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ABSTRACT

A change in policy of the Defense Documentation Center (DDC) with regard to supplying hard copy and/or microforms of reports caused problems to users of the DDC Technical Report Service. Discussions among users of the service, a questionnaire survey and committee reports summarized basic user concerns, provided selected statistics and a look at (1) abstract bulletins and indexes, (2) categories for selective dissemination of information (SDI), (3) field office viewing facilities, and (4) acquisitions procedures. The changes recommended in the policies and procedures are: standardization of abstract bulletins and indexes and SDI categories, reestablishment of viewing facilities in the Greater Washington, D.C. area, modification of acquisition procedures and improvement in present DDC services by direct and faster service to users, provision of free hard copies and a policy change on limited documents. (AB)

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INFORMATION HANG-UPS

*Problems Encountered by Users of the
Technical Information Services Offered by DDC and CFSTI,
With Recommendations for the Future*

September 1969

Committee of DDC Users
in the
Greater Washington, D.C. Area

I 002 213

FOREWORD

On July 1, 1968, the Defense Documentation Center (DDC), instead of providing a free document service to the defense community (government agencies and defense contractors), began to charge \$3.00 for all hard (paper) copies of reports received into their system after August 1965, while continuing to supply microfiche copies free of charge. Further, payment for classified documents had to be made to the Clearinghouse for Federal Scientific and Technical Information (CFSTI) before the hard copy of the document could be supplied from DDC.

To many users of these technical report services, once the initial shock was over, this appeared to be a cumbersome, delaying, and expensive procedure. Government agencies were caught short because funds had not been appropriated for the added unexpected expense. Government contractors were caught in the middle because speed of retrieval was of prime importance, microfiche copies were received sometimes weeks sooner than hard copy, and users were demanding hard copy to use. Neither were equipped with an adequate number of readers. Little had been done to develop procedures by agencies who previously had not been handling or processing microform. The flow of information lagged while we all tried in various ways to cope with the resultant problems we faced.

One year later now, most of us have accepted and adapted, one way or another, to the real fact that microforms are here to stay. In spite of slow user acceptance and/or processing adjustments, they are real space savers and easy to handle records. However, from experience in dealing with the major government suppliers of technical report literature and from conversations within the "invisible college" of library and technical information colleagues, it has become quite apparent that a number of common problems still plague us and create concern among the users of these federally sponsored report services. The problems of retrieving bibliographic information, obtaining quick response to queries and orders, processing the film format, bookkeeping individual charges, among others, are still problems.

For this reason, I invited thirty other facilities in the Greater Washington, D.C. area (chosen from the list of "Top 200 Users of DDC Technical Report Service" – Calendar 1967) to attend an unofficial exploratory meeting to be held at IDA on June 24, 1969, to discuss the present state of document information—specifically, the problems encountered since July 1, 1968, as a result of the policy and procedural changes implemented by the Defense Documentation Center (DDC); the ways we as major users have coped with these problems; and the resultant impact on each individual information system.

Approximately twenty-seven facilities responded. We recognized that DDC and CFSTI operate under limitations and constraints which might influence policy, but the consensus at that first meeting was that this group could provide useful feedback to improve the flow and handling of documents and information, from the users' point of view.

At the meeting we discussed the use of microforms, microform readers and printers, indexes, fields of interest and individual problems, such as (1) receipt of microfiche documents with mixed sheets, duplicate sheets or missing sheets, (2) difficulty in marking microforms, particularly in downgrading, (3) addition of CFSTI in the request process, which delays receipt of documents, (4) deposit account statements which are confusing and often in error, (5) use of "NOFORN" on microfiche instead of the correct "Foreign Export Control" statement, (6) costs themselves and the costs of bookkeeping, (7) ways individuals bypass an unresponsive DDC set-up for urgent service.

However, since the purpose of the meeting was not to "beat DDC over the head," we determined to maintain a positive approach, pinpoint major areas of concern and make recommendations as a group. Toward this end, each participating facility agreed to complete a user questionnaire and meet again when the results had been tabulated. They also asked Mrs. Ruth McCullough, Westinghouse Defense and Space Center, who had expressed her intention to attend the FIT/DDC Users' Conference at the Florida Institute of Technology, Melbourne, Florida, on July 2-3, 1969, to represent this Greater Washington, D.C. user group at that conference, which she did. She reported back that the concerns of the Washington group were the concerns of users in other parts of the country and that representatives of DDC and CFSTI encouraged specific constructive recommendations.

At the second meeting, held at IDA on July 24, 1969, five committees were formed to study the specific problems of the Users' Survey, Abstract Bulletins and Indexes, Standardization of Selective Dissemination of Information (SDI) Categories, Field Office Viewing Facilities, and Acquisition Procedures.

At the third meeting, held at IDA on August 19, 1969, these reports were discussed by the entire group, amended, and committed to the committee chairmen as a group to pull it together as a single presentation.

This report, then, is the result of discussions among the forty-five representatives who participated by mail or attended one of the three meetings. It is presented to initiate communication, to take a positive step toward mutual cooperation, and to express appreciation to DDC and CFSTI for their consideration of the proposals which we hope will help us all to achieve a common goal of widest and most efficient dissemination of document information to the ultimate users.

