NASA/DoD Aerospace Knowledge Diffusion Research Project

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Summary Report to Phase 2 Respondents
Including Frequency Distributions

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THE NASA/DOD AEROSPACE KNOWLEDGE DIFFUSION RESEARCH PROJECT

Report to Phase Two Respondents

Introduction

This project, started in 1989, is designed to explore the diffusion of scientific and technical information (STI) throughout the aerospace industry. The increased international competition and cooperation in the industry promises to significantly affect the STI demands of U.S. engineers and scientists. Therefore, it is important to understand the aerospace knowledge diffusion process itself and its implications at the individual, organizational, national and international levels.

The Project is planned in four Phases. Phase 1 is designed to study the information-seeking habits of U.S. aerospace engineers and scientists. Phase 2, the subject of this report, is concerned primarily with the transfer of scientific and technical information in industry and government and the role of librarians and technical information specialists. Phase 3 looks at the use and transfer of STI in the academic aerospace community. Phase 4 will examine knowledge production, use and transfer among non-U.S. individuals and aerospace organizations.

Part I

Data Collection Methods

The list of U.S. and Canadian government and industrial libraries was compiled from several sources. One source was the Directory of Special Libraries and Information Centers. Additional libraries were compiled from the members of the Aerospace Division of the Special Libraries Association. All libraries held aerospace, aeronautical or related collections. In addition to the industry libraries, government libraries, including both regional depositories and armed services libraries, were included on the list. Academic libraries with aerospace collections were included if the institution did not offer an aerospace program. (Academic libraries in institutions offering aerospace programs were included in Phase 3 of this project.)

The self-administered questionnaire was mailed to all the libraries rather than a sample. The questionnaire was directed to the person listed as the head of the library. Often it was given to the person in charge of the aerospace collection. Generally, in any corporate group and location, only the main library (based on collection size) was surveyed. The survey was conducted between May and August 1990. The Center for Survey Research staff called every fifth non-respondent. These calls, reminded respondents to return the questionnaire. They also eliminated libraries which were not eligible for the study. For instance, some libraries had been closed for lack of funds. In all, 156 libraries responded to the survey with an adjusted response rate of 68 percent.

Description of the Participants

The librarians were asked to provide some information about themselves and their libraries. This section describes the librarian. Almost 70 percent of the librarians were female. Most had extensive experience as information specialists. Overall, 78 percent had more than five years experience. However, 43 percent had been in his or her current job five years or less. Altogether, 72 percent held the current job less than ten years. Seventy-one percent of the librarians had earned the MLS.

Sixty percent were members of SLA and 25 percent were members of ALA. Seventeen percent did not belong to any national professional information society. The librarians were not likely to be members of technical societies. Only about four percent were members of ACM, AIAA and ASTM, respectively. About eight percent held IEEE membership.

The librarians were also asked to provide information about their library. Thirty-six percent reported that there was more than one library at their facility. Staff sizes of the libraries varied. Forty-one percent employed only one librarian or technical information specialist. Thirty-eight percent reported their library employed between two and five librarians. Fifty-nine percent reported their library employed only one

administrative or management person and 37 percent employed only one library technician. Ninety-two percent employed at least one clerk.

Total Size of Staff of All Libraries at Facility

Staff Type	None	One	2-5	6 or More
Management	5.3	58.5	22.4	14.1
Librarian/TIS	0.0	40.7	38.2	19.2
Library Technician	5.1	36.7	28.5	28.2
Clerk	6.6	38.5	33.0	19.8
Other	7.7	42.3	23.0	22.8

Most (72 percent) of the information centers functioned as cost centers with the library costs charged to the organizational overhead. Seven percent of the libraries were cost-justified centers in which the library operates on its own budget. The remaining libraries functioned as self-sufficient or profit centers.

The Library as a Cost Center (percents)

Functions	
True Profit Center	1.4
Protected Profit Center	4.1
Cost Center	74.7
Self-Sufficient Cost Center	8.2
Cost Justified Center	11.6

Part II

Reports Received

Most of the respondents (82 percent) reported that their library received NASA technical reports in paper. Only 68 percent received microfiche reports. DoD technical reports were received in paper by 76 percent and in fiche by 59 percent. Sixty-five percent received AGARD technical reports in paper and 47 percent received them in fiche.

NASA Technical Reports

Most libraries hold the only NASA technical report collection in the organization. Only 12 percent reported that an engineering or research department or office maintained a separate collection of NASA technical reports. Thirty-four percent receive NASA reports directly from NASA and 34 percent receive them from NTIS. Thirteen percent reported receiving them from the GPO.

The librarians were asked to consider why their library might discontinue automatically receiving NASA technical reports. Sixty-eight percent said subscription cost could be a factor. Another potential factor was lack of physical storage space (66 percent). Only fourteen percent said NASA technical reports duplicated other information sources and less than ten percent felt NASA reports were not timely.

The librarians were asked to consider the factors that influenced the use of NASA technical reports by both the technical management personnel and the engineering and research personnel in their facility. They noted that accessibility was an influential factor in the use of the reports. Sixty-one percent said it affected use for the technical management personnel and 73 percent noted accessibility was an important factor for the engineers and researchers. Most of the other factors affected both groups of users about the same. Technical quality was seen to be the most important factor for both groups.

Factors Influencing Use of NASA Technical Reports
(percents)

Factor	Technical/Management Personnel	Engineering/Research Personnel
Accessibility	61.2	72.5
Ease of Use	49.0	58.9
Expense	36.9	34.2
Familiarity	61.4	65.0
Technical Quality	65.0	73.7
Relevance	64.1	66.6
Comprehensiveness	53.5	60.2
Physical Proximity	50.0	53.5
Skill in Use	35.6	50.4
Timeliness	57.4	56.4

The librarians also rated the reports themselves. Fifty-eight percent of the librarians rated NASA technical reports as accessible and 81 percent rated them high in technical quality. The reports were rated high by 74 percent of the librarians in relevance. The three factors rated highest by the librarians were the same as the librarians perceived influenced management personnel; technical quality, relevance and familiarity. The librarians perceived accessibility to be among the top two factors influencing the use of NASA technical reports by engineers, but they rated accessibility among the lowest three factors themselves. These results indicate the use of NASA technical reports may be reduced by inaccessibility.

Rating of NASA Technical Reports
by the Intermediaries
(percents)

Technical Quality	80.5
Relevance	74.0
Familiarity	67.0
Expense	62.7
Ease of Use	61.3
Comprehensiveness	61.1
Timeliness	57.7
Accessibility	57.6
Physical Proximity	53.1
Skill in Use	50.1

Bibliographic access to NASA technical reports is extensive in most libraries. Over 90 percent provide access via author, title, subject, and report number. Eighty percent also provide corporate source access and 70 percent provide access by contract/grant number. Seventy-nine percent provide access by key words.

The librarians were also asked to the reasons why they were unable to obtain a NASA technical report for a patron. (See tables at end of report for complete list.) The reason most often cited was the "library did not own the report" with 85 percent of those responding indicating it had happened at least once in the preceeding six months. Sixty percent noted they had trouble obtaining a NASA report because it was classified or restricted.

NASA Information Products and Services

The librarians were asked to review several statements about NASA products and indicate whether they agreed or disagreed with the statements. The librarians (74 percent) found SCAN to have current announcements and 71 percent said SCAN was easy to use. Eighty-four percent said RECON coverage was adequate, but only 37 percent said RECON was easy to use. Sixty-seven percent found the RECON database

to be current and 52 percent said RECON searches were sufficient compared to searches of other databases. The librarians were also asked to evaluate STAR and IAA.

STAR and IAA Evaluation
(percents)

	STAR	IAA
The coverage is adequate	76.7	84.4
The category scheme is adequate	71.0	80.6
The announcements are adequate	62.4	70.3
The abstracts are adequate	77.4	77.3

The librarians were also asked which NASA products they would be likely to use in an electronic format. Sixty-one percent would use NASA technical reports online and 47 percent would use NASA reports on CD-ROM.

Bibliographic Tools and Electronic Services

The librarians were asked to rate the importance of various indexes and bibliographic information sources. NASA STAR was rated very important by 50 percent and 74 percent found DTIC DROLS very important. Other sources ranked as very important by more than 50 percent of the librarians were: Aerospace Index, (58 percent); COMPENDEX, (66 percent); INSPEC, (55 percent); and NTIS OnLine, (65 percent.)

Electronic search services are primarily done by the intermediaries. Sixty-three percent reported that all searches use intermediaries. The method of payment for these services varies according to the organization. Forty-three percent of the libraries absorbed all costs and 19 percent split the costs with the user. The user paid all costs in 21 percent of the libraries.

