

THE WHITE HOUSE
NATIONAL ADVISORY COMMISSION ON LIBRARIES

Minutes of Meeting

Corrected and Approved

Session: Third

Date: February 13, 1967

Place: Room 3065, South Building
Department of Health, Education, and Welfare
330 C Street, S. W.
Washington, D. C.

NATIONAL ADVISORY COMMISSION ON LIBRARIES

Minutes of Meeting

February 13, 1967

The Commission was convened for its third meeting at 10:10 a. m. , on Monday, February 13, in Room 3065, South Building, Department of Health, Education, and Welfare, Washington, D. C. Dr. Douglas M. Knight, Chairman, presided.

Commission Members present were:

Dr. Douglas M. Knight (Chairman)
Dr. Estelle Brodman
Dr. Launor F. Carter
Mr. Verner W. Clapp
Mr. Carl Elliott
Dr. Alvin C. Eurich
Dr. Herman H. Fussler
Dr. Caryl P. Haskins
Dr. William N. Hubbard, Jr.
Dr. Carl F. J. Overhage
Dr. Harry H. Ransom
Mrs. George Rodney Wallace
Dr. Stephen J. Wright
Dr. Frederick H. Burkhardt
Mrs. Mildred Partridge Frary
Mrs. Marian Gould Gallagher
Mr. Emerson Greenaway
Mr. Dan M. Lacy
Mrs. Merlin M. Moore

Absent was:

Dr. Wilbur L. Schramm

Also present were:

Mr. Melville J. Ruggles, Executive Director,
National Advisory Commission on Libraries
Dr. Daniel J. Reed, Deputy Director, National
Advisory Commission on Libraries
Miss Adrienne Driben, Research Assistant,
National Advisory Commission on Libraries
Mr. Ray Fry, Director, Division of Library Services
and Educational Facilities, U. S. Office of Education
Mr. Forrest Hartwell, Reporter

Executive Session

New Members.

After calling the meeting to order, the Chairman introduced the following newly-appointed Members of the Commission: Dr. Burkhardt, Mrs. Frary, Mrs. Gallagher, Mr. Greenaway, Mr. Lacy and Mrs. Moore. This was the first meeting of the entire Commission, with the exception of Dr. Schramm who could not be present.

Minutes.

Following the approval of the provisional minutes of the January 7th meeting, the purpose of a proposed topical, cumulative edition of the minutes was described to Members. This would consist of a front-page table of contents, outlining the subject matter of the minutes, and a topical rearrangement of the contents of the minutes of all Commission meetings. Such an edition would help the Members and the Staff to identify and locate the various topics discussed along with everything said about the topic regardless of who said it or at which meeting it was said.

Since the structure of the meetings hereafter would change with the beginning of the "interviews", the Members agreed that a summary of the highlights of the various statements by "guests" would suffice. These summaries should be sent, it was insisted, to the guests for their review before being incorporated into the minutes. Any documents or written statements by guests would then be appended to the approved minutes of the appropriate meeting as part of the permanent record of the Commission.

Interviews

As a preface to the first of the Commission's interviews, the Chairman briefly noted that the guests invited to appear before the Commission would have either knowledge of or interest in a particular aspect of library affairs and that the "conversations" between guests and the Commission should be unstructured, free and friendly, unlike the tone and temper of Congressional hearings.

Dr. Burton W. Adkinson, National Science Foundation.

Further discussion on procedural matters was postponed temporarily as the Chairman turned to the Commission's first guest, Dr. Burton W. Adkinson, Head of the National Science Foundation's Office of Science Information Service, and his associate, Mr. Henry Dubester. (See Appendix A for Dr. Adkinson's written introductory statement.)

Dr. Adkinson opened the conversation with a brief description of the structure of the National Science Foundation, which was established in 1950 to foster research and education in the sciences. As the Foundation developed, it incorporated into its programs those sciences not included originally, among them the social sciences whose support rose from \$800,000 in 1958 to approximately \$20 million in 1967.

Structurally, the NSF is organized into three major divisions, each of these administered by an Associate Director:

- 1) Research
- 2) Institutional Programs
- 3) Educational Programs

Besides these, there are two smaller units attached to the Office of the Director of the Foundation: the Office of International Science Activities, which deals with science programs on an international level, and Dr. Adkinson's Office of Science Information Service, established in 1958 to develop a wide variety of methods for making scientific information broadly and easily available. This Office has expanded its scope, in recent years, to include social science information.

According to Dr. Adkinson, NSF support of research in the field of information science is concentrated in universities. At the same time, NSF carries on an exchange of information on such research with its counterparts in other Federal agencies, primarily for the purpose of informing the program people of what is going on and identifying worthwhile programs that are dying because of withdrawal of support from some quarter. The National Science Foundation, insofar as it is interested in libraries as such, is interested primarily in research libraries and particularly those in universities, but it believes that there are other agencies with a clearer and more direct relationship to libraries and with a broader responsibility to them than NSF has.