Ruth S. Smith,
Head Librarian, IDA

September 15, 1969

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ABSTRACT

One year after the Defense Documentation Center (DDC) changed its policy on July 1, 1968, in regard to supplying hard copy of reports and/or microform, it is increasingly evident that a number of common problems are being experienced by the users of the DDC Technical Report Service.

In this regard, Mrs. Ruth Smith, Head Librarian of the Institute for Defense Analyses (IDA), invited thirty of the other top 200 users in the Greater Washington, D.C. area to attend an unofficial meeting in June 1969 to explore mutual problems and possibly provide feedback to the DDC and the Clearinghouse for Federal Scientific and Technical Information (CFSTI).

Discussions among forty-five representatives who participated by mail or in a series of meetings, a questionnaire (DDC user survey), and committee reports summarize basic user concerns, provide selected statistics and look at (1) abstract bulletins and indexes, (2) categories for selective dissemination of information (SDI), (3) field office viewing facilities, and (4) acquisitions procedures.

A number of recommendations are made in CONCLUSIONS.

ABSTRACT BULLETINS AND INDEXES

Presented here are recommendations for improvement of U.S. Government Research and Development Reports (USGRDR) as an announcement and indexing publication, concerns about government information services in general, and some suggested areas for examination.

Committee:

Lorna Moore, Chairman

Regina Nellor

Mae Preston

Frank Reilly

TRW Systems

Institute for Defense Analyses

TRW Systems

**U.S. Coast Guard
Department of Transportation**

Many of us, experienced in the use of abstracting journals, including those of DDC, NASA, and AEC, are now having to consult, much more frequently than before, the Clearinghouse journal and its index.

It is a difficult bibliographic tool. To begin with, none of us can quite remember its name. *U.S. Government Research and Development Reports* is not a quick verbal reference, partly because we all spend much of our working day among research and development reports, without the capital letters, and these words simply fail to bring to mind a specific publication. We recoil at the thought of the letters USGRDR either spelled out or attempted (unsuccessfully) as an acronym.

The most natural and functional title would be *Clearinghouse Abstract Bulletin*. CAB would be as easy to remember as TAB. Or there could be a Clearinghouse TAB just as there is a DDC TAB.

On the front cover and the spine of each volume there is no indication of which accession numbers are to be found inside. Obviously, there can be no such indication. A glance at the Report Locator List of any single recent issue will show why. One, chosen at random, lists 26 different kinds of accession numbers, because it is now Clearinghouse policy to assign no accession numbers of its own to the reports formerly distributed by other agencies. That a short, inclusive series of numbers cannot be shown on the spine for the convenience of the user who must guess at the contents is a fact that may sound unimportant. But it is a symptom of a lack of sufficient regard for the user.

In arrangement and form, the USGRDR and Index are cluttered. We offer the following suggestions:

- The price of the reports should be deleted from the Index, except when it differs from the standard charge. The standard charge is explained in the introduction to the Index and is noted with the abstract. Repetition is unnecessary.
- The contract index would be helped by deletion of the word "contract" before each item in the alphanumeric list. (See Examples 1 and 2.)
- The corporate author index should be modeled on the one used in TAB. Report numbers should be included in the corporate author entry, and those entries with report numbers should be arranged, within a corporate author, by report number. Entries without report numbers should be arranged alphabetically by title, rather than numerically by accession number. (See Examples 3 and 4.) Or all entries within a corporate source could be arranged alphabetically by title, without reference to report numbers.

- The alphanumeric ordering in the personal author index, probably in the corporate author index, and certainly in the report number index, appears whimsical. (See Examples 5 and 6.)

Our quarrel with the report number index is not that the Clearinghouse doesn't pick up a report number, but that we can't find it. The following suggested changes would make it like the one in TAB:

1. Report numbers without letter prefixes should be cited in the beginning of the index and should be arranged in numerical order.
2. Within a single letter of the alphabet, report numbers with a single letter prefix should begin the listing and should be arranged in numerical order.
3. Double, triple and quadruple letter prefixes should follow, respectively; and should be arranged alphanumerically.
4. Filing by report number prefixes should be at least to the third letter. (See Examples 7 and 8.)

In the abstract journal, the practice of cross referencing by repeating the bibliographic entry, complete except for the abstract, is more confusing than helpful. It would be preferable to print the referenced accession numbers only, with the key to their location, either at the end of a specific abstract, or more generally, at the end of the subject field listing. There would then be only primary entries printed out as in TAB. (See Examples 9 and 10.)

It is also recommended that the format of the primary entries be altered as follows:

1. Accession number
2. Corporate author
3. Personal author(s)
4. Date
5. Report number(s); contract number(s)
6. Special ordering instructions, if any
7. Descriptors and/or abstract
8. Cross reference, if any, by PB number and location key

The accession number should be in *bold* print preceding the abstract. This number is the first visual reference point for a reader who has been referred from the index to the abstracting journal. It is usually the very symbol he is searching for. Moreover, the entries are in order by this number. It should head the bibliographic entry.