Services Provided

A variety of services are provided at most libraries. Some examples are: document order and delivery (94 percent); handouts and library guides (81 percent); locating sources (97 percent); identifying documents (97 percent); and acquiring information (97 percent.) Other widely provided services include: alerting services (63 percent); electronic ordering (62 percent) electronic reference services (78 percent); in-house STI and routing services (61 percent); database development (73 percent); and on-line catalog searching (53 percent). It is important to note that 67 percent of the librarians thought that engineering and research staffs were not aware of the available services and did not use the library as a result.

Sixty-five percent of the respondents listed the personal collections of users as a competitor to the library in providing services to the engineering and research staff. Fifty-five percent reported competition from the "old boy" network. The third major competitor, marked by over half of the respondents (51 percent), was department or project "libraries". Three-quarters noted that there were "gatekeepers" in their organization.[1]

Rating NASA as an Information Provider

The intermediaries were asked to rate NASA in three categories: 1) knowledge of the technical information needs of the user 2) community, effort devoted to understanding user needs and 3) involving intermediaries in the information transfer process. NASA was rated high by 57 percent for its knowledge of the technical information needs of the user community. Fifty-one percent rated NASA high on the effort NASA devotes to understanding the technical information needs of the user community. However, only 38 percent gave NASA high grades for the effort NASA devotes to involving intermediaries in transferring the results of NASA research to the user community.

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[1]Gatekeepers were defined as "engineers or researchers who serve as information intermediaries for their colleagues.

Part III
Summary and Comparisons

This portion of Phase 2 of the NASA/DoD Aerospace Knowledge Diffusion Research Project was concerned primarily with the ratings of librarians and other information intermediaries have of STI used by aerospace engineers and scientists. Some broad patterns of similarities and differences have emerged.

First, librarians and engineers use different resources to obtain information. The personal collections that the engineers and scientists go to first (see our Phase 1 report) are seen as competition by the librarians. The information specialists use the electronic and database collections more often than do the engineers and scientists.

Second, the librarians want to be more actively involved in the research activities of their clients. They believe the information resources they have available are under-utilized by the researchers in the facilities where they work. They believe that researchers are not aware of all the STI resources and facilities available to them via the information centers. The engineers and scientists who responded to the Phase 1 study indicated that they explore informal information sources first, then look to formal resources themselves and finally turn to librarians and technical information specialists only when their other efforts have not proven fruitful. This indicates that the information-gathering process used by the researchers inhibits their use of the libraries and the professionals who work there.

Finally, while the information specialists think NASA has a fairly good understanding of the needs of their clients, they feel NASA may not be doing enough to assist the librarians to be involved in the research process. Eighty-six percent want NASA to host a conference to help in this regard.

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ADDITIONAL INFORMATION ON THIS PROJECT

Phase 1 of this project is concerned primarily with the use and rating of STI by aerospace engineers and scientists. AIAA members were asked to review several information sources and rate them and to describe the patterns they use to gather the information they need. Analysis of these data is underway.

Phase 3 of this project focuses on the academic sector of the aerospace community. Questionnaires were sent to undergraduate engineering students and to faculty in aerospace-related departments. Additionally, questionnaires were sent to academic librarians in schools with aerospace programs. Each group was asked to evaluate aerospace STI and to explain how STI is used. Analysis of these data is underway.

Phase 4 began in summer, 1990 with a pilot study in Europe and Japan. A study of aerospace engineers and scientists in Britain is scheduled to begin in February, 1991. Additional surveys in NATO countries and Japan are planned.

If you would like additional information about this study or copies of reports that examine these data in more detail, please contact:

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We welcome your comments and suggestions.

NASA/DoD AEROSPACE KNOWLEDGE DIFFUSION RESEARCH PROJECT PUBLICATIONS

Reports

Pinelli, Thomas E.; Myron Glassman; Walter E. Oliu; and Rebecca O. Barclay. **Technical Communications in Aeronautics: Results of an Exploratory Study.** Washington, DC: National Aeronautics and Space Administration. NASA TM-101534, **Report 1, Part 1.** February 1989. 106 p. (Available from NTIS, Springfield, VA; 89N26772.)

Pinelli, Thomas E.; Myron Glassman; Walter E. Oliu; and Rebecca O. Barclay. **Technical Communications in Aeronautics: Results of an Exploratory Study.** Washington, DC: National Aeronautics and Space Administration. NASA TM-101534, **Report 1, Part 2.** February 1989. 84 p. (Available from NTIS, Springfield, VA; 89N26773.)

Pinelli, Thomas E.; Myron Glassman; Rebecca O. Barclay; and Walter E. Oliu. **Technical Communications in Aeronautics: Results of an Exploratory Study -- An Analysis of Managers' and Nonmanagers' Responses.** Washington, DC: National Aeronautics and Space Administration. NASA TM-101625, **Report 2.** August 1989. 58 p. (Available from NTIS, Springfield, VA; 90N11647.)

Pinelli, Thomas E.; Myron Glassman; Rebecca O. Barclay; and Walter E. Oliu. **Technical Communications in Aeronautics: Results of an Exploratory Study -- An Analysis of Profit Managers' and Nonprofit Managers' Responses.** Washington, DC: National Aeronautics and Space Administration. NASA TM-101626, **Report 3.** October 1989. 71 p. (Available from NTIS, Springfield, VA; 90N15848.)

Pinelli, Thomas E.; John M. Kennedy; and Terry F. White. **Summary Report to Phase 1 Respondents.** Washington, DC: National Aeronautics and Space Administration. NASA TM-102772, **Report 4.** January 1991. 8 p. (Available from NTIS, Springfield, VA.)

Pinelli, Thomas E.; John M. Kennedy; and Terry F. White. **Summary Report to Phase 1 Respondents Including Frequency Distributions.** Washington, DC: National Aeronautics and Space Administration. NASA TM-102773, **Report 5.** January 1991. 53 p. (Available from NTIS, Springfield, VA.)

Pinelli, Thomas E. **The Relationship Between the Use of U.S. Government Technical Reports by U.S. Aerospace Engineers and Scientists and Selected Institutional and Sociometric Variables.** Washington, DC: National Aeronautics and Space Administration. NASA TM-102774, **Report 6.** January 1991. 350 p. (Available from NTIS, Springfield, VA.)

Pinelli, Thomas E.; John M. Kennedy; and Terry F. White. **Summary Report to Phase 2 Respondents Including Frequency Distributions.** Washington, DC: National Aeronautics and Space Administration. NASA TM-104063, **Report 7.** March 1991. 40 p. (Available from NTIS, Springfield, VA.)

Papers

Pinelli, Thomas E.; Myron Glassman; Rebecca O. Barclay; and Walter E. Oliu. **The Value of Scientific and Technical Information (STI), Its Relationship to Research and Development (R&D), and Its Use by U.S. Aerospace Engineers and Scientists. Paper 1.** Paper presented at the European Forum "External Information: A Decision Tool" 19 January 1990, Strasbourg, France.

Blados, Walter R.; Thomas E. Pinelli; John M. Kennedy; and Rebecca O. Barclay. **External Information Sources and Aerospace R&D: The Use and Importance of Technical Reports by U.S. Aerospace Engineers and Scientists. Paper 2.** Paper prepared for the 68th AGARD National Delegates Board Meeting, 29 March 1990, Toulouse, France.

Kennedy, John M. and Thomas E. Pinelli. **The Impact of a Sponsor Letter on Mail Survey Response Rates. Paper 3.** Paper presented at the Annual Meeting of the American Association for Public Opinion Research, Lancaster, PA, May 19, 1990.

Pinelli, Thomas E. and John M. Kennedy. **Aerospace Librarians and Technical Information Specialists as Information Intermediaries: A Report of Phase 2 Activities of the NASA/DoD Aerospace Knowledge Diffusion Research Project. Paper 4.** Paper presented at the Special Libraries Association, Aerospace Division - 81st Annual Conference, Pittsburgh, PA, June 13, 1990.

Pinelli, Thomas E.; Rebecca O. Barclay; John M. Kennedy; and Myron Glassman. **Technical Communications in Aerospace: An Analysis of the Practices Reported by U.S. and European Aerospace Engineers and Scientists. Paper 5.** Paper presented at the International Professional Communication Conference (IPCC), Post House Hotel, Guilford, England, September 14, 1990.

Pinelli, Thomas E. and John M. Kennedy. **Aerospace Knowledge Diffusion in the Academic Community: A Report of Phase 3 Activities of the NASA/DoD Aerospace Knowledge Diffusion Research Project. Paper 6.** Paper presented at the 1990 Annual Conference of the American Society for Engineering Education - Engineering Libraries Division, Toronto, Canada, June 27, 1990.

Pinelli, Thomas E. and John M. Kennedy. **The NASA/DoD Aerospace Knowledge Diffusion Research Project: The DoD Perspective." Paper 7.** Paper presented at the Defense Technical Information Center (DTIC) 1990 Annual Users Training Conference, Alexandria, VA, November 1, 1990.

