin: That is true.

Charles F. Gosnell, Director, New York University Libraries: I would like to suggest that the roots of this problem are not in the lack of desire on the part of the people in the Library of Congress and elsewhere to serve, but the roots are basically political and budgetary.

I could just picture some sharpshooter in Budget taking a potshot at the *Bibliography of Agriculture saying:* "That's something that can be easily eliminated. Let the people who use it pay the cost."

Of course, what happens is that what is done centrally and cooperatively as it has been done—the cost to the nation, as a whole, is an infinitesimal amount of what it will now cost under this new arrangement; but at least in the budget of the Department of Agriculture, somebody gets credit for saving a substantial sum—thousands of dollars.

But the thing basically is ridiculous; and unless we express ourselves politically, I do not think that we are going to get very far.

Now, I should like to ask when the Crowell-Collier-Macmillan or whoever else publishes these things that they get more or less free from the Government, do they then go out and copyright them and profit doubly and triply and prevent us from making the uses of them that we made when they were issued by the Government free of copyright restrictions?

There are all kinds of ways of increasing these costs and imposing them upon other institutions which are supported by the Government at one level or another and that are supported by private funds and certainly are no better provided for than the Federal Government.

Chapin: John Sherrod tells me that Colliers can copyright this.

Warren N. Boes, Director, Syracuse University Library: I think we are missing another part of the problem; and that is, the early morning session which related to this. People like COSATI, the NSF, the Office of Education—I do not think they have adequately devoted themselves to these particular problems. They have utterly neglected the information world. They deal in things like personal dissemination of information, profiles, all sorts of non-essentials and the real problem of coming to grips with what we are dealing with—and that is the research libraries—is an actual adjunct of the total information that gets to the individual. It is just completely neglected and has been neglected for a number of years.

I find this shocking.

Grieg Aspnes, Cargill Inc. Research Library: The thing I cannot understand is that Dr. Harlow talked about the need for knowing what the *user needs*—that *we* do not *pay* enough *attention* to *the user. Well,* this seems so basic. Our other speaker said that we are talking about priorities. It seems to me—and, now maybe I am naive, as just a practicing special librarian—that my first priority is my user. He is number one; that is all that counts. My job is to serve him and to know what he needs and give it to him—within, of course, my budget.

I do not see why all this should be so new or world-shaking and why the national libraries have any different set of priorities or a different base for the priorities than serving the user. Maybe we are mistaken. Maybe we do not realize who your users are. Maybe they are not us.

Comment: What I have heard so far is that we have a national library, a Federal Library Commitee, but not a Federal library. We have information agencies, and I wonder whether there is one place—what the places are—where the Federal Government, the people of the United States, tried to define a total information policy which would take into account the points that Mr. Gosnell made, which is: when the Government creates information with the tax money, and then supplies to a commercial service, which copyrights it, which then pushes for a copyright bill which would charge me a royalty for disseminating that information on a Xerox, I would just like to know where these things can be considered. I am not trying to get a monolithic policy, but there ought to be some place—maybe not a central agency, but maybe a central agency—at which a total policy can be looked at. Is it Congress that makes that policy?

Sherrod: Well, I think you have partially answered your own question. We do not have a monolithic approach, of course, to solutions of information any more than we do of poverty and pollution and rural life and all the other

problems that face us; and I think we probably all prefer that it not be this kind of monolithic approach.

The intent of a meeting of this kind—and what COSATI is trying to do and what the Federal Library Committee is trying to do—is hopefully to establish dialogs of this kind so that our program can reflect the desires of more people.

I do not mind at all the criticism of what we have done with a publication any more than I mind my children complaining to me that we do not have four automobiles so that each of them can have one. When the money gives out, dad has to say quite frankly, "One of you will have to either ride in tandem or else you will walk." It simply becomes a matter of no money, no publication.

Harlow: That is a limited view, John. It is not the national view. You are excusing yourself on that basis.

Sherrod: No. We do not want to make any excuses. The budgets are fixed, and there is a Federal prison not far south of here where a number of Federal employees now sit because they spent more money than the Congress had alloted them.

Harlow: Answer his question. Who takes the national view in respect to information? If you cut it out, what effect does this have on the country? That is the question that needs to be answered.

Sherrod: I think one would have to take a view as to how much has really been cut out. The redundancy of information in this country is so tremendous that, when you look at one small package of it and see it go, you assume that the whole thing is lost. Actually, there are all kinds of alternatives to this sort of thing. When the horse went, there were still lots of ways of getting around; and when the car goes, there still will be ways of moving. I do not think information has been stifled in any way. We have taken one familiar old friend and placed it quietly away— well, not so quietly—we placed it away. But there are a number of new and vigorous products to take its place. That is the way life has always been. When the old and used and somewhat decrepit leave, there is always a new and vigorous product to take its place. And I think the things that are coming out to take its place are going to be so much better, so much quicker, so much more efficient, that you will soon forget. Expense, of course, is something that is relative. Somebody said to me the other day, "Can we really afford to make a phone call?" And my answer was, "Can we really afford not to make a phone call?"

Chapin: I would just like to add that the CCM index to the *Bibliography of Agriculture* is going to be a permuted title index, and that is it. And there is some cost, here, to the user of this information, too.

Perspectives on the Use of Information

HERBERT S. WHITE
Vice President, Information Management
Leasco Systems & Research Corporation

When Burt Lamkin called to ask me to appear on this program, he encouraged me to address myself to what I saw as problems, requirements, errors, user needs—and almost anything else I wanted to talk about concerning the flow of Federal technical information and its use.

It's hard to turn Burt down in any case, but in this instance he didn't really have to do much convincing. I have been involved in the Federal technical information program in a variety of capacities for about 20 years, and it would be surprising if, in that time, I did not build up some fairly strong feelings on the subject.

My relation to this question has been from a variety of view-points. For the first three years of my professional career I was a government employee who participated, albeit at a low level, in the information program of the Navy Research Section of the Library of Congress, which later combined with the Central Air Documents Office to form ASTIA, now Defense Documentation Center. For about 10 years, in the aerospace industry and in the technical information program at IBM, I was an information user, of the services provided by ASTIA, NACA, and the Atomic Energy Commission, and I participated in the user groups which sent nasty letters and occasionally nasty delegations to try to get these programs to make changes in order to make their services more valuable to the industrial library community. Usually these requests were for more rapid service, more liberal distribution policies, fuller or more frequently cumulated indexes. Almost all of them, of course, would have required the expenditure of more money, a concept we little understood and little cared about. We were received unfailingly with courtesy and tact, and our nasty letters were always answered with carefully worded restraint. I still have some of these letters. But, of course, very little happened. That's not a criticism. We didn't really have the right to expect much to happen.

In 1964 I went over to the other side. I joined Documentation, Incorporated (now Leasco Systems & Research Corporation) and, for over five years, served as Executive Director of the NASA Scientific and Technical Information Facility, which we operated under contract for the National Aeronautics and Space Administration. In this incarnation I received a few of the complaints myself, and I wondered at the irrascibility and lack of reasonableness of some of the writers. Clearly, they were only interested in the solution to their own problems and showed neither understanding nor patience with ours.

Finally, for the last 15 months, as Vice President for Information Management of Leasco Systems & Research Corporation, I have been concerned with the development of products and services for sale to the information community—in some cases as formulated from government-generated data bases. My relationship to government information

programs has therefore been in several guises—as an employee, customer, encourager, contractor, and competitor.

Libraries and Federal Programs

I think it must be recognized, first of all, that there are significant factors—significant and valid—which mitigate against the provision of information services by the Federal government with a library orientation, with the library cast in the role of a customer, and receiving attention and service befitting a customer. The fact that it is not so treated is largely due to the fact that the satisfactions of its concerns are not necessarily the main concerns of the agency information programs.

All of our Federal government information programs are mission oriented; i.e., their first and foremost responsibilities are internal—to their own agency, to their own management, to the sources of their own power and funding support. It is sometimes difficult for outside users to understand this, to comprehend why agency information programs continue to proliferate and expand, why new services and products are constantly being made available while others are discontinued for lack of funds, all this while implemented programs may suffer from lack of support and attention, and they cannot understand why all of this is done without really involving or determining the needs of the public-user community.

Much of this results from the simple political inability of an agency program to maintain a status quo—and agency information programs within the Federal government are highly politically sensitive creatures. You simply can't expect much enthusiastic support from your management, or from Congress by forecasting more of the same things at a higher cost because of increased total volume. It is much more palatable to receive requests for more funds when these funds are earmarked for new, and what seem to be revolutionary, break-through concepts (whether or not they are in fact) which open new vistas of service for information-starved scientists and engineers, by revolutionizing their approach to information, and by accelerating markedly the development of national programs for the public good.

The fact that few of these things actually happen—that scientists and engineers really haven't changed their inefficient habits for using information very much—that the technical man's use of microfiche is limited and his use of the terminals virtually nil—all of that is really beside the point. What the battle-wise managers of our Federal information programs learned a long time ago is that, if they expect to be given the funds to do their jobs as they, professionally, consider the jobs to be, they must present a program which is constantly moving forward, which combines modesty and thrift (through ruthless and continuous weeding) with thrusts at the frontiers of the information technology.

It is a philosophy of management presentation which managers of operating library systems—in industry, universities, and state and local governments—might well learn to emulate, at least in part. Much of the paucity of support for such programs stems from the fact that justifications are primarily couched in the necessity for doing more of the same things—bigger book budgets, a new building, acceleration of binding—and rarely in terms of new and imaginative services which is something management can understand and appreciate.

Successful managers of information programs in the Federal environment have, of necessity, understood their political needs for innovation and development very well. Unfortunately, these requirements have given them goals at least partly at odds with the objectives of the library user community.

The first conflict is one to which I have already alluded. Libraries receiving service from the Federal information community tend to measure the validity of these services in terms of delivery—delivery of announcement publications, delivery of documents for loan or retention. These, because of their sheer massive bulk, provide the greatest drain on the program's funds and, because volumes continuously increase (what volumes in the Federal environment ever decrease?) also pose the greatest dollar threat on a continuing basis. They also provide the statistics least appreciated by agency management or the U.S. Congress. No matter how efficient your production or distribution operation, the annual free distribution of 250,000 hard copy documents or of 5 million microfiche is an expensive business—one made even more disturbing by the recognition that the program volumes have grown by an annual 20% and can be expected to continue to grow as much—with a concomitant built-in increase in costs. From this viewpoint, the imposition of user charges is not only logical but necessary. The only surprise to me is the fact that they created such great surprise.

The second major conflict in the provision of technical information products and services to libraries comes from the fact that many of the agencies cannot ever admit that, in fact, the prime thrust of their service is to libraries in the first place. To do this would be political and administrative suicide. So, despite the fact that the prime public interface of the NASA Facility, DDC, and the AEC Technical Information Service is most assuredly with librarians, this contact must be minimized, and instead the emphasis must be on direct services to engineers and scientists. This then accounts quite readily for the emphasis on programs of on-line access for retrieval, and of personalized SDI profiles. The thrust is to put the agency program into direct and sophisticated contact with engineers, scientists, and program managers. The inevitable, although unintentional, result is the bypassing of the library and the conflict with the able and aggressive library manager, who continually stresses to his clientele that they should bring their information problems to him directly, and who tries to order documents of program importance without waiting for a user request.

I have spent a fair amount of time on this thesis because it is important that we recognize that much of the library community has information objectives which are not the same as those of the Federal information generation and announcement programs, and that the goals of these Federal programs—in terms of providing services to their in-house management and clientele, and in terms of demonstrating viability and continued expansion—will always take precedence over the library community's desire to receive larger and larger volumes of information, to receive them more rapidly, and to get them at no or very little cost.

Free Information

There is no such thing as *free* information, and there is certainly no such thing as free information from the Federal government. Every

relationship between the supplier and a recipient is based on an understanding of who is doing what for whom—whether or not this understanding is ever written down or discussed. The distribution of *free* agricultural pamphlets or flower seeds from your congressman is based on his assumption that he is doing you a favor and that you will remember that when he runs for re-election. The difficulty which many libraries have had in maintaining access time for their internal computer operations is primarly based on the fact that these computer services are *free*. As a result, at the first sign of a paying customer, off with the library. I have maintained for some time that the only way for any library to undertake any sort of mechanization is to have the funds for computer time and orogrammer services added to its budget, even if in practice this only means a transfer of funds internally from one unit of the organization to the other. The implicit threat is still there—"it's my money, and if I can't get adequate service from you, I'll buy it on the outside". Usually the threat itself is enough to assure better co operation.

The same situation applies in the relationship between the Federal government programs and the general library community. Free distribution of documents is under ever-increasing pressure—even for microfiche. The distribution of government services "at cost" still implies that a favor is being done. When you are being done the favor, you can't complain much about the service you are receiving, particularly in an environment in which agency information programs are hard pressed to supply the information needs of their own direct management.

Information, in terms of documents, publications, and bibliographies, has value, and we will all be better off when services being provided are being paid for. Obviously, I recognize that there are areas, communities, and libraries, which cannot afford such a concept directly and without further assistance. However, that support should come, not in the form of free publications and service, but in the form of dollars with which to buy things the way everyone else buys them.

There is no arbitrary standard or limit which defines support for library and information programs, and if you have mentally set your sights on a hoped-for 10% increase with which to offset rising labor costs—a 10% increase to continue to do the same things, or even more of the same things—then you have a great deal to learn from the people who do manage government information programs. Management bodies which support and fund programs allocate as little as they can get away with, in the spreading of too few resources over too many demands—demands which cannot be evaluated against one another. It is all too easy to give in to the temptation to cut appropriations for programs which offer little beyond continuation of the status quo.

I am not only speaking from theory. I was an employee of an industrial corporation whose management rejected a 10% increase in the $100,000 budget of the library to buy more books, eliminate the back og in cataloging, and provide shelves and binding. Management rejected the $10,000 increase apologetically, because of tight budgetary constraints this year, and in the hope that favorable consideration might be possible the next year, and then approved the expenditure of an additional $200,000 to

supplement the library operation with an information center to provide dissemination, retrieval, and mutti-station availability of microcopy.

Recognition of all of this is crucial because, if one thing is clear in the fierce budget-cutting and budget evaluating which is going on, it is that programs must promise new concepts, new approaches, new vistas—not only if they are to grow, but if they are to survive. The last few months have seen the cancellation of a great many government programs which have been around so long that all of us had begun to consider them fixtures. In this environment, services provided by the Federal agencies to the library community for free or at so-called "cost" will be in trouble, and the biggest trouble will be that of the users who have geared themselves to receive such services, and who now do not have the flexibility and time to respond to the new financial factors.

I have talked to a number of industrial and university librarians about the imposition of user charges, and I find that their greatest complaint is not about the user charges, as such, but about the fact that user charges were applied arbitrarily by some programs and not by others—for some services and not for others—and that they came too suddenly to allow for budgetary planning and allocations. Ninety days, or even 150 days, is not enough time for an organization whose budget was frozen six months ago. I, and the people I have talked to, consider user charges a valid concept—but as part of an overall plan, and not as a reluctant afterthought, caused by an agency budgetary reduction or the political pressure caused by the fact that another agency has imposed them

The Federal Role

In addressing, then, the question of what should the Federal government be doing in the *distribution* of information, my answer would be: as little as practicable. This does not mean that as little as *possible* should be done. It does mean that the Federal government should not be doing things which can be done by others.

The primary responsibility of a Federal government information program is that of insuring that adequacy of information service in its field of interest does exist, aside from whether this service is provided by the government itself, not-for-profit sector, or private industry. In developing new government programs recognition must be given to the fact that, at least to some extent, such programs already exist, and no agency should establish a totally new program in disregard and duplication of existing practices. I think that one laudable approach was that followed by NASA. The American Institute of Aeronautics and Astronautics was already covering part of the journal literature to which the NASA mission is oriented. NASA, rather than establish a journal abstracting and indexing service in competition to AIAA, supplemented the funding of that society to permit AIAA to expand its coverage in new and needed areas. In this manner, NASA sought to assure that the greatest possible benefit would be derived at the smallest possible incremental dollar expenditure.

In the information area, Federal support is most clearly needed, in my judgment, in the development of new programs on a pilot or experimental basis, with the clear understanding that these will either be discontinued if unfeasible or shifted to the private sector. Experimental work in information transfer, in the development of networks, in on-line and rapid access

systems, and in support of reprographic developments in areas in which the risks are clearly too great to attract private enterprise—these should be the main thrusts of Federal programs.

There are other areas in which operational programs are so limited in scope or in volume, that complete or partial support is necessary even when the program distributes basic costs in the form of user charges. The area which comes most clearly to mind is that of specialized information centers and information analysis centers. While the financial picture can be altered through cost allocation and user charges, I doubt that any such centers can be self-sufficient in the near future. At the same time, these centers, and their roles of information analysis and information repackaging, must be continued and expanded and not allowed to rest simply on the hard test of economic survival, even though that is still the best test we have.

The area in which the Federal government should do far less is in the field of volume distribution of documents, publications, microfiche, journals, and other publications products. It is the area of greatest cost to government programs, and the area in which the user is most susceptible to the vagaries of funding levels (such as with the *Bibliography of Agriculture*). It is also the area in which the profit motivation of the information industry can probably achieve greater efficiency, perhaps more timeliness and accuracy, and most assuredly greater response to user complaints, reactions, and desires.

Information Industry Relationships

The information industry can also respond to the pressures for information repackaging to a much greater extent than can the Federal government. I think it is becoming increasingly clear that the simple acquisition of large collections and their passive availability for use in major research libraries is simply not adequate to the needs or desires of the user community. Today's information users do not desire more information. They now receive more than they can cope with. What is needed by the individual recipient is less information—information of greater direct meaning for and application to his needs. This underlies the thrust for information repackaging. I regret to say that there is evidence that our major research libraries do not recognize this need and this responsibility to an adequate extent, and this failure accounts for the rapid proliferation of information retrieval and dissemination centers which have been formed on many university campuses to "support" the library operation. There is great damage to the research library and, for that matter, to any library in this development. Carried to its natural and final extension, it turns the library into a stock room.

The question of whether or not government programs should make their information packages available on a sole-source basis to selected contractors, or simply open the data base to a free-for-all competition in the private sector, is not an easy question to answer, and those of you who may have attended the Information Industry Association Conference just concluded know that there is no unanimity of viewpoint within the industry itself.

Although free competition is considered the preferable course in our society, I do not think it is always valid. I believe that there is a responsibility

to national information needs. Government agencies, while they do not have to fill these needs through their own programs, should not abdicate their roles for seeing that the needs are fulfilled. In making data bases available for private exploitation, government agency programs can still demand standards of quality, of price range, of inclusiveness, of speed of announcement, and, perhaps most significantly, of assured continued operation for a specified period. One successful example of this policy which comes to my mind is that practiced by the Office of Education in its ERIC program. *Current Index to Journals in Education* is published for sale and profit by Crowell-Collier-Macmillan, and ERIC microfiche are sold at an annual rate now approaching 10 million fiche per year by NCR. Both contractors are in the business to make money, and both have sufficiently flexible contracts to allow them the business decision to invest in equipment and marketing costs. At the same time, the Office of Education does exact constraints on the activities of the contractor and, of course, always has the option of choosing to give the authorization to some other organization. It seems to me that OE has chosen the happy middle ground between a free-for-all in the private sector involving the birth and death of publications and services in which the information user is the biggest sufferer, and such tight constraints as were evolved by the Library of Congress in making its *World List of Meetings* available for commercial publication. The constraints which LC placed on the successful bidder, in terms of the format of the publication, in terms of pricing constraints, and in terms of making the bidder absorb LC allocated costs which the bidder might or might not consider appropriate, unfortunately doomed what might have otherwise been an interesting and successful experiment. If I can oversimplify, and I recognize that oversimplifications are unfair, LC did not make the *concept* of *World List* available to private enterprise, it sought an organization to publish *its World List*, and that is a job for a contractor whom you pay, not for an entrepreneur seeking a profit.

