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REPORT OF THE
COMPTROLLER GENERAL
OF THE UNITED STATES



Observations On Collection
And Dissemination Of
Scientific, Technical, And
Engineering Information

National Technical Information Service
Department of Commerce

GGD-76-66

MARCH 19, 1976

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-158363

C1
The Honorable Ray Thornton
Chairman, Subcommittee on Domestic
and International Scientific
Planning and Analysis
Committee on Science and Technology
House of Representatives

HSI 53502

Dear Mr. Chairman:

We have noted that the Subcommittee has been actively considering House bill 10230, the National Science and Technology Policy and Organization Act of 1975. The bill provides for establishing a committee to consider the needs for, among other things, Government-wide improvements in existing systems for handling scientific and technological information.

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2
We recently completed a limited examination of the National Technical Information Service, Department of Commerce, particularly the agency's mission as a clearinghouse for scientific, technical, and engineering information. Our examination was primarily concerned with the Service's collection process and the adequacy of information received from other agencies and the private sector. We did not attempt to evaluate the products and services provided by the Service to the various user groups. 778 72

We were informed that the information gathered would interest your Subcommittee in further considering House bill 10230. Further, your office asked us to identify other major issues noted during our examination. The information gathered is presented in appendix I; observations on other issues related to collecting and disseminating scientific and technical information which may need further study are presented in appendix II.

B-158363

This report is also being sent today to the Chairman,
C2 Subcommittee on Government Information and Individual Rights, H³ 61504
C3 House Committee on Government Operations. Copies of this — 1100
C4 report are being sent to the Chairmen of the Senate Committees > 5000
C5 on Aeronautical and Space Sciences, Commerce, and Labor and — 2200
Public Welfare and to the Secretary of Commerce.

Sincerely yours,

Thomas B. Atkins

Comptroller General
of the United States

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ABBREVIATIONS

ERDA	Energy Research and Development Administration
GSA	General Services Administration
HEW	Department of Health, Education, and Welfare
NASA	National Aeronautics and Space Administration
NTIS	National Technical Information Service
OMB	Office of Management and Budget
ST&E	scientific, technical, and engineering

COLLECTION OF SCIENTIFIC,
TECHNICAL, AND ENGINEERING INFORMATION
BY THE NATIONAL TECHNICAL INFORMATION SERVICE

INTRODUCTION

The National Technical Information Service evolved from the Office of Technical Services, established within the Department of Commerce in 1946. The Office of Technical Services cataloged and made readily available to the public the technical literature accumulated during World War II.

Public Law 81-776, approved September 9, 1950, 64 Stat. 823, 15 U.S.C. 1151, directed the Secretary of Commerce to establish and maintain a clearinghouse for scientific, technical, and engineering (ST&E) information. The Office of Technical Services administered the clearinghouse until 1964 when the Department of Commerce formed the Clearinghouse for Federal Scientific and Technical Information. In 1970 it was redesignated the National Technical Information Service (NTIS).

Public Law 81-776 instructs the Secretary to collect ST&E information from whatever sources, foreign and domestic, that are available. Public Law 81-776 states further:

"* * * That the purpose of this Act is to make the results of technological research and development more readily available to industry and business, and to the general public, by clarifying and defining the functions and responsibilities of the Department of Commerce as a central clearinghouse for technical information which is useful to American industry and business."

Although congressional hearings were not held on the bill that was eventually enacted as Public Law 81-776, hearings were held in the Senate during the preceding Congress on an identical bill (S. 493). During those hearings, Senator J. William Fulbright, who introduced the bill, stated:

"This bill will make it possible for a company that is in need of specific information in reference to the latest available technical knowledge on a specific commodity to secure such information through one request instead of hunting from place to place as is the condition at present, and then perhaps not be able to find it even though the data may be available."