Pinelli, Thomas E.; John M. Kennedy; and Rebecca O. Barclay. "The Role of the Information Intermediary in the Diffusion of Aerospace Knowledge." Science and Technology Libraries 11:2 (Winter) 1990: 59-76. **Paper 8.**

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Survey of Librarians and Technical Information Specialists

156 Respondents

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FREQUENCY DISTRIBUTIONS OF RESPONDENTS' ANSWERS

The following tables reflect the actual number of respondents answering each question in a specific way rather than the percentages of respondents choosing an answer. For most questions, all respondents were eligible to respond. However, for some questions, only respondents answering a previous question in a specific way were eligible. In some cases, a large number of respondents did not answer a question, although eligible to do so. Most of these questions had yes-no answers and it is safe to assume that "no answer" means no or did not use the information sources. Using actual frequency of response should provide readers with a clearer picture of the meaning of the data. Question order (and in some cases, question text) has been slightly modified for ease of presentation and reader use. Any reader with particular interest in the data may contact the authors for additional information and assistance.

Approximately how many times in the past six months has a NASA technical report been requested by one of your patrons but could not be obtained from your library for each of the following reasons?

	0	1-10	11-25	26-100	More than 100
Your library did not own the report	12	34	15	15	6
Your library owned the report but it was missing or could not be found	33	29	1	3	2
The report was in a STAR category not received by your library	37	15	4	1	0
The report was distributed in fiche only and your library receives paper copy in that STAR category	48	3	0	0	0
The report was distributed in paper only and your library receives fiche copy in that STAR category	49	4	0	0	0
The report was listed in STAR but was not automatically distributed by NASA	34	16	4	2	0
The report was in a STAR category you automatically receive but you never received it	42	5	1	0	0
The report was referenced as a NASA publication but was not in the NASA system	29	25	4	1	0
The report was a classified, restricted, or limited distribution document	26	35	3	0	1
The report was available only from the NASA center of origin	42	12	1	0	1
The report was available only from the author or technical monitor	42	8	1	0	1
Insufficient bibliographic information; did not know where or how to obtain the report	37	25	0	0	1

Approximately how many times in the past six months did the library staff use the following print sources?

	Do not have	0	1-10	11-25	26-100	More than 100
Applied Science and Technology Index	58	12	21	10	15	12
Engineering Index	67	5	20	9	15	14
Current Contents	71	13	19	3	8	10
Government Reports Announcement and Index	55	10	22	8	19	18
International Aerospace Abstracts	62	9	22	10	9	18
NASA SP-7037	64	31	18	5	2	2
NASA SCAN	74	25	4	8	6	6
NASA STAR	37	8	24	15	24	22
Science Citation Index	90	15	5	2	6	7

Approximately how many times in the past six months did the library staff use the following electronic sources?

Aerospace Database	28	10	24	19	23	28
COMPENDEX	28	9	23	17	29	27
DTIC DROLS	55	11	15	10	14	23
INSPEC	24	12	30	17	27	22
NASA RECON	49	20	17	10	10	16
NTIS Online	25	6	21	18	32	33
Wilson Line Index	76	25	11	4	5	5
SCISEARCH	37	19	40	10	13	11

LIBRARY SURVEY

Approximately how many potential library/TIC users are there at your facility?		Approximately what percentage of the potential users actually use your library/TIC?	
1-100	15	1-10%	6
101-500	28	11-25%	21
501-10,000	62	26-50%	39
More than 10,000	9	51-75%	23
		76-100%	13

Including in-house (company) reports, approximately how large is your library's/TIC's technical report collection?		Approximately what percentage of your total technical report collection is NASA/NACA technical reports?	
0-1000	21	0-5%	21
1001-10,000	30	6-10%	10
10,001-50,000	22	11-20%	14
50,001-100,000	14	21-30%	14
100,001-200,000	11	31-40%	8
200,001-750,000	15	41-50%	12
More than 750,000	12	51-80%	8
		more than 80 percent	9

Approximately how many times in the past six months has your library utilized the following sources to obtain NASA technical reports not in your collection?

	0	1-25	26-50	51-100	More than 100
NTIS	15	47	11	9	14
NASA STIF	38	28	2	2	5
DTIC	32	32	3	5	9
NASA field center library	43	25	0	0	3
NASA author	46	21	0	0	3
Another library	31	39	3	0	5
DDS or broker	56	5	0	0	4
OCLC	48	18	0	0	4
AIAA technical library	42	19	2	6	7

LIBRARY SURVEY

Are there any other library/Technical Information Centers at your facility?	
Yes	54
No	96
How many other libraries/TICs exist at your facility?	
None	6
One	16
Two-Five	22
Six-Ten	5
Over Ten	3
Do the engineering or research department(s), division(s) or office(s) maintain a NASA Technical Report collection separate from that which is kept in your library?	
Yes	15
No	112
Which of the following best describes how your library routinely receives NASA Technical Reports?	
Directly from NASA	51
From NTIS	52
From GPO	20
Does not routinely receive NASA Technical Reports	18

Which of the following best describes the use of NACA and NASA Technical Reports in your library?

	Heavily Used 1	2	3	4	Not Used at All 5	No Collection
NACA	5	7	33	51	5	36
NASA	15	35	53	29	1	14

LIBRARY SURVEY

Please indicate the total size of the library staff at all libraries/technical information centers at your facility:

	0	One	2-5	6-10	11-25	More than 25
Administrative/Management	5	55	21	5	7	1
Librarians/Technical Information Specialist	0	50	47	8	7	9
Library Technician	5	36	28	15	6	7
Clerks	6	35	30	5	5	8
Other	2	11	6	2	3	1

Which of the following describes how your library/TIC functions?

True Profit Center	2
Protected Profit Center	6
Cost Center	109
Self-Sufficient Cost Center	12
Cost-Justified Center	17

Does your library subscribe to, automatically receive, purchase or otherwise obtain the following?

	Yes	No
NASA Technical Reports in paper	125	27
NASA Technical Reports in fiche	94	44
DoD Technical Reports in paper	109	35
DoD Technical Reports in fiche	80	56
FAA Technical Reports in paper	71	67
FAA Technical Reports in fiche	37	87
AGARD Technical Reports in paper	90	49
AGARD Technical Reports in fiche	60	69
US Aerospace Company Technical Reports	88	53
US University Technical Reports	83	52
AIAA papers in hard copy	93	50
AIAA papers in fiche	40	86

Does your library subscribe to, automatically receive, purchase or otherwise obtain the following foreign (non-US) technical reports?

	Yes	No
British ARC & RAE Reports	46	99
ESA Reports	45	98
French ONERA Reports	16	122
German DFVLR, DLR & MBB Reports	28	113
Japanese NAL Reports	8	128
Swedish NAL Reports	8	122

Which of the following are used to provide access to your NASA Technical Report collection?		
	Yes	**No**
Card Catalog	68	33
Printed Directories	106	12
(Online Public Access Catalog) OPAC	52	37
(Computer Output Microfiche Catalog) COMCAT	12	61
NASA RECON	57	31
Other	37	106
How is bibliographic access provided to the NASA Technical Reports in your library?		
Author	113	13
Title	114	9
Report Number	116	10
Subject	112	11
Corporate Source	91	22
Contract/Grant Number	76	32
Key Words	84	23
Which of the following describes how physical access to your NASA/NACA Technical Report Collection is provided?		
NASA-Open	84	25
NASA-Closed	43	45
NASA-Individually Cataloged	70	30
NASA-Arranged by Report Numbers, by Report Series	96	14
NACA-Open	51	32
NACA-Closed	41	33
NACA-Individually Cataloged	41	37
NACA-Arranged by Report Numbers, by Report Series	79	14

Which of the following best characterizes why your library would consider discontinuing automatically receiving NASA Technical Reports?		
	Yes	**No**
Automatic distribution (subscription) is too costly	58	27
NASA TRs duplicate other sources of needed information	10	62
Information contained in NASA TRs is not timely	7	67
Not all the reports received were useful	46	37
Problems with the distribution and receipt of NASA TRs	15	55
NASA contract/grant completed; no longer needed NASA TRs	11	60
Physical (storage) space	61	32
Do not automatically receive NASA TRs	49	38

LIBRARY SURVEY

To what extent do you think the following factors influence the use of NASA TRs in your library:					
By Technical/Management Personnel	**Greatly Influenced 1**	**2**	**3**	**4**	**Not Influenced 5**
Accessibility	32	39	18	8	19
Ease of Use	19	33	28	7	19
Expense	13	28	20	19	31
Familiarity or Experience	37	33	25	6	13
Technical Quality or Reliability	37	30	22	6	8
Comprehensiveness	31	23	33	8	6
Relevance	33	35	26	8	4
Physical Proximity	24	29	23	13	17
Skill in Use	13	24	34	16	17
Timeliness	26	32	28	7	8
By the Engineering or Research Personnel					
Accessibility	50	37	14	5	14
Ease of Use	27	39	24	7	15
Expense	19	20	27	18	30
Familiarity or Experience	33	43	26	7	8
Technical Quality or Reliability	39	42	16	4	9
Comprehensiveness	29	36	30	4	9
Relevance	36	38	25	7	5
Physical Proximity	29	32	18	17	18
Skill in Use	15	41	27	10	18
Timeliness	29	29	28	8	9

Which of the following best represents your library's approach to paying for online search services?	
Not offered	10
User pays nothing; library absorbs costs	64
User pays reduced cost; library absorbs some costs	29
User pays all costs	31
User pays all direct costs plus a fee	4
Other	12
Which of the following best characterizes your library's approach to providing online (electronic) search services?	
Not offered	11
Users do all searches	1
Users do most searches	5
Users do half themselves/half through an intermediary	6
Users do most searches through an intermediary	22
Users do all searches through an intermediary	93
Other	10

How do you view your library's use of the following electronic/information technologies?