Obviously, not all government data bases are of sufficient interest and market value to interest profit-oriented private industry in the investment of its own funds in such a risk enterprise. Just as obviously, many of these programs are of sufficiently unique value that their future simply cannot be allowed to rest on a corporate decision of potential profitability. The answers are not simple or clear-cut, and, as in the support of information analysis centers, partial government funding, or the development of an information package for offer to the private sector including both a lucrative and a less interesting product, might be feasible. Similarly, we should de-emphasize programs under which a few government agencies now cling tightly to publications of recognized stature and interest, while palming the money losers off on an unwilling industrial information community.

I can only return then, to the thesis I stated earlier. Government should do as little as necessary— it should certainly not do something which can be done as well or better by others. I fall back on the original intention of Congress in establishing the Department of Commerce—to assist American business, not to compete with it. At the same time, the Federal information community does have the responsibility for seeing to it that the priorities which need to be met are met, and it is here that the judicious application of government funds in support of research and development.

in support of start-up costs, and in partial support of marginal programs, can be invaluable. In all of this projection, of course, the user—be he industrial, governmental, or academic—pays an equitable price for what he is getting, and I have already stated my belief that this is not only possible but necessary. He is certainly paying for it now, without getting any of the leverage to which a customer is entitled.

Federal Standardization

There is one more thing which, it seems to me, the Federal information community should do to improve the success of this concept. In order to have successful manipulation and exploitation of government-generated information, we must have more standardization. The study sponsored by COSATI several years ago, and undertaken by SDC, concluded that it would be unrealistic to expect the various government programs to police themselves in the area of standardization, and it recommended the establishment of a capping agency with the power and authority to make decisions across agency lines. Quite understandably, the agency representatives on COSATI did not look with too much enthusiasm on such a program which could destroy their autonomy of management, and the proposal was rejected. COSATI has taken upon itself the development and application of standards on a voluntary and cooperative basis. It is a difficult task because it contradicts the instinctive need, which I have commented on earlier, to come up with a program which is better, faster, or sexier, than that of your neighbor agency. If *they* have an on-line retrieval capability, it is essential that *you* have one (quite aside from whether or not you need one or, for that matter, whether his works). I am not saying any of this sarcastically, or even critically. The need to be first, to be best, is what has sparked the development of many of the excellent government systems we have today. Without this spirit of competition, government programs would be a long way from where they are.

Nevertheless, the development, application, and enforcement of standards is absolutely essential if the private exploitation of government information is to move forward and if the consuming public is to get the best deal for its dollar. The missions of the various government agencies and their information programs are not exclusive, they overlap to a considerable degree. It is no secret that perhaps 25% of the documents announced by NASA are initially announced by DDC. NASA re-announces them because the information being reported, while sponsored by the Department of Defense, is significant to the NASA mission. It is essential, therefore, not only to avoid the duplicate costs of re-analysis, re-keying, and re-photographing, but also to spare the information customer the inadvertent cost of buying the same thing twice or, even if he gets it for nothing, the inadvertent cost of filing and storing it twice. To accomplish this, mere compatibility of vocabulary systems—whatever is meant by compatibility— is not enough. Indexing systems must be so evolved that, despite the disparity in missions, users can have access to all information available on a subject, regardless of the agency which first brought it to light. There is, of course, some work being done in this area, but much more needs to be undertaken, and the government agency programs must substantiate their contention that they don't need a capping agency to

make them cooperate, by showing the willingness to make accommodations and compromises.

COSATI has had some successes. Probably its greatest success, in my view, is the development of a microfiche standard, and it is significant to note that not *until* there was standardization between DDC, AEC, NASA, CFSTI and others with regard to size, quality, and reduction ratios, were the designers and developers of equipment to read, enlarge, and reproduce microfiche willing and able to commit their own resources.

The need for, and use of, information raises complex questions, and it is clearly an area in which the Federal government cannot be expected to make all the decisions, to expend all the funds, to take all the initiative, and to receive all the blame. Development and application of our information resources will require an interaction in which the Federal government, the information industry, and the information recipient will all be willing to do their share of the part, take their share of the risks, and pay their share of the cost.

Discussion Period and Plenary Session

Andrew Aines. Chairman, COSATI: Mr. White, I agree with everything you say. It was a very, very well-tempered talk.

Now, at some point, perhaps, we will have a body of thinking in terms of the report put out by Systems Development Corporation on the "capping agency". The difficulty was that they came along with a recommendation for about a 250 man outfit at Executive Office level. Now, for five years we have been trying to get more than one person in our office, and we have borrowed people. There is one gentleman who is with me now who was borrowed from the National Bureau of Standards. He will be returned in October.

In all this time the idea of getting two, three or four people, who I am sure would save millions of dollars a year along the lines SDC talked about, simply has not come to pass. We have worried about this problem; we wonder why this is. Those of us in this profession see the needs, but somehow or other, the people who have their hands on the tiller of power do not agree that we should be doing some of these things.

I think there is a failure of communications somehow. The fact that our constituency is so diverse, so scattered throughout our body politic, makes it impossible to pull together the kind of political culture that can be heard, where the alarm that *they* hear can be understood by some of the people in power.

I am indicating to you that, logically, what SDC said was probably correct; but in terms of the policies of the real world we live in, it has simply become impossible. So I add that on to the fact that some agencies have some disquietude about the possibility of having decisions come down that might cause them to change their programs somewhat.

I find them a pretty enlightened lot on the whole, and I am sure that if they had to make the changes for the common good, they would grumble a little bit but they would do it like all other human beings.

I think the SDC study, although it is a beautiful document with many other purposes, left us in a hole. It might even have created more problems by frightening the very people whose support we needed in order to get minimal requirements to do some of the work we wanted.

Samuel T. Waters. National Library of Medicine: Herb, I wondered, did you mention anywhere in your talk the role of the professional society as against the government and private firm? Do you see a role? Where do you see the role for systems control? Do you see it with the government? Do you see it with the professional society? Do you think it is feasible to turn to private production of individual products?

White: It is a tough question, and there are some representatives, I think, of the professional societies who might be more willing to speak to this topic.

I do think this: I think that the Federal agencies have the overall responsibilities to see to it that the job gets done—preferably by not doing it themselves.

Recognize, also, that there are several cuts at this. There are information analysis, generation, and packaging. There is also the repackaging and most of the industrial applications have been in terms of

repackaging. Repackaging of information becomes particularly important in the concept of smaller and smaller cuts at the information base for more and more specialized information users. Professional societies play a very large role—in part supplemented with government funds—in the broad gathering of information and the broad analysis of information, and they do a lot of work, as in the NASA case, for the agency programs themselves.

I think it should be recognized that, if something is done by a not-for-profit organization, such as a professional society, it does not necessarily make it free, or necessarily cheaper. Sometimes things done by not-for-profit organizations can cost more than things done by profit organizations.

So it is not a cost question that is involved. I think it is a question, in terms of Federal involvement, of who is best qualified to do this kind of thing. There are areas of professional involvement where, very clearly, the professional people who need to be interacted with will deal most effectively through their own professional society; and, by all means, they should be used in this context.

Burton E. Lamkin, National Agricultural Library: I do not think the associations can do it, because I do not think they are organized well enough to do it.

I think the problems the Federal government needs to come up with is a statement of their requirements. This has been done somewhat in the area of microfiche standards. Now you are seeing industry responding to that in the way of microfiche and in the way of equipment.

I think the same kind of approach is needed for systems, because I think the private sector, the industrial group, is certainly more capable of putting together the necessary teams to come up with the types of systems we need to manage information than anyone else.

Comment: As a university librarian, I listen to students constantly, and occasionally I become impatient with them because they seem naive to me and idealistic, and when I am running my own shop I try to be realistic like Herb, and I pretty much know how the systems try to cope and how the system runs.

But when they attack us they hit a sensitive spot occasionally; and one of the things I hear when Herb's talking is that he is being *realistic.* But we have lost our idealism. We have lost something. We have lost the reason why we exist, which is to get the information to the public. We have lost the philosophy of government.

I think we would be open to attack by students right now if they were listening to us. I know this is realistic. I know it is true. I can sympathize with everything that is said. But I feel a loss. I know this is what we are going to have to come to grips with, and I think we are pretty much over-exposing ourselves. I do not know the answers.

White: I thought that, in addition to being realistic, I was, perhaps, in a sense, being almost too idealistic, because of the kinds of things I was envisioning.

The only area in which I may be realistic is in my feeling that there is no such thing as free information; and the things that are provided by the government are not provided free of charge. They are paid for by the people who pay for our government, and these are the same people who obtain the so-called free information.

I am not opposed to government services *per se*; but neither am I in favor of government services *per se*. This is a question in which the user certainly has no ax to grind, because, for the user, his desire is to get what he can best use most efficiently; and it seems to me that, whether he gets this through government channels, through a professional association, or through industry, none of this is free. Further, as long as the criterion is also established that lack of funds, as such, within a library, cannot be allowed to be a basis for not receiving publications, what must be done is to *supplement funds*, not to supply free publications.

Now that is perhaps as idealistic as anything anybody could say.

Question: Herb, I think you misunderstand me. That is idealistic from the view point of a businessman. But what does Government exist for? I mean, we all pay taxes to the Government; we know we are paying for something. What are we paying for? Are we paying for service? What kinds of service? What makes our Government a more viable one? Is it by having a well informed public? Is this worthwhile? Should we continue such an enterprise? Why have a free university? Why have a free library in the university? Probably the library could be in a much better state if we could charge for our services. Why have it free?

You are attacking a whole principle here. You are being idealistic from the particular viewpoint, but I think you lost some of the breadth.

White: Well, you know, it is our government, and it provides those services for us that we want it to provide for us. It is basically *our* determination as to what we want to buy from the government, or what we want to buy from industry. This is our decision as people; and the students, hopefully, share in this, too.

The important thing is that needed services be provided, not by whom they are provided. A bigger government is not necessarily a better government or a more efficient government. In fact I see some contradiction in the simultaneous demands for more individual freedom and for further government encroachment through the guise of more "free" services which only makes us more dependent.

Stephen A. McCarthy, Association of Research Libraries: More along the same line, I think we have lost the whole philosophy in back of the government depository system. It is to the advantage of the government, to the advantage of the country, to make available all over the country in many locations, publications produced at the expense of the public. That was the philosophy. What you have preached is the very opposite of that philosophy; and I suggest that people who have accepted your philosophy, and are now preaching it, are being remiss in their duty.

I would like to add another point: The reason a special library can go along and not add to its budget for books is precisely because it saves its money and depends on Cornell and Rochester and Penn State to supply the materials that it won't buy. It can then go into information analysis and other highly refined developments. It could not do that if it did not have the basic framework of the research libraries of this country to which it could turn.

When I was at Cornell, the largest single purchaser of Xerox copies was none other than the Xerox Company.

White: I have no desire to defend Xerox. It is certainly able to pay for anything it gets from Cornell University library, and should be charged at a rate adequate to reimburse all of Cornell's costs, unless, of course, Xerox is already making other substantial financial contributions to the Cornell budget.

The reason that the library systems and the depository library systems we have were established was to provide the best library service to our public on the broadest basis at the lowest cost. Now, that is the objective. The objective is not depository libraries. The objective is *service;* and I would suggest simply, without going into it in any great detail, that all of the concepts under which we provide information are subject to continued re-evaluation and retesting. There is nothing sacrosanct about any of this unless we are basically slaves of our institutions. The depository system is a tool. It has no inherent vice to be attacked or virtue to be defended.

Question: Mr. White, you are not for a moment suggesting that commercial distribution of some of these things is anywhere near as cheap as government distribution through the depository system? Considering what you might call hidden costs, which do not show up immediately, certainly the distribution complex that is required for commercial distribution (and the copyright problems, and the royalties, and everything else) is far more costly, in gross, to the citizens of the United States than any kind of depository distribution, or other government distribution. I would certainly second the suggestion that Dr. McCarthy made that you go back and read, not only the legislation and the reports setting up the Department of Commerce, but the legislation and reports setting up the depository system.

Now, unfortunately, even the Superintendent of Documents has forgotten about a lot of that basic philosophy. But the philosophy is there, and I think, for the total benefit of all the citizens of the United States, a return to that philosophy will involve far less expenditure of money than any kind of an overlay of commercial distribution.

White: Ladies and gentlemen, we are not living in Oz, and we pay for everything we get. I would certainly say, from my own experience on both ends of the thing, that, in most cases, government distribution systems are more expensive, because private industry does tend to be more cost conscious and more cost effective. You as the user, may not see it, because a lot of it is a hidden cost which you pay in other ways—in overhead and allocations and things of this nature.

By the same token, the money we save in not having to pay for copyright charges is money we pay in other ways, at least in part through increased costs for the material we buy in the first palce.

I am far less insistent that industry do everything, than some people appear to be that the government do everything. What I am saying is that we need to look at who should be doing what without any preconception to determine the most effective way of operating our information utility and serving our information needs. I find it a fair and valid concept, and I like to think it's both realistic and idealistic.

Jerrold Orne, University of North Carolina Libraries: I would suggest that we are not as much concerned about which costs more, but the simple fact—and I believe it *is* a fact—that the initial cost is already there in the government. I would give you, as an example, the current publication by Gale Research of a five year cumulation of L.C. Union Catalogs. They have taken a journal out of the public domain because LC was not able to get it out fast enough (or get it out at all, perhaps) because of budget difficulties. They are selling the five year cumulations at something like $2,700.00. We paid, as I remember, $900.00 for the first 164 volumes of the entire LC catalog.

Now, the initial cost of preparation of that material is already in the government, and we have paid for it. Gale Research saw the light and got it out; and I am buying it for my library because they knew we could not operate without it.

But this is a fact, that we are paying for it twice. Still, I do not know any way around it. I think, in fact, that the commercial operators are going to founder because, simply, libraries like mine also have budgetary problems.

There is one particular agency selling an SDI service that has been after me for five years to invest something like $12,000.00 for services that I cannot get my faculty even interested in.

Now, these are multiplying by the score; and the simple fact is that, in time, they are going to have trouble, because they are pricing themselves out of the world. They are pricing themselves out of our money as well as out of the government's money and something's got to happen.

Beards and Computers

(Conference Banquet Address)

LEE BURCHINAL
Director, Division of Information Technology and Dissemination
Office of Education

Tonight I would like to consider with you the conjunction or disjunction of some recent developments that I think will affect just about everything we do as library and information systems managers. I can't stand before you as a librarian. I will readily admit to not being knowledgeable or informed in that area. Nor do I have formal credentials as an information scientist.

I guess I'm just a government administrator who had the good fortune of being given certain assignments which thrust him into the field of communications. My comments come from my experiences in the overlapping fields of information system and library activities, and beyond those, from attempts to apply knowledge in the field of education.

ERIC Products

Let me preface my observations with a parochical note. In glancing at your program, I discovered that ERIC was not expounded upon. Permit me to add just a few comments on what still is one of the newest Federal information systems. ERIC was begun in 1966 as a national information system to serve researchers, planners, and other professionals in the field of education. In developing ERIC, we thought it was necessary to venture in some unique directions because of the heterogeneity and complexity of American education, with its many levels, many fields of subject interest, numerous professional organizations, local autonomy, and vast scattering and variations in the quality of its literature.

Consequently, we set about developing ERIC as a kind of a decentralized information system. An important planned consequence of the decentralization decision was that we didn't have to bring subject specialists and technical information people into Washington; rather, we went to them through the funding of the decentralized ERIC Clearinghouses. We also went to the private, profit-making sector, not only for providing technical services, but for selling ERIC reports instead of providing them through a free Federal service. Response has supported this decision. We intend not only to continue our policy of selling products, but, if possible, to strengthen this kind of delivery method.

I suspect that our sales policy is not supported in principle by some of you. I would like to explain our rationale. We look upon the roughly $1 million that National Cash Register grossed from the sale of 10 million microfiche last year, as a Federal budget savings of this amount—really more, if you include the cost of raising Federal revenues in the first place, through taxes, getting the money to the Office of Education, and further dispensing the funds to contractors.

Selling products also helps in the development of rational resource allocation mechanism among schools, universities, and educational bodies. If ERIC products are not sufficiently valuable for groups to allocate scarce resources for their purchase—then, they shouldn't be suported with public money in the first place.

There is an additional reason for turning to the private sector for sales of ERIC-based products. This is the potential for the spin-off of new kinds of tailor-made or packaged information products and systems that can be developed solely with private capital instead of relying on Federal funding.

Federal dollars can be reserved for costly acquisition and file organization; the private sector can repackage and distribute products in various ways—such as the Crowell-Collier-Macmillan Information Corporation is doing.

CCM Information Corporation produces *Current Index to Journals in Education*, and now is bringing out two new products, entirely supported with their own cash. If these are successful, they will be supported with their revenues; if they're not successful, we will not have had an expensive, long term government program before reluctantly deciding that the investment wasn't worth the results.

One of CCM's new products is called "CLASS." Now, that has kind of a classy ring to it. If I can remember the acronym, it stands for *Current Literature Awareness Service Series*. The first content field will be Reading. Not a surprising topic since Commissioner Allen announced Right to Read as a national goal.

CCM will search the ERIC tape for *Research in Education* and the tape for *Current Journals in Education* to identify all reports and periodical citations that match a profile for reading specialists and then will generate a new monthly abstract index bulletin, *CLASS: Reading*, that brings together all the current, significant reading literature. *CLASS: Reading* will sell for $8.95 for eight issues. The price will permit most professionals to have their own desk copy and will save countless trips to the library.

Second, CCM is developing, in one package, a complete file of all research in ERIC on reading from 1966 through 1969. The box will contain about 1,000 reports on microfiche and the four-year index. Again, the purpose is to bring usable information into the user's working environment.

This kind of flexibility in generation of user-oriented products with private initiative extends greatly the impact of the original Federal investment. Enough for ERIC. Now, I would like to invite your attention to several broad areas of concern.

Trends Affecting Use

There are, I think, at least three broad intellectual and societal trends that have serious implications for operation and further development of libraries and information systems.

First, I will identify these emerging trends with short definitions; I will elaborate on each briefly—and only briefly.

The first trend is professionalism in management. This trend began in many areas decades ago, particularly in business, has now moved into the government, and I think will move out from the government to all areas of the public sector, including library operations.

The second trend I will call the institutionalization of interdisciplinary effort. It started during World War II in science areas, and now is becoming pervasive, if not dominant, in most intellectual areas.

The third is much more difficult to grasp. It represents an emergence of humanistic or individual-centered life style with a redefinition of values.

I am not a social historian or philosopher, and can hardly develop these satisfactorily; but I would like to comment on each to provide possibly a different perspective than what you have had this morning and this afternoon, or than what you will have tomorrow.

Professionalism in Management

Professionalism in management is represented by a new breed of program analysts and their program planning, budgeting, and evaluation tools. They are tough-minded, and often effective. Large companies have demonstrated the value of continued program evaluation and planning, with hard yardsticks.

The first major efforts to apply the PPBS techniques in Federal agencies began in DoD. Then the Federal government began building comparable programs in the civilian agencies. Results to date are mixed, but application is growing and improving. The program analysts ask the questions we program operators prefer to avoid, and their technology is much superior to our normal ways of arguing for incremental funding (i.e. the population served has increased by ten percent, therefore we should increase the funding of this project by a similar amount.)