When asked for general recommendations, Dr. Adkinson stated that the American library community must develop a national, coordinated system wherein libraries assist one another. The job, he added, is clearly too large for any one library regardless of whether it is the Library of Congress or any other library. A second major national need he described

as planning, that is, the identification of national needs and national means to achieve them. He insisted that some person or group must identify the overall national undertakings and also the sub-systems that will be needed to support a national program. This national planning facility must also decide how the sub-systems are to be interconnected among themselves and how they in turn are connected to the national effort.

The National Automated Serials Inventory was mentioned as an example of potential library cooperation. Dr. Adkinson said librarians have supported this as an idea and a goal, as they have most other forms of library cooperation and the creation of a national library system. But the question is who will pay for the large, continuing program involved in such a library system? While it may be very appropriate for the Federal Government as a whole to pay most of the cost of such a system, it is clearly not appropriate for the National Science Foundation, which has more specialized objectives. Some other agency with a more comprehensive interest in the nation's libraries must undertake this role.

In response to questions about the Foundation's support of indexing and abstracting of scientific and technical literature, Dr. Adkinson described the Foundation's position as one of gentle persuasion and readiness to assist those ready to improve these services. The National Science Foundation is especially interested in seeing these national and international services standardized and rationalized. But the Foundation does not force subject disciplines into improving these services. Each learned community must convince itself of the merits of each step before it is taken. Similarly, in the area of library services, if the three national libraries were to combine forces and agree on common standards, the nation's libraries would undoubtedly follow their leadership.

After some discussion of how much money the Foundation supplies to libraries directly and indirectly and in various forms, and how difficult it is to ascertain exact figures, the Chairman asked Dr. Adkinson if he could supply the Commission, for its own confidential use, with an estimate (or better, a series of estimates) of the Foundation's expenditures of all kinds on libraries. Dr. Adkinson agreed to attempt this.

Further on the subject of costs, Dr. Adkinson said that the National Science Foundation believes that the users of information services should pay for them. This view is in contrast with the position the Government has taken in the field of medical science.

The Chairman concluded the Commission's conversation with Dr. Adkinson by expressing the gratitude of the Commission for his assistance and promising to ask him for further information and assistance later in the Commission's year.

Mr. Scott Adams, National Library of Medicine.

The second guest of the morning was Mr. Scott Adams, Deputy Director of the National Library of Medicine. (See Appendix B for Mr. Adams' written introductory statement.) He began by reminding the Members that the NLM is unique in having a statutory mandate to perform certain services, namely the task of supporting the medical and health-related sciences in the United States as a part of the total national "health effort." He admitted that implementing this statute is dependent upon the budget cycle.

In developing its mission to support the national health effort, the NLM has come to three philosophical conclusions:

- 1) libraries are not ends in themselves but instrumentalities serving the national health needs;
- 2) libraries need to adapt to a constant change in medical science;
- 3) the library is an adequate base for new or modified information systems.

Throughout its 100-year history, the NLM has engaged heavily in indexing, bibliographic control and interlibrary loan services -- a total task clearly beyond available private resources and possible only with the support of the Federal Government. In reply to a question about the Federal Government's responsibility for coordinating national library programs and policy, Mr. Adams replied that the NLM exchanges views regularly with the staff of such agencies as the National Science Foundation, the Library of Congress and the Office of Education in order to coordinate, insofar as possible, the programs of the NLM with those of other Federal agencies. He added that there should be continuing and even closer coordination of such programs. This remains true even though the Bureau of the Budget presently provides a certain kind of overall review of library and information programs supported by the Federal Government. The witness reminded the Members that research libraries are now outgrowing national systems and setting forth on paths leading to very large international systems of cataloging, indexing and abstracting. This being the case, it seems that only national governments can be counted on for adequate support.

Dr. Hubbard opened a discussion of political, if not constitutional, questions by explaining that one of the earliest kinds of public welfare accepted as a responsibility by the Federal Government was public health. This Federal support has given health programs and the libraries supporting them a clear advantage over other government welfare programs and other library and information undertakings. It was his opinion, and the opinion of others, that considerations of cost had not and would not determine the level of library service available to the country, anymore than it had determined the level of health service the Federal Government attempted to supply its citizens. Public demand had much more influence than cost on these developments. These are, therefore, not so much fiscal as political questions. The public would eventually have, said Mr. Greenaway, exactly what it wants from its government. Dr. Overhage added that a public concern with education will soon become just as compelling as it has been with health. Instead the question is: What kind and what level of services are appropriate for which libraries, and what kind and what level of support should be sought from each level of government? Or, as the Chairman put it: How should we mix financial support of libraries received from various levels of government and from various private sources?

Drs. Fussler and Overhage asked Mr. Adams what structure might seem a desirable instrument to coordinate Federal library programs, perhaps to determine policy governing them and to supply a central initiative. Mr. Adams did not recommend any particular comprehensive instrument, but cited again the role of the Bureau of the Budget and pointed to a number of practical and technical points of coordination and cooperation now present or developing among the three national libraries on the one hand and, on the other hand, the National Library of Medicine and a network of medical libraries across the country.

The mention of the network of medical libraries led Dr. Carter to engage the witness in a discussion of the experience of the National Library of Medicine with certain technical aspects of its network. From this experience, Mr. Adams drew for emphasis one basic conclusion: The major impediment to further development of the medical library network is the paucity of trained personnel.