	We already use it	**We don't use it, but may in the future**	**We don't use it, doubt if we will**
Audio tapes and cassettes	91	19	38
Motion picture films	34	14	95
Video tapes	95	31	19
Desktop/electronic publishing	43	69	27
Computer cassette/cartridge tapes	46	48	40
Electronic mail	95	46	4
Electronic bulletin boards	56	68	19
FAX or TELEX	135	11	3
Electronic databases	135	10	2
Video conferencing	21	54	65
Teleconferencing	42	49	51
Micrographics and microforms	132	4	8
Laser discs/video discs/CD ROM	76	56	10
Electronic networks	78	54	10

How important to your library are the following print sources?	Very Important 1	2	3	4	Not at all 5	Do Not Have 6
Applied Science/Technology Index	27	19	11	17	9	61
Engineering Index	31	16	12	7	11	66
Current Contents	18	11	11	9	12	79
Government Report Announcement and Index	36	17	21	6	8	60
International Aerospace Abstracts	28	16	9	14	6	70
NASA SP-7037	8	6	19	16	20	68
NASA SCAN	14	3	13	11	9	88
NASA STAR	51	27	13	8	3	43
Science Citation Index	16	5	6	8	6	97
How important to your library are the following electronic sources?						
Aerospace Database	65	11	17	10	9	32
COMPENDEX	75	16	10	7	5	32
DTIC DROLS	56	2	5	4	9	65
INSPEC	64	18	16	12	6	26
NASA RECON	36	12	12	8	5	64
NTIS Online	79	18	14	6	4	26
SCISEARCH	28	23	24	22	12	33
Wilson Line Index	4	7	13	7	15	90

Please indicate how strongly you agree or disagree with each of the following statements concerning the following bibliographic products:

About STAR	Strongly Agree 1	2	3	4	Strongly Disagree 5
The coverage is adequate	42	37	18	5	1
The category scheme is adequate	37	34	23	5	1
The announcements are current	34	29	22	12	4
The abstracts are adequate	44	35	19	3	1
About IAA					
The coverage is adequate	29	25	7	3	0
The category scheme is adequate	25	25	11	1	0
The announcements are current	24	21	15	4	0
The abstracts are adequate	30	21	14	1	0
About SCAN					
The announcements are current	14	12	6	2	1
SCAN is easy to use	13	12	5	5	0
SCAN is timely	14	12	5	3	1
The print quality is adequate	11	12	5	7	0
About RECON					
The coverage is adequate	29	19	7	2	0
RECON is easy to use	11	11	14	16	7
The RECON database is current	14	23	13	5	0
Searches on RECON meet user's research requirements	12	23	14	7	0
Searches on RECON are sufficient compared to searches of other databases	11	17	17	6	3

How likely would you be to use the following if they were provided in electronic format?

	Very Likely 1	2	3	4	Not at all Likely 5
IAA on CD-ROM	25	12	13	18	39
STAR on CD-ROM	34	20	20	16	28
Full text of NASA reports on CD-ROM	34	23	19	16	29
Computer program listings on CD-ROM	15	10	20	21	40
Numerical/factual data on CD-ROM	19	16	18	24	30
Numerical/factual data online	25	17	21	20	23
Images (photographs) on CD-ROM	20	17	18	24	33
RECON front-end	10	9	10	8	27
Online system (full text and graphics) for NASA technical reports	47	25	19	10	17

LIBRARY SURVEY

How does your library generally learn about user needs?		
	Yes	**No**
Requests Received	147	1
In-house Publications	60	74
Survey Questionnaires	45	90
One-on-one Interviews	129	15
Library Staff Meetings with Research/Program Managers	55	77

Which of the following services does your library provide?		
	Yes	**No**
Alerting Services	93	54
Electronic Ordering	88	55
Document Order and Delivery	140	9
Electronic Reference Services	113	32
Handouts and Library Guides	118	27
In-House SDI and Routing Services	87	55
End-User Online Database Search Training	28	114
NASA SCAN	36	104
Stored Search on RECON for SDI	13	118
Time Saving Assistance in:		
Locating Sources	142	5
Identifying Documents	143	4
Acquiring Information	142	4
Expert Help in:		
Learning/Using Information	99	37
Database Development	42	102
Uploading/Downloading	42	97
Remote Online Access to Library Catalog	69	72
CD-ROM Work Station(s) in Library	60	79
Cooperative Cost Sharing Services:		
Group Contract for Online Services	44	92
Coordinated Access to Networks	44	94
Acquisition of Most-used Databases for Searching Online Through Corporate Computer Facilities:		
Aerospace Database	42	88
NTIS Online	50	82
Federal Research in Progress (FEDRIP)	15	108
Energy Database	25	99
DTIC DROLS	28	102
NASA RECON	24	100
Acquisition or Development of User Friendly Front-end Systems for Searching Most Used Online Databases:		
Library Online Catalog Searching	75	66
Gateway Searching of Multiple Databases	25	110

Which of the following do you see as "competition" for your library in providing services to the engineering or research staff?

	Yes	No
The "old-boy" network	75	61
Personal collections	89	48
Other units within the organization:		
Research assistants attached to projects	27	107
Department or project "libraries" not a part of your library	70	67
Direct user access to outside information sources:		
Information brokers	34	97
Publishers	28	102
Online vendors	25	105
NASA/STIF	13	116
NTIS	15	109
Direct use of national computer communications networks:		
ARPANET	5	124
Internet/NSFNET	6	124
Direct use of facility network (local area network):		
Online access to your library catalog	18	111
Online access to other facility libraries	18	111
Transmission of text:		
Office facsimile transmission	28	98
Electronic mail	22	105
Manuscript preparation and delivery (electronic publishing)	11	114
Database creation by users:		
Information collection, storage, and use	34	90
Downloading data to personal files	27	99
Electronic transmission of data	22	101

Overall, how would you rate your library's information services?

Funding:	Excellent 1	2	3	4	Poor 5
Staff Salaries	15	41	50	21	14
Materials/Equipment	7	43	45	28	20
Searching Online	45	49	31	9	8
CD-ROM	12	21	20	14	36
Innovation	20	32	43	24	20
Staffing:					
Staff Size	6	24	53	30	31
Aerospace Experience	17	23	42	25	26
Science Background	15	30	44	28	17
Services to Users:					
Information Supplied on Request	66	59	15	3	1
Alerting	28	52	29	10	9
Turnaround Time	34	50	44	8	2
State-of-the-Art	13	41	36	25	15
Interaction with Users:					
User Needs Surveyed	23	39	33	21	14
User Meetings Attended	15	28	31	25	22
Orientation/Instruction	23	36	47	10	12

Which of the following statements explain why members of the engineering and/or research staff do not use your library?

	Yes	No
They are not aware of the library's existence	48	78
They are not aware of the services offered	89	43
Library's hours not convenient	22	104
Library is physically too far away	64	65
Information needs met more easily elsewhere	47	79
Library does not have the information they need	54	73
Library too slow in getting needed information	40	88
They have to pay to use the library	7	118
Management discourages use of the library	14	112
They have their own personal collection of information	93	37

LIBRARY SURVEY

Years of library/information experience:		Years in present position:	
0 to 5 years	18	0 to 5 years	65
6 to 10 years	16	6 to 10 years	44
11 to 15 years	30	11 to 15 years	14
16 to 20 years	44	16 to 20 years	16
21 to 25 years	19	21 to 25 years	9
26 to 30 years	14	more than 25 years	4
more than 30 years	11		

Education:	
Bachelor's Degree	75
MLS	110
Master's Degree	30
MBA	4
Ph.D.	6
Other	10

Professional (National) Library/Information Membership:		Professional (National) Technical Membership:	
ALA	39	ACM	6
ASEE	4	AIAA	6
ASIS	18	ASTM	6
SLA	93	IEEE	13
Other	21	Other	16
None	27	None	83

Gender:	Female	105
	Male	47

Approximately how many times in the past six months has your library provided the following services for the engineering and/or research staff?