If we seem to be holding up the DDC TAB as an ideal, we can only say that it should be. It has grown, after many painful years, into a fine research tool.

The rest of our comments have deeper implications. We wonder about the use of report numbers as accession numbers, and about the use of AD numbers and N-numbers in the Clearinghouse journal. The possibility of assigning PB numbers to all reports included in it

should be explored. The report number index could provide cross reference to any other numbers. Perhaps TAB could use only AD numbers and USGRDR only PB numbers, making the distinction between open reports and the security sensitive ones clearer.

The convention of grouping abstracts under the large subject categories in the abstract volume should be re-examined. NSA abstracts are listed in strictly numerical order, and this is a functionally successful publication. The COSATI fields and sub-fields are essential, of course, but they are always noted with each abstract, and the list of fields is in the front of each issue. Greater use could be made of the computer-produced bibliographies in the subject areas we need, in order to compensate for the loss of the classified arrangement.

One characteristic of an effective information system is its own clearly defined and announced purpose and limits. This is what makes its use by a varied public possible. We know what to expect of the twenty or so good periodical indexes in common use in the United States, but we can no longer be certain what to expect of the report literature abstracting journals.

The Clearinghouse has perhaps been asked, too hastily, to do too much. One has the feeling that this hurried expansion was imposed upon it so that it could serve as a cashier to take care of the necessary payments for documents rather than for reasons connected with the intellectual organization of information.

Whatever the reason, it is a fact that its function has become blurred and this has weakened the other government-sponsored services too.

We recognize that the problems to be met in organizing the report literature are complex. Unlike the discipline-defined indexes to the journal literature, the report announcement publications have always been catalogs of collections. If a collection itself is not a rather clearly defined body of literature, then its catalog, no matter how painstakingly and expertly done, is not one we can turn to for help with our own clearly defined needs. As users, our needs are always defined. Most of the time we are looking for specific reports. To search for them in the dark is an expensive game.

We hope that some of these questions can be explored, with the user firmly in mind, so that these services can become more functional and responsive.

CONTRACT NUMBER INDEX

CONTRACT AF 04(695)-36 AD-661 624	22B HCS 3.00	CONTRACT AT(04-3)-515 SLAC-94	
CONTRACT AF 19(628)-3819 AD-665 762	20C HCS 3.00 HFS 0.65	CONTRACT AT(07-2)-1 PB-183 563	9B HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-4317 AD-665 783	20L HCS 3.00 HFS 0.65	CONTRACT AT(10-1)-1230 IR-1201	11F HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-4797 AD-665 729	3B HCS 3.00 HFS 0.65	CONTRACT AT(10-1)-205 IDO-17289	18J HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-4995 AD-666 114	4A HCS 3.00 HFS 0.65	CONTRACT AT(13-1)-GEN-14 WAPP-HRP-126	18I HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-5032 AD-665 76R	20M HCS 3.00 HFS 0.65	CONTRACT AT(11-1)-1193 COO-1183-30	18L HCS 3.00 HFS 0.65
AD-666 167	20R HCS 3.00 HFS 0.65	TID-28781	6M HCS 3.00 HFS 0.65
AD-666 168	20N HCS 3.00 HFS 0.65	CONTRACT AT(11-1)-1340 PB-183 517	6N HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-5073 AD-666 239	4B HCS 3.00 HFS 0.65	CONTRACT AT(11-1)-599 USBR-RC-1361	4A HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-5165 AD-667 715	20M HCS 3.00 HFS 0.65	CONTRACT AT(11-1)-850 PB-183 548	11B HCS 3.00 HFS 0.65
AD-666 082	17B HCS 3.00 HFS 0.65	CONTRACT AT(29-2)-2510 ALO-2510-3	18I HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-5167 AD-666 065	9E HCS 3.00 HFS 0.65	CONTRACT AT(30-1)-1156 NLCO-1022	10B HCS 3.00 HFS 0.65
AD-666 066	14B HCS 3.00 HFS 0.65	CONTRACT AT(30-1)-3491 HFO-3491	11F HCS 3.00 HFS 0.65
AD-666 418	9E HCS 3.00 HFS 0.65	CONTRACT AT(30-1)-3735 HFO-3735-1	20H HCS 3.00 HFS 0.65
AD-666 419	17C HCS 3.00 HFS 0.65	CONTRACT AT(30-1)-3800 HARL-3800-25	14B HCS 3.00 HFS 0.65
AD-666 420	17I HCS 3.00 HFS 0.65	CONTRACT AT(30-1)-3928 PB-183 567	18R HCS 3.00 HFS 0.65
AD-666 421	17B HCS 3.00 HFS 0.65	CONTRACT AT(4-1)-1830 BNWL-927	18J HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-5176 AD-666 163	4B HCS 3.00 HFS 0.65	CONTRACT AT(40-1)-3347 TID-24780	18A HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-5509 AD-666 470	7D HCS 3.00 HFS 0.65	CONTRACT AT(45-1)-1830 BNWL-371-PF-1	6R HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-5719 AD-666 092	3B HCS 3.00 HFS 0.65	BNWL-66	10A HCS 3.00 HFS 0.65
CONTRACT AF 19(628)-5731 AD-666 472	3A HCS 3.00 HFS 0.65		
CONTRACT AF 19(628)-5816 AD-666 971	3B HCS 3.00 HFS 0.65		
CONTRACT AF 19(628)-5846 AD-666 --	300 HCS 3.00 HFS 0.65		