In response to Mr. Clapp's question, "What makes a network?", Mr. Adams explained that among medical libraries a natural system had grown up over many years as a result of an active interlibrary loan program long existing among medical libraries. It was only necessary for medical libraries to strengthen and to build upon the existing document-handling network and utilize developing technology for its improvement. A present goal of the National Library of Medicine is to develop and support a limited

number of regional medical libraries and their resources in order that they may provide a more adequate level of library and research assistance to medical libraries in their area. These will be, by and large, institutions which are already attempting such service to other libraries but without sufficient resources. Each of these strengthened regional libraries will be equipped with MEDLARS tapes and will have available ample computer time for the use thereof. These strong regional libraries are envisaged as branches, in a sense, of the National Library of Medicine providing a "backstopping" service to medical libraries in their regions.

Col. Andrew A. Aines, Committee on Scientific and Technical Information.

The first guest of the afternoon, Col. Andrew A. Aines, Technical Assistant in the Office of Science and Technology (OST) and Acting Chairman of the Committee on Scientific and Technical Information (COSATI) of the Federal Council for Science and Technology (FCST), informed the Commission that progress and problem-solving in the information field depends on the full participation of all the elements in our pluralistic society, rather than the government alone. The absence of a large organized effort in the government to deal with those information problems outside science and technology, such as the humanities, law, economics, art, etc., and the present political infeasibility of establishing a substantial group within the Executive Office of the President to manage this aspect of the problem have resulted in the Bureau of the Budget and the Office of Science and Technology assuming responsibility for contributing what they can to needed solutions. (See Appendix C for Col. Aines' written introductory statement.)

According to Col. Aines, COSATI provides a unique forum in the Federal Government that permits about twenty-five Federal agencies to come together and discuss information handling problems. As an FCST entity, COSATI bases its progress on consensus, which on rare occasions makes progress difficult. Where there are demands for rapid action, or when there are severe problems to be solved, the Bureau of the Budget and OST are available to provide assistance. A suggested alternative approach would be the establishment of an authoritative information group at the Executive Office level which would cooperate with the agencies on actions and requirements. At this stage, however, the most effective program would be the construction of solid internal information systems in each agency, appropriately tied into a well-articulated Federal system.

When COSATI came into being three years ago, its primary concern was the coordination of the Federal agencies. Without abandoning its original aim, the Committee has, through maturation, directed its attention toward

national and international systems. Although its basic function is coordinative, COSATI can also initiate activities and does by determining what issues are important at a given time and focusing and encouraging agency efforts along these lines.

With encouragement and support from NSF, the National Academy of Sciences created the Committee on Scientific and Technical Communication (SATCOM) to act as a bridge between the government agencies and the scientific community. SATCOM is still feeling its way, and COSATI is pleased to have this ally.

Working with the problem of the standardization of software is a COSATI panel of operational technicians, who are engaged in programs involving microfiche, cataloging, machine-readable indexes, and generally in those areas relevant to COSATI's field of responsibility.

In order to bring its work closer to the public, COSATI's panels may on occasion include individuals from outside, but closely associated with the government.

Turning from the activities of COSATI to the task before the Commission Members, Col. Aines recommended that the Commission take a systematic look at library problems, viewing all the entities involved in the library field today, from the small neighborhood library to the research library, looking in the future toward the growing possibilities of networks of libraries; that the Commission set up a group of checkpoints leading to recommendations that seem worthwhile in the total system; and that the Commission examine what is really needed, what is available in technology now and in the foreseeable future. Although the Commission cannot change everything, Col. Aines felt that it can, indeed, stimulate important advances.

Mr. Foster E. Mohrhardt, National Agricultural Library.

The brief conversation with Foster E. Mohrhardt, Director of the National Agricultural Library, centered on decentralized provision of library services, library networks, and the overlap of materials and efforts. (See Appendix D for Mr. Mohrhardt's written introductory statement.)

According to Mr. Mohrhardt, standardization and uniformity are mandatory in network development, as well as adequate financial support. In order to develop a decentralized network, the NAL:

- 1) has adopted the Library of Congress Classification Scheme, which is used by the majority of agricultural libraries;
- 2) is compiling an inventory of all agricultural-biological information institutions and organizations;
- 3) has established international clearinghouse programs for extensive agricultural subject bibliographies and translations; and
- 4) is exploring cooperative decentralization, a unique plan in carrying out national responsibilities.

The decentralization concept is best exemplified by a cooperative agreement effected by the NAL and the University of California. Both institutions found their collections in a certain category were incomplete, but the University of California collection was superior and was better housed and maintained. The collections were combined at the University of California, which will in the future provide bibliographic and interlibrary loan service to any area of the country.

In developing library networks, the National Agricultural Library's area of interest lies with land-grant institutions and State universities, which would work cooperatively with the Library. At present the Library is setting up an experimental net of five institutions on the east coast to interchange needed materials utilizing facsimile transmission by telephone. As the pilot is evaluated, it is hoped that other private sources which have not been tapped can be brought into the network.