Increment growth appeals just don't apply anymore. An analyst is trained to identify the problem clearly, diagnose it, pose possible solutions, evaluate alternative paths for achieving an objective, state the objective in terms of measureable outcomes, and develop criteria for choosing the most effective and least cost means for attaining the objective. How often do we examine any of our programs in this way? Peter Drucker, in his book, *The Age of Discontinuity*, particularly his chapter on "Sickness in Government," illustrates the laxity of bureaucratic functioning in the Federal sector. (Incidently, it has been reported that President Nixon has made this chapter *must* reading for all members of the Cabinet).

I suggest the book for your reading. You won't like what Peter Drucker has said in many cases, and you won't agree with him on many points, but some of his indictments and some of his assertions make me uncomfortable when I mentally review the justification and planning behind many of the requests made to Congress for funding library and information programs.

Long range, rigorous planning with careful consideration of cost/benefit returns of alternative solutions is new to many of us. We generally haven't been too innovative. We continue most of our programs and add some elements from time to time, but usually without abandoning less effective or low priority activities—unless the budget crunch gets really tough. Management analysts, on the other hand, confront us with hard questions about the benefits of programs in relation to their costs. I can assure you this is true in HEW, and in the Office of Education. For instance, why should we have ERIC? What good does it do? Who uses it? What would hapen if ERIC were terminated? Suppose ERIC's budget were cut one-third, what would be dropped? In what order? When will ERIC be a mature system? How will you know? What criteria can you apply to determine whether ERIC is half way, three-fifths, or close to attaining maturity? And so on.

We don't have complete answers to those questions, but we are working on them. One approach we are following is to have studies done on uses and perceptions of value of ERIC products and services. Another consists of developing management reporting systems so that we can discover actual costs of operations conducted by ERIC clearinghouses.

Harvey Marron, Chief of ERIC, just gave a paper in which he laid out the costs of the ERIC program for various kinds of activities. With this kind of

knowledge we can trace progress, or the lack of it, in increasing effectiveness and efficiency in each operational element of ERIC. We can identify slippage in expected savings, be reassured that expenses conformed reasonably well with estimates, and our budget decisions can be rooted in actual experience. These kinds of data, I believe, will become the basis of more and more budget decisions in public-supported programs.

To conclude this first point, I simply assert that those of us representing library and information transfer programs had better become expert in management analysis and learn to use these new tools effectively. We are going to see more professionalism introduced into the management of resources in the public sector. We're going to have to render a solid accounting for the funds that have been provided, and we're going to have to know our real costs. Finally, we have to become cost/benefit conscious managers and planners.

Institutionalization of Interdisciplinary Approaches

Let's turn to the second emerging development— the institutionalization of the interdisciplinary approach. Interdisciplinary approaches are unavoidable in the search for solutions to major problems today. Issues are so complex, no single discipline commands the knowledge, methods, and skills needed for their improvement. For example, while education continues to be dominated by educators, persons with training in various disciplines are in demand for positions in research, teacher training and administration. Schools of education are hiring psychologists, sociologists, anthropologists, political scientists and others for research and teaching roles. Many state and big city school districts are hiring systems analysts, economists, business managers, and others who have no background in education, but who have needed skills. The medical field offers additional examples, as do schools of business administration.

A recent issue of the SDC Magazine documents changes in the staffing and operations of schools of business administration. In the past, many prominent schools were organized around marketing and finance. In most prominent schools today an interdisciplinary mix is emerging. Operations research, modeling, linear programming, group dynamics theory, combinations of industrial sociology and industrial psychology, computer simulation, and other basic tools are mastered instead of just the principles of finance or marketing.

The fields of library and information sciences may become the next significant areas for penetration by the behavioral sciences. Libraries and information systems basically are communication systems. No matter what devices are used, books, other printed forms, or various electronic means; ultimately some form of knowledge transfer and ideational or behavioral change results. I suspect, therefore, that we will see increasing interest on the part of the behavioral scientists interested in learning styles, principles of behavior, communications, and group interactions, teaming up with the communications, library and information specialist to improve our understanding of these processes.

While I am prognosticating let me add that I don't believe we will see any precise general mix of these groups. Rather, there will be a number of

temporary mixes generating different kinds of paterns and intellectual combinations among these fields. I would also suggest that the clearly defined, relatively isolated professional school is passe. All of you have jumped ahead, I am sure, to the conclusion of my erratic tour of interdisciplinary developments in the current American scene. Collusion or collision of the library and information sciences is not a unique or particularly noteworthy event, despite the heat and little light that spokesmen of the field have generated in the past decade. Personalities ranged on all sides of issues simply have failed to realize that their identity crises or turf-defending behavior is not only unproductive but irrelevant to major deep set conditions that are changing our intellectual landscape.

Related to the breakdown in formalism and isolation of disciplines is the trend toward increased involvement of the private sector in delivering various information services to users. Companies will build what Bill Knox has called a "consumer ladder" of services. Instead of just one package or service, different levels, each tailored to the interests and consuming styles of users, will be developed. Techniques borrowed from marketing suggest how consumer ladders might be developed for different classes of users in various fields of knowledge. Simple, one-page information may suffice for some users. Longer, exhaustive treatments are necessary for others. More refined steps or information increments exist between these two extremes.

Emphasis most likely will be on delivering usable information to persons, directly where possible, and otherwise, through intermediaries such as special libraries. Further Federal-private company cooperation can be expected in delivery of new information services. There will be greater use of federally-developed information files by profit-making companies, universities, and professional organizations. In the future, I doubt if Federal managers will have a monopoly on the delivery of products from files they oversee.

Reformulation of Values

The third trend I mentioned is tied into some kind of reformulation of values that began with World War II and has gone on since then. This kind of change is ubiquitous; it's around us. In fact, some of us, most of us probably, are so much a part of it we may not even realize the magnitude of the changes. Still, there is a vast ferment in values and behavior. An obvious, stimulating, challenging, and sometimes disturbing—to us adults at least—indicator of the transition toward new emphasis on individualism and humanism is the emergence of today's youth culture.

Youth challenges the adult world. Many are unwilling to accept materialistic values and many conventional values at the expense of individualism, personal development, and social justice. They are seeking ways to improve the system for the benefit of all.

Large scale changes do not come easily or without personal and social costs. When the old rules fade, and new life styles are being tested, adapted, and sorted out as the basis for a new integration of values, many innovations will be deleterious or, to use systems jargon, counter-productive. The drug scene, personality disorganization, and the like are some of the unfortunate consequences we are witnessing today. So too is the generation gap and increased intolerance between defenders of the *status quo* and advocates of the new. Still, a reformulation, fusing the tested

elements of the old and new will occur, as occurred when the United States shifted, first from rural to urban society, and now, from a production to a service or knowledge-based society.

I don't know how the societal changes I have tried to suggest aply to the concerns that we represent. Perhaps we simply have to expect less tolerance for any kind of formalism, more openness to trying alternatives, greater risk taking, and less patience among able, well trained young persons for inefficiency, ineffectiveness, and lack of response to overwhelming social needs of our day. I am sure that, given some thought and attention to the interests of youth, we can more effectively apply their great energy, talent, and enthusiasm to improve our library and information services.

In summary, I have simply tried to touch on a few ideas that stand behind operational problems we normally discuss. I don't know how the three developments add up. But many times when we talk about revolution or change in our communications science, we refer only to fantastic technological changes. Even more dramatic, far-reaching, and significant changes, I believe lie in the social arena. These are reformulations in values, life styles, work orientations, academic disciplines—all of which are going to alter dramatically and in yet unknown ways the content, format, and delivery of information we normally have made available through libraries and information systems.

Proceedings of the Second Day
Friday, March 27, 1970

Morning Session:

Availability of Select Federal Information Services and Products

E. J. Brunenkant, *Moderator*
Director, Division of Technical Information
Atomic Energy Commission

Participants:

Eric Tietz
Philip Kuhn
Marvin W. McFarland
Edward L. Brady
Henry M. Kissman
Elsa S. Freeman
Wallace C. Olsen

Afternoon Session

Speakers:

Casper Jordan
John Humphry

and Plenary Session

AEC Information Programs

E. J. BRUNENKANT
Director, Division of Technical Information
U.S. Atomic Energy Commission

The AEC Division of Technical Information does not operate a national library. Our principal customer is the AEC and its contractor family. That family represents about 120,000 scientific and engineering employees, most of whom are employed by our contractors. AEC has only about 6700 employees scattered across the nation, which, by Washington standards, is a small family.

We operate by a statute, however, which is broader than most science agencies in the sense that it directs the AEC to "promote the general welfare, encourage industrial progress, enlarge the fund of technical information, and contribute to scientific and technical progress."

We have construed this rather liberally, and have extended our information services to groups not directly related to the AEC family by means of a contract.

However, like other major science agencies today, we were having to sort out our priorities because science is not as popular as it was in the immediate post-Sputnik era, and we are having to make decisions primarily on the basis of the lack of funds. This is particularly true in the information services of the AEC.

Yesterday there was a great deal of unhappiness expressed over the decision of the National Agricultural Library to eliminate the *Bibliography of Agriculture*. With responsibilities for similar bibliographic tools in AEC, I assure you that I am following NAL's progress in this direction with considerable interest and enthusiasm, because I think that the tools that will follow-on will even be better than the ones that are being reluctantly left behind.

Remote Access

We, too, publish a major bibliographic tool, *Nuclear Science Abstracts*. We believe that the printed abstract journal, in terms of its current size —about 16,000 pages a year—probably has a finite life.

We are not prepared to make the total break because we are not in a position to substitute, for the printed products, the kind of service that most of our contractor family is interested in having.

We are very optimistic about interactive remote access systems, and we are currently experimenting with NASA-RECON. It is our hope that systems of this type will advance from mainly experimental mode to fully operational mode in the next three years. It is our intention that remote consoles, with access to the AEC data base, will be available to every major university community within the United States; and we believe that the economics of remote access to a bibliographic data base offer considerable advantages to the user.

The cost of any major information system is really wrapped around the input cost. We estimate that it costs us about $1,300,000 to produce an abstract and indexing service the size of NSA. At least fifty percent,

and probably as much as eighty percent, of the cost occurs in acquiring the document, indexing the document, and in the mechanical aspects of generating the machine-readable bibliographic record.

International Nuclear Information System (INIS)

We embarked upon an international system, which we call INIS (for International Nuclear Information System) which is being coordinated by the International Atomic Energy Agency in Vienna.

The concept is simple. Each country will pay the input cost of its own material for a common data base using common parameters and standards; and every country will be able to use the combined total data base.

This system, in experimental mode, is expected to become operational in April of this year. Two of our senior staff members, Charles Gottschalk and Margaret Pflueger are currently working in Vienna and have a computer center there.

This, to my knowledge, is the only major machine system with an international base that is approaching operational status. The system also has the participation of the Soviet Union.

National Book Buying System

The other program I want to talk about because I think it has implications, particularly for university libraries, is the national book buying system that we have established.

About five years ago, we took a look at our major contractor libraries—the twenty largest of them—and it was pretty clear that book distribution habits in this country were abysmally poor. It cost a lot of money to get the book; the delivery times were attrocious; the discount rates, compared to discount rates given to normal distributors, were inequitable; the cost of just buying the book, in terms of the government requirements for handling the invoice, frequently equaled the basic cost of the book itself.

All of our librarians were cataloging books; all said that they were using the LC cards, but all of them really were adding substantially to the LC card. In addition to that, they had some difficulty in getting LC cards in a reasonable period of time.

We finally got our contractor librarians to agree that a central book buying system would be useful. We could not agree on every parameter, so we offered about twenty different options to each librarian. He would get a catalog card; he would get processing services; his catalog card could be printed or could be machine readable—variations of these and other service options.

We asked the book contractor to provide the book to any librarian in the system on a profile basis within fifteen days after it was generally available for sale. We also asked him to bill us on the basis of the net cost of the book to him plus a unit handling charge. So, if the cost of the book is twenty dollars, we pay the same unit handling charge as we do for the book which costs ten dollars.

In the field of science—our primary interest—we knew that the average price of a book was about ten dollars; and this seems to be

escalating about six or seven percent a year. This was a three-year contract. We are currently paying $1.95 over the net cost of the book.

The books have to be delivered with the catalog cards and all the processing services completed; and we are billed on a monthly basis. We believe that we have eliminated a great part of the accounting costs.

In summary: the remote access system, INIS, and the book buying system are marks of progress. We believe in making available, to the extent that we can, the services of our major documentation center in Oak Ridge. Our primary resources there are reports. We do not maintain a large library collection in the traditional sense. We have considered it; we have not turned it down; but we have not taken any steps as yet toward creating a more conventional national library function.

Clearinghouse for Federal Scientific and Technical Information (CFSTI)

ERIC TIETZ
Assistant to the Director, Clearinghouse for
Federal Scientific and Technical Information

Assistant to the Director, Clearinghouse for Federal Scientific and Technical Information

I want to bring you up to date on the products and services of the Clearinghouse for Federal Scientific and Technical Information.

We are an eighty percent self-sustaining operation that, this year, will show sales of over three million dollars with no giveaways—not even to members of Congress. So as far as we are concerned, Herb White was certainly correct: there is nothing for free; and certainly not from us.

First, I want to bring you up to date on our input. Under our present activity, our collection from 1946 to date totals about six hundred thousand reports, and we are adding to them at the rate of about forty-five thousand a year.

That number breaks down, roughly, into the following proportions for the various sources of documents:

Atomic energy, defense and space research	33,000 (73 percent)
Environmental and social research	4,000 (9 percent)
Economics	3,000 (7 percent)
Foreign documents	5,000 (11 percent)

We are acquisitioning reports from over 200 agencies of the government and others, with increasing emphasis now being given to reports from such agencies as the Department of Transportation, for motor vehicle compliance test reports; Department of the Interior, for water resources reports; HUD reports, etc.

We are acquisitioning building research studies from Sweden; highway research from the UK; reports from non-government sources such as the American Institute of Planners, the Council of Governments, Washington Metropolitan Area Transit Authority—just to mention a few.

In connection with the input of reports, we are starting to ask agencies to share the cost of input by supplying a COSATI technical report standard title page or magnetic tape with bibliographic data, or to reimburse the Clearinghouse for indexing and abstracting. Some agencies are already doing this.

As recommended by the COSATI Task Group on the Dissemination of Information in 1969, we will continue to expand acquisition of technical documents, especially in the environmental, social and economic areas.

There are presently about 100,000 Clearinghouse users. Forty-seven percent of the total are industrial users. Within that category, 25 percent of the industries account for 75 percent of the orders.

Governments—Federal, state and local—account for 21 percent; foreign orders, 18 percent; and universities, 14 percent.

In the case of the CFSTI abstract journal, *U.S. Government Research and Development Reports* (USGRDR), certain improvements, notably the announcement of journal articles, are being explored.

Clearinghouse *Announcements in Science and Technology*, a sub-journal concept, breaks the journal down into forty-six categories. We are planning a new category scheme which will drop the forty-six categories to thirty-four, but will involve a more detailed categorization scheme of some three-hundred subcategories. As an example, in the new category 15, "Electro-technology", it will be possible to look under a subcategory for reports on "semi-conductor devices"; and it will no longer be necessary to look through the entire text to find this material.

Our *Fast* announcement service, is made available presently to over eight-hundred journals and technical society publications, domestic and foreign; and that has been increased in the last year.

We have just announced the 1969 *USGRDR Index* which is available in six parts.

Select New Products

I would like to mention briefly our Selective Dissemination of Microfiche (SDM) under which microfiche copies of documents, announced for sale by the Clearinghouse, are available in several hundred selected categories and sent out on automatic distribution. This is a faster and more economical method of obtaining copies of the latest documents in selected fields of interest. The SDM customer can order documents by subject category; by originating agency such as DOD, NASA, AEC, etc.; or by subject category within an agency collection. The subject categories referred to are the basic set of SDM categories of the subject fields and groups used to announce documents in USGRDR.

The automatic distribution feature of SDM permits the Clearinghouse to offer this service at twenty-eight cents instead of sixty-five cents per title. SDM distribution is made twice each month at the time the documents are announced. SDM is our answer to depositories.

The Clearinghouse announcement journal is available on magnetic tape. Dr. Chapin said yesterday that he has no way of handling magnetic tape, but we have had lots of requests to make the service available, and most of the pressure has come from overseas.

The magnetic tape contains information equivalent to each issue of USGRDR, and is issued on the journal publication date—the 10th and 25th of each month. The annual subscription rate for the twenty-four issues is $1500. These tapes are released on 600 foot mini-reels. We have a folder containing the specifications.

A new Patent Office classification index is now available from the Clearinghouse. This is the third microfilm edition of the cumulative index of the classification of patents. This index contains the official listing of all patent numbers issued through December 31st of 1968—more than 3,415,000. This edition supercedes the listing covering patents issued through December 1962.

A patent number sequence classification record is a new microfilm publication which lists the original and cross reference classifications together with each number and patent number order. It comprises all patents issued through April 29th of 1969 and all reclassifications made effective from January 1st of last year.

A Federal stock number cross reference list is available on magnetic tape so that manufacturers no longer must thumb through thousands of

pages to match company part numbers with stock numbers of the Federal Supply System.

Another new Clearinghouse service is concerned with translations from the China Mainland press. Translations from China Mainland newspapers and other periodicals are now available on a subscription basis from the Clearinghouse. These translations are prepared by the American Consulate General in Hong Kong. For many years, this series has served as one of the principal sources for academic research of the Chinese Mainland and includes a survey of the China Mainland daily press, selections from weekly magazines, as well as current background information.

In the distribution area, we are constantly improving or trying to improve, our turn-around time. We are getting new equipment for plastic packaging of outgoing orders which will help to speed our service still more.

In the reference and referral area under the present activity, we are searching 200,000 items per year. Our files permit searches on 50,000 subject terms, 90,000 names of researchers, and 18,000 corporate names.

Our objective is a complete search-and-retrieval capability for all reports accepted by the Clearinghouse since 1964. This is equivalent to about 180,000 reports.

We hope to be able to announce a fee and a free search service later this year using as abstract files, a card file and Houston Fearless microfiche store as well as 16mm microfilm.

Our goals in reference and referral are to provide a focal point for information about Federally-sponsored research and development and to provide a link between business, industry, and government information centers.

In short, the Clearinghouse goal was designed to be responsive to the requirements of Public Law 776, our Charter, the Department's mission, the recommendations of COSATI, and the expressed needs of the technical community.

Question and Discussion Period

Ruth Smith, Institute for Defense Analysis: I would like to know who decides what criteria is used as to whether a report is distributed by the Clearinghouse or by GPO?

Tietz: Well, that decision is not made by the Clearinghouse. That is made by the agency.

Brunenkant: Maybe I can amplify it. My understanding is the Clearinghouse has a working relation with the Superintendent of Documents. Normally, however, the decision is a printing decision based on the quantity. Within the AEC—and I think this is true of NASA, too—it is made on the basis of whether or not, first: there is a field printing plant (since all of our contractors operate field printing plants subordinate to the Government Printing Office); and secondly: whether or not the quantity is going to be substantially above a thousand. Our cutoff point is usually a thousand copies.

We send one copy, however, of all our unclassified unlimited reports to the Clearinghouse, and I think this is also true of NASA.

Smith: Do these same reports then go to the Government Printing Office for distribution?