	Do Not Have	0	1-10	11-25	26-100	More than 100
Tour of the library	17	8	64	28	11	5
Library presentation as part of employee orientation	47	22	50	4	6	3
Library skills instruction	28	19	38	18	17	13
Library presentation for members of a research project/team	48	34	40	5	1	1
Engineering information resources and materials instruction	40	20	39	8	12	10
Instruction for end-user searchers	52	24	23	7	12	9

In performing your professional duties as an intermediary, about how many times, in this past year, have you contacted or been contacted by NASA personnel concerning transferring the results of NASA research?

	You Contacted NASA	NASA Contacted You
Zero	68	97
One	9	6
2-10	36	8
11-25	7	1
Lots/Many	3	1

As an intermediary, how would you rate NASA technical reports on each of the following factors?					
	Very Accessible 1	**2**	**3**	**4**	**Not at all Accessible 5**
Accessibility	25	47	36	16	1
	Easy to Use 1	**2**	**3**	**4**	**Difficult To use 5**
Ease of Use Skill in Use	17 21	48 35	35 44	3 8	3 4
	Not Expensive 1	**2**	**3**	**4**	**Very Expensive 5**
Expense	29	45	34	8	2
	Very Familiar 1	**2**	**3**	**4**	**Not at all Familiar 5**
Familiarity or Experience	30	47	25	12	1
	Excellent 1	**2**	**3**	**4**	**Poor 5**
Technical Quality or Reliability Comprehensiveness	33 23	58 43	19 36	3 5	0 1
	Highly Relevant 1	**2**	**3**	**4**	**Not at all Relevant 5**
Relevance	31	54	23	6	1
	Close 1	**2**	**3**	**4**	**Far 5**
Physical Proximity	31	29	37	12	4
	Very Timely 1	**2**	**3**	**4**	**Not at all Timely 5**
Timeliness	20	36	34	5	2

Should NASA sponsor a NASA Technical information users meeting similar to those held by DTIC and NTIS?	
Yes	95
No	15
What form would you prefer the meeting to take:	
Annual meeting held in Washington, D.C.	20
Annual meeting held on a regional basis	46
Meeting held in conjunction with annual national meetings	19

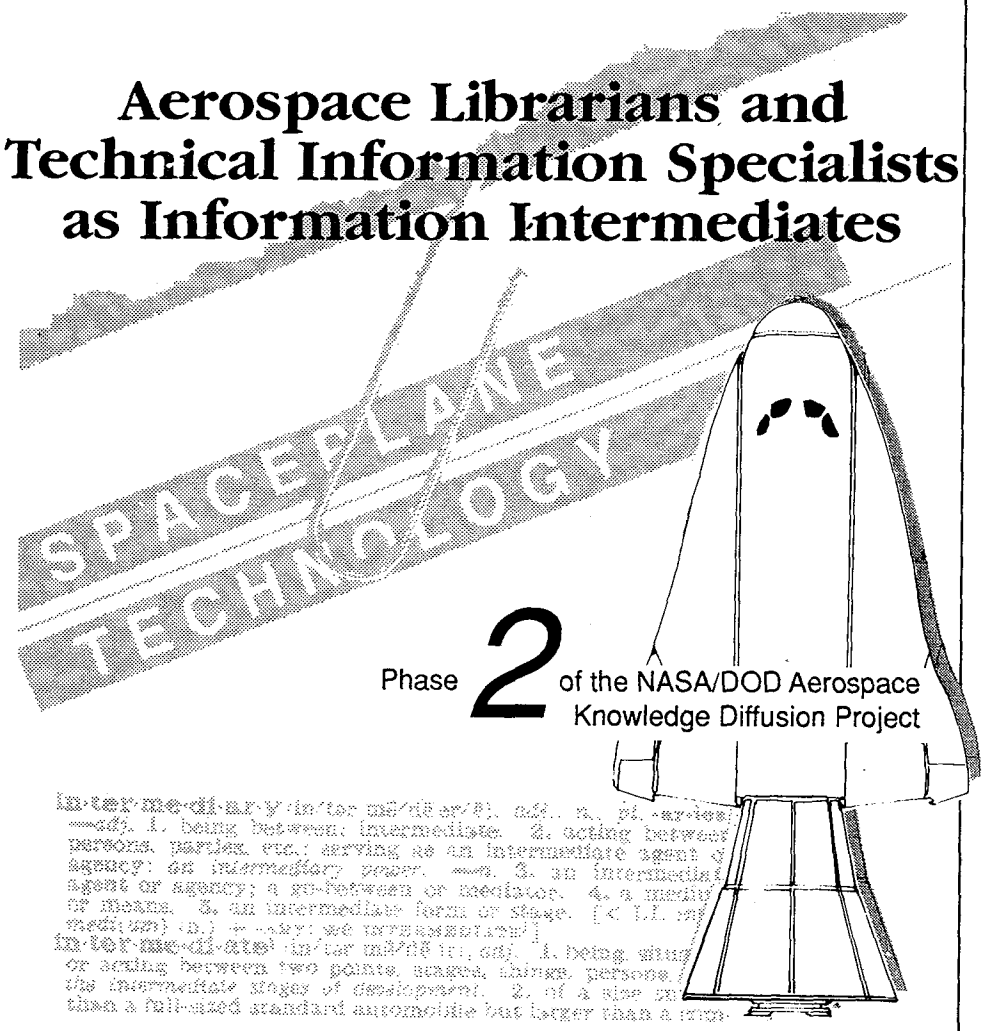
	Extensive	2	3	4	None
As an intermediary, how would you rate your knowledge of the technical information needs of the engineering and/or research staff at your facility?	15	60	44	13	1
As an intermediary, how would you rate NASA's knowledge of the technical information needs of your user community?	23	34	29	10	5
As an intermediaary, how much effort does it appear that NASA devotes to understanding the technical information needs of your user community?	17	34	28	15	7
As an intermediary, how much effort do you think NASA devotes to involving you in transferring the results of NASA research to your user community?	16	25	32	23	12

As an intermediary, how active are you in transferring NASA produced knowledge to the engineering and/or research staff at your facility?				
Very Active	**2**	**3**	**4**	**Very Passive**
12	33	34	30	17

As an intermediary, what steps or actions, if any, do you take to "actively" transfer NASA produced knowledge to the engineering/research staff at your facility?		
	Circled	**Not Circled**
Screening Information	52	104
Interpreting data	18	138

	Yes	No
Within the past year, are you able to cite at least one specific case or incident that demonstrates how information provided (or denied) by your library made a difference to an R&D project?	78	63
In your company or corporation, do you think there are "gatekeepers," engineers/researchers who served as information intermediaries for other engineers and researchers?	97	32

Aerospace Librarians and Technical Information Specialists as Information Intermediates



Phase 2 of the NASA/DOD Aerospace Knowledge Diffusion Project

Sponsored by the
National Aeronautics and Space Administration
and the Department of Defense with the cooperation of Indiana University

These data will provide us with some background about your library.

1. Are there any other library/technical information centers at your facility? (Circle number)

YES	NO	
1	2	Please go to Q3

2. How many other libraries/technical information centers exist at your facility? (Please indicate)

_____ other libraries/technical information centers

3. Please indicate the total size of the library staff in all libraries/technical information centers at your facility?

Administrative/management ..... _____
Librarians/technical information specialists ..... _____
Library technicians ..... _____
Clerks ..... _____
Other (specify) _____ _____

4. Approximately how many potential library/technical information center **users** are there at your facility? (Please indicate)

_____ _____ Don't Know (✓)

5. Approximately what percentage of the **potential users** actually use **your** library/technical information center? (Please indicate percentage)

_____ % _____ Don't Know (✓)

6. Which of the following describes how your library/technical information center functions? These specific terms are derived from "The Library as a Profit Center," Stephen C. Tweed, *Special Libraries* 75:4 October 1984, 270-274. (Please circle **ONLY** one number)

   1. True Profit Center - Library is "...a profit-making segment...held accountable for financial performance just as any other division would be."
   2. Protected Profit Center - Library "...begins to sell services on a limited basis. The profits from outside sales are put back into the operating budget of the library."
   3. Cost Center - Library charged to the overhead of the organization.
   4. Self-Sufficient Cost Center - Library operates on a charge-back system and strives to recover all or part of its operating budget.
   5. Cost-Justified Center - Library operates on its own budget. "Requests for services are recorded and a dollar value is placed on them. Each year the library has an objective to achieve a set level of savings or value recognized."
   6. Other (specify) _____

These data will help us understand how your library deals with technical reports.