Although the designation of the national libraries as the appropriate national resource for certain materials has been worked out, the question of overlapping collections and jurisdictions frequently arises. As a conclusion to his remarks, Mr. Mohrhardt suggested the need for a central recording system to prevent the gathering of materials already available.

Executive Session

Commission Procedure.

At the final executive session, the Members discussed studies, experts, and visits to libraries. It was suggested that the compiled list of experts include representatives from Brookings Institution and the Bureau of the Budget; that the Commission consider the areas of adult education, consumer needs, and government representatives of the people; that the Commission's report consist of a brief forward, a sixty-page text, and approximately eight detailed studies by skilled individuals, a report which

would have an impact both on Congress and the public in general; and that the Members inspect different libraries in operation for the purpose of self-knowledge and the possibility that recommendations may emerge from such direct, personal contact with libraries.

Adjournment.

The meeting was adjourned at 4:55 p. m.

Approved by the Commission at
its fourth meeting on March 5,
1967 in New York City.


Douglas M. Knight, Chairman

APPENDIX A

STATEMENT TO THE MEMBERS OF THE NATIONAL ADVISORY COMMISSION ON LIBRARIES BY

Burton W. Adkinson
National Science Foundation
February 13, 1967

I. BACKGROUND

To put the relationship between libraries and the National Science Foundation into perspective it is necessary to review briefly the legislative and administrative history that underlies it.

The National Science Foundation Act of 1950 directs the Foundation to "foster the interchange of scientific information among scientists in the United States and foreign countries." It further charges NSF to underpin the educational processes necessary to promote the national research endeavor, and the institutions in which this endeavor is carried on. Libraries figure in the interchange, educational, and institutional aspects of this assignment.

Title IX of the National Defense Education Act of 1958 directed the establishment, within the Foundation, of the Office of Science Information Service (OSIS). Among other assignments, this office was to "undertake programs to develop new or improved methods . . . for making scientific information available."

These two pieces of legislation clearly involve NSF and OSIS in library matters. However, it must be emphasized that libraries are only one of many components in the research, education, and information fields, and that in each of these fields there are library concerns that fall outside of the "science and technology" boundaries that define the Foundation's responsibilities. Because of these facts neither NSF nor OSIS has singled out libraries per se as a focal point for support; they have rather looked upon them as parts, necessary and important but nevertheless only parts, of the complex systems that must be supported to achieve the Foundation's objectives.

In addition to explicit legislative directives, a number of executive and administrative decisions have been made that further define the Foundation's role in supporting libraries.

(1) Because of the cited legislation's emphasis on science and technology, the Foundation's concerns have focused on libraries used by scientific research communities, and most of these are associated with universities.

(2) Simple accretion of library holdings (and shelf-space) unrelated to some demonstrated need imposed by programs of legitimate Foundation concern have not been supported.

(3) Determination of needs has been left with the libraries themselves. NSF has taken the position that libraries are better equipped to define their customers' requirements than it is.

(4) Library operations specifically required by other agencies of the Federal establishment in achieving their assigned missions are beyond the purview of NSF. By executive order and correspondence, it has been established that coordination in this sphere rests, at least as far as science and technology are concerned, in the Office of Science and Technology.

The following discussion of past, present and possible future interactions between NSF and the library community should be read with the considerations cited above in mind.

II. NSF LIBRARY AREAS OF SUPPORT

Four main areas of NSF interaction with the library community merit identification. These are: (1) direct support of library operations; (2) education of personnel to conduct these operations; (3) systems analysis and automation studies aimed at applying modern technology to these operations; and (4) development of coordinated and cooperative load-sharing networks among libraries.

A fifth area could be added here, which is the indirect contribution to library resources represented by translation programs, improvement of such bibliographical tools as abstracting-and-indexing publications, or basic research into indexing theory, file organization, and the like. To keep this discussion brief, this whole area of potential but indirect benefit to libraries will here be ignored.

Before elaborating on the four areas enumerated above, it should probably be reiterated that the Foundation's proper interest is restricted to scientific and technological efforts, and the information transfer appropriate thereto. If

Foundation support in any of the four areas contributes to other library concerns, well and good; but it has not felt justified in supporting library operations or innovations for their own sake unless their contribution to science and technology could be clearly identified.

A. Support of Library Operations

In this area, which includes building or renovation, acquisition of books and periodicals, and in some instances provision of personnel to staff science libraries, most library assistance has come from what is at present the Institutional Relations Division of the Foundation. The Graduate Science Facilities Program, for example, supports science libraries that are part of science buildings. Institutional Grants for Science, aimed at bolstering research and scientific education resources in recipient institutions, contributed an average of 7 1/2% toward development of library facilities--purchase of books, periodicals, and other library materials in science, and salaries of science library personnel. The University Science Development Program has to date made twenty grants, of which two included about 5% for library support and another two more than 15%. (Taken all in all, these contributions to support of science library operations added up, in 1966, to about \$2 1/4 million.)

B. Education of Science Information Personnel

Some percentage of the NSF funds that go into research in information processing, library support, and the like certainly contribute to the education of people engaged in library processing of scientific information. However, the identifiable portion of NSF expenditures devoted to education of science librarians comes largely from the education component of NSF. In this area the principal emphasis has been on the development of curricula needs to qualify professionals in the handling of scientific information and in the design of modern technological systems suited to this purpose. (Grants totalling about \$325,000 have in recent years been awarded to Georgia Tech, Lehigh, and the University of Illinois.)