Tietz: This sort of thing sometimes happens. ESSA issued a report on phototransmission via satellite. SUPDOCS made it available. There were two printings, and then it was decided not to reprint. We got a call asking whether we would put that report in our collection inasmuch as the agency was getting up to twenty-five inquiries a day. They reminded us that a revision of the report was in progress, but they wanted to take care of customers in the meantime. And, of course, in the Clearinghouse, nothing ever goes out of print. We can always make "blowback" reproductions.

Kai-Yun Chiu, John Hopkins University: (Miss Chiu's question was inaudible on the tape recording, but Mr. Tietz replied as follows:)

Tietz: If there is sufficient demand, we will go back and make annual indexes available prior to '67. There must be enough people willing to pay for it.

The annual indexes are now funded by DDC in part, and they have expressed no willingness to fund our going further back, so the only way we would take this on is if there was a considerable demand for this to warrant our going to the effort.

Uri Schoenbach, Gale and Company: At the beginning of your talk, I note that you mentioned something about accessioning more of the reports from small Government organizetions.

Tietz: Yes. Our input now is from over two hundred agencies of the Government. As I indicated from the statistics, our primary input is still AEC, DOD and NASA; but we were widening our input from other agencies.

And under the Freedom of Information Act, more and more agencies are putting their material into our collection.

Schoenbach: I appreciate that because I have noted that there are quite a number of relatively small organizations such as the Advisory Commission for Intergovernmental Relations and various divisions of various Government agencies as well as committees that have very significent reports . . .

Tietz: . . . and no way to make them available.

Schoenbach: It is their initiative to have to bring them to you, isn't it?

Tietz: No. We have an acquisitions clerk who "rings doorbells."

1970 Census Summary Tapes

PHILIP KUHN
Chief, Data Documentation and Delivery Staff
U. S. Bureau of the Census

The Data Access and Use Laboratory, of which I am a member, was formed about three years ago with the specific goal of making as much data as possible available to as many people as possible in the cheapest or best form we could find. We had a leaning, right from the beginning, toward computer summary tapes. Magnetic tapes may not strike you as being cheap; but when you are talking about the amount of data that we are trying to issue from the 1970 census, and when you talk about the speed with which we hope to deliver it, magnetic tape is the only way that we can hope to succeed.

The Bureau has, since its beginning, been capable of turning out reams and reams of published data, and we felt that that was an area that we could not improve much. So we have turned to the summary tapes, and I think we have a good program.

The summary tapes that we will issue break down into two big categories: those tapes that deal with the complete count information—the information gathered from *every* household in the nation; and the sample information—the information gathered from a 20 percent sample of the households in the nation.

The size of the sample restricts the number of questions that we can ask. One hundred percent of the nation will receive a questionnaire that has some twenty three questions per household. It really is not a very hard thing to answer. It is the 20 percent of the households that get the rest of the questionnaire in which you get another two pages of housing questions and another two pages per person of personal questions. Maybe I should not have said "personal;" at any rate, they are questions about a person. At one time, I sat down and answered the entire questionnaire to see how long it would take me; and at the time, I had a four person household. It took me over an hour. But the Census Bureau seems to feel that the average person will be able to fill this out faster than I was able to.

The first three summary counts will be based on the twenty three questions that every household in the nation answers. The questions are strictly along the lines of age, race, sex, and relationships of members of the household to the head of the household.

The housing questions are a bit broader. They cover rent or value; home ownership; the plumbing in your house, to a minor extent; and a few other questions.

Out of these twenty three questions, we managed to get quite a few cross-tabulations. The first count will be issued for block groups and enumeration districts. A block group is simply a group of city blocks, and we will be reporting by block groups in the areas where we have both the mailout and mail-back census. Roughly sixty to seventy percent of the population will be covered by this mailout-mailback census.

Counts and Tabulations

The enumeration district is our old standard method of census taking in which an enumerator goes around and checks at each household. The questionnaire will have arrived ahead of him for the 100 percent part, but if he comes to a household that is included in the 20 percent sampling, he will fill that part out during the interview. The area he covers is an enumeration district, and that is the smallest area that we will report on the first count.

We will report some 400 data items in some 50 tallies on that count, and this would compare to the one or two data items that you would get in the printed reports; namely, the head counts and housing unit counts for larger areas. You will not see any block group on any enumeration district reports in print.

On the second count, we take the same twenty three questions that have been asked of everyone and turn these into 3500 data items describing "tracts." A tract is a small, census-defined area averaging about four thousand people.

The way we turn twenty three questions into 3500 data items is by taking the second count tally by age, by race, and by sex, where we have two sex categories and three race categories, and 101 individual years of age. So we come up with 606 data items from those three questions. Those are not the only items we arrive at on the second count, however.

This will be reported for every tract in the United States and, outside the tracted areas, for various subdivisions of county and larger sized areas.

The third count which will be reported in the major metropolitan areas of the United States will be issued for every block that we have identified; and for every block, we will have 250 data items—once again, based on these same twenty three questions.

These first three files—the complete count files—will be finished throughout the fall of this year and will be available roughly as follows: the first count, between August and December; the second count, between October and April 1971; and the third count will become available through the first half of 1971.

This schedule of availability will be dependent upon the size of the state. For New York and California, even though we try to give priority to the processing of those states, the reports always come out last. It just takes that much longer to process the states. For Vermont and Wyoming, we can get the reports out quickly.

The last three counts—the fourth, fifth, and sixth, which are based on the sampling questionnaires—take us longer to process, but we still hope to get out the fourth count, between January and October of 1971.

The fourth count will be for tracts—as was the second count—and for county subdivisions. It will have about 13,000 data items per tract. Once we get up the larger areas, the counties, states, etc., 30,000 data items per geographic area are included.

The fifth count will be an innovation for the Bureau. This will be a report by Zip Code area. It will not be an exact report by Zip Code area because we did not record on our basic record tape the Zip Code in which a person lives. We do record the Zip Code in which he works, but we are going to use our geographic reference tools and approximate the number of people living in a certain Zip Code area and report for that approximation.

This fifth count will cover five digit Zip Codes in the major metropolitan areas and three digit Zip Codes outside those areas, and it should be available next July with about 800 data items for each area.

The 800 data items on the fifth count will be approximately the size of the 1960 printed tract report.

The final summary tape will be for large areas: the metropolitan counties, the cities of over 50,000, the Standard Metropolitan Statistical Areas (SMSA), and states. We plan to have, roughly, 150,000 data items of population information and 110,000 items of housing information for each of these areas. These tapes should become available between March and October of 1971.

We are planning geographic tools on tape and microfilm and paper to help people use the summary tapes. We have publications that attempt to make people aware of what we are coming out with and what is needed to work with the summaries. These will be sent on request.

*Chief, Data Documentation and Delivery Staff, U.S. Bureau of the Census

Question and Discussion Period

Question: How large is the whole data base going to be; and what is the cost going to be?

Kuhn: The total for the six counts will be about twenty-one hundred reels. A majority of them will be full reels. We will make reels available on a state-by-state basis for all of the counts except the fifth count, and so that means that we'll fill up as many reels as it takes.

Whatever is left over will go on a partial reel. But most should be full tapes. They will sell for roughly sixty dollars apiece.

Question: Will the summary tape be made available to the depositiory libraries?

Kuhn: Well, we have made some unfortunate remarks about summary tape depository libraries. We had hoped, at one time, to recognize a limited number of libraries around the country and offer them a very few free tapes. But it looks as though that's going to go by the board. We'll try to recognize many more libraries and offer them the technical backup materials rather than any of the summary tapes.

Question: What do you mean by technical backup?

Kuhn: The documentation for the tapes, the geographic references for the state in which the library is located, and things of that nature.

Question: You also said earlier in your talk that you can improve on the previous record of publication. Does this mean that the usual publications will still appear in approximately the same form as they were before?

Kuhn: The publications are being changed somewhat for the change in the question format, but essentially, you'll get the same publications on about the same time schedule. I believe that there are about a third more pages this time than there were in 1960.

Elsa Freeman, Dept. of Housing and Urban Development: My husband is working on redesigning all the publications and the tables, so I'm somewhat familiar with them. I think they'll be essentially the same *kind* of information, but it's certainly going to be completely reformatted.

Arthur Hamlin, Temple University: The tapes as a whole cost about a hundred and twenty-five thousand dollars, roughly, according to your figures. What arrangements are made for the use of these, since very few institutions will buy the complete set? Will there be facilities in Washington for research people to come and get the information through the use of publicly-owned tapes?

Kuhn: We don't have any such plans ourselves. We are recognizing a group which we call summary tape processing centers. We're not giving them any formal backing or anything of that nature. The only thing we do is to publish a list of people that plan to purchase summary tapes, with the tapes that they plan to purchase, and the type of service that they'll perform on those tapes; and we've had a few universities ask for recognition. I don't remember any libraries offhand, but quite a few private outfits and one or two state governments.

Question: Well, this is turning this over to the commercial people, again, now, isn't it?

Kuhn: Well, in a sense, you might be better off with the commercial people than with the Bureau. You'll always be able to come to the Bureau for a special tabulation, but the experience with the special tabulations that I worked with shows that, if it's something from the summary tapes, it should be cheaper to go to a private group that is set up to work on the summary tapes rather than get in line at the Bureau and pay the price that we'd have to charge you.

There are groups that plan to set themselves up to service academicians and, I would assume, librarians; but we don't know too much about their plans yet.

Comment: I don't think many librarians are going to use the tapes, but they're going to want the tapes available for the people they serve. I don't know how it strikes the rest of you, but it seems to me very strange that a vast body of knowledge like this should be assembled by the US Government and not made available for use in some public institution; but turned over to, what I gather to be, any private individual who thinks he can invest a hundred and twenty-five thousand dollars and make two-hundred and fifty-thousand out of it at our expense.

It isn't libraries I'm speaking of; I'm speaking of people we serve.

Kuhn: Well, the point on the summary tapes is that this is the cheapest way that the Bureau can make them generally available to people.

It's just impossible, strictly on economic terms, for us to print all of this data, so we're sending them out to anyone who can purchase them. And for anyone who's interested in the nation as a whole, for all summary reels, that is, a hundred and twenty-thousand dollars, roughly, will be the cost. But for anyone who's interested in one particular state, the most tapes he would have to buy would be—as in California, for example—120 tapes.

We could have just come out with the printed reports and let people come to us for special tabulations which they can still do, but which would have been much more expensive than $60 per reel.

Question: How about the programming for those tapes? That should be a considerable expense, added to the hundred and twenty-thousand dollars, I would think.

Kuhn: Yes, it will. Unfortunately we can't provide a subsidy for the tapes or the program. Even if you wanted to work from the printed reports, there would be quite a bit of money spent just keypunching the data off the printed reports to put it into a computer to use. There's no way around spending a lot of money to use the census data.

John Humphry, New York State Library: You mentioned the possibility of getting at least preliminary information on population between, say, January and April of '71. Would this figure, then, be a firm figure, or would this be subject to correction?

The reason we bring it up is that many aid formulas that would benefit libraries will be based on population estimates and firm figures. We wonder whether this information on population will be subject to a further review beyond that period of January to April of 1971.

Kuhn: Well, essentially, our figures are always subject to review; but the figures that we come out with from August to December of 1970 will be, for all intents and purposes, final.

We have to provide the President with official state figures by November 1970; and those figures will agree with the first count figures for the states. If we find errors, we'll try to correct them. Once any given count is finalized, we won't change those numbers; but one of the reasons we don't start issuing until August is that we'll feel pretty sure, by then.

Humphry: I hope you can get New York State's out earlier thn some of the other states.

Kuhn: Well, I can pretty well assure you that New York's first count will be about December. This will be the last of the first count tapes.

Humphry: You see, we're being pressured constantly by those who have the responsibility to compute the aid formulas. The sooner that you have a firm figure for the 1970 census, the sooner we can begin to compute new aid and grants; and there's a big stake in it for the future and the planning.

Kuhn: If you just want a headcount for places and counties and so on, you might be able to get the advanced report ahead of the first count; but it would probably come about the same time as the first count. They would certainly be cheaper than the first count though; and if that's all you want, you could use it.

Humphry: We would certainly need it by counties. Would this be, perhaps, the middle of this year?

Kuhn: I think for New York, the advanced report probably wouldn't be much before November or December.

The problem is that we start processing New York and California as soon as we can and give them priority, but they are so vast that we still do not finish them until the last of the states.

Humphry: Even basic data such as a per capita count?

Kuhn: Well, there is one other possibility, but you stressed, I think, *final* counts. You can get the field counts (preliminary counts), from the field headquarters this summer. Your Congressman will no doubt get them, but I don't know if you'd be able to get them on a county-by-county basis.

National Referral Center For Science And Technology

MARVIN W. MCFARLAND
Chief, Science and Technology Division, Reference Department
Library of Congress

The question most frequently asked about the National Referral Center is: "Are you still around?" I do not know where the rumor of our death came from, but it is like the rumor about Mark Twain's death; it is greatly exaggerated.

There is something, though, for us to learn in considering information services at a meeting like this in the history of the National Referral Center. I think there is a lesson about early over-enthusiasm—early expectation of great things that take a long time and a great deal of money to develop to a point where they can be truly serviceable.

You heard Henry Dubester say, yesterday, that the Office of Science Information Service of the National Science Foundation persists in the attitude that its money is essentially "seed" money, and that, within a reasonable and, hopefully, short period of time, the services that they seed will bear fruit and will sustain themselves.

Well, it is difficult for me to see how a service, which is a free service, could be expected to sustain itself in a three year developmental period. This was our experience, and there was a threat, at one time several years ago, that the Referral Center would go under.

Fortunately, we had convinced ourselves, at least, that we were sufficiently successful to convince the Librarian of Congress to "take the bull by the horns" and ask Congress to perpetuate this activity in the Library of Congress as an adjunct to the Science and Technology Division.

It was a touch-and-go sort of thing. Congress was aware, of course, that this service had been instituted and understood also that it was sustained by the National Science Foundation.

We were fortunate. The Librarian was successful. We got the money for ten permanent positions in the Library of Congress, and this is what has made the continued effort possible.

Now, what is the National Referral Center? What does it do?

The guidelines for this type of service were laid down essentially by the National Science Foundation, and we have attempted to continue along those lines with little change.

The first purpose was to establish an inventory of all pertinent, usable, viable information resources in the United States; and then to give an information service—a referral or reference service—free to anyone who wanted information.

Where can I go to get information about this? The yellow pages in the telephone directory is the simile we frequently have used. This is a long and difficult process. First, it is necessary to identify these resources; second it is necessary to get an adequate description of them—to get them compiled in a sufficiently codified form so that the information can be accessed and readily upgraded. The third thing was, periodically, to publish specialized or generalized directories of information resources. Finally, the fourth purpose was to give the National Science Foundation statistical

reports—analytical reports—that might shed some light upon the total information network, seen or unseen, in the United States.

Directories and Automation

Very early in the game, of course—we got $500,000 or so to start out with—NSF wanted products—all products. Well, we came out, I think very prematurely, with a directory in book form which purported to cover the information resources in the United States of the physical, biological and engineering sciences. It had 1100 entries. Obviously this is not a directory of the information resources in those very broad—practically total—fields. Remarkably, this publication has been reprinted four times at GPO and continues to sell at almost the rate that it sold after the initial buying.

I have no explanation for this, except that I think directories are very popular. I think you could sell as much of almost anything. The next directory that came out had a similar fate, and it purported to cover the social sciences.

At the present time, we are in the process—after the passage of more years than we like to think about—of revising, republishing and updating those original directories.

In order to do that and to do it in a way that is economical, we have had to resort to a computer. More than that, we have had the interesting experience of tying our automation effort in the Referral Center into the broader effort of the Library; and these directories, as they come off in the next few months, will have utilized in their compilation the MARC II format which was developed, not for this kind of thing, but for bibliographic records; and we will have used the Library's own 360 computer system. We will have used also—I think it is among the first attempts at such a publication, at least a publication of the Library of Congress—the Linotron equipment of the GPO.

Now, doing all this has put us back, as far as scheduling is concerned, but I think that the bugs have finally been cleared up and that we will be able to roll within the next few months with the first of the revised records.

We must again, however, recognize the support, in this case, of the National Science Foundation. When they withdrew their funds some years ago, they said, "we cannot support you any more as an operation, but we will be very happy to buy services from you."

Well, when we decided that we would go to mechanization to produce these directories, OSIS was quite interested and agreed to a two-year program costing about a hundred and sixty thousand dollars to support the actual development of the mechanized system.

We get a product out of this; we get the directories. But the purpose of the National Science Foundation was to sustain us in our effort to get from a very cumbersome, self-defeating manual system to a much more flexible, much more usable, and much more manageable machine-assisted operation.

The Referral Center is a function, as we have organized it. It is an integral part of the operations of the Science and Technology Division. We have two or three (depending upon the volume of business) reference librarians—we call them "referral specialists"—answering referral inquiries. We have another group of people in our publications unit when

we are working on the actual compilation of a directory that are, at that particular time, wearing an NRC label. But there is not a room, or a special group of people, that is absolutely and solely the NRC. This was the only economical way we could really continue to go on at all. The similarities between reference and referral work are so great that it seems to me compelling to have them performed by the same type of individual in the same organizational structure.

We have published five directories to date: physical/biological/engineering sciences; social sciences; water; Federal Government; and general toxicology. We are coming out in a few days with one that we are doing for Dr. Brady's COSATI Panel on Information Analysis Centers.

We have now developed a method—and that is all this referral effort is. The only thing that distinguishes it from reference work, generally, is the concentrated effort and the application of system to the amassing of information about information resources.

Everybody does something like this all the time. Every library gives referral services—every information service uses referral services. If I do not have it, and I know somebody that has, I send the user there.

NRC is an attempt to compile a large data base of a significant size and manipulate it for a variety of purposes. I think the technique has succeeded, and believe we can apply it to the needs of other government agencies as they come along.

Question and Discussion Period

Rowena Swanson, Air Force: Does Mr. McFarland have an approximate count on, first, the number of information analysis centers in that report, and second, how many scitech entries do you have in the directories?

McFarland: A hundred and twenty information analysis centers I think. It is a very small directory. In the first volume, which will be physical and engineering, there will be approximately three thousand. The social sciences, I have really no feeling for. That was a joint effort in the first instance of the Library with an outside group, and it will be little bit more difficult.

The next one to come out, however, will be biology. These things are being done concurrently. We are making selections all the time for the next volume in the next field. We already know that biology will be at least equal in size to the physical and engineering directory.

Federal Information Analysis Centers

EDWARD L. BRADY
Associate Director for Information Programs
National Bureau of Standards

I am here today as a missionary for the concept of the information analysis center. I believe firmly in the expressions in the famous Weinberg report about the importance of the information analysis center.

You may recall that the Weinberg report says that the members of the committee view the specialized information center as a major key to the rationalization of the scientific and technical information system of the country. The report contains a good deal of philosophy about how the information analysis center should be organized and staffed and various exhortations to the technical community of the United States to participate in these kinds of activities and to give them increased status and professional recognition.

Now, to be sure that we are talking about the same kinds of activities, I want to define the concept of the information analysis center. I have been told by Alvin Weinberg that the report received a rather negative reaction from librarians, including the concept of the information analysis center.

The information analysis center, as we view it within the COSATI Panel is a group of people of mixed specialties—some subject matter specialists; some information processing specialists, who gather together the world's supply of information relevant to a particular area (which they define together with their sponsors). They index this information and store it, but, still, it is not an information analysis center.