- NTIS offers several products and services, such as
- selling technical reports in the form of paper copy, microform, or magnetic tape;
 - selling journals and newsletters announcing acquired reports;
 - making specialized subject searches;
 - preparing NTIS bibliographic data files on magnetic tape; and
 - automatically distributing microforms by subject.

NTIS exchanges information principally by collecting ST&E reports which have originated in other Federal and non-Federal agencies, announcing their availability, and offering the reports and report products for sale. Information collected may be disseminated either directly or through publication in business, trade, or technical and scientific publications.

The sources of all fiscal year 1973, 1974, and 1975 revenues for NTIS are shown below.

	Revenue by source			Total
	FY 73	FY 74	FY 75	
	(000 omitted)			
Sales	\$5,598	\$ 8,129	\$ 8,973	\$22,700
Appropriations	1,497	1,636	2,126	5,259
Processing fees (note a)	744	950	1,049	2,743
Other (note b)	456	582	633	1,671
Total revenue	<u>\$8,295</u>	<u>\$11,297</u>	<u>\$12,781</u>	<u>\$32,373</u>

a/Fees paid by Federal and non-Federal agencies to reimburse NTIS for the cost of processing documents into the NTIS system.

b/Funding for special bibliographies, journals, and order processing for Federal agencies.

At the end of fiscal year 1974, NTIS had collected about 334,000 ST&E literature titles. Documents received in calendar year 1974 were from:

	<u>Number of</u> <u>Documents</u>	<u>Percent</u> <u>of total</u>
Department of Defense	21,284	33.0
Energy Research and Development Administration	13,387	21.0
National Aeronautics and Space Administration	7,987	13.0
Other Federal agencies	29,579	32.0
Organizations in foreign countries	278	.4
Private (domestic) organizations	198	.3
State and local governments	160	.3
 Total	 <u>63,873</u>	 <u>100.0</u>

SCOPE OF REVIEW

We gathered information on NTIS practices for collecting and disseminating technical reports and discussed the NTIS role as a clearinghouse with representatives of NTIS, the General Services Administration (GSA), and the Office of Management and Budget (OMB).

We reviewed summary records applicable to the collection and dissemination of ST&E documents at NTIS; the National Aeronautics and Space Administration (NASA); the Energy Research and Development Administration (ERDA); and the Departments of Labor, Agriculture, and Defense and contacted appropriate officials at those agencies. Also, we discussed NTIS efforts to collect ST&E information from non-Federal agencies. We did not evaluate the services provided by NTIS to the various user groups or the complete collection and dissemination activities at the agencies contacted.

OBSERVATIONS ON COLLECTION
ACTIVITIES BY NTIS

Some Federal agencies are not providing ST&E documents to NTIS, and limited information is obtained from sources other than Federal agencies.

Some Federal agencies not providing
ST&E documents to NTIS

Of the five Federal agencies surveyed, three--ERDA, Defense, and NASA--were submitting almost all of their ST&E documents to NTIS; two--Labor and Agriculture--were not.

According to Agriculture officials, in calendar year 1974, Agriculture published 1,059 ST&E documents. NTIS records showed that 136 Agriculture documents were put into the NTIS system during that period.

Similarly, at the Bureau of Labor Statistics, Department of Labor, we obtained samples of about 455 documents produced in calendar year 1974 which were identified by NTIS officials as suitable for their collection. During that period, however, only about 28 Bureau of Labor Statistics documents were sent to NTIS.

In addition, NTIS officials said they believed several other Federal agencies were not submitting all of their ST&E documents. The Department of Health, Education, and Welfare (HEW); the Department of Housing and Urban Development; GSA; and the Securities and Exchange Commission were mentioned.

An official of NTIS, of Labor, and of Agriculture said Labor and Agriculture did not submit all of their ST&E documents to NTIS because (1) NTIS legislation does not require Federal agencies to submit such data to NTIS and (2) legislation of the Federal agencies involved authorizes them to collect and disseminate their own ST&E information. Another reason, according to an Agriculture official, is that NTIS charges the Federal agencies for processing ST&E information into its system.