EXAMPLE 1: USGRDR Contract Number Index

(ECOM-0387-F3) F AD-852 535	Fid/Gp 1/3	DAAG39-69-C-0001 GOVERNMENTAL AFFAIRS INST WASHINGTON DC RESEARCH DIV (AMC-TIR-27.1.10.5(1)) AD-301 663L	Fid/Gp 19/1	DASA01-68-C-0004	DADA17-68-C-8133 JOHNS HOPKINS UNIV BALTIMORE MD SCHOOL OF MEDICINE A AD-852 892L	Fid/Gp 6/3
DAAD07-69-C-0069 CORNELL AERONAUTICAL LAB INC BUFFALO NY WASHINGTON PROJECTS DEPT CAL-UM-2709-H-1 (ECOM-0069.1) AD-301 783L	Fid/Gp 12/2	(AMC-TIR-27.4.1.3) AD-301 664L	Fid/Gp 19/6	DAHC15-67-C-0011 INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SCIENCE AND TECHNOLOGY DIV RP-P-465 (IDA/HQ-68-9454) AD-301 899L	Fid/Gp 15/7	
DAAD04-67-C-0024 ATLANTIC RESEARCH CORP FORT HUACHUCA ARIZ JANSKY AND BAILEY ENGINEERING DEPT AD-852 553L	Fid/Gp 20/14	(AMC-TIR-27.4.6.1(2)) AD-301 848L	Fid/Gp 17/8	S-320 (IDA/HQ-68-9400) AD-301 881	Fid/Gp 9/2	
DAAD05-67-C-0136 MELPAR INC FALLS CHURCH VA 6482-F (LWL-CR-02-B-69) F AD-852 555L	Fid/Gp 6/12	(AMC-TIR-27.5.7.4) AD-301 665	Fid/Gp 19/1	S-320-2 (IDA/HQ-68-9394) AD-301 882	Fid/Gp 9/2	
DAAD05-68-C-0047(X) FOSTER-MILLER ASSOCIATES INC WALTHAM MASS (BRL-6734/3) F AD-301 928	Fid/Gp 19/6	(AMC-TR-18.2.4.2) AD-301 666L	Fid/Gp 15/2	S-320-3 (IDA/HQ-68-9395) AD-853 077	Fid/Gp 5/3	
DAAE67-67-C-4209 CONTINENTAL ASSOCIATION AND EN- GINEERING		DAAR01-67-C-1089 RESEARCH ANALYSIS CORP MCLEAN VA RAC-TP-320 AD-301 930	Fid/Gp 15/7	S-320-4 (IDA/HQ-68-9396) AD-853 078	Fid/Gp 5/3	
		DAAR01-67-C-1995 RAYTHEON CO BEDFORD MASS MIS- SILE SYSTEMS DIV BR-5309 AD-301 651L	Fid/Gp 16/4.2	S-320-5 AD-301 883	Fid/Gp 9/2	
		DAAR01-68-C-0092 ESL INC SUNNYVALE CALIF ESL-TM-131 (MID-CW-05-1-68) AD-301 866L		S-320-6 (IDA/HQ-68-9398) AD-853 079	Fid/Gp 5/3	