The essential feature of the information analysis center is that, after this processing, the information contained in the information storehouse is converted to new intellectual products. These may be critical reviews of the state of knowledge in a particular area; they may be compilations of critically evaluated data (this is what our network of the National Standard Reference Data System consists of); they may be recommendations to the technical community about action that needs to be taken; or they may be analyses of management problems; or solutions to specific problems that a sponsoring agency may have posed to the center.

Now, the essential feature about these centers is this intellectual evaluation step: the creation of new knowledge, a function which can only be done adequately by a specialist in the field with which the center is concerned.

Information analysis centers in recent years have been attracting a good deal of attention, and their numbers have increased rapidly. However, I want to point out that there is nothing new about the concept of the information analysis center, and I often use a photograph of Stonehenge to indicate the antiquity of such activities.

This antiquity really indicates the strength of the information analysis center. It produces the kinds of intellectual products that have been demonstrated, over thousands of years of knowledge of science and technology, to be useful.

The new feature about the information analysis center that is coming to the fore is that it is being recognized by the managers of R&D programs as a

relatively efficient contribution to the solution of the problems that they face. Of course, everybody here is familiar with the great increase in the quantity of information that is being produced, and with the decreasing attention that the individual working at the laboratory bench seems to be paying to the collection of literature. Few individual scientists and engineers really are familiar with the literature in their field, or even are knowledgeable about the material which is relevant to their own specialty, even though, of course, most of them claim that they know everything that is worth knowing and everything worthwhile that is going on in their field.

An information analysis center is useful, not just in the fields of physical science and technology, which I have primarily been talking about and which we concentrate on in the National Bureau of Standards, but in other areas of knowledge as well.

. The directory that Mr. McFarland referred to previously, and which is now being revised, has been on sale at the Clearinghouse for Federal Scientific and Technical Information for three dollars. The new edition, as you just heard, will be there in a very short time in case anyone does not have the first edition. I hope you all have the earlier edition already anyhow. But in this directory, perhaps half of the entries are for what might be called physical science and technology. The others are concerned with biological and medical sciences, with education, and with social sciences. This only lists the Federally supported information analysis centers. The privately sponsored ones are not in here.

The important thing is that the Federal program manager is recognizing that the information analysis center can make a very good contribution. Some of these centers are discipline oriented; some of them are mission oriented; i.e., they have a mission orientation in the sense that they concentrate on the activities of collecting information related to a particular set of problems. For example, the Atomic Energy Commission supports an information analysis center on isotopes, and all of the kinds of information related to the production and application of isotopes is gathered there.

Another kind of information analysis center is the one that collects raw observational data, usually from systems that are much too large to be contained in a laboratory. An example is oceanographic data. Another is data related to the upper atmosphere.

All of these centers have these characteristics in common: They collect information in a computer or, in some cases, with filing cards in cabinets; field (and in some cases, getting access to sources of information in some countries becomes a very difficult problem), they index this material in some detailed fashion—much more detailed than the generalized indexing services of *Chemical Abstracts* or *Engineering Index;* they store this information in a computer or, in some cases, with filing cards in cabinets; they extract the relevant information that is required and then, through intellectual analysis and evaluation, produce a condensed package of evaluated information. They are regarded as a part of the R&D process directly, and the participants in these centers consider themselves as contributors to professional progress in their own field.

This is what makes it possible to get some of the most talented and most highly regarded scientists working in these activities. We started out

in the Standard Reference Data Program—a network of information analysis centers—with the thought that it might be rather difficult to persuade some of the leaders of the American physics and chemistry communities to participate in these kinds of activities. Instead, we have had far more proposals for centers and far more people wanting to work in a center to produce a critical review than we have been able to support with the obviously inadequate funds that we have been able to get.

Most of the centers within the Federal Government are funded by the large program agencies. The Atomic Energy Commission, for example, has twenty or more information analysis centers, all concerned with one aspect or another of the general field of atomic energy. I have mentioned the one on isotopes. They have others in such areas as atomic and molecular processes; nuclear data; fundamental particle data; radiation chemistry; and a whole assortment of others.

The National Standard Reference Data System, which is coordinated and partially funded by the National Bureau of Standards, concentrates on the area of critical evaluation of data on the properties of substances.

We have centers on such subjects as thermodynamic properties, electron interaction with atoms, transition probabilities between atomic energy levels, and many others.

Now, I mentioned that these activities are not confined to science and technology. The Office of Education suports a network of nineteen ERIC Centers. E-R-I-C stands for Educational Resources Information Center. These are concerned with selected aspects of the field of education.

All of these centers which actually carry out this intellectual evaluation function, are listed in this directory prepared by our COSATI Panel. The differences betwen the first edition of this directory and the new edition really are quite small. There have been several deletions and about fifteen additions to the list since 1968.

The COSATI Panel on Information Analysis Centers was established three years ago to study the problems associated with information analysis centers in the framework of the Federal Government and to make recommendations to COSATI and to the member agencies regarding funding, patterns of distribution of the products, staffing, and policies connected with sale of the output.

I think we have made progress, and we have made a number of recommendations; but most of the problems of operating information analysis centers still remain. Letting the user community know what resources are available in these centers and what kinds of services they can take advantage of are very serious problems. And this is one of the important reasons for my missionary activity.

In talking with groups like this, I want to let everyone know as much as possible about the existence of these centers and to spread the word that they are in business to provide a variety of services to all who need them. I hope, especially, that librarians get very familiar with all of these activities and in order to help the people that they—the librarians—serve, to take advantage of what these centers have to offer.

Question and Discussion period

Question: What do you see as the relationship between the information analysis center and the library?

Brady: Every information analysis center has to have a library, and everyone that I know of maintains its own library. Most of them work very closely with the libraries in the institutions in which they are located. They use the services of the library for the initial searching of the literature—the initial cut at the relevant material. Almost all of the centers located at the National Bureau of Standards, for example, receive from the library, a listing of material. They use the resources of the library for securing both abstracts and full texts of the material that they want to examine; and then they consider that their analysis and evaluation functions take over where the library functions stop in these operations.

Question: I would like to ask Dr. Brady, who are the qualified users?

Brady: The availability of the services from each center is identified in the directory.

Question: Must you be a member of an agency staff?

Brady: No. In most cases, the services are available to all comers—anybody who is interested in a subject gets access to the services that are provided.

Special services may consist of bibliographic searches or even, in some cases, the actual solutions to specific problems that are posed. In many cases, of course, if the preparation of a report answering a problem is going to take two or three man months, the center will charge for that service—if it is for an individual. Most of them like to prepare things that they think are of broad interest to a large number of people.

Environmental Quality Information Programs in The Federal Government

HENRY M. KISSMAN
Director, Science and Information Facility
Food and Drug Administration

I would like to present to you a preliminary report on some plans for a new survey of information activities.

The Office of Science and Technology, Executive Office of the President, has formed an Ad Hoc Committee to Study Environmental Quality Information Programs in the Federal Government. This Committee—which we have called the SEQUIP Committee—will, as a first step, look at information programs which support, wholly or in part, missions connected with environmental pollution. This means programs concerned with pollution of air, water, food, soil and urban living space; by agricultural and by solid and liquid wastes. The Committee will also concern itself with generalized information programs such as clearinghouses or national libraries which serve the environmental pollution field in a substantial manner.

For this project, the term "information program" has been defined rather loosely as any organization whose activities have a direct relevance to environmental pollution, and that also: (1) has substantial amounts of processed scientific and technical information or data relevant to some segments of the environmental pollution field; (2) processes information or data; (3) has, as a principal mission, the providing of services; and (4) is Federally operated or Federally supported for activities carried out in lieu of in-house operations in a government organization. Thus, the Commitee will be looking at information centers, information analysis centers, clearinghouses, document centers, etc. with substantial involvement in the environmental pollution field.

The Present View

I am sure it is obvious to all of you that the fight for a beter environment, or the fight against irreversible destruction of the existing environment—or whatever else you might want to label it—is rapidly becoming the crusade of the '70's. Programs at all levels of government and in the private sector are being directed towards solving various aspects of a tremendously complex set of interlocking problems. It is a danger that this widespread concern of the citizen, the legislator and the government administrator might bring about something that I like to call Leacock's syndrome, after the Canadian author who wrote about the "knight who jumped on his horse and rode off in all directions". The problems are real enough, and the general concern is obviously justified and probably overdue, but this concern must be translated into rational action. The first step for such action should be a taking stock and an understanding of what we have and what we are doing right now. The question is: (and I am here paraphrasing some comments which Col. Aines made to our Committee last week) Can the tremendous information system now existing in the Federal agencies be used to provide the information which will be required in solving the various environmental quality problems? Or do we need a new, dedicated

information system which has its own roots, its own programs, its own sense of purpose? Our intuition tells us—no! We cannot create large systems every time we want to solve a new set of complex problems. There is just not enough money around for such an approach. How much adaptation of our present store of knowledge and our present methods of doing things will be necessary to take care of the special problems presented by these activities? Clearly, we will need systems which will make it possible for all legitimate claimants to obtain the information they will need for a variety of objectives. The problem is going to be particularly difficult because many people, who are not now in the normal channels for obtaining scientific and technical information are suddenly becoming involved. Administrators in cities, states and other organizations, who normally worry only about budget information, will now need substantive technical information and data of all kinds, program information as well as budgetary and cost information, in order to make the decisions which will be required of them. They will have to know where to go for this information and they should not have to go to hundreds of different places in order to get it.

The SEQUIP Committee will *not* be concerned with what is actually being done in the areas of pollution control, abatement or monitoring. Rather, it will try to tell the government through OST about what is being done in the information programs that now support such activities. I do not have to sell this audience on the concept that information and data handling activities are of fundamental importance to all major scientific and engineering enterprises. Proper management of scientific information is not necessarily the first step in such ventures, but without such information management, these ventures are not going to get very far.

The SEQUIP Committee is staffed with people from various government departments and agencies. The Office of Science and Technology and the Departmental representatives on COSATI were instrumental in getting this group together. The first meeting was March 6, 1970. The present roster is as follows:

Thomas Austin, National Oceanographic Data Center
Clifford A. Bachrach, National Library of Medicine
Richard A. Carpenter, Library of Congress
Joseph Coburn, U.S. Coast Guard, Department of Transportation.
Robert G. Coon, Food and Drug Administration
Lowgan O. Cowgill, Department of the Interior
John B. Forbes, Department of Agriculture
David Freeman, National Bureau of Standards
Robert R. Freeman, Environmental Science Service Administration
Joseph G. Gratton, Atomic Energy Commission
Henry M. Kissman, Food and Drug Administration
William Lehr, U.S. Coast Guard, Department of Transportation
Herman W. Miles, Department of Defense
John Redmond, Surgeon General's Office,
Department of the Army
Victor Searle, Environmental Health Service, HEW
George Wright, Department of Housing and Urban Development

These individuals are not official representatives of their organizations, but they will be looking at their own organizations and trying to identify—for the Committee—information programs that should be part of the study.

The Committee has one over-all task—the preparation of a definitive report. This document will have various facets. First of all, the report should function as a directory of federal information programs in the environmental pollution field; it should name key people in these programs. Secondly, the report should provide a description of what these organizations do and which agencies or activities they support. Thirdly, the report should bring out problem areas, as they are seen by the information programs themselves, or as they become evident to the Committee during the study. Problems might be due to overtapping activities, insufficient funding or staffing, tack of adequate information or data management support for certain environmental pollution activities, etc. The report should also describe how the various information programs interact, and it should point out how greater interaction could be brought about. Finally, the report should make substantive recommendations to OST—perhaps on improvements or augmentations of existing activities; initiation of new programs where such programs are tacking; and on subsequent studies which OST or other organizations should carry out.

In order to obtain the input on which to base its final report, the Committee will request information in the form of questionnaires, checklists or descriptive reports from the various information programs that were identified as relevant to the study. To facilitate this information transfer process and to discuss its requirements with these information programs, the Committee will hold a *SEQUIP Workshop* here in Washington during the latter part of May. The National Academy of Sciences has graciously made its facilities available for this event, and some of the members ot the Academy will take part in the activities.

The Workshop will bring together the managers or other representatives of the information programs in the study. The Committee will also invite subject experts from various segments of the environmental pollution field who will help in the deliberations of the Workshop and who will also provide guidance during the preparation of the report. The Workshop is expected to have several functions: (1) it should be a forum for the discussion of the reports which the Committee expects to receive from the information programs; (2) it should identify and report on problem areas: (3) it should make certain that all relevant programs have indeed been recognized; and (4) it should identify and aid in the exchange of operational techniques (e.g., thesauri, software packages, etc.) which might be of common interest. Thus, while the Committee expects to benefit from the Workshop by obtaining information which will be essential for its final report, the participants should also benefit from an exchange of information and experiences with colleagues who are working in similar areas and who may be faced with similar problems. It is hoped that, in some areas, the Workshop will turn out to be the starting point for information networks in the environmental pollution field.

As Cotonel Aines put it, "what we would like to see coming out of this Workshop is a number of sharp, incisive comments from the information

organizations on the opportunities, costs, dangers, possibilities for exploitation of existing files, and some answers to the question of whether this task can be accomplished better by a decentralized effort built with existing parts, or by organizing a new centralized activity".

After the Workshop, the SEQUIP Committee will begin work on the final report. It is expected that a preliminary version of this report will be circulated to the information programs for comments. These comments can then be incorporated in the final report. With the Workshop taking place in May, we hope that it will be possible to have a preliminary report ready for comments by the end of the fiscal year. The final report should then be ready in September.

We hope that this study will be a useful contribution that will answer some important and timely questions and perhaps lay the foundation for further action.

Research Collections in Federal Libraries

ELSA S. FREEMAN
Director of the Library, Dept. of Housing and Urban Development,
FLC Task Force on Acquisitions

Fellow Inputers and Outputters: Yesterday Neal Harlow berated the Government for overemphasis on science and technology; Richard Chapin asked about the six million volumes held by Federal libraries other than the Mighty Three.

I bring you glad tidings of a publication which demonstrates that the Government is not only responsive to, but has anticipated your needs. But first I would like to state that I share Neal Harlow's concern about the technology syndrome.

"The Mythos of the Electronic Revolution" is a provocative article in the Spring issue of *American Scholar*[1]. The authors mention the "secular religiosity that surfaces whenever the name of technology is invoked"; how today, the electrical sublime has superseded the mechanical sublime of the turn of the century. They deplore how science and technology are viewed by many as vehicles of general, evangelical progress—moral as well as material.

We should not add to that myth. Though part of the study I've been asked to talk about was produced by a computer, the mechanics remained the medium, not the message.

Genesis of the Study

One of the charter groups of the Federal Library Committee was the Task Force on The Acquisition of Library Materials and Correlation of Federal Library Resources. Bill Welsh, esteemed Director of the Processing Department at the Library of Congress has chaired this Task Force from its inception.

At the outset we recognized that, to determine where we should go, we first needed to know where we were. We were concerned with Federal libraries everywhere. What were their acquisition and retention policies? What are their holdings? Are they adequate for the Government's needs and its national and international responsibilities? What subject areas of interest to the Government and the Nation were not covered? What were and should be the relationships of these resources with other information communities in and out of the Federal government? Which library should be assigned responsibility to collect and provide service in a subject field? What is needed toward the building of an integrated network of resources?

Like all such high aspiring task forces, none of us had the time to devote to implementing our high mindedness. Fortunately we obtained financing from the Office of Education for a contract with the George Washington University Biological Sciences Communication Project. The project supervisor was Mildred Benton, with David Weeks responsible for the ADP application. This group was selected because Mildred Benton and her staff have such expert knowledge of Federal libraries. The Task Force worked closely with the contractor.

As a first step we directed them to study the major subject holdings of Federal libraries that maintained extensive or unique collections of research materials. Therefore, the concentration was on the special and academic library and that singular institution called the Library of Congress. I have a draft of the Task Force's completed study here and some sample tables.[2] It is a guide to the holdings of Federal research libraries.

Methodology

Questionnaires were sent to about 600 research libraries out of the approximately 1950 Federal libraries. Four hundred questionnaires were returned. Of these, 188 were deemed eligible for inclusion. Visits were made to many. Criteria for eligibility were based on questionnaire responses from libraries reporting Exhaustive, Research or Unique collections.

An *Exhaustive* (or Comprehensive) collection is briefly defined as having everything recorded on the subject in all editions and languages. (The actual definitions provided in the questionnaire are more detailed and illustrative.) We recognize that this blissful perfection was more often intended by a library than attained.

A *Research* collection includes all the basic reference tools, all important works both current and retrospective, and ample selection of less important current works.

A *Unique* collection is one without like or equal. The materials may be distinguished for unusualness or excellence but not necessarily for size.

Research materials are interpreted as all recorded information, regardless of format and include monographs (trade and all others), documents, reports, serials, maps, records, tapes, films, slides, microforms, pictures, manuscripts, and what have you. The study did not include strictly archival collections as, generally, in the Government Executive agencies, those are housed separately from the library.

Availability to researchers was another important criterion. Security classified materials are therefore excluded.

In order to have a systematic, standardized subject terminology and to encompass all knowledge, we used the Dewey Decimal Classification Third Summary. (The Library of Congress Classification system is not adapted easily for this purpose.) The Dewey Classification is merely the skeleton on which to hang all subject fields, make comparisons possible and provide uniformity—we thought. But like all skeletons, it sometimes rattled. More details on the methodology—its strengths and skeletons—are discussed in the published study.

The Published Study

The main aspects of the report are: a statement of objectives; a discussion of methodology; an analysis of findings; presentation of the hierarchically arranged tables; subject and geographic indices; appendices that include the questionnaire. The report is both narrative and tabular.

The tables are computer generated, which should make updating comparatively easy. Data items are expressed in abbreviated natural language. Only the names of libraries are in code.

We expect that this will be merely the first edition. There will be disquiet and even howls from librarians and others because of errors of omission

and commission. Moreover, library collections are dynamic—changing constantly. Collection emphasis, policies, and agency missions also fluctuate.

The heart of the information in the study is contained in tables that show major resources in Federal Libraries by:

Table 1- Code number for libraries included and an indication of availability of collections.

Table 2- Resources listed by library

Table 3-Resources listed by zip code

Table 4-Resources listed by subject classification

Table 5-Bibliographic aids and card indexes maintained

Table 6-Special collections

Table 7-Unique collections

Some Findings

Among the illuminating and unexpected findings was that the strongest subject class was Geography, History, Biography. The Pure Sciences were a close second. The weakest was Religion—no comment. If one omits the vast collections at the Library of Congress, then the largest class was the Social Sciences with Literature next to the last, and Religion still trailing. Now you know why government prose is so turgid. On individual subjects, mathematics is the one most frequently reported, with 29 locations (out of 188); after that, in descending order: physics, statistical method, statistics of population, economics, public finance, U.S. statutes and cases, public administration.

Because of the amount of work involved in having to supply dates of coverage, the three national libraries—Library of Congress, National Agricultural Library, National Library of Medicine were excused. Nevertheless, the other rare book dates reported are interesting: the year 1220-by the Justice Dept.; 1452-Naval Academy; 1496-West Point; 1501-Smithsonian; 1536-Main Navy.

When holdings of Exhaustive collections are reported, 432 subjects were so rated. The libraries reporting the largest number of Exhaustive classes were Library of Congress, National Library of Medicine, Smithsonian, National Agricultural Library, State, Transportation, Army, Merchant Marine Academy, Navy, and Geological Survey.

One hundred and one of the 188 locations have foreign language material. Even exclusive of the Library of Congress, about all languages are included; for example, the Defense Language School at Monterey claims all but "dialects."