Federal agencies not required to submit data

Public Law 81-776 does not require any organization to submit technical information to NTIS. Rather, it directs the Secretary of Commerce "* * * to take such steps as he may deem necessary and desirable--(a) To search for [and] collect * * * such information from whatever sources, foreign and domestic, that may be available * * *."

To obtain data from more agencies, in February 1975 NTIS submitted a proposed circular to GSA which would have required Federal agencies to submit technical information to NTIS and pay the processing costs. As part of the review process, GSA solicited OMB views. OMB was concerned that transferring the information from Federal agencies to NTIS would be very costly and cumbersome and would unnecessarily duplicate information. OMB recommended that the circular not be implemented until an analysis of the cost and need was made. GSA later requested NTIS to provide information regarding other similar efforts financed by the Federal Government, the advantages and disadvantages of a centralized operation such as NTIS, and the cost to implement the circular.

An NTIS official said NTIS decided not to develop the detailed data regarding a centralized operation requested by GSA. Instead, NTIS believed it would be more useful to develop information which may be of assistance to the Federal Science and Technology Survey Committee (proposed under the National Science and Technology Policy and Organization Act of 1975 (H.R. 10230) which was referred to the Senate Committees on Aeronautical and Space Sciences, Commerce, and Labor and Public Welfare in November 1975).

Under this act, the Committee would be directed to consider the need for, among other things, Government-wide improvements in existing systems for handling scientific and technological information.

Legislation authorizing collection and dissemination of ST&E information

As mentioned previously, NTIS legislation does not specifically designate that agency as the sole clearinghouse for ST&E information in the Federal Government. Moreover, the legislation of other Federal agencies authorizes them to collect and disseminate ST&E information.

For example, Agriculture and HEW are directed by statute to collect and disseminate ST&E information relating to agriculture and medicine, respectively.

The Agriculture authority to act as a clearinghouse for agricultural information is contained in 7 U.S.C. 2201 which states:

"There shall be at the seat of government a Department of Agriculture, the general design and duties of which shall be to acquire and diffuse among the people of the United States useful information on subjects connected with agriculture and rural development, in the most general and comprehensive sense of those terms * * *" (Emphasis added.)

Similarly, statutory authority exists for HEW to collect and disseminate information, acting through the National Library of Medicine. The National Library of Medicine was established as part of the Public Health Service:

"In order 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 * * *." 42 U.S.C. 275.

Because "clearinghouse" is defined as "an agency for collection, classification, and distribution esp. of information or other matter or items requiring wide distribution"^{1/} and because Agriculture and HEW are authorized to engage in collection and dissemination, both can be categorized as clearinghouses.

Charges by NTIS for processing data into its system

Public Law 81-776 states that:

"It is the policy of this Act, to the fullest extent feasible and consistent with the objectives of this Act, that each of the services and functions provided herein shall be self-sustaining or self-liquidating and that the general public shall not bear the cost of publications and other services which are for the special use and benefit of private groups and individuals * * *."

NTIS receives appropriated funds, but its operations are primarily financed through revenue from sales and, recently, a processing fee (see p. 2).

In January 1973, to achieve greater self-sufficiency, NTIS began charging some agencies a processing fee for each document submitted. In May 1973, OMB directed that this fee be applied to all agencies, to further reduce NTIS' dependence on funds appropriated specifically for it. The fee varies depending on the method the agency uses to transfer its information to NTIS. Agencies transferring information in machine-readable form pay no processing fee; agencies submitting documents not in machine-readable form are charged a fee of up to \$38.50 per document.

Our survey indicated that the fee acts as a deterrent. Some agency officials are reluctant to pay fees for documents they are voluntarily submitting.