7. Does your library subscribe to, automatically receive, purchase, or otherwise obtain the following? (Circle numbers)

	YES	NO	Don't Know
NASA technical reports in paper	1	2	9
NASA technical reports in fiche	1	2	9
DOD technical reports in paper	1	2	9
DOD technical reports in fiche	1	2	9
FAA technical reports in paper	1	2	9
FAA technical reports in fiche	1	2	9
AGARD technical reports in paper	1	2	9
AGARD technical reports in fiche	1	2	9
U. S. aerospace company technical reports	1	2	9
U. S. university technical reports	1	2	9
AIAA papers in hard copy	1	2	9
AIAA papers in fiche	1	2	9

8. Does your library subscribe to, automatically receive, purchase, or otherwise obtain the following foreign (non-U. S.) technical reports? (Circle numbers)

	YES	NO	Don't Know
British ARC and RAE reports	1	2	9
ESA reports	1	2	9
French ONERA reports	1	2	9
German DFVLR, DLR, and MBB reports	1	2	9
Japanese NAL reports	1	2	9
Swedish NAL reports	1	2	9
Other (specify) _____			

9. Do the engineering or research department(s), division(s), or office(s), maintain a NASA technical report collection separate from that which is kept in **your** library? (Circle number)

   1 Yes
   2 No
   3 Don't know

10. Including in-house (company) reports, approximately how large is your library's/technical information center's technical report collection? (Please indicate)

_____ total number of technical reports

11. Approximately what percentage of your total technical report collection is NASA/NACA technical reports? (Indicate percentage)

_____ % _____ Don't Know (✓)

These data will help us understand the use of NASA technical reports in your library.

12. Which of the following **best** describes how **your** library routinely receives NASA technical reports? (Circle **ONLY** one number)

1 Directly from NASA
2 From NTIS
3 From GPO
4 Does not routinely receive NASA technical reports
5 Other (specify) _____

13. Which of the following **best** characterizes the use of the NACA technical reports in **your** library? (Circle number)

Heavily Used				Not Used At All	Don't Know	No NACA Technical Report Collection
1	2	3	4	5	7	9

14. Which of the following **best** characterizes the use of the NASA technical reports in **your** library? (Circle number)

Heavily Used				Not Used At All	Don't Know	No NASA Technical Report Collection
1	2	3	4	5	7	9

Please go to Q19, p. 5

15. Which of the following are used to provide access to **your** NASA technical report collection? (Circle **ALL** that apply)

	YES	NO
Card catalog	1	2
Printed directories (e.g., NASA STAR)	1	2
OPAC (Online Public Access Catalog)	1	2
COMCAT (Computer Output Microfiche Catalog)	1	2
NASA RECON	1	2

Other (specify) _____

16. How is bibliographic access provided to the NASA technical reports in your library? (Circle **ALL** that apply)

	YES	NO
Author	1	2
Title	1	2
Report number	1	2
Subject	1	2
Corporate source	1	2
Contract/grant number	1	2
Key words	1	2

Other (specify) _____

17. Which of the following describes how **physical access** to your NASA/NACA technical report collection is provided? (Circle **ALL** that apply)

NASA

	YES	NO
1 Open	1	2
2 Closed	1	2
3 Individually cataloged	1	2
4 Arranged by report numbers, by report series	1	2
5 Other (specify)_____		

NACA

	YES	NO
1 Open	1	2
2 Closed	1	2
3 Individually cataloged	1	2
4 Arranged by report numbers, by report series	1	2
5 Other (specify)_____		

18. Approximately how many times in the **past six months** has your library utilized the following sources to obtain NASA technical reports **not in your** collection?

	Times in the Past Six Months	Don't Know (✓)
NTIS	_____	( )
NASA STIF	_____	( )
DTIC	_____	( )
NASA field center library	_____	( )
NASA author	_____	( )
Another library	_____	( )
DDS or broker	_____	( )
OCLC	_____	( )
AIAA technical library	_____	( )
Other (specify) _____	_____	

19. Approximately how many times in the **past six months** has a NASA technical report been requested by one of **your** patrons but *could not be obtained from your library* for each of the following reasons?

	Times in the Past Six Months	Don't Know (✓)
Your library did not own the report	_____	( )
Your library owned the report but it was missing or could not be found	_____	( )
The report was in a STAR category not received by your library	_____	( )
The report was distributed in fiche only and your library receives paper copy in that STAR category	_____	( )
The report was distributed in paper only and your library receives fiche copy in that STAR category	_____	( )
The report was listed in STAR but was not automatically distributed by NASA	_____	( )
The report was in a STAR category you automatically receive but you never received it	_____	( )
The report was referenced as a NASA publication but was not in the NASA system	_____	( )
The report was a classified, restricted, or limited distribution document	_____	( )
The report was available **only from** the NASA center of origin	_____	Specify NASA center(s) _____ _____
The report was available **only from** the author or technical monitor	_____	( )
Insufficient bibliographic information; did not know where or how to obtain the report	_____	( )
Other (specify _____	_____	

20. Which of the following best characterizes why **your** library **would consider** *discontinuing* automatically receiving NASA technical reports? (Circle **ALL** that apply)

	YES	NO
Automatic distribution (subscription) is too costly	1	2
NASA technical reports duplicate other sources of needed information	1	2
The information contained in NASA technical reports is not timely	1	2
Not all the reports received were useful	1	2
Problems with the distribution and receipt of NASA reports	1	2
NASA contract/grant completed; no longer needed NASA reports	1	2
Physical (storage) space	1	2
Do not automatically receive NASA technical reports	1	2

Other (specify) _____

21. To what extent do you think the following factors influence the use of the NASA technical reports in **your** library by the ***technical management*** personnel in your facility? (Circle numbers)

	Greatly Influenced				Not Influenced	Don't Know
ACCESSIBILITY: the ease of getting to the information source	1	2	3	4	5	9
EASE OF USE: the ease of comprehending or utilizing the information	1	2	3	4	5	9
EXPENSE: low cost in comparison to other information sources	1	2	3	4	5	9
FAMILIARITY OR EXPERIENCE: prior knowledge or previous use of the information source	1	2	3	4	5	9

FACTORS	Greatly Influenced				Not Influenced	Don't Know
TECHNICAL QUALITY OR RELIABILITY: the information was expected to be the best in terms of quality, accuracy, and reliability	1	2	3	4	5	9
COMPREHENSIVENESS: the expectation the information source would provide broad coverage of the available knowledge	1	2	3	4	5	9
RELEVANCE: the expectation that a high percentage of the information retrieved from the source would be used	1	2	3	4	5	9
PHYSICAL PROXIMITY: the distance to the information source	1	2	3	4	5	9
SKILL IN USE: the level of skill or skill mastery required to use the information source	1	2	3	4	5	9
TIMELINESS: the time allocated or available to produce a solution	1	2	3	4	5	9

22. To what extent do **you** think the following factors influence the use of the NASA technical reports in **your** library by **engineering or research** personnel in your facility? (Circle numbers)

	Greatly Influenced				Not Influenced	Don't Know
ACCESSIBILITY: the ease of getting to the information source	1	2	3	4	5	9
EASE OF USE: the ease of comprehending or utilizing the information	1	2	3	4	5	9
EXPENSE: low cost in comparison to other information sources	1	2	3	4	5	9
FAMILIARITY OR EXPERIENCE: prior knowledge or previous use of the information source	1	2	3	4	5	9
TECHNICAL QUALITY OR RELIABILITY: the information was expected to be the best in terms of quality, accuracy, and reliability	1	2	3	4	5	9
COMPREHENSIVENESS: the expectation the information source would provide broad coverage of the available knowledge	1	2	3	4	5	9

FACTORS	Greatly Influenced				Not Influenced	Don't Know
RELEVANCE: the expectation that a high percentage of the information retrieved from the source would be used	1	2	3	4	5	9
PHYSICAL PROXIMITY: the distance to the information source	1	2	3	4	5	9
SKILL IN USE: the level of skill or skill mastery required to use the information source	1	2	3	4	5	9
TIMELINESS: the time allocated or available to produce a solution	1	2	3	4	5	9

23. As an intermediary, how would you rate NASA technical reports on each of the following factors? (Circle numbers)

	Very				Not At all	Don't Know
ACCESSIBILITY: the ease of getting to the information source	1	2	3	4	5	9
	Easy				Difficult	Don't Know
EASE OF USE: the ease of comprehending or utilizing the information	1	2	3	4	5	9
	Not Expensive				Very Expensive	Don't Know
EXPENSE: low cost in comparison to other information sources	1	2	3	4	5	9
	Very Familiar				Not at all Familiar	Don't Know
FAMILIARITY OR EXPERIENCE: prior knowledge or previous use of the information source	1	2	3	4	5	9
	Excellent				Poor	Don't Know
TECHNICAL QUALITY OR RELIABILITY: the information was expected to be the best in terms of quality, accuracy and reliability	1	2	3	4	5	9

FACTORS						
	Excellent				Poor	Don't Know
COMPREHENSIVENESS: the expectation the information source would provide broad coverage of the available knowledge	1	2	3	4	5	9
	Highly				Not At all	Don't Know
RELEVANCE: the expectation that a high percentage of the information retrieved from the source would be used	1	2	3	4	5	9
	Close				Far	Don't Know
PHYSICAL PROXIMITY: the distance to the information source	1	2	3	4	5	9
	Easy				Difficult	Don't Know
SKILL IN USE: the level of skill or skill mastery required to use the information source	1	2	3	4	5	9
	Very				Not At all	Don't Know
TIMELINESS: the time allocated or available to produce a solution	1	2	3	4	5	9

These data will help us determine the use of the bibliographic tools and electronic databases by library personnel.