As expected, the largest number of libraries with research collections was in the Washington, D.C. area, with 88, followed by California, with 13, and Virginia, with 9. The East Coast has the greatest concentration of Federal libraries with major subject collections.

You might be interested in a sampling of the Unique Collections, apart from the national libraries, with which most of us are familiar. Some unusual materials reported are:

Labor Organization Newspapers

Economic Mobilization Programs

Magnetic Observations at Permanent Stations

List of U.S. Patent Numbers
Drawings of Ships and Boats
Epitaphs
Civil War Maps and Manuscripts

Availability and Some Cautions

The published study will be titled "A Study of Resources and Major Subject Holdings Available in U.S. Federal Libraries" and will be issued with a grant from the Office of Education. It will consist of 670 pages of narrative and tables. Publication will occur in the Fall with free distribution to the 3100 locations on the FLC mailing list. Other copies will be available free from FLC at the Library of Congress until the supply is exhausted.

Users of the volume should keep these points in mind:

1. No library collections or policies are static—all are subject to change.

2. Comparisons of libraries may be inconclusive since, despite the best efforts and skills of the contractor, data supplied are more complete for some libraries than for others.

3. Interpretation of what was wanted, and of the terms, varied considerably.

The major recommendation of both the Task Force and the contractor relating to method was the need for developing standards for measuring and evaluating the status and availability of collections. For example, what is meant by what we discovered to be imprecise terms such as "Exhaustive" and "Research"? What is the quality of service rendered by a library to make its collections more useable?

Significance of the Study

This compilation will:

1. Constitute a tool, not previously available, covering significant holdings of Federal libraries throughout the country. These, collectively, represent one of the great intellectual resources of our nation.

2. Indicate gaps that exist in this information resource.

3. Indicate degree of availability to scholars and to the public of each collection.

4. Indicate library resource capability for any agency which may consider assuming government-wide information responsibilities in a given subject area.

5. Make possible the formulation of recommendations for a more efficient and logical coordination of acquisition and development policies.

6. Serve, if considered desirable, as a basis for establishing a coordinated network of Federal libraries or of Federal libraries with the private sector, or a single library with others in its subject field, such as those in medicine and agriculture.

We shall welcome, and undoubtedly shall receive, criticism, suggestions, and even the afore-mentioned howls about the report. Remember, it is the first attempt at a comprehensive survey of these significant holdings.

[1]Carey, James W. and Quirk, John J. "The Mythos of the Electronic Revolution" (Part 1), *American Scholar*, v. 39, no. 2, Spring 1970.

[2]George Washington University Biological Sciences Communication Project. *A Study of Resources and Major Subject Holdings Available in U.S. Federal Libraries Maintaining Extensive or Unique Collections of Research Materials. Final Report.* Washington, D.C., Sept. 1970 USOE Bureau of Research Project No. 8-D310, 670 pages.

Agricultural Sciences Information Network

WALLACE C. OLSEN
Research Associate, EDUCOM, and Network Project Director

This project began under the previous administration at the National Agricultural Library, when Foster Mohrhardt was Director. It began with a grant to EDUCOM, with Joseph Becker as project director, and it has evolved in three years into something quite different from what was originally conceived.

The original concept was to introduce a telecommunications system into the landgrant institutions in connection with the National Agricultural Library or with the Department of Agriculture.

The primary objective of the system was "to strengthen information communication and exchange among the libraries of the landgrant institutions and NAL."

The turnaround in the telecommunications emphasis came during the course of the project. The final recommendations do not stress the telecommunications, although the long range view is of the ultimate extensive use of such methods tor all types of information needs including, as an example, data transmission with the computer as a utility.

The implied view is of a rather tight confederation of similar, subject-discipline, research-oriented institutions working toward a common information goal with the Department of Agriculture or the National Agricultural Library taking the leading role. Because this project has been reported to the Biological-Agricultural Subject Subdivision of ACRL at the last two ALA conferences and has been summarized in print in various places, I will not go into details of the plan, but merely give you a status report on where we are.

The EDUCOM research team finished its report in August 1969. It was published and distributed in quantity to landgrant people and within the Department of Agriculture. It is available as a public document from the Clearinghouse for Federal Scientific and Technical Information and also for the same price from the EDUCOM office.

The Components

As we envisioned the plan in EDUCOM, and as we recommend, the network would be constituted of three unequal units—or networks—which could function separately or jointly. In this sense, we have recommended what might be termed a network of networks. These three basic components are:

1. A landgrant library component, including the National Agricultural Library as, perhaps, the organizer and leader.
2. An information analysis center component.
3. A telecommunications component which would serve to speed communication between the institutions, bind them together, and build familiarity and expertise in preparation for a more elaborate system.

The landgrant libraries component is conceived as a cooperate network aimed immediately at improving the facets of interactivity among

the landgrants and between the landgrants and NAL. In other words, it *need not* function with NAL; it can function between the landgrants exclusively if the National Agricultural Library does not become the leader or chooses not to be an integral part of the network.

The activities which are recommended include many of those which you heard discussed at this conference, particularly when you were discussing and throwing bricks at the national libraries. Not the least of these is communications.

The introduction of the information analysis center grew out of the constantly expressed need and desire of agricultural researchers for the types of services which information analysis centers usually provide. These researchers had never heard of an information analysis center, yet they enumerated for us the exact functions that most IAC's try to perform. Therefore, we include them as a major element—a major component. The functions of the IAC's go beyond the services which most landgrant institutions, including the libraries, are usually able to provide.

The report was widely distributed, not only to inform, but also to determine the validity and the appropriateness of what we put in the report; also to test the climate of support and willingness to proceed.

The second major step in the recent past was the two and a half day symposium held in Washington in February 1970. We educated each other a great deal, and we built up a tremendous head of steam which also burned one or two people. Some of it was directed, however, to beneficial purposes. The agricultural administrators and researchers who were invited are greatly excited about the prospects of the network since they see the need as being even greater than what we expressed in the report. They, along with the landgrant librarians, passed a resolution at the end of the symposium which has been directed to the Secretary of Agriculture for his actions and to the President of the National Association of State Universities and Landgrant Colleges for his action. These were transmitted only five weeks ago so we have no report yet on immediate action, although the reactions appear to indicate a willingness and an interest in moving forward.

The plan as a whole, and the resolutions and recommendations of the symposium, involved more than the libraries of the institutions. Therefore, the more inclusive information activities which are under consideration will probably take longer to accomplish than if we were working exclusively with the libraries. We must wait, in this case, for some political action.

The library-oriented recommendations were urged for immediate action. Therefore a Library Networks Interim Task Force has been created by the National Agricultural Library; it met two days ago. By early September, this group anticipates improvements in functions between the landgrant libraries and NAL. We hope that several of the very specific recommendations which were drawn up at the symposium will have been accomplished.

We also expect that we will move rather quickly and rather far down the road on those functions and activities which are more long range than the six months which we have set for ourselves. These actions are jointly being agreed upon by the administration of the National Agricultural Library and the three landgrant librarians who represent the landgrant community on

the Task Force. EDUCOM's role is that of a catalyst or a counselor in network building. We are also attempting to provide day-to-day assistance in the steps that are being taken.

I wish to emphasize that we are not sticking with the letter of the report. The symposium, in its discussion, found flaws in the report. The recommendations, in most cases, follow those of the report. The basic plan of the Agricultural Science Information Network seems realistic and secure.

Coalings—A Presentation of Demands

MARION MILCZEWSKI
Director of Libraries, University of Washington

I don't want to abuse the hospitality of the sponsoring group, but it seems to me that, under the circumstances, I must speak.

All of you know about the mail difficulties. We are here during the Easter season. My colleague from Washington and I traveled a great distance to get here because the program appeared to be interesting and useful and valuable to us.

This morning, I woke up about three o'clock and was bothered about this whole conference because there was a great deal of valuable information coming, and there was very little in the way of feedback except between 2:45 this afternoon and 4 o'clock. I thought: How do I get at this matter? It occurred to me that I had to have a sponsoring body; so I created one. Then the sponsoring body produced a set of demands which I would like to read to you. The sponsoring body is a Coalition of Affected Libraries in the Non-Governmental Sector. The acronym is COALiNGS.

COALINGS makes the following seven non-negotiable demands:

1. That a reply be provided by representatives of COSATI and FLC by 4:00 PM Friday, March 27, 1970; that is, today.

2. That, where the missions of producers of Federal bibliographic information do not now include provisions for responsible sharing of such information directly with non-governmental libraries, those missions be revised in some way to make such sharing effective.

3. That the three national libraries make greater efforts to assemble materials of all kinds, relevant to libraries from all countries, and on all subjects to provide the national availability our user communities want.

4. That the resources of the other specialized Federal libraries be made more available through national listing and cataloging or other effective bibliographic displays. We heard about what efforts are being made in this area, but that's not quite enough for the research libraries.

5. That the three national libraries make greater efforts to catalog the information received by them promptly, that catalog data in printed form be made available to libraries in a timely manner, and that the resources of other Federal libraries, not covered by the three national libraries, be given similar treatment.

6. Lacking the central library agency such as the National Library Commission that has been proposed, COSATI and FLC, jointly, should make greater efforts toward coordination, standardization, and sharing of output with research libraries.

7. COSATI and FLC should arrange for some coordinate relationship with non-Federal research libraries such as, representative membership of non-governmental research libraries on COSATI and FLC and in similar groups, by whatever names they are called, where the research libraries believe representation is required. Such non-governmental members are to be nominated by a joint group representing the ARL, ACRL, SLA, and the American Association of State Libraries.

Finally, COALiNGS also has a responsibility. On their part, members of COALINGS pledge to make renewed effort with the Congress and with the Administration to have enabling legislation passed and budget provision

made to assist the Federal libraries to do their part in the national bibliographic effort, and they will take such local steps as may be needed to be able to use and cooperate with the Federal bibliographic effort most effectively and efficiently for the benefit of the primary beneficiaries, their users.

There needs to be a continuing conversation between the Federal library sector and the research libraries. There ought to be some regular and systematic dissemination of information to the research community, and I hope something will be done to provide it other than our regular press which we now have to depend on. It is obvious to me that we need to continue conferences such as this meeting which has so successfully been put together.

Thank you.

Black Academic Libraries: An Inventory

CASPER LEROY JORDAN
Assistant Professor, Atlanta University School of Library Service

Unless some unforeseen social upheaval occurs, the ten-year period of the sixties will be most vividly remembered in the United States by enduring and quick advances toward racial equality. The Federal government enacted legislation guaranteeing certain basic civil rights and took steps to inaugurate political equality for all citizens regardless of color and race. Of equal importance, the conscience of America generally was aroused to the lasting evils of discrimination and its consequent violations of the moral principles basic to a truly democratic nation.

Now aware of the racial injustice which has so long existed throughout our republic, more and more individuals and organizations are throwing their efforts into a number of activities to close the gap between our professed egalitarian principles and our discriminatory practices. These activities assail abuses along the whole spectrum of rights—from employment practices, housing conditions and consumer services, to voting privileges and equal access to education. The fight for equal educational opportunities demonstrates how advances in any of these areas of social life affect the others. Formerly, major progress toward the goal of free and open access to education has had to wait on legal action in the courts, but now educational opportunities are expanding as the result of wider and more telling use of political power and social pressure. These educational opportunities are themselves necessary before comparable advances can be made in employment opportunities, for in a modern society, education and technological training are the keys which unlock the doors to the preferred occupations. Fair-employment practices will not, by themselves, guarantee admittance to higher occupations. Without open access to education at all levels, to the untutored and unskilled the right to employment without regard to race will largely remain an empty dream.

The salutary effects of increased educational opportunity extend beyond employment and housing and voting. Education also gives renewed strength to the entire movement for equal opportunities. Black college students dramatized this role of education in the 1960's when they began to demonstrate for equal consumer service. Students joined in protests at lunch counters and movie theaters, bringing arrests, jailings, publicity and further demonstrations. These sit-in demonstrations and the enrollment of the first blacks in previously segregated state universities glued the eyes of the world on the colleges that these students attended. Questions were posed. What were these colleges like? What were their standards? What were their needs?

HIGHER EDUCATION

In the past fifty years analysts of American higher education had undertaken to answer these questions. All of these reports in one way or

---

[1]McGrath, Earl. *The Predominantly Negro Colleges and Universities in Transition*, New York, Bureau of Publications, Teachers College, Columbia University, 1965.

another contain many facts about higher education for Negroes. Although the black schools include less than ten per cent of American institutions of higher education, and their enrollments comprise less than five per cent of all college students, these black colleges and universities enroll over half of all Negroes attending the nation's institutions of higher education. Regardless of the speed or extent of racial integration, and in spite of the Riesman-Jencks satire, many of these institutions will continue to be a major avenue to higher education for black youth.

Except at the topmost level of excellence represented by a few celebrated institutions, the Negro institutions run the entire gamut of quality within American higher education.[1] Negro institutions lie all along the line of the American academic procession, instead of forming a separate unitary group at the tail end. Some are exceptionally far forward and others far behind, but beside each of them stands some institution attended predominantly by white students. A not inconsiderable number of these black institutions now struggle along toward the rear of the procession. Some educators conclude that both their students and society at large would be better served if a number of black schools closed their doors. Many observers conclude that the black institutions ought to be preserved and strengthened. Student finances, educational preparation, and growing enrollments argue compellingly for preserving, strengthening, and integrating existing black institutions and against closing them or allowing them to wither on the vine of academe. To keep these institutions in being and to enhance the quality of their programs will require large sums of money. Both the social necessity and humane considerations persuasively demonstrate that obtaining these greatly needed resources is a work to which foundations; government at the local, state, and Federal levels; and individual philanthropists can, with deep satisfaction, dedicate their efforts. As far as disadvantaged blacks and other youth are concerned, the concept of excellence can be realized by taking students where they *are* socially, economically, and educationally, and developing their abilities to the fullest—a task long familiar to the black schools of America.

To retain any validity today, the Hopkins image of higher education as a teacher on one end of a log and a student on the other must include books, journals, microforms and a computer between them. If a library is to be of high quality, college administrators must understand and appreciate its role in accomplishing the objectives of higher education. Faculty members must be familiar also with its collection in their own subject areas, be active in helping to keep the collection current, and assure its effective use. Finally, the financial support of the library must be both adequate and free from frequent and violent fluctuations.

This essay reports on several major features of black academic libraries: collections, operating expenditures, staff, and salaries. The quality of any college library is determined first by the extent and nature of its material and human resources. When its holdings are insufficient, outdated, or inadequately housed; or, when its staff and services are unreliable, unimaginative, or ineffective, the library cannot actively accomplish its functions. The resources and services of black college

libraries run the gamut from poor to excellent, but the curve is skewed toward the lower end.

Black Academic Libraries Survey

Eighty-five black, four-year, degree-conferring institutions were queried in connection with this study. Fifty-one questionnaires were returned. Information about other institutions which did not respond was gathered from other sources. The results were categorized in terms of type of support of the institutions. United Negro College Fund is a group of privately supported, accredited, four-year colleges which have banded together to carry on fund raising jointly. Founded in the 1940's, it is the oldest educational "community fund" extant. The fall of 1968 was taken as the base period for this inventory of black academic libraries. Some institutions furnished information and requested that it be used only in summary form. This confidence was respected.

Statistics, it seems safe to say, are used in surveys of collections more consistently than anything else. If a library says anything at all about collections, it is almost sure to mention its size. There are widely accepted standards for minimum sizes of college libraries, below which, in the judgment of professional organizations or accrediting associations, it is impossible to provide the variety of materials required for adequate service. There is normally a high correlation between the size of a library, its usefulness, and the quality of the institution it serves.

In the 51 institutions reporting their 1968 fall figures there were 92,911 students enrolled on a full time basis. The enrollments ranged from a low of 520 to a high of 8,847. These institutions reported 4,290,915 volumes for the end of the year; the smallest collection was 5,281, and the largest collection reported 575,357. No collection in a black college approaches one million. Eleven (about one-fifth) exceed the 100,000 volume figure. During the year 324,487 volumes were added ranging from 1,021 volumes added at one of the smallest schools to 43,893 volumes added at the college with the largest enrollment. The total number of bound periodicals reported was 235,212, ranging from 288 to 26,451 (this is a very unreliable figure as many libraries did not keep separate data). Per capita figures are often used in surveying collections. There were 46.1 volumes per full-time student on the average in these black college libraries, with 2.5 periodicals per capita. The highest per capita holdings were 142.7 volumes and 13.3 was lowest; 14.4 bound periodicals per capita was the highest reported with a low 0.26

Some comparative figures are available from the U.S. Office of Education. For the academic year 1967-68, 2300 academic libraries reported holding 303,000,000 volumes at the end of the year and 43.3 volumes per student. Twenty-nine of the black libraries in the present study held this number—although the average for the black schools exceeded the 43.3 volumes. During the academic year 22,000,000 volumes were added; less than a half-million were added to black college library collections.

Private and Public

Let us take a look at the privately-supported colleges. Thirty-four reported an enrollment of 46,404—about half of all reported. These enrollments ranged from 551 to 8,847. About half of the volumes in all the reporting libraries were held by these privately supported institutions:

2,494,404—the largest single collection among the black schools is included in this group. Over half of the number of volumes added to collections were added in this category: 170,770 of 324,487. Less than one-third of the bound periodicals reported were on the shelves in privately-supported libraries. The average per capita holdings for privately-supported libraries was 53.7 volumes which exceeds national figures— the range was 13.8 to 142.7 (twenty-one libraries met the national figure). Again the highest and lowest per capita holdings of bound periodicals were found in this group: the highest per capita holdings being 14.4 and the lowest 0.26.

Publicly-supported institutions present another picture. 46,507 students were enrolled in these schools— about half of all students enrolled in black institutions. Enrollments were larger: seventeen returned questionnaires and only one had an enrollment of less than 1000, ranging from 944 to 5,957. One half of the volumes in black libraries were in these schools with collections ranging from 43,346 to 261,944. Less than half of the total volumes added to black libraries were acquired by publicly-supported schools (153,717 of the 324,487 total). The range of acquisitions was a low 3,161 and a high of 17,403. 139,771 of the 235,212 bound periodicals reported were held by these libraries; ranging from 1,970 to 26,451. There was an average of 37.1 volumes per capita in this group with a range of 15.5 to 72.3. Eight exceeded the national figure. On the whole privately-supported colleges reporting were doing better than their publicly-supported opposite numbers.

Members of the United Negro College Fund (UNCF) are considered the "elite" of black institutions. Thirty-four are included in this study—some have been added and one has resigned from the group since the study. Not all UNCF members answered the questionnaire, and some figures were gathered from other sources. 33,708 students were enrolled in UNCF colleges—about one-third of all enrollment in black institutions. Enrollments ranged from 481 to 6,407. About three-sevenths of all the collections were held by UNCF colleges (1,734,767 of 4,290, 915). Over half of the books added to the group studied were placed in UNCF libraries (177,851 of 324,487). 105,513 of the 235,212 bound periodicals reported were held by UNCF libraries. An average 44 volumes were held by these libraries per capita against the national figure of 43—with a range of 11.5 to 142.7. UNCF libraries were doing better than publicly supported libraries, and better than non-UNCF members.

American Library Association's Association of College and Research Libraries published "minimum" standards for academic libraries in 1959. These standards are taken seriously by many college library administrators. These widely accepted standards give direction as to minimal size of an academic library, and libraries which fall below these standards, substantially, cannot provide the variety of materials required for adequate service. Above the minimal size, standards ordinarily specify a given number of additional volumes per capita. A minimum collection of 50,000 "carefully selected" volumes is suggested for a minimum enrollment of 600 students; an additional 10,000 volumes are suggested for each additional unit of 200 students.