EXAMPLE 2: TAB Contract Number Index

IONOSPHERIC PROPAGATION N69-21597	4A HCS 3.00 HFS 0.65	BUKHALOV AD-686 436	14A HCS 3.00 HFS 0.65
PARIS UNIV., ORSAY (FRANCE). ACCELERATION NEUTRAL OMEGA NESSON PRODUCTION BY ELECTRON POSITRON ANNIHILATION N69-21798	20H HCS 3.00 HFS 0.65	PROJECT SQUID. AD-686 438	21E HCS 3.00 HFS 0.65
ELECTRON, POSITRON ANNIHILATION INTO POSITIVE PION PLUS NEGATIVE PION IN NEUTRAL OMEGA NESSON RESONANCE REGION N69-21802	20H HCS 3.00 HFS 0.65	FURTHER CREEP BUCKLING TESTS WITH CYLINDERS SUBJECTED TO FLEXURE, AD-686 439	11F HCS 3.00 HFS 0.65
PARIS UNIV., ORSAY (FRANCE). LABORATOIRE DE L ACCELERATEUR LINEAIRE. COMPARISON OF ORSAY RESULTS ON VECTOR NESSONS WITH VECTOR NESSON DOMINANCE MODEL PREDICTORS N69-21793	20H HCS 3.00 HFS 0.65	POLYTECHNIC INST OF BROOKLYN N Y DEPT OF AEROSPACE ENGINEERING AND APPLIED MECHANICS INVESTIGATION OF PLATES AND SHELLS UNDER EXTERNAL LOADING AND ELEVATED TEMPERATURES. AD-685 745	13H HCS 3.00 HFS 0.65
PARIS UNIV., ORSAY (FRANCE). LAB. DE L ACCELERATEUR LINEAIRE. THE NESSON PRODUCTION WITH ELECTRON POSITRON COLLIDING BEAMS N69-21800	20H HCS 3.00 HFS 0.65	TRENDS IN EXPERIMENTAL HYPERSONIC RESEARCH, AD-686 146	20J HCS 3.00 HFS 0.65
PARKER MATHEMATICAL LABS INC CARLISLE MASS THE INTEGRATION OF CERTAIN VOLUME INTEGRALS REQUIRED IN THREE-BODY CALCULATIONS, AD-685 782	12A HCS 3.00 HFS 0.65	PLUTON IN HIGH DENSITY FLUIDS, AD-686 147	13J HCS 3.00 HFS 0.65
PENNSYLVANIA HOSPITAL PHILADELPHIA DEPT OF MOLECULAR BIOLOGY REPRINT STUDIES OF INSULIN ACTION. I. THE STEADY LEVEL OF GLUCOSE ACCUMULATION IN INSULIN-TREATED MICE MUSCLE AT 0C. AD-685 769	6A HCS 3.00 HFS 0.65	HYDRATION TEMPERATURES IN CONCRETE. AD-686 148	13C HCS 3.00 HFS 0.65
PENNSYLVANIA STATE UNIV UNIVERSITY PARK DEPT OF PHYSICS REPRINT A FIRST PRINCIPLE PSEUDOPOTENTIAL CALCULATION OF THE ELASTIC STRESS CONSTANTS OF BERYLLIUM. AD-685 968	20R HCS 3.00 HFS 0.65	FLAME PROBLEMS OF LINEAR VISCOELASTICITY, AD-686 149	20K HCS 3.00 HFS 0.65
REPRINT A CALCULATION OF THE OPTICAL ABSORPTION IN SODIUM IN THE NEAR INFRARED. AD-686 217	20L HCS 3.00 HFS 0.65	STATUS REPORT OF THE HYPERSONIC FACILITY OF THE POLYTECHNIC INSTITUTE OF BROOKLYN, AD-686 150	14B HCS 3.00 HFS 0.65
PENNSYLVANIA STATE UNIV., UNIVERSITY PARK. DEPT. OF CIVIL ENGINEERING.		A SURVEY OF HEAT TRANSFER PROBLEMS CONNECTED WITH SPACE VEHICLE REENTRY, AD-686 151	22E HCS 3.00 HFS 0.65
		TRANSIENT RESPONSE OF A RING-STIFFENED SPHERICAL SHELL IMMERSED IN AN ACOUSTIC MEDIUM. AD-686 157	20R HCS 3.00 HFS 0.65
		AN ASSESSMENT OF LIFT-DRAG MODULATION TECHNIQUES FOR ATMOSPHERIC ENTRY, AD-686 327	22C HCS 3.00 HFS 0.65
		ON THE DYNAMICS OF ATMOSPHERIC ENTRY AND REENTRY, AD-686 328	22A HCS 3.00 HFS 0.65

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EXAMPLE 3: USGRDR Corporate Author Index - Entries Arranged by Accession Number

AIR FORCE AVIONICS LAB WRIGHT-PATTERSON AFB OHIO

AFATL-TR-68-140
Antipersonnel/Antimateriel Mechanisms.
AD-501 863 Fld/Gp 19/1

AFATL-TR-68-145
Skin-Activated Compounds for Marking and
Detection.
AD-501 772 Fld 17

AFATL-TR-69-42
Analytic and Experimental Interior Ballistics
of Closed Breech Guns.
AD-852 601 Fld/Gp 19/4

AIR FORCE AVIONICS LAB WRIGHT-
PATTERSON AFB OHIO

AFAL-TR-68-129
Guidance Sensor-Interceptor Mission Inter-
face Analysis.
AD-501 912 Fld/Gp 17/7

AFAL-TR-68-302-P1-1
Evaluation of Contiguous Subcarrier Barrage
(CSB) Jamming Technique. Part I: Laboratory
Evaluation Program.
AD-501 709 Fld/Gp 17/4

AFAL-TR-68-311
Cooperative Countermeasures System Study.
AD-501 909 Fld/Gp 17/4

AFAL-TR-68-368
Penetration Aids for Tactical Fighters.
AD-501 911 Fld/Gp 17/4

AFAL-TR-69-17
Crossed-Field Amplifier System Analysis.
PENVAL Program.
AD-501 699L Fld/Gp 17/4

TR-69-18

AIR FORCE FLIGHT DYNAMICS LAB
WRIGHT-PATTERSON AFB OHIO

AFDDL-TR-69-24
Development of a Miniature Capacitive
Resolver.
AD-852 715 Fld/Gp 17/7