C. Systems Analysis and Automation

This and the following category of NSF library development

effort have largely been the province of OSIS. Examples of systems analysis projects supported by OSIS are operations research studies of library functions at Johns Hopkins and Purdue; it has also participated in support of project INTREX at MIT, which is meant to reveal what a large university library complex that takes full advantage of today's technology would comprise. Another example is a study currently under way at the Center for Research Libraries of optimal distribution and holding strategies applicable to library materials.

On the mechanization side, OSIS has underwritten such projects as the University of Illinois effort to develop a comprehensive computer system for automating library operations in general, and a joint Columbia-Harvard-Yale experiment with a computerized catalog of medical literature. It also was the major supporter of the Air-lie House conference on library automation that the Library of Congress convened in 1963. Our most recent library automation project is one now in process at the University of Chicago. (Over the past five years, OSIS has put about one and a half million dollars into investigations of this sort.)

D. Interlibrary Network and Resource Development

In the face of the obvious fact that libraries must abandon the doctrine of local self-sufficiency, particularly in science and technology where information is being generated at an ever-increasing rate and where cross-disciplinary principles are continually diversifying the needs of individual library users, OSIS has put considerable emphasis on development of cooperative load-sharing library networks and investigations of the factors that make such sharing of resources feasible. To provide the libraries themselves with a communication link and a mechanism for planning toward this end, it has supported the headquarters secretariat of the Association of Research Libraries. In Colorado and West Virginia it has aided in studies of regional sharing of library resources and processes. In an effort to identify and develop standards necessary to effective interlibrary communications, OSIS has provided support for the U. S. Standards Institute's Z-39 committee. It is supporting Harvard's library in an exploration of the possible impact on individual participating libraries of the Library of Congress's MARC program which is perhaps the most ambitious computer-based shared-cataloging program now under way.

Much of the effort that OSIS has put into the library network and shared resources area of course is not included in such specific projects as those exemplified above. Instead, it consists in stimulating library groups to identify problems and initiate experimental solutions to them, often without direct NSF fiscal involvement. For example NSF/OSIS has encouraged the library community to begin planning an automated national serials inventory system. To that end it has encouraged the development of specifications for a feasibility study of such a system and supported the study on the specifications. Almost two years ago OSIS made this study available to library groups with an indication that it stood ready to assist financially in the design and development of the system when the library community and other organizations are ready to take the initiative in development and support of such a system. (It is important to take such stimulation effort into account in looking at budget figures, because the half million dollars that OSIS has spent in this field in the last five years is not really a true index to either the effort that has gone into it or the importance attached to it.)

To round out the overall picture of the Foundation's involvement with the library community, it should be pointed out that considerable indirect support for the library community, or at least the university library community, results from the basic research program. The "overhead" charge included in each research grant unquestionably is parcelled out by the administrators of recipient institutions so as to yield some funds for library operations. (Rough estimates of what this has amounted to in the past year yield a figure approaching 10 million dollars, an appreciable sum by comparison with that spent in readily identifiable direct support such as that discussed earlier.)

It is evident from the foregoing, but perhaps deserves emphasis, that NSF is not too heavily involved in the library support business as such, even though to the extent that libraries contribute to research, education and information-transfer processes in the natural and social sciences, they are entitled to some measure of NSF assistance. Moreover, in view of the minute proportion of the overall cost of the national library operation that is represented by the fraction of NSF's budget that can legitimately be directed toward it, it is clear that NSF cannot really underwrite any appreciable part of even those library functions that are within its purview. In the library field, as in its scientific information efforts in general, emphasis must be directed toward stimulation, coordination, systems research, experimentation, and the like, with only occasional emergency support of day-to-day ongoing operations or facilities.

APPENDIX B

STATEMENT TO THE MEMBERS OF THE NATIONAL ADVISORY COMMISSION ON LIBRARIES BY

Scott Adams
National Library of Medicine
February 13, 1967

A national library functions as such by virtue of historical accident and traditions, through the scope of its authorized functions and services, through legislative authority, and through the leadership it exercises.

The National Library of Medicine claims the distinction of statutory establishment. Its purpose as stated by the National Library of Medicine Act (Public Law 941), is to "assist the advancement of medical and related sciences, and to aid in the dissemination and exchange of scientific and other information important to the progress of medicine and to the public health." It is thus a Federally supported resource in the national health effort.

CLASSIC FUNCTIONS

Traditionally, it has functioned as a capstone of a medical library system comprising some 3,000 members, providing through its indexes and catalogs, bibliographic access to health literature, and through its interlibrary loan and photoduplication services, access to the documents themselves. It has functioned through other health libraries to guarantee the availability in the United States of any writing required for scientific or professional purposes by any health worker.