For example, in a 1974 letter, an Assistant Secretary of the Department of Agriculture stated:

"I am not prepared to commit the agencies of this Department to reimburse NTIS for costs it incurs in processing documents that are generally available

^{1/}"Webster's Third New International Dictionary," Philip Babcock Gove, ed., (Springfield, Mass., G. & C. Merriam Co., 1971).

through the agricultural technology transfer system. This does not preclude the development of special arrangements for specific situations where it may be mutually advantageous for NTIS to process agricultural material."

NTIS accepted documents from Agriculture and absorbed the processing costs while negotiating the matter with the agency. As of July 1, 1975, however, NTIS refused to process documents submitted by organizations unless accompanied by the processing fee.

Major agencies affected by this policy include the Department of Housing and Urban Development and HEW. NTIS is continuing to negotiate with these organizations in an attempt to obtain both the documents and the fee.

We believe the act intended that self-sufficiency be a secondary objective (collecting and disseminating ST&E information being the primary objective) and not interfere with the effectiveness of the NTIS program. Also, we believe the language of the act is so broad that the Secretary of Commerce could change the policy on fees if he or she determined it to be harmful to the program and could seek additional appropriated funds, if necessary.

Limited information obtained from sources other than Federal agencies

NTIS is directed by Public Law 81-776 to collect ST&E information from whatever sources are available. Sources of this information outside the Federal Government include State and local governments, private organizations, and foreign organizations.

NTIS has concentrated its collection efforts almost exclusively within the Federal Government. As a result, little information from other sources is collected:

<u>Source</u>	<u>Number of documents collected calendar year 1974</u>
State and local governments	160
Private domestic organizations	198
Organizations in foreign countries	<u>278</u>
Total	<u>636</u>

The documents received from these sources represent about 1 percent of all documents collected for calendar year 1974.

APPENDIX I

APPENDIX I

Scientific and technical journals are another source for this information. The results of thousands of federally funded efforts are published annually as articles in journals. An official of one agency estimated it alone funded efforts that resulted in publishing about 7,000 articles in 1974.

NTIS officials said NTIS devotes very little of its resources to collecting ST&E information from non-Federal sources. The major reasons NTIS cited are that these sources (1) are reluctant to pay the fees charged by NTIS and (2) in many instances, do not wish to have their material made public.

OBSERVATIONS ON OTHER ISSUES RELATED TO
COLLECTION AND DISSEMINATION OF ST&E INFORMATION
WHICH MAY NEED FURTHER STUDY

1. Several Federal agencies, including NTIS, are legally authorized to collect and disseminate "scientific, technical and engineering information." Agencies differently interpret what documents should be classified as ST&E. The need for a uniform definition should be explored.

2. Federal agencies charge different prices for the same ST&E documents. Are these agencies subject to the requirements of OMB Circular A-25 relating to user charges? Are agencies uniformly administering the circular? Do the practices followed provide for equitable charges to users of the information, regardless of where the user obtains the document?

3. Basically, regarding ST&E information, three steps are carried out by Federal agencies:

1. Preparing source material.
2. Collecting and cataloging such information.
3. Packaging and disseminating such information.

Each function needs to be studied to determine whether (1) it is necessary and distinct from the others, (2) duplication can be eliminated, (3) adequate coordination exists between the agencies, (4) centralization of some or all of the functions would be better than decentralization, and (5) the laws in existence complement each other or, in fact, conflict. Consideration should be given to determining what effect the collection and dissemination of ST&E information by several agencies has on the users of these documents and what changes might be needed to best serve them.

4. Various user groups (such as scientists, program managers, and policy makers) require different types of information services. The needs of these user groups should be identified and a determination should be made whether the services provided by Federal agencies match the needs.

5. The ST&E information the Federal Government believes it should acquire from non-Federal sources and the best method of obtaining such data need to be examined. NTIS has considerable difficulty obtaining such data and is confronted with that sector's decisions not to make the results of its efforts available to everyone.