Of the 34 UNCF libraries studied, 23 did not meet the minimum standard, or approximately two-thirds. Nine met or exceeded the standard. Two wholly graduate institutions would not be evaluated by these standards.

A word must be said about the undergraduate schools in the Atlanta University Center. Their separate collections all fall below minimum standards; however, the holdings in the Atlanta University library show a "plus" for these schools, which might not be justified.

Volume and Budget Deficiences

Approximately 676,000 volumes are needed to bring these 34 UNCF libraries up to the minimum standard of size of collection. There is probably a greater "deficit," if the present collections were properly weeded, and only the "carefully selected" items were retained.

What would it take to purchase these volumes? *Library Journal* of July 1969 reports the average cost of a hard cover book in 1968 was $8.47. It would take approximately 5.7 million dollars at 1968 average book prices to erase this deficit. A similar picture would probably present itself for the publicly-supported and the non-UNCF libraries.

Libraries have made real gains with respect to support during the past several years, along with hard- won recognition and general acceptance of the services they provide. A study of the finances of a library, and of its services, necessarily requires an evaluation of practically every other factor that relates to its operation. While it does not necessarily hold true that an effective library program is the result of adequate support, the two factors are, naturally, related.

While, as a general rule, a college library should receive a budget of no less than five per cent of the total operating budget of the college, the librarian should build a budget on need. Many institutional budgets are so small that the library's five per cent is a pittance. Another method used in checking the adequacy of the library budget is the student formula; that is, an adequate library program requires expenditures of between 50 and 80 dollars per student.

The libraries' responses indicated that $7,130,087 were spent for library expenditures, ranging from a high of $871,873 to a low of $36,317. About half of this figure was paid out in salaries ($3,495,631) which ranged from $411,559 down to $17,222. $716,722 went for wages, or approximately one-tenth of total expenditures. $157,715 were spent for binding services. $2,320,610 were expended on books—less than one third. Only three libraries spent more than $100,000 for books, and the range was from $325,087 to $6,494. $439,079 were disbursed for other library expenditures. Expenditures on a per capita basis revealed a spread from 36 to 153 dollars. Keeping in mind the suggested figure of between 50 and 80 dollars as an adequate per capita library expenditure, five libraries spent less than 50 dollars and 21, less than 80 dollars. Twenty-six libraries exceeded the 80 dollar figure, while three met the figure—several more than double the figure.

There should be little room for jubilation, as many of these libraries are in the midst of programs of "catching up", and these indications of increased expenditures should leave little room for complacency.

The five per cent of the general budget for library purposes is being met in most instances. The range in this category was from a low 1.5% to a high of 10.3%—26 libraries exceeded the figure. It was impossible to compute this figure for seven libraries. Here again, this five per cent figure allows little room for complacency.

How many staff members should a library have? What standards should a survey employ in evaluating personnel? The answer is simply: as many as necessary to accomplish the objectives of the library. This answer seems clear enough, but it is far from easy to apply. Library service is open endeo in character; better service leads to more use; and this, in turn, requires still more staff members. Librarians have developed guidelines for division of staff between professional and nonprofessional positions. Some recommend that there should be two supportive people for every professional position. ALA standards require a minimum of three professional librarians in an academic library—there are other formulas to be used to justify additional professionals based on student enrollment. Eight libraries reported staffs of professionals of less than three—none with one-man libraries. The range of professional staffs was from 2 to 27. The non-professional help did not fare so well, the range was from 1 to 41. If the two non-professional for every professional rule-of-thumb is applied, the picture is rather bleak: 14 libraries had this ratio. The question arises why administrators are reluctant to hire sufficient supportive staff for their libraries. With the lack of sufficient supportive staff many professionally trained librarians are tied down to clerical duties which could be performed more cheaply by a nonprofessional assistant—releasing the much-needed library expertise to assist the student and faculty member. Hours of student help are difficult to evaluate, and many of the black libraries depend heavily upon this supply of manpower. The responses indicated that the range was from 1,035 to 135,232 hours of student help. It is realized that the genius of black higher education is represented by this "boot strap" operation of self-help, but it would be desirable to translate some of these expenditures in student wages into the hiring of full-time supportive personnel. Work weeks are becoming shorter, and a 37 hour work week is not uncommon. Two libraries reported a 35 hour week.

Professional Salaries

Salaries are not a matter of what should be paid for a given type of work but what the market provides. A brief survey was made in April 1968 of the salaries reflected in the ads of the March, 1967, and March, 1968 issues of the *ALA Bulletin*, *Library Journal*, and *Wilson Library Bulletin*. The study revealed that the median salary range for vacancies generally requiring no experience, in March 1968 was $7000 to $7500; the lowest starting salary was $5400 and the highest was $8500. All of these salaries required a MSLS degree. The *Library Journal* of June 15, 1969 reported that the average salary for 1968 library school graduates averaged $7660 with a median of $7488 and a cluster at $7000–$7500 (a range of $4500 to $16,300).

In comparison with our survey nine libraries were offering between $7000 and $7500 for these beginning positions, and some offered less than the $5400 lowest figure, while none approached the $8500 high figure. The *Library Journal* library school graduate figure for average salary offering was met or surpassed by only three libraries ($7883–$8054); the median figure ($7488) was met or exceeded in six instances. It would appear that the black libraries were not in a very competitive position for hiring library school graduates.

As experienced employees are often hired within the salary range rather than at the minimum step it was not possible to ascertain the real hiring rate in the survey of the three periodicals. Therefore, the minimum rate was used: median salary range for vacancies generally requiring MSLS plus experience for March 1968, $8500 to $8999 with the lowest salary of $6200 and a high of $12,000. Associate or Assistant Librarians in black colleges numbered eight who received more thatn $8500—in fact all eight exceeded the $8999 figure in the survey, and one exceeded the $12,000 high of the survey. The remainder of the group fared pretty well, all receiving more than the low of $6200. Heads of major units (eight in number) received more than $8500 and two received less than $6200. Other professional librarians, except one, received less than $8500, with a range of $5000 to $9000. Chief librarians in the black sample earned from $6500 to $18,469. Clerical help averaged between $3000 and $6000. On the whole, salaries in black college libraries were not competitive.

The black colleges are making a considerable effort by themselves to overcome the deficiencies of their libraries. As these colleges increasingly use a greater variety of teaching techniques than textbooks and lectures, and as their faculty members increasingly attempt to keep up with advances in their fields, the black colleges will need even more extensive support to remedy their deficiencies. The present condition of the library services in most of the black colleges can be summed up in the statement that the physical facilities are, in general, more adequate than the books, journals, films, records they contain, or the number of the library staff. The situation is about even between the privately and publicly supported institutions, with the UNCF libraries having a slight edge. Their collections and staff need extensive strengthening to rectify a history of insufficient support and to help lift instruction and learning out of ritual and routine.

Question and Discussion Period

Dr. Joseph Reason, Howard University: Some figures used there by Casper sort of jogged my memory, so I think my library is involved in this; but I would like to make a suggestion concerning the standards for determining the deficiency of book collections.

I have been using another standard than the ALA figure. I have been using the standards of the U.S. Office of Education in its grant program. My library is more deficient in volumes than the several he grouped together with us.

I do not know that it would do for the undergraduate colleges, but certainty for the larger institutions, it may be misleading to talk about the ALA standards of 1959.

Federal Library and Information Programs Versus Total Library Planning

JOHN A. HUMPHRY
Assistant Commissioner for Libraries,
New York State Education Department

The system concept of library service and its development serves as the focal point for my presentation here today. It is not a wholly new concept, but its development has been accelerated within the last decade or two because of political and economic requirements as well as significant roles of leadership within the profession. There is hardly a state among the fifty that has not adopted, in some form, this principle of organizing book and information services. Probably the earliest planned development of public library service took place in New York in 1835 when the State Legislature enacted permissive laws for the establishment of tax supported libraries in school districts. While these early beginnings were relatively short lived, it did spark the beginnings of public library development, especially in New England where State legislatures enacted laws permitting cities and towns to levy taxes for the support of municipal libraries. It was not until about 100 years later, however, that the library system as it is now organized, chartered, funded and service oriented, came into being. From modest beginnings, the Nation's libraries have been assuming ever-increasing responsibilities as our society requires more and more information.

Four principal areas of concern with respect to the library program of the Federal government and the implications for library planning throughout the country will be stressed in this talk. The first relates to the organizational pattern of libraries and library service; the second to bibliographic control of the enormous output of publications, especially those issued by the Federal government; third, the role of the Federal government with respect to systems of libraries and networks of information; and fourth, the potential for leadership in library affairs.

It is presumptuous to attempt, within a half hour, to comment on the strengths and deficiencies of a program as broad, comprehensive, far-reaching and complex as the Federal library program, but nonetheless I was invited to do so.

Organizational Patterns

First, let me comment on the legal and organizational structure of libraries and library service at the Federal level, a gigantic complex that defies mastery. A paragraph in the report *Libraries at Large* prepared by the National Advisory Commission on Libraries sums up the situation:

> "Without exaggeration, it can be said that the Federal Government's library services, taken together, make the Government the largest library agency in the United States, if not in the world. As each library developed, it did so largely independently of any others, however, and to this day no single complete or detailed inventory of all Federal library facilities has ever been made."[1]

Within the Federal library structure, there are three aspects to be identified. The first aspect concerns the number of libraries, national, departmental, agency and others that were established principally to support governmental activities. Some, particularly the national libraries, in addition to serving in an official capacity, also exert influence on library activity throughout the country. Secondly, there is the great complex of Federal assistance to all types of information systems emerging in the capital and exerting a development function nationwide. Third, there are a number of Federal information systems emerging that exert a development function with implications for all information-oriented consumers.

Many commendable and useful programs have been established, constituting a base for leadership nationally and internationally, especially at the national libraries and at the Office of Education. Programs have grown so rapidly and into such a complex maze that a Federal Library Committee has been established to provide a kind of stock-taking function, to inventory, identify and work out meaningful cooperative ventures among the great variety of agencies involved. A commendable beginning. Might consideration be given to the application of the system concept to this complex of libraries serving government?

The suggestion I am about to make has been proposed many times, but the profession needs a source or office in the Federal government where library assistance programs can be identified readily. Such an effort was begun in the *Catalog of Federal Assistance Programs* prepared by the Office of Economic Opportunity in 1967 but badly needs updating on a continuing basis. At present, many organizations employ full time liaison persons to locate facts about federally supported programs.

Systems and Networks

If some Federal agency should assume a similar responsibility and attempt to inventory and identify the rapidly emerging information systems and networks for the benefit of a variety of users, a great service would have been performed. For those involved in planning, it is essential there be compatibility among such systems and networks. It is important to define and determine what a system really is, what its service should be, and, if it provides information in the public interest, whether or not it should be supported with public funds. In other words, one of the first requirements is to set up a point of information, a clearing house at which information on all kinds of library and information programs might be secured.

The kind of observation and recommendation that I am making would require legislated responsibility and authority, as well as funding. For example, before an information system could be recognized and established, a chartering authority would study its specifications to determine if it possessed the capacity to perform certain functions, and further, if it were entitled to government subsidy. The Networks for Knowledge legislation, proposed but not funded, might be a possibility in this area. Investigation of this type is in order.

Much has been written on the subject of officially designating the Library of Congress as the national library by legislative action. I will not go into all of the advantages and disadvantages of this suggestion, but a substantial segment of the library profession, particularly those involved in

responsibilities for planning, would welcome this action. It would parallel the organization and services of the National Library of Medicine. It would be particularly welcome if the library were organized in such a way as to include among its responsibilities, in concert with the Office of Education, a kind of development function to support its national role of leadership with respect to library and information programs.

There are those who suggested that such a proposal is unworkable, but I fail to understand why, if it works in New York State, it could not also work at the national level. It could be one way of exerting, coordinating and directing powerful leadership with respect to the rapidly developing programs of library service of every type and at a variety of governmental levels. An immediate salutary effect could be that state library administrative agencies or groups of such agencies would be in a position to plan more effectively and with confidence that an organization at the national level existed to support planning. It is clear that the economics and the politics of our national development will not permit an unjustifiable number of duplicative programs and services, and we therefore must conceive of ways to eliminate as much duplication as is possible. One specific benefit could be the opportunity for legislative reference services provided at the state level to relate more effectively to the Legislative Reference Service of the Library of Congress either through exchange of information or through preparation of bibliographies on topics of national import and policy.

Another important area where aggressive leadership is being assumed by our three national libraries, and could be strengthened further, is automation and computer application to libraries. One often hears the comment that computerized applications are designed for business or industry and then adapted to library procedures; not so in our national libraries where systems are designed and tailored specifically to accommodate library requirements. The applications to cataloging, serials control and building of data banks are examples of exemplary activity.

Federal Bibliographic Control

The bibliographic control function which the three national libraries perform is of major significance, especially since the National Program for Acquisitions and Cataloging was enacted to support the advance of the Library of Congress into the acquisition of significant foreign language research materials. If the Library of Congress served as a focal point for national library developmental services, especially in cooperation with state library agencies or groups of such agencies, the identification, location and access to such materials could be greatly enhanced. A major block to the effective functioning of research libraries is the bibliographic control factor.

No one needs to be told that the Federal government is the world's largest publisher, that information flowing from its agencies, contractors and research offices is contributing substantially to the publication explosion. Bibliographic control of these materials is far from complete. Some of them are security classified which limits their general availability either for bibliographic identification or for access to its content. While valiant attempts are being made to identify a substantial part of the

publication output of Federal government agencies, identification is by no means complete. I should like to quote from an article by a member of our staff, Peter J. Paulson, Chief of our Technical Services in the New York State Library, appearing in *Library Trends*, January 1970:

> "Central to the problem of acquiring government documents for the research library is the need for a convenient source of supply, preferably one offering automatic selective or comprehensive distribution, from which the whole range of current government-sponsored publication is available. In the United States, the Federal depository system was originally intended to provide such a source of suply. The clear intent of the General Printing Act of 1895 was to centralize government printing in the Government Printing Office, and to place full control of the distribution of government publications in the Office of the Superintendent of Documents.
>
> "Over the years, however, much government publishing has come to be done outside of the Government Printing Office, and the Superintendent of Documents no longer effectively controls the distribution of all government publications. This trend became especially marked with the great proliferation of Federal activities during the New Deal. In 1936, A. F. Kuhlman spoke of an 'unprecedented crisis' in the publication and distribution of Federal publications, pointing to the 'vast amount of material issued by Federal agencies outside of the office of the public printer.' By 1968, this trend had gone even farther, and the Public Printer himself reported to Congress that there were some 300 agency printing plants outside of his control, and that their aggregate annual production was probably equal to that of the Government Printing Office. Most of the material so produced, of course, is not distributed to depository libraries.
>
> ". . . indicative of the limitations of the Government Printing Office (GPO) depository system are the number of more specialized depository systems created by the Federal agencies themselves—the Army Map Service, Geological Survey, Census Bureau, NASA, and the Federal Regional Technical Report Centers are examples. Some of these (the Census Bureau, for example) are intended to supplement the GPO system by providing additional outlets for agency publications, others (the Army Map Service or NASA, as examples) are competitive with the GPO system, since they distribute materials not available to GPO depositories. Some of these specialized depository systems are highly restrictive (there are only eleven Federal Regional Technical Report Centers), while others are quite broad (the Census Bureau has 140 depositories in the United States)."

We are increasingly concerned with the trend of the Federal government away from the provision of information to the public without charge and the adoption of alternate systems of information distribution. Full and free distribution of government publications to libraries makes them available to both the specialized and non-specialized user, to the affiliated and unaffiliated researcher, and places them within the framework of the broad range of services which the modern research library can provide. Many libraries have joined together in networks or systems to provide more effective access to this significant resource. In New York State the development of the NYSILL program offers such an example. Through this network, the resources of the New York State Library, the New York Public Library, the libraries of Columbia, New York and Cornell Universities, and the specialized resources of such institutions as the Engineering Societies Library and the Library of the American Museum of Natural History are available to every citizen of the State.

Federal Leadership

Now for a few specifics and a recapitulation of previous thoughts:

1. There is a need for developing a statement of policy with respect to library service at the Federal level and for the development of a national plan. Guidelines and direction could be of assistance in solving compatibility problems. Continuing responsibility for review of national policy is a justification for creating a national library commission on a permanent basis.

2. The planning function is so vital to the success of the Nation's library national libraries should involve to a greater extent the state libraries and research libraries.

3. Legislation in support of libraries should stipulate that funds for local agencies should be made available through State Education Departments or other appropriate State planning agencies. A quote from Commissioner Nyquist with respect to the role of the state is pertinent here:

"We should like to se among the principles to be developed as guidelines for the implementation of the act (Networks for Knowledge) that preference be given to statewide plans and therefore to applications received from State Education Departments particularly where these reflect participation by other institutions or agencies.

"It is assumed that other institutions will be applying, and we should like to urge the Federal office that the guidelines include a provision whereby such applicants shall, at the very least, be required to inform the State agency of the nature of their aplication by submission of a duplicate copy to the Education Department. Even more desirable would be to build into the guidelines a procedure whereby the State Education Departments' views on applications submitted to Washington would be solicited. What we hope to achieve is coordinated statewide planning."[2]

While the Federal government has made great strides in providing book and information services for itself and for all the citizens of the United States, the time has come to re-examine the framework within which the Federal effort is carried on. The diffuse and confusing array of agencies involved and lacking uniform controls and standards must be re-examined and re-directed. The benefits to be derived, nationwide, from such a re-direction will be inestimable.

In conclusion, I should like to compliment the leaders who planned and conducted this conference. As librarians, we have learned about a number of information programs. We hope that our colleagues in the information and technical professions have learned that librarians have a role to play in the design of networks for information services. This conference has identified a lack of what we call in New York State involvement and participation. May I recommend, therefore, that, as a result of this exchange of ideas during the past two days, a joint committee be constituted. This committee should represent State and other research libraries, information scientists and potential network users. It should have such stature and authority as would allow it to plan effectively an international system of networks for information exchange.

---

[1]Douglas M. Knight and E. Shepley Nourse, editors. *Libraries at Large: Tradition, Innovation and the National Interest.* New York: R. R. Bowker Co., 1969, p. 347.

[2]Letter from Commissioner Nyquist to the Associate Commissioner, United States Office of Education.

Question and Discussion Period

Samuel T. Waters, National Library of Medicine: I should like to ask if you, Mr. Humphry, believe in the need for additional controls and standards; whether you think this is consistent with your position advocating that funds for libraries should be applied to state planning agencies.

Quite the contrary seems to me to be the case. I have seen specific examples where lack of uniformity arises in the development of networks at state levels.

Humphry: Do you think, Mr. Waters, that the two points of view are incompatible?

Waters: I do not think they are necessarily incompatible provided that the state agencies are not the ones to develop standards aimed only at their own state.

Humphry: Yes. Well, my answer to that is: you begin somewhere. And you start by working with your constituents; you plan some kind of program; you hope that a certain body of principles will be recognized; a certain set of stipulations will be honored to which everybody can subscribe; and then you proceed from there.

I think that one of the great strengths of the New York plan has been, over the years, the fact that special problems have received special solutions; and I would not want anybody to think that, in New York State, we advocate a kind of blanket coverage for library and information service. we have a patchwork aproach to solving the multiplicity of library and information problems.