MEDLARS

As a publisher of medical indexes, it supported one of the early efforts to mechanize bibliographic processes, the Welch Medical Indexing Project of 1948. In 1958, it developed an automated publication system, the highly successful Index Mechanization Project. MEDLARS, which combined a publication system with a mechanized search system was initiated in 1961 and has been successfully operational since January 1964. It is used to produce a variety of index publications (including the Index Medicus), and to accomplish some 400 mechanized literature searches monthly. It is also used to produce the Library's

biweekly cumulative book catalog, and its card catalog. With 700,000 bibliographic records, MEDLARS is one of the largest operational citation retrieval systems extant. Through contracts, the Library has decentralized MEDLARS search to UCLA, Colorado, Alabama, Michigan and Harvard, and through agreements, to the National Lending Library for Science and Technology (UK) and to the Karolinska Institutet (Sweden). The Library is developing specifications for a more powerful computer-based system which will contain certain time-sharing features.

EXTRAMURAL FUNCTIONS

The critical need for improved information practices in the medical sciences has received concentrated attention over the past twenty years by health educators, scientists, research administrators, and makers of public policy in both the Executive and Legislative branches. While other fields of science and technology concentrated early on the development of new information service mechanisms, the health sciences have expressed concern for the strengthening and modernizing of an existing institution--the medical library. These interests were concentrated in 1965, on the passage of the Medical Library Assistance Act which authorizes a five-year \$115,000,000 support program to be administered by the Public Health Service through the National Library of Medicine. Thus, the National Library of Medicine acquired a function unique to a national library of supporting the development of other libraries. Its intramural programs and its extramural programs have now a common objective of modernizing and improving information services to health workers. The extramural programs, conducted through well established Public Health Service mechanisms for grants and contracts, provide assistance for the construction of library facilities, for manpower development, research and development in medical library science, basic resources of medical libraries, establishment of regional medical libraries, and support of biomedical publications. To date, 12 training grants, 30 research grants and contracts, 200 resource grants, and 15 publication support grants and contracts have been approved.

FIVE YEAR PROGRAM PLAN

Over the past two years, both intra and extramural programs have been involved in the development of a five-year program plan. This plan contemplates among other factors:

1. The development and perfection of an existing medical library network composed of regional libraries, local library service network, specialized information centers in coordination with the National Library of Medicine itself.
2. The creation of a Center for Biomedical Communications which will comprise a research and development function.
3. The development of a National Toxicologic Information System in accordance with Presidential directives to HEW.
4. The development of a more highly sophisticated computer system and its further decentralization through regional libraries.
5. The reorientation of programs to support information needs of continuing education functions under development in the regional medical programs.
6. The development of audiovisual and related media within the national system.

The objectives of the research and development programs are to minimize the impediments which stand between the individual user and the information he requires. The program contemplates, among other objectives, the conversion of significant parts of the Library's collection to a graphic image retrieval system and the sharing of this system with the regional libraries.

APPENDIX C

STATEMENT TO THE MEMBERS
OF THE
NATIONAL ADVISORY COMMISSION ON LIBRARIES
BY
Andrew A. Aines
Office of Science and Technology
February 13, 1967

About five months ago, in the President's statement announcing the formation of your Commission on Libraries, he asked you to ponder on several grave questions of concern to him, to his staff, to educators, to scientists, to engineers, and especially to the many fine men and women who identify themselves as librarians. He mentioned the "tidal wave of new information touching on every aspect of our lives", and that "piling up valuable new knowl-
edge is not enough; we must apply that knowledge to bettering our lives." He asked what part our libraries could play in the development of our communications and information-exchange networks. He asked you to look at future roles for the libraries, their relationship with other elements in the communications networks, and organizational and economic problems.

These are difficult questions to answer and the challenge you face is understandably one of considerable proportions. This is so because of the huge scope and great complexity of the problem and the encyclopedic knowledge required to reach an understanding of the facts needed in attaining a potential solution. The difficulty is magnified by our inability to arrest the explosion long enough to examine the components objectively. It is not easy to solve a problem that shifts and changes in size and scope as you examine it.

Reflecting on the problem, in the Atlantic Monthly of July 1945, Vannevar Bush observed in an article entitled, "As We May Think":

"The difficulty seems to be, not so much that we publish unduly in view of the extent and variety of present day interests, but rather that publication has extended far beyond our present ability to make real use of the record. The summation of human experience is being expanded at a prodigious rate, and the means we

use for threading through the consequent maze to the momentarily important item is the same as was used in the days of square-rigged ships."

With the passage of two decades, new technology has obviously emerged that may help us find our way through the maze reported by Bush. But it should be understood that while it may be possible for us to harness the computer to help us control and find our way through the growing pyramids of literature, the new communications technology will itself inevitably contribute to the flood of literature, at least until some kind of an equilibrium is reached, temporary as though it may be.

The problem that arises from the additional multi-media flow resulting from the instrumental effect has hardly registered itself as a bona fide claimant for our attention, but it probably will before long. The dilemma must continue as long as we can predict an upward trend in research and development, in education, in the explosion of new information, in communications technology (long-range communication, microphotography, computers, copiers); in information systems developed nationally and internationally, and in the ultimate linkage of these systems. Putting it another way, even if the new communications means contributes magnificently to the solution of the information explosion, the information affluence that has created the dilemma continues to be magnified, less by the addition of new information than by the potential repetitive repackaging of the old information.