AIR FORCE FLIGHT TEST CENTER EDWARDS AFB CALIF

AFFTC-SD-69-7
A-7D Performance Military Preliminary
Evaluation.
AD-852 953 Fld/Gp 1/3

AFFTC-TR-69-10
F-111A Category II Stability and Control
Tests.
AD-852 943 Fld/Gp 1/3

AFFTC-TR-69-15
Evaluation of the UH-1F Helicopter with Thin
Tip Main Rotor Blades.
AD-852 926 Fld/Gp 1/3

AIR FORCE INST OF TECH WRIGHT- PATTERSON AFB OHIO SCHOOL OF ENGINEERING

GAM/AE/69-6
Two-Dimensional Viscous Compressible Flow
in a Slender Channel.
AD-852 673 Fld/Gp 20/4

GAM/AE/69-8
A Computer Analysis of Pressure Distribution
over Slender Bodies at Subsonic Speeds.
AD-852 674 Fld/Gp 20/4

GAM/AE/69-9
Review of V/STOL

AFML-TR-68-350
Development of Cutter Geometry Based on
Material Properties.
AD-852 856 Fld/Gp 13/9

AFML-TR-69-6
Effect of Notches on Fatigue Strength of Com-
posite Materials.
AD-853 045 Fld/Gp 11/2

AFML-TR-69-27
Nickel-Base Superalloy Oxidation.
AD-852 999 Fld/Gp 11/6

AFML-TR-69-37-Vol-1
Manufacturing Methods for UHF Amplifier
Tube, Volume I.
AD-852 761 Fld/Gp 9/1

AFML-TR-69-37-Vol-2
Manufacturing Methods for UHF Amplifier
Tube, Volume II.
AD-852 762 Fld/Gp 9/1

AFML-TR-69-60
Ultimate Strength Analysis.
AD-852 995 Fld/Gp 1/3

AFML-TR-69-77
Friction and Wear of Solid Materials Sliding in
Ultrahigh Vacuum and Controlled, Gaseous
Environments.
AD-853 047 Fld/Gp 11/8

AIR FORCE MISSILE DEVELOPMENT CENTER HOLLOWAY AFB N MEX

MDC-TR-69-35
Final Trajectory Report on WTR Flight 0212.
AD-501 762L Fld/Gp 14/5

MDC-TR-69-36
Fin...

EXAMPLE 4: TAB Corporate Author Index - Entries Arranged by Report Number

AN AUTOMATIC
 JUNCTIONS,
 ACS 3.00 HPR 0.65

TECH.
 13

SPECIFICALLY
 DEVELOPING ALONG THE
 STEEP SLOPE OF THE
 PART 1.
 1 HCR 3.00 HPR 0.65

SPECIFICALLY
 DEVELOPING ALONG THE
 STEEP SLOPE OF THE
 PART 2.
 1 HCR 3.00 HPR 0.65

SCHEMATIC OF A
 SPINCH (ROCCUS
 1 HCR 3.00 HPR 0.65

1 HCR 3.00 HPR 0.65

ON SITE SITES.

COATING PILOT
 INSULE COMBINATION
 HCR 3.00 HPR 0.65

SEAN STRENGTH OF ASPHALT COATED STRUCTURAL PLATE PIPE.
 PD-183 590 13B HCR 3.00 HPR 0.65

JOHNSON, R. E.
 WATER VAPOR ABSORPTION MEASUREMENTS USING A ROBY LASER.
 PD-183 466 4A HCR 3.00 HPR 0.65

JOHNSON, ROGER B.
 REPRINT GROWTH OF RIFT VALLEY PRYER VIRUS IN HUMAN DIPLOID
 (HI-38) CELLS.
 AD-686 359 6B HCR 3.00 HPR 0.65

JOHNSON, TRYS E.
 IMPROVING RETURNS FROM RISE PRODUCTS THROUGH USE OF
 OPERATIONAL RESEARCH TECHNIQUES.
 PR-183 379 12B HCR 3.00 HPR 0.65

JOHNSON, HALTER L.
 OUTPUT SIGNAL-TO-NOISE RATIO IMPROVEMENT IN ANGLE MODULATION
 SYSTEMS THROUGH PER-EMPHASIS AND DE-EMPHASIS.
 AD-686 468 9D HCR 3.00 HPR 0.65

JOHNSON, R. C.
 RESEARCH AND DEVELOPMENT IN UTILIZATION OF SELF-SUSTAINED
 ELECTRON BEAM INVESTIGATION.
 AD-686 240 9A HCR 3.00 HPR 0.65

JOHNSON, S. P.
 THE MARK II PROTOTYPE CARBOHYDRATE ANALYZER DESCRIPTION
 AND OPERATION.
 PD-183 556 6L HCR 3.00 HPR 0.65

JOHNSON-BREVELI, S. I.
 IN VITRO BIOLOGICAL TESTING OF PROSTHETIC MATERIALS.
 PR-183 315 6L HCR 3.00 HPR 0.65

* JOHNS, HOWARD J.
 ARMA HANDBOOK FOR UGARDA, 5B HPR 0.65
 AD-685 941
 ARMA HANDBOOK FOR HONARRIGUE, 5C HPR 0.65
 AD-686 154

JOHNS, E. L.