I do not think that it is necessariiy true that you need a lot of controls or a lot of standards, but I think you need, at least, a review process so that whatever program you put into effect, on a statewide or a nationwide basis, meets certain requirements; and then you can proceed from that point to develop what I think would be approaching a qualitative type of program. Guidelines and direction are required, but perhaps not control—perhaps the word "control" is an unfortunate one.

Lorenz: Well, to be specific, John, I understand you are trying, in New York State, to relate a statewide serials data program to the national serials data program. I think this is what Sam was getting at.

Humphry: The New York State library has an operational automated serials program, and I think that we have tried our best to keep in touch with the plans being devised here in Washington among the three national libraries. We try to be conversant with the standards—or whatever format and principles are applied to the preparation of a bibliographic control system as complex as this one—so that our program would, therefore, be compatible with whatever is devised on a nationwide basis.

I think the minimum should be that computers ought to be able to talk to each other on whatever plans are developed for nationwide bibliographic controls. I do not think we are ever going to have, in a free enterprise society, everybody using one brand of computer, and perhaps one standard format. As long as you can talk to each other and relate to each

other and have your data banks react to questions, I think you have done as much as you possibly can.

Now, I think, John, that this national serials program is an excellent example of a national leadership role; and the State of New York has attempted at every step to keep in touch with what is being devised here in the hopes of achieving the kinds of results that I have already described.

Arthur Hamlin, Temple University: Did I understand you to say that the Joint Committee you are recommending should be international in scope?

Humphry: Well, international with respect to the control of materials. We would be very hapy to settle right now for a kind of wrapup in New York State, let alone the problems nationally, and leave the international problems for sometime hence.

I think it should be at least thought of, Arthur, for international programs, but let us take everything in proper sequence.

Final Plenary Session

Sherrod: Marion Milczewski gave us this morning's "non-negotiable demands," and my group of advisors has suggested that I respond to this immediately before we go to other demands.

Kurt Cylke, Executive Secretary of the Federal Library Committee, would like to make a brief response.

Cylke: I read four of this morning's "non-negotiable demands" as applicable to the Federal Library Committee.

1 *Representation:* It might strike you as amusing but, this past Wednesday, at 10 o'clock, we had a meeting of the Federal Library Commitee at which time it was voted to become somewhat closer to organizations such as ARL; and only time has prevented my sidling up to Steve McCarthy and saying, "Would you like to become a guest observer with the Federal Library Committee?"

So I will say that publicly now, and Steve will be hearing from us within a very short time.

2. . *Coordination:* I think that this meeting is a step by the Federal Library Committee and COSATI to get closer together. It is obviously a meeting for COSATI, the Federal Library Committe, and the research library community to come closer together. This leads, obviously, into the next demand:

3. *More Meetings:* We are meeting today with the help of the Office of Education. The COSATI group itself has no source of funds; the secretariat of the Federal Library Committee has no independent funding source; however, if we can prevail upon other funding sources to help us, I am sure that the three groups, the third group being the research library community, through either the ad hoc group of this morning or through ARL or through—as someone suggested—ARL and SLA and ALA.

4. *Sharing:* In making our resources available, one of the first things that happened when the Federal Library Committee was incorporated in 1965, was to write a mission statement; and this was to be a mission statement which was acceptable by all the Federal agencies—one generalizable statement.

Ruth Fine was the chairman of that committee. The statement was drawn and sent out to the agencies within the Government; and it was accepted by ninety percent. It contained the statement that, one of the prime steps to be taken was to examine policies for making information available to the nation at large.

The next step, of course, is to get down into the agency library situation, and we are working on this. In other words, we have identified the demand, and we are pursuing it.

Mrs. Freeman, this morning, indicated the first steps toward a national inventory of research resources.

Again, as John Humphry said today, the first thing to do is to start, and this is what we have done. We cannot apologize, and I would not begin to, for not having done this through the years, but the start has now been made.

It has taken $160,000 to get this far, so we are not talking about a minor effort; and we would hope, when this document which Mrs. Freeman reported on is published—the first version—that we can get the backing of

the library community and the various funding organizations to help us again to pursue this further.

I would say to the demands of this morning—the non-negotiable demand: we surrender. You do not have to lie across the doorway of the Wilson Room in our meetings or anything of that sort.

Speaking for the Federal Library Committee, we welcome the involvement with the research library community. We hope to see greater involvement. As I said, we will look forward to talking with Steve McCarthy. and I hope that this will be the first in a series of many meetings in a cooperative venture.

Sherrod: Thank you. Kurt. I would like to respond to the demands of this morning only briefly. I could not agree more if I had written them myself. I could not have said it better. I could not take exception to one single suggestion or demand.

I would like. however. to point out something that I have not done and that is: Many of you may not know what members already belong to our committee: and while I would agree they were not selected by the groups that Marion suggested this morning, the bulk of our committee is not representative of the Federal Government.

Let me read those non-Federal people who belong to that group.

Peter Draz of Time, Incorporated, Libraries.

Stella Keenan, National Federation of Science Abstracting and Indexing Services.

Roy Kidman, Director of the Rutgers University Library.

Gerry Kretteck of the ALA.

Steve McCarthy, Executive Director of ARL.

Foster Mohrhardt of the Council on Library Resources.

Anne Painter of the University of Indiana.

Dorothy Parker of the Rockefelier Foundation in New York.

James Riley of the University of Chicago.

Wesley Simonton of the University of Minnesota.

Herman Smith, Director of the Office for Advancement of Public Negro Colleges.

Charles Stevens of MIT.

So the majority of our members are not employees of the Federal Government; however, i think, in line with the suggestion. I am perfectly happy and anxious to expand this committee to include members who are elected by the group suggested by Marion this morning; and I will turn to a member of my committee, Dr. McCarthy, and ask him to work out the necessary arrangements to hold this election. or do whatever is necessary to add additional representation from the group that was suggested this morning.

Dr. McCarthy has asked for time to make a few remarks, and I am pleased to ask him to come forward at this time, after which time, any other participants who want to present resolutions will be acknowledged.

McCarthy: I want to preface my remarks by saying that this is not intended in any sense to be a full reply to the presentations which we have had over the past day and a half.

It seemed to several of us, discussing what we were hearing, and also considering our own problems, that it was too much on such short

notice—really no time at all—to try to respond to the explanation of Federal library resources, outlook, and expectations for the future, as we have learned about them in the last two days.

Jim Haas, currently the President of ARL, and I, together, did get down a few thoughts which I would like to present to you now, and I hope that you will think well of them and support them as recommendations of the members of this conference.

The statement reads as follows:

> In the context of this conference, Federal library and information services might be viewed in two categories:
> (a) Those services performed primarily in response to internal needs of the sponsoring department or agency, and
> (b) Those services performed in response to the needs of a broader audience, including specifically the research libraries of the nation.
>
> In the case of the first category, it would seem that a reasonable objective should be to promote appropriate uses by research libraries of existing resources and services. The principal impediment to reaping these incremental benefits is almost certainly a lack of communication. It follows that imaginative steps should be taken to improve the present situation by developing new methods to assure a regular flow of precise and detailed information between Federal libraries and research libraries outside the Federal community. Perhaps this is a subject that should be explored further by the COSATI Task Group on Library Programs, the Federal Library Committee and the ARL.
>
> The second category of Federal services is obviously of great interest and importance. Above all, it seems essential that services and programs geared to the needs of research libraries should meet the following requirements: (1) They must be truly responsive to the fundamental service obligations and operating requirements of those libraries; (2) they must not be unduly sensitive to funding and policy fluctuations; and, (3) they must be subject to a monitoring process to help assure, on a continuing basis, that results actually reflect established objectives.
>
> The Federal Relations Committee of the ARL has been charged with responsibility for formulating positions on a number of specific subjects. It is hoped that these position statements will be useful both in stimulating legislative programs and in promoting further development of the already invaluable inventory of services provided by the national libraries and other Federal libraries and agencies.
>
> We, therefore, recommend that:
> (1) The conference formally acknowledge the importance of this meeting to the research library community as a major step in effecting useful communication between Federal library and information agencies and research libraries, and express its appreciation to those responsible for organizing it.
> (2) The COSATI Task Group on Library Programs and the Federal Library Committee hold similar meetings at appropriate intervals.
> (3) The COSATI Task Group on Library Programs and the Federal Library Committee make available on a regular and systematic basis the kind of information supplied during this meeting. This additional effort is especially important because the Office of Education Research Program in Library Science is not provided for in the Administration's bill for the extension of the Higher Education Act of 1965.
>
> The COSATI Task Group on Library Programs be prepared to receive recommendations and requests from the research library community, through such groups as the Federal Relations Committee of the ARL, as they may be developed in the future."

With reference to number 3 and the extension of the Higher Education Act of 1965, if I could say just a word. You will remember that, when Mr. Dubester spoke the other day, he added up a truly stagge: ng sum of money appropriated through the Office of Education in support of libraries; and by comparison, he indicated the relatively frugal funds of the National Science Foundation.

As you know, there has been a modest research program, financed through the Office of Education, and devoted to various library research and pilot projects. I regret to say that an analysis of HR 16621, which is the Administration's bill for the extension of the Higher Education Act of 1965, eliminates all reference to research in library and information sciences.

This, in my judgment, is a very serious blow and emphasizes even more, the importance of the academic library communities' establishing and staying in as close relationship as possible with the Federal library and information community where they will be able to carry on research and pilot undertakings which, I should judge, will be very few and far between in our colleges and universities in the years immediately ahead. When you consider the budgetary situation which most institutions face, there is going to be, I believe, very little money for this purpose.

Mr. Chairman, if it is proper, I would like to ask the audience if they will support these recommendations.

John Lorenz, Library of Congress: May I suggest one additional resolution that you might like to consider; and that is, that the legislation to establish the National Commission on Libraries and Information Science be enacted.

It seems to me this is the only way that might still be open to get back into the research picture.

McCarthy: I would be very happy to accept that.

Sherrod: We have motions along with an amendment.

Is there any further discussion? Further comment or questions? All those in favor, say: Aye. (Chorus of "Ayes.") Opposed? The "ayes" have it.

Thank you very much Steve.

Are there further resolutions or comments to be presented?

Grieg Aspnes, Cargill, Inc.: I am grateful for the chance to talk for a minute, and I think I should because I am a stranger in this house. I am not sure I have the right to speak. I am not really sure I have a right to be here, but I am grateful to John Sherrod for inviting me, because I think I am the only one in the room representing private industry as a delegate here. I may be wrong, but I am certainly one of the few. My resolution, which is not in the form of a resolution, would simply be a plea that private industry be included in any of your future deliberations and exchange of information. I represent Cargill Incorporated, a giant corporation, which most of you do not know. They are worldwide in forty different countries. They do about two and a half billion dollars worth of business a year which is more than Pillsbury and General Mills combined. They are one of the largest contributors to the favorable balance of payment in the United States because of the tremendous export program of feed, food, wheat, grain, soybeans, and so forth.

Running an information center for Cargill, I am serving one of the very ultimate consumers of information. There is hardly a Federal agency that

we do not deal with or depend on for this information. I am sure this is true for other major corporations like IBM and General Electric and all the rest who, I believe, should be represented.

Again, thank you, John, for inviting me here. I certainly have gained a great deal, and I think we could contribute a great deal in the future.

Hugh Atkinson, Ohio State Univ.: I have some concerns over some of the views expressed which I will state, but I will not make a motion.

I am concerned over the tendency of the Federal information establishment to produce and arrange bibliographic data at the general tax supported expense; and then to turn these over without proper copyright protections to private industry to be sold back to us, who then purvey it back to the users who originally paid for it. I express my concern for this without offering you a solution.

I would also point out that some of Mr. Chapin's remarks, I believe, were seriously misinterpreted by some of the people who commented on them. We are not all against magnetic tapes, as such, but we must remember that, when we were talking about bibliographic data, we saw at least three kinds of uses. Commonly, they were mixed up. There were the current awareness services; there was retrospective searching by subject or some other form; and there was the control—the cataloging.

Now, it does seem that all of us are trying to do the same thing; and that is, to produce substantive data and get it into the hands of researchers. The bibliographic tools—the current awareness services, the catalogs and so forth—are all aids, helps, guides, to doing just that.

We know that, without the substantive data, without the journal article, the book, the report, no amount of bibliographic aids is going to be of ultimate value. So if there is a bottleneck, and we can identify it, that has to be solved too. It does seem that the great bottleneck right now is in cataloging data.

If there are to be priorities in the provision of bibliographic services, the kind of bottleneck which most needs to be solved is cataloging.

The magnetic tapes may well be good for current awareness services and retrospective searching. They simply do not work right now for cataloging, and I suggest that the first priority to getting the substantive data into the hands of researchers is getting the material on library shelves, on information center shelves; and to do that, we must have them cataloged.

And the reasons for the lack of usefulness of magnetic tapes have to do with such technical details as searching, retrieval, and so forth; and not simply the lack of availability of computing hardware. So I would suggest that the Federal information establishment put its money where the real needs are— in getting materials to the researcher. That would be in the cataloging of common western language materials quickly. If the AEC can get a contractor to provide delivered, fully-cataloged, processed material in two weeks, I see no reason why the Federal establishment cannot give us cataloging data within the same length of time.

It may be done by cataloging at source, but that time sequence seems to be reasonable.

Sherrod: Are there other comments or resolutions, from the floor?

Seeing no hands and hearing no voices, I presume we have come to the end of what may seem like a long two days, but, hopefully, a fruitful two days. We all appreciate your participation. We look forward to future meetings of this kind together where we can exchange views and, hopefully, improve programs. Thank you all very much.

Attendees of the Conference

Adams, Mildred E., Federal City College
Aines, Andrew A., Office of Science and Technology, Executive Office of the President.
Alrutz, Tom J., Catholic University
Alsmeyer, Henry L., Texas A&M
Aspnes, Grieg, Research Library, Cargill, Inc.
Atkinson, Hugh C., Ohio State University Libraries
Bacharach, Louis, Catholic University
Berry, Paul L., Reference Department, Library of Congress.
Boes, Warren N., Syracuse University
Bougas, Stanley J., Dept. of Commerce
Boylan, Merle, Goodell Library, Univ. of Massachusetts
Bradley, Eileen M., Univ. of Toronto
Brady, Edward L., National Bureau of Standards
Brunenkant, Edward J., Atomic Energy Commission
Bull, Judith, Mankato State College
Burchinal, Lee G., Office of Education
Cameron, Ulysses, Federal City College
Chandler, James, University of Maryland
Chapin, Richard, Michigan State University
Chiu, Kai-Yun, Johns Hopkins University
Compton, Bertita E., National Academy of Sciences
Conley, Binford H., Alabama A&M College
Crouch, Milton, University of Vermont
Cylke, F. Kurt, Federal Library Committee
Davis, Hillis D., Cooperative College Library Center, Atlanta, Ga.
Dawson, John Minto, Univ. of Delaware
Downie, Currie S., U.S. Air Force
Draz, Peter, Time, Inc.
Dubester, Henry, National Science Foundation
Dunlap, Leslie W., Univ. of Iowa
Durkin, Robert E., Information Services Consultant
Estes, Sarah, West Virginia Library, Commission
Farley, Richard A., Farrell Library, Kansas State University
Fine, Ruth, Bureau of the Budget
Freeman, Elsa S., Department of Housing and Urban Development
Freiband, Susan J., Student
Galejs, John E., Iowa State University
Gosnell, Charles F., New York University
Gordon-Gourlay, J.W., Clemson University

Haas, Warren J., University of Pennsylvania
Hadsell, R.S., Agency for International Development
Hamlin, Arthur, Temple University
Harlow, Neal, Dean Emeritus, Rutgers University
Harrer, Gustave, University of Florida
Henderson, James W., New York Public Library
Hendricks, Epsey Yearby, Alcorn A&M College, Lorman, Miss.
Heron, David W., University of Kansas
Hordusky, Clyde, State Library of Ohio
Humphry, John A., New York State Library
Jackson, W. Carl, Pennsylvania State University
Janaske, Paul, Office of Education
Janecek, Kilbourn L., North Dakota State University

Johnson, Carol, National Agricultural Library
Jones, James V., Case Western Reserve University
Jordan, Casper, Atlanta University
Jordan, Robert, Federal City College
Jeffs, Joseph E., Georgetown University
Keenan, Stella, National Federation of Science Abstracting and Indexing Services
Kellam, W. Porter, University of Georgia
Kennedy, James, University of Massachusetts
Kissman, Henry M., Food and Drug Administration
Koltay, Emery, Standard Book Numbering Agency
Kondos, George, Dept. of Justice
Krettek, Germaine J., American Library Association
Kuhn, Philip, Bureau of the Census
Lamkin, Burton E., National Agricultural Library
Landrum, John H., South Carolina State Library
Lebowitz, Abraham, National Agricultural Library
Lorenz, John, Library of Congress
Losee, Madelaine W., N.A.S.A., Scientific & Technical Information Division
Lowe, William C., North Carolina State University
Lynch, Isohel, Maryland State Department of Education
McCarthy, Stephen A., Association of Research Libraries
McCoy, Ralph E., Southern Illinois University
McFarland, Marvin W., Science and Technology Division, Library of Congress
McMullan, T.N., Louisiana State University
Milczewski, Marion A., University of Washington
Mohrhardt, Foster E., Council on Library Resources, Inc.
Mothershed, S.W., Texas Southern University
Moundalexis, Susan, National Agricultural Library
Murray, Frederick E., Department of the Interior
Olsen, Wallace C., EDUCOM
Orne, Jerrold, University of North Carolina
O'Rourke, George W., Kentucky State Department of Libraries
O'Rourke, James R., Kentucky State College
Palmer, David C, New Jersey State Library
Papier, Lawrence, Office of Education
Parks, George, University of Rhode Island
Parlis, L.R., University of Rhode Island
Parrott, Sangster, North Carolina State Library
Payne, Kirby B., Dept. of Transportation
Perry, Pennie E., North Carolina College at Durham
Pretzer, Dale H., Michigan State University
Reason, Joseph H., Howard University
Regulus, Homie, Fort Valley State College
Rogofsky, Murray, Naval Oceanographic Office Library
Rouse, Roscoe, Oklahoma State University
Ruiin, S.A., Social Security Administration
Scheerer, Carl, National Archives and Records Service
Schoenbach, Uriel H., Gale Research Corp.
Schoene, Molly, Battelle Memorial Institute
See, Richard, National Library of Medicine
Shepherd, Giles F., Cornell University
Sherrod, John, National Agricultural Library

Shipman, Fred W., Department of State
Shipman, Joseph C., Linda Hall Library
Shirk, Frank C., Virginia Polytechnic Institute
Simonton, Wesley C., University of Minnesota
Slater, Francis L., University of Pittsburgh
Slatin, Miles, State University of New York at Buffalo, Lockwood Library
Smith, G. Donald, Washington State University
Smith, Jessie C., Fisk University
Smith, Patricia, National Agricultural Library
Smith, Ruth, Institute for Defense Analysis
Sprow, Allen, Veterans Administration
Stanford, Edward B., University of Minnesota
Summers, F. William, Florida State Library
Swanson, Rowena, U.S. Air Force
Swim, Frances F., Department of Interior
Taylor, David W., Washington State Library
Taylor, Kanardy L., Department of Health Education and Welfare
Tietz, Eric, Clearinghouse for Federal Scientific and Technical Information
Tyler, Jack M., Wyoming State Library
Vincent, Donald E., University of New Hampshire
Walters, Samuel T., National Library of Medicine
Wedgeworth, Robert, Student
White, Herbert S., Leasco Systems Corp.
Williams, Gordon R., Center for Research Libraries, Chicago
Woods, W. Matt, Federal City College
Wright, Lottie M., Federal City College.