This is a sticky problem, and how much marketplace forces will be able to contribute toward its solution is enigmatic. Fortunately, there are programs and trends that may help us avert sole reliance on the faithful Rx of time and the interaction of contending groups as the way to muddle our way through.

Even if we could master the knowledge we need to make it possible to understand the forces, trends, and factors involved, we are still enjoined to provide solutions that will harmonize with other ongoing efforts in this exploding field. At the same time, we are forced to recognize that we do not have a blank check on the resources necessary for optimum solutions. The pluralistic composition of our society precludes the application of government fiat, except perhaps for certain parts of the government library complex, and even in this segment there is question about the propriety and value of the directive as a way to structure improvements.

There is yet another difficulty. In appraising the role of the library, the question should be asked what substantive changes have taken place or appear likely to take place in the world of communication, education, science and technology and others that will change the status of library operations. The reference here is not only to relationships with other components of the information-handling community, but also to the various types of libraries.

How do libraries relate to each other? How can they be integrated in a much more meaningful way than presently? How do research libraries relate to information centers and more important, how can we minimize unnecessary duplication of functions and increase sharing of resources and even tasks? Should the neighborhood library be treated in the same way as the research or special library? What is the probable effect of improved television programming - educational and entertainment - on the local municipal libraries? Should the Federal government take stronger steps to assure coordination of library activities within the government?

Returning to the statement of the President that piling up knowledge is insufficient and that knowledge must be applied toward bettering our lives, it is plain that a new dimension to the problem is added. Librarians traditionally have regarded their role in the information process as what might be termed "an energetically passive one." They work hard to create good collections in their storehouses and a good workshop for patrons sufficiently interested in using the stored knowledge. If their patrons do not make full use of their knowledge bank, this is beyond their responsibility and a problem for management - others. The approach is passive; the plea for help they expressed in recent years is mostly for resources (more books, better facilities, and higher pay) and for more recognition of their profession. Research librarians are more energetic and many sought to obtain and use the new tools made possible through new information-processing technology. Some have even joined hands with the computer people in the development of better library systems. The ferment is evident; some of the library community no longer is willing to take the passive route. But even with a number of spearhead efforts to attain modernity, it is still necessary for the library community to consider specifically what it should do now and in the future to take a more active role in the active application of knowledge. Undoubtedly, the National Advisory Commission will ponder this question as it studies the wide variety of libraries in and out of the government.

Mentioned earlier was the existence of programs which were promising in terms of providing at least some coherence and integration in

the planning and developing of information systems, especially in science and technology.

High on the list is the Committee on **Scientific & Technical Information (COSATI)**, of the Federal Council for Science and Technology, which is chaired by a staff member of the Office of Science and Technology. COSATI has representatives of some twenty Federal agencies, most of whom are the senior information people in their agencies. Others are scientists, engineers, managers, and executives interested or involved in the improvement and coordination of agency communication programs. A number of panels and task groups are employed to study agency programs and problems and make recommendations for improvements.

The names of the groups will give you a clue of their missions and the wide scope of COSATI's interests: Operational Techniques and Systems, Information Sciences Technology, Education and Training, International Information Activities, Management of Information Activities, Information Analysis and Data Centers, National Systems for Scientific and Technical Information, and the Technical Report.

COSATI works closely with the Bureau of the Budget, with the Library of Congress, and with a number of other groups in and out of the government, and generally acts as the scientific and technical information focal point in the Executive Office of the President.

Supported by the National Science Foundation is the National Academy of Sciences-National Academy of Engineering Committee on Scientific and Technical Communication (SATCOM). This organization is expected to be a growing influence in the field.

There are a number of organizations like ICSU, UNESCO, OECD, NATO, and others, operating in the international area, whose influence on informational matters may be important. In the United States, professional societies (chemistry, physics, biology, psychology, engineering) are playing a more direct role in the development of information programs. NSF is assisting them. The larger governmental agencies (DOD, AEC, NASA, DHEW, Commerce) are working on important information systems to support their programs. It is possible that some of the Federal agencies will undertake a larger role in the future and assist in the structuring of national information systems in science and technology. Three studies are being undertaken by COSATI which are in various

stages of completion: abstracting and indexing, oral or informal communication, and data handling. The first of these is supported by NSF and the last two by the Advanced Research Project Agency of the Department of Defense.

The role of industry is not often clear in the structuring of information systems, but there are bits of evidence of interest and action. A committee on information has been informed by the National Security Industrial Association. The United States Chamber of Commerce has shown interest from time to time. However, there is no question but that there are a great number of strong information programs in industry and commerce, especially in the electronics field, in the publishing industry, in the computer field, and in the long-range communications business. New undertakings and mergers in these areas attest to the virility of the thrust of new technology and the opportunities for exploitation.

That there are a large number of groups interested in progress in this field is quite clear, but less clear is how we will be able to solve many of the problems that are evident, many resulting from the changes brought about by new technology and other forces.