EXAMPLE 5: USGRDR Filing of JOHN

Band Pulsed Coaxial Magnetron.
 55L Fld/Gp 9/1

ARRY
 Dynamic Properties of Rocket Com-
 products.
 10 Fld/Gp 21/9.2

CARMINE L.
 Reflective Laser Detector Diode.
 94 Fld/Gp 9/1

JOHNS M.
 gical Examination of Production
 of 175-MM M113 Gun Tube Forgings
 roved Properties.
 2 Fld/Gp 11/6

DS.
 arning Feasibility Study.
 8L Fld/Gp 15/3

DR.
 oduction (IP) Test of Truck. Utility.
 4x4, M151A1C, USA Reg No.
 2 Serial No. 08012.

AD-852 604 Fld/Gp 1/3

JOHN, FLOYD I.
 440L O and M Program.
 AD-501 740 Fld/Gp 12/1

JOHNSON, B. W.
 TROIKA Study. Volume I.
 AD-501 688L Fld/Gp 22/2
 TROIKA Study. Volume II.
 AD-501 689L Fld/Gp 22/2
 TROIKA Study. Volume III.
 AD-501 690L Fld/Gp 22/2
 TROIKA Study. Volume IV.
 AD-501 691L Fld/Gp 22/2

JOHNSON, J. F.
 Radio Guidance of Missile 10SD/1202
 AD-852 753 Fld/Gp 17/7
 Mark II Airborne Guidance Equipment Com-
 patibility Tests.
 AD-852 832 Fld/Gp 17/7

JOHNSON, READ, JR
 Dispersion Strengthened Metal Structural
 Development.
 AD-853 049 Fld/Gp 11/6

JOHNSON STEPHEN

Individual
 Zero 'G' Separator, GD/A P/N
 S/N 002.
 AD-852 475 Fld

JUST, W.
 Control and Stability of Rotary W
 Part III. Longitudinal Motion.
 AD-852 873L Fld/

JYLHA, S.
 The Laser in Tank Weapon Applic
 AD-852 960L Fld

KAC, M.
 Lecture Series on Differential Equ
 sion 7. Stochastic Differential Equ
 AD-852 680L Fld

KAHLER, F. C.
 A High-Frequency-Radio
 Propagation-Path Simulator.
 AD-852 879 Fld/

KAMRASS, MURRAY
 Internal and External Checks of t
 Evaluation System.
 AD-501 899L Fld/t

KANE, WILLIAM E.
 Guidance Sensor Interceptor M

EXAMPLE 6: TAB Filing of JOHN



CS 3.00 NPS 0.65	W69-21023	4A HCS 3.00 NPS 0.65
IS 3.00 NPS 0.65	X-641-69-108	200 HCS 3.00 NPS 0.65
S 3.00	W69-21548	20N HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	X-641-69-118	9B HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	W69-21394	18B HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	X-711-69-91	13I HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	W69-20926	13H HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	X-713-69-67	11F HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	W69-20927	8F HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	Y-0F-21	20D HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	PB-183 473	13J HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	Y-1653	20V HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	* 01357-4-2	9A HCS 3.00 NPS 0.65
I 3.00 NPS 0.65	PB-183 581	
I 3.00 NPS 0.65	08055-2-F	
IB 3.00 NPS 0.65	AD-685 871	
CS 3.00 NPS 0.65	1271	
ICS 3.00 NPS 0.65	AD-830 346	
	1321	
	AD-686 404	
	1363-4-T	
	AD-685 756	
	1471-Q-7	
	AD-685 871	

Report Numbers Without Letter Prefixes Interfiled

CS 3.00 NPS 0.65	PUB-3U	8H HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	AD-686 306	7D HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	PUB-616	13F HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	AD-686 035	21H HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	PDP-8	10B HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	PB-183 889	11A HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	PWA-PB-3015	4A HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	W69-20879	9B HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	PBA-3070-VOL-1	5D HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	W69-21771	15C HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	PWA-3597	1C HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	* W69-21352	5A HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	P-32	
ICS 3.00 NPS 0.65	PB-183 466	
ICS 3.00 NPS 0.65	P-3600/25	
ICS 3.00 NPS 0.65	AD-685 701	
ICS 3.00 NPS 0.65	P-4044	
ICS 3.00 NPS 0.65	AD-686 413	
ICS 3.00 NPS 0.65	P-4048	
ICS 3.00 NPS 0.65	AD-685 702	
CS 3.00 NPS 0.65	P-4054	
CS 3.00 NPS 0.65	AD-686 414	
CS 3.00 NPS 0.65	P-4055	
CS 3.00 NPS 0.65	AD-686 414	
CS 3.00 NPS 0.65	P-4055	
CS 3.00 NPS 0.65	AD-686 414	