24. Approximately how many times in the **past six months** did the library staff use the following **print** sources?

PRINT SOURCES	Times in Past Six Months	Do Not Have (✓)
Applied Science and Technology Index	_____	( )
Engineering Index	_____	( )
Current Contents	_____	( )
Government Reports Announcement and Index	_____	( )
International Aerospace Abstracts	_____	( )
NASA SP-7037 (Aeronautical Engineering: A Continuing Bibliography With Indexes)	_____	( )
NASA SCAN	_____	( )

PRINT SOURCES	Times in Past Six Months	Do Not Have (✓)
NASA STAR	_____	( )
Science Citation Index	_____	( )
Other (specify) _____	_____	

25. Approximately how many times in the **past six months** did the library staff use the following ***electronic sources***?

ONLINE (ELECTRONIC) DATABASES	Times in Past Six Months	Do Not Have (✓)
Aerospace Database	_____	( )
COMPENDEX	_____	( )
DTIC DROLS	_____	( )
INSPEC	_____	( )
NASA RECON	_____	( )
NTIS Online	_____	( )
Wilson Line Index	_____	( )
SCISEARCH	_____	( )
Other (specify) _____	_____	

26. How important to your library are the following **print** sources? (Circle numbers)

PRINT SOURCES	Very Important				Not at all Important	Do Not Have
Applied Science and Technology Index	1	2	3	4	5	9
Engineering Index	1	2	3	4	5	9
Current Contents	1	2	3	4	5	9
Government Report Announcement Index	1	2	3	4	5	9
International Aerospace Abstracts	1	2	3	4	5	9
NASA SP-7307 (Aeronautical Engineering: A Continuing Bibliography with Indexes)	1	2	3	4	5	9

PRINT SOURCES	Very Important				Not at all Important	Do Not Have
NASA SCAN	1	2	3	4	5	9
NASA STAR	1	2	3	4	5	9
Science Citation Index	1	2	3	4	5	9
Other (specify) _____	1	2	3	4	5	9

27. How important to your library are the following **electronic sources**? (Circle numbers)

ONLINE (ELECTRONIC) DATABASES	Very Important				Not at all Important	Do Not Have
Aerospace Database	1	2	3	4	5	9
COMPENDEX	1	2	3	4	5	9
DTIC DROLS	1	2	3	4	5	9
INSPEC	1	2	3	4	5	9
NASA RECON	1	2	3	4	5	9
NTIS Online	1	2	3	4	5	9
SCISEARCH	1	2	3	4	5	9
Wilson Line Index	1	2	3	4	5	9
Other (specify) _____	1	2	3	4	5	9

These data will help us determine the use of information technology in your library.

28. Which of the following **best** represents your library's approach to paying for online search services? (Circle **ONLY** one number)

1 Not offered

2 User pays **nothing** for service; library absorbs **all** costs

3 User pays **reduced** cost; library absorbs **some** of the costs

4 User pays **all** costs

5 User pays all direct costs plus a fee

6 Other (specify) _____

29. Which of the following **best** characterizes your library's approach to providing online (electronic) search services? (Circle **ONLY** one number)

1 Not offered

2 Users do **all** searches

3 Users do **most** searches

4 Users do **half** of the searches by themselves and **half** through an intermediary

5 Users do **most** searches through an intermediary

6 Users do **all** searches through an intermediary

7 Other (specify) _____

30. Please state your library's philosophy or policy regarding end-user searching of electronic databases.

_____

_____

_____

_____

_____

31. How do you view your library's use of the following electronic/information technologies? (Circle numbers)

Information Technologies	*We already use it*	*We don't use it, but may in the future*	*We don't use it and doubt if we will*
Audio tapes and cassettes	1	2	3
Motion picture film	1	2	3
Video tape	1	2	3
Desk top/electronic publishing	1	2	3
Computer cassette/cartridge tapes	1	2	3
Electronic Mail	1	2	3
Electronic bulletin boards	1	2	3
FAX or TELEX	1	2	3
Electronic databases	1	2	3
Video conferencing	1	2	3
Teleconferencing	1	2	3
Micrographics & microforms	1	2	3
Laser disc/video disc/CD-ROM	1	2	3
Electronic networks	1	2	3

These data will provide feedback regarding NASA information products and services.

32. Please indicate how strongly **YOU agree** or **disagree** with each of the following statements concerning the following bibliographic products. (Circle numbers)

	Strongly Agree				Strongly Disagree	Don't Know
About STAR						
The coverage is adequate	1	2	3	4	5	9
The category scheme is adequate	1	2	3	4	5	9
The announcements are current	1	2	3	4	5	9
The abstracts are adequate	1	2	3	4	5	9

	Strongly Agree				Strongly Disagree	Don't Know
About IAA						
The coverage is adequate	1	2	3	4	5	9
The category scheme is adequate	1	2	3	4	5	9
The announcements are current	1	2	3	4	5	9
The abstracts are adequate	1	2	3	4	5	9

	Strongly Agree				Strongly Disagree	Don't Know
About SCAN						
The announcements are current	1	2	3	4	5	9
SCAN is easy to use	1	2	3	4	5	9
SCAN is timely	1	2	3	4	5	9
The print quality is adequate	1	2	3	4	5	9

	Strongly Agree				Strongly Disagree	Don't Know
About RECON						
The coverage is adequate	1	2	3	4	5	9
RECON is easy to use	1	2	3	4	5	9
The RECON database is current	1	2	3	4	5	9
Searches on RECON meet user's research requirements	1	2	3	4	5	9
Searches on RECON are sufficient compared to searches of other databases	1	2	3	4	5	9

33. How likely would **YOU** be to use the following if they were provided in electronic format? (Circle numbers)

	Very Likely				Not at all Likely	Don't Know
IAA on CD-ROM	1	2	3	4	5	9
STAR on CD-ROM	1	2	3	4	5	9
Full text of NASA reports on CD-ROM	1	2	3	4	5	9
Computer program listings on CD-ROM	1	2	3	4	5	9
Numerical/factual data on CD-ROM	1	2	3	4	5	9
Numerical/factual data *online*	1	2	3	4	5	9
Images (photographs) on CD-ROM	1	2	3	4	5	9
RECON front-end	1	2	3	4	5	9
Online system (full text and graphics) for NASA technical reports	1	2	3	4	5	9

34. What barriers, if any, would hinder your library's adoption of the electronic information products listed in Question 33? (Please list)

1 _____
2 _____
3 _____

35. What information products or services, if any, should NASA discontinue? (Please list)

1 _____
2 _____
3 _____

36. What new information products or services, if any, should NASA consider offering? (Please list)

1 _____
2 _____
3 _____

These data will help us understand the interface between librarians as information intermediaries and engineering and research personnel as information users.

37. Approximately how many times in the **past six months** has **your** library provided the following services for the engineering and/or research staff?