What are some of the problems? Some of these will be listed without defining them as fully as they deserve. Standardization of software is near the top in any list. The confrontation of the property-rights of authors and the unsettling effects of the mechanical copier on traditional copyright practices is another. The growth, composition, and support of information networks and the place of libraries and specialized information centers as nodes in the network systems is yet another. We have not yet really addressed ourselves to the goals and economics of information systems programs. The legitimate roles of the government and non-government sectors in the development and operation of information systems are yet to be charted. Participation in the development of worldwide systems will occupy considerable attention, as we can easily recognize how they will affect our national programs. We are just beginning to develop a program to find criteria for the efficiency of information-processing programs. We are conscious of the growing need to employ the tools of operational analysis, systems development, and just plain good management practices in the handling of information. We want to know considerably more about user needs and requirements, and more about the philosophy of information as a marketable commodity to be sold and purchased as a service. There are many more problems not listed above that you have probably encountered in your deliberations.

What has been stated above is more in the nature of a sampler and intended to open any line of discussion that you care to undertake. That the Office of Science and Technology is deeply involved in and concerned about the general information problem for which you are also seeking an answer, there can be little doubt. In the common cause, we are desirous of working as closely as possible with you.

APPENDIX D

STATEMENT TO THE MEMBERS OF THE NATIONAL ADVISORY COMMISSION ON LIBRARIES BY

Foster E. Mohrhardt
National Agricultural Library
February 13, 1967

AUTHORIZATION

The Organic Act of 1862, establishing the Department of Agriculture, designated as one of its basic missions "to acquire and to diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word," and placed upon the Secretary the responsibility to "procure and preserve all information concerning agriculture which he can obtain by means of books. . . ." The Library was established the same year by the first Commissioner of Agriculture. In conjunction with the Library of Congress and the National Library of Medicine it fulfills the traditional functions of a national library.

SERVICES

The National Agricultural Library collection contains approximately 1,263,000 volumes including publications in 50 languages currently acquired from over 155 governments and jurisdictional entities. It makes this store of knowledge available to the research workers of the Department, agricultural colleges and universities, research installations, other government agencies, agricultural associations, industry, individual scientists, farmers, and the general public. It collects current and historical published material and organizes it for maximum use through reference services, loans of publications, photoreproduction, and bibliographical services.

To provide ready access to publications in the Library, it issues currently:

1. The Bibliography of Agriculture, a monthly listing of all significant journal articles, books, pamphlets, etc. acquired by the Library (over 100,000 items per year).

2. The Pesticides Documentation Bulletin, a biweekly computer-produced index to the world's pesticides-related literature.
3. The National Agricultural Library Catalog, a monthly list of all books, periodicals and serials added to the Library collection. (Commercially Produced)

The retrospective "Dictionary Catalog of the National Agricultural Library 1862-1965" is being published this year in 68 volumes. It will enable libraries throughout the world to have at their fingertips information to make available to them the Library collection through loan and/or photocopy services.

NATIONAL AGRICULTURAL INFORMATION NETWORK

Standardization and uniformity are mandatory in network development. In order to prepare a basis for network planning, we have:

1. Completed six studies.
2. Started an inventory covering all agricultural-biological information institutions and organizations.
3. Adopted the Library of Congress Classification Scheme, which is used by the majority of agricultural libraries.
4. Developed pilot projects:
 - (a) An experimental air loan service is scheduled to begin next week. The NAL will serve as a receipt and delivery point for Washington area Federal libraries who wish to lend or borrow materials from Pennsylvania State University.
 - (b) Preliminary agreement has been reached on an experimental network for facsimile transmission of Library materials involving several institutions in Eastern United States.
5. Explored cooperative decentralization, a unique plan in carrying out national responsibilities.

Delegation of responsibility for collecting in subject or geographic areas has been formalized with two institutions, and based on their successful operation, 57 other "delegated agent" proposals are under study or informal agreement.
6. Established international clearinghouse programs for

extensive subject bibliographies and translations in bio-agriculture and on projects involving vocabularies or research and development in communication and documentation.

MECHANIZATION

The National Agricultural Library as the home of the world's first documentation service--Bibliofilm Service--started in 1932, as well as the first major experiment in automation--the Rapid Selector--in 1947, is deeply concerned with information science and the potential use of mechanization and computers. We can report the following progress:

1. The Pesticides Information Center has been established to support research related to plant pest control, pesticides regulations, and to reducing pesticides hazards. This is the first major library effort to operate a science information center.
2. Agricultural-Biological Literature Exploitation.
Task Force ABLE, made up of USDA staff, designed and presented the concepts of an information retrieval system for the Library. Their published report outlined one of the first comprehensive information retrieval plans.
3. Automation of the Bibliography of Agriculture.
The Personal Index to the Bibliography is prepared with the aid of an optical scanner-a character recognition device-in combination with computers. The subject index will shortly be produced this way.
4. Systems Study.

For ten years the Library has been laying the groundwork for a total library automation program. Funds provided in our present budget made it possible for us to start a total systems analysis and design.

Within the next two weeks we will award a contract for the design of an integrated system covering the Bibliography of Agriculture, the Pesticides Information Center, and all of our technical, bibliographic, lending and recording services.

These systems will be designed for compatibility with programs of the Library of Congress and the National Library of Medicine. In addition, they provide for the initiation of a national network.