	Times in the Past Six Months	Don't Provide (✓)
Tour of the library	_____	( )
Library presentation as part of employee orientation	_____	( )
Library skills instruction	_____	( )
Library presentation for members of a research project/team	_____	( )
Engineering information resources and materials instruction	_____	( )
Instruction for end-user searchers	_____	( )
Other (specify) _____	_____	

38. How does your library generally learn about user needs? (Circle numbers)

	YES	NO
Requests received	1	2
In-house publications	1	2
Survey questionnaires	1	2
One-on-one interviews	1	2
Library staff meetings with research/program managers	1	2
Other (specify) _____		

39. Which of the following services does YOUR library provide? (Circle numbers)

	YES	NO
Alerting services	1	2
Electronic ordering	1	2
Document order and delivery	1	2
Electronic reference services	1	2
Handouts & library guides	1	2
In-house SDI and routing services	1	2
End-user on-line database search training	1	2
NASA SCAN	1	2
Stored search on RECON for SDI	1	2
Other (specify) _____		

40. Which of the following services does YOUR library provide? (Circle numbers)

	YES	NO
Time-saving assistance in		
Locating sources	1	2
Identifying documents	1	2
Acquiring information	1	2
Expert help in learning/using information	1	2
Database development	1	2
Uploading/downloading	1	2
Remote online access to library catalog	1	2
CD/ROM workstation(s) in library	1	2
Cooperative cost sharing services		
Group contract for online services	1	2
Coordinated access to networks	1	2
Other (specify)_____		
Acquisition of most-used databases for searching online through corporate computer facilities		
Aerospace Database	1	2
NTIS online	1	2
Federal Research in Progress (FEDRIP)	1	2
Energy Database	1	2
DTIC DROLS	1	2
NASA RECON	1	2
Other (specify)_____		
Acquisition or development of user-friendly front-end systems for searching most-used online databases		
Library online catalog searching	1	2
Gateway searching of multiple databases	1	2
Other (specify) _____		

Other innovative services (specify) _____

41. Which of the following do you see as "competition" for your library in providing information services to the engineering and/or research staff? (Circle numbers)

	YES	NO
The "old boy" network	1	2
Personal collections	1	2

COMPETITION

	YES	NO
Other units within the organization		
Research assistants attached to projects	1	2
Department or Project "libraries" not a part of your library	1	2
Other (specify)_____		
Direct user access to outside information sources		
Information brokers	1	2
Publishers	1	2
Online vendors	1	2
NASA/STIF	1	2
NTIS	1	2
Other (specify)_____		
Direct use of national computer communications networks		
APRANET	1	2
Internet/NSFNET	1	2
Other (specify)_____		
Direct use of regional computer communications networks		
(specify)_____		
_____		
Direct use of facility network (local area network)		
Online access to your library catalog	1	2
Online access to other facility libraries	1	2
Other (specify)_____		
Transmission of text		
Office facsimile transmission	1	2
Electronic Mail	1	2
Manuscript preparation and delivery (electronic publishing)	1	2
Database creation by users		
Information collection, storage, and use	1	2
Downloading data to personal files	1	2
Electronic transmission of data	1	2

42. Overall, how would you rate your library's information services? (Circle numbers)

	Excellent				Poor	No Opinion
Funding						
Staff salaries	1	2	3	4	5	9
Materials/equipment	1	2	3	4	5	9
Searching online	1	2	3	4	5	9
CD/ROM	1	2	3	4	5	9
Innovation	1	2	3	4	5	9
Other (specify) _____	1	2	3	4	5	9

LIBRARY SERVICES

	Excellent				Poor	No Opinion
Staffing						
Staff size	1	2	3	4	5	9
Aerospace experience	1	2	3	4	5	9
Science background	1	2	3	4	5	9
Services to users						
Information supplied on request	1	2	3	4	5	9
Alerting	1	2	3	4	5	9
Turnaround time	1	2	3	4	5	9
State-of-the-art	1	2	3	4	5	9
Other (specify) _____						
Interaction with users						
User needs surveyed	1	2	3	4	5	9
User meetings attended	1	2	3	4	5	9
Orientation/instruction	1	2	3	4	5	9

43. Which of the following statements explain why members of the engineering and/or research staff do not use your library? (Circle numbers)

	YES	NO
They are not aware of the library's existence	1	2
They are not aware of the services offered by the library	1	2
Library's hours not convenient	1	2
Library's physically too far away	1	2
Information needs met more easily elsewhere	1	2
Library does not have the information they need	1	2
Library too slow in getting needed information	1	2
They have to pay to use the library	1	2
Management discourages using of the library	1	2
They have their own personal collection of information	1	2
Other (specify) _____		

44. As an intermediary, how would YOU rate your knowledge of the technical information needs of the engineering and/or research staff at your facility? (Circle number)

Extensive				None	Don't Know
1	2	3	4	5	9

45. As an intermediary, how active are you in transferring NASA produced knowledge to the engineering and/or research staff at your facility? (Circle number)

Very Active				Very Passive	Don't Know
1	2	3	4	5	9

46. As an intermediary, what steps or actions, if any, do you take to "actively" transfer NASA produced knowledge (technology transfer rather than information transfer) to the engineering and/or research staff at your facility? (Circle **ALL** that apply)

1 Screening information
2 Interpreting data
3 Other (specify) _____
4 Other (specify) _____

47. Within the past year, are you able to cite at least one specific case or incident that demonstrates how information provided (or denied) by your library made a difference to an R&D project? (Circle number)

YES	NO
1	2

48. Would you be willing to identify the user for a follow-up interview? (Circle number)

YES	NO
1	2

49. As an intermediary, what barriers, if any, hinder or keep you from "actively" transferring NASA produced knowledge (technology transfer rather than information transfer) to the engineering and/or research staff at your facility? (Please list)

1 _____
2 _____
3 _____
4 _____

50. In your company or corporation, do you think there are "gatekeepers," engineers and/or researchers who serve as information intermediaries for other engineers and researchers? (Circle number)

YES	NO
1	2

52. Would you be willing to furnish the names of these individuals for a follow-up study concerned with determining the role played by these "gatekeeper" in technology transfer? (Circle number)

YES	NO
1	2

These data will help us understand the interface between librarians as information intermediaries and NASA as a knowledge producer.

53. As an intermediary, how would you rate NASA's knowledge of the technical information needs of your user community? (Circle number)

Extensive				None	Don't Know
1	2	3	4	5	9

54. As an intermediary, how much effort does it appear that NASA devotes to understanding the technical information needs of your user community? (Circle number)

Extensive				None	Don't Know
1	2	3	4	5	9

55. As an intermediary, how much effort do you think NASA devotes to involving you in transferring the results of NASA research to your user community? (Circle number)

Extensive				None	Don't Know
1	2	3	4	5	9

56. As an intermediary, what steps or actions, if any, should NASA take to increase the participation or involvement of librarians in transferring the results of NASA research to the aerospace community? (Please list)

1 _____
2 _____
3 _____
4 _____

57. In performing your professional duties as an intermediary, about how many times, in this past year, have you contacted or been contacted by NASA personnel concerning transferring the results of NASA research?

	Times in PAST YEAR
YOU contacted NASA	_____
NASA contacted YOU	_____

Finally, we would like to collect some background information on the person to whom our letter was addressed. This information will be helpful with the analysis of the data.

58. Gender:

1 Female
2 Male

59. Years of library/information experience:

_____ years of experience

60. Years in present position:

_____ years in present position

61. Education:

1 B. A. in _____
2 B. S. in _____
3 MLS
4 Master's in _____
5 MBA
6 J. D.
7 Ph. D. in _____
8 Other (specify) _____

62. Title or position in library:

_____

63. Professional (national) library/information membership (Circle **ALL** that apply)

1 ALA
2 ASEE
3 ASIS
4 SLA
5 Other national library or information society (specify) _____
6 Not a member of any national library or information society

64. Professional (national) technical membership (Circle **ALL** that apply)

1 ACM
2 AIAA
3 ASTM
5 IEEE
6 Other national technical society (specify) _____
7 Not a member of any national technical society

OPTIONAL QUESTIONS

1. What suggestions can **YOU** offer for improving access to the results NASA produced knowledge?

_____
_____
_____
_____

2. Should NASA sponsor a NASA technical information users meeting similar to those held by DTIC and NTIS? (Circle number)

YES	NO
1	2

3. What form would you prefer the meeting take? (Circle number)

1 Annual meeting held in Washington, DC
2 Annual meeting held on a regional basis
3 Annual meeting held in conjunction with annual national meetings
4 Other (specify) _____

4. What suggestions can you offer regarding the structure, purpose, content, and scope of a NASA technical information users meeting that would be attended by information intermediaries from academia, industry, and government?

_____
_____
_____
_____

5. Is there anything else YOU would care to say regarding this research?

_____
_____
_____
_____

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16. Abstract

Phase 2 of the four phase NASA/DoD Aerospace Knowledge Diffusion Research Project was undertaken to investigate the transfer of scientific and technical information (STI) from government to the aerospace industry and the role of librarians and technical information specialists in the transfer process. Data were collected through a self-administered mail-back questionnaire. Libraries identified as holding substantial aerospace or aeronautical technical report collections were selected to receive the questionnaires. Within each library, the person responsible for the technical report was requested to answer the questionnaire. Questionnaires were returned from approximately 68 percent of the libraries. The respondents indicated that scientists and engineers are not aware of the services available from libraries/technical information centers and that scientists and engineers also under-utilized their services. The respondents also indicated they should be more involved in the process.

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