Single Letter Prefixes Interfiled With Multiple Letters

CS 3.00 NPS 0.65	W69-21023	18B HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	W69-21548	7B HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	X-641-69-108	18C HCS 3.00 NPS 0.65
CS 3.00 NPS 0.65	W69-21394	18D HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	X-711-69-91	18E HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	W69-20926	18F HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	X-713-69-67	18G HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	W69-20927	18H HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	Y-0F-21	13E HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	PB-183 473	18J HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	Y-1653	18K HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	* 01357-4-2	18L HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	PB-183 581	8H HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	08055-2-F	18J HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	AD-685 871	13H HCS 3.00 NPS 0.65
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ICS 3.00 NPS 0.65	AD-830 346	21E HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	1321	20L HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	AD-686 404	20I HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	1363-4-T	20G HCS 3.00 NPS 0.65
ICS 3.00 NPS 0.65	AD-685 756	
ICS 3.00 NPS 0.65	1471-Q-7	
ICS 3.00 NPS 0.65	AD-685 871	

Varying Multiple Letter Prefixes Interfiled

EXAMPLE 7: USGRDR Report Number Index

REPORT NUMBER INDEX

3SR-76 Research to Investigate the Mechanisms of Transient Radiation Induced Latchup in Integrated Circuits. AD-852 862	Fld/Gp 9/5	AD-501 781 Fid/Gp 19/1	ADTC-TR-69-49 Explosive Hazards Test of CBU-52/B and CBU-54/B Munitions. AD-852 973	Fld/Gp 19/2	
19-69 Continued Development of a Unique Method of Command Thrust Modulation. AD-501 932L	Fld/Gp 21/8	4960-U-2-Pt-2-PR-17 Evaluation of Effects of Shelf Life on Capacitors. AD-853 017L	Fld/Gp 9/1	ADTC-TR-69-51 Compatibility Test of the QRC-397 Mark III ECM Pod on F-105D/F and F-4C/D Aircraft. AD-501 717	Fld/Gp 1/3
55 Performance and Psychophysiological Activation Dynamics in a Serial Approach-Avoidance Conflict Situation with Performance-Related Reward. AD-852 819	Fld/Gp 5/10	5864-FR1 Weaponization Study of the Mass-Focus Warhead. AD-501 864	Fld 19	ADTC-TR-69-64 Evaluation of the QRC-392 Signal Locator. AD-501 736	Fld 17
56 Phenothiazine-like Effects of an Anti-inflammatory Substance QB 07A on Fear-motivated Behavior in Rats. AD-852 820	Fld/Gp 6/15	6400-189-P Report of Project MICHIGAN, Subproject 3: Image Interpretation and Sensor-Output Processing. AD-501 923	Fld/Gp 14/5	AEC-WT-6210-1 Research on Thermal-Shock-Produced Failure in Electronic Parts. AD-501 658L	Fld/Gp 9/3
59 Measurement of Perceived Oscillation. AD-852 821	Fld/Gp 5/10	6482-F Blood Pressure Recording Device with Audio-Visual Readout. AD-852 555L	Fld/Gp 6/12	AEDC-TR-69-56 Pitot-Pressure Measurements in a Two-Stage Nozzle System. AD-852 516	Fld/Gp 14/2
60 Perceived Direction of Rotary Motion. AD-852 822	Fld/Gp 5/10	7142-40-B IRIA Annotated Bibliography of Infrared Literature, Volume XIII, Number 1. AD-501 673	Fld/Gp 20/6	AEDC-TR-69-67 Altitude Tests of Three United Technology Center Subscale Titan III-C/D Booster Motors for Determination of Thrust Vector Control Performance. AD-852 517L	Fld/Gp 21/8.2
69SD490-1A Damage Coupled Re-Entry Dynamics Program (REDYP 3A). Volume I - Engineering Manual. AD-852 918L	Fld/Gp 22/2	8053-F Research on Whisker-Reinforced Metal Composites. AD-852 860L	Fld/Gp 11/4	AEDC-TR-69-94 Performance of Two Hercules, Inc., BE-3-A9 Solid-Propellant Rocket Motors Under the Combined Effects of Simulated Altitude and Rotational Spin. AD-852 883L	Fld/Gp 21/8.2
69SD490-2A Damage Coupled Re-Entry Dynamics Program (REDYP 3A). Volume II - Users Manual. AD-852 919L	Fld/Gp 9/2	10555-6057-R8-00 Effects of Navigation System Errors on Target Motion Analysis. AD-501 788L	Fld/Gp 19/5	AEDC-TR-69-102 Aerodynamic Calibration Results for the AEDC-PWT 16-ft. Supersonic Tunnel At Mach Numbers from 1.50 to 4.75. AD-852 942	Fld/Gp 14/2
69SD686 R/V Technology and Observables Program, Phase 1B. AD-501 653L	Fld/Gp 22/2	11172-6011-T7-00 Integrated Counterinfiltration Systems Study, Volume 1. AD-501 916L	Fld/Gp 15/7	AEDC-TR-69-104 Pressure Distributions on a Multipurpose Entry Vehicle At Mach Number 1.5, 3.0, and 5.5. AD-853 072	Fld/Gp 1/3
69TMP-4 A Fortran Code for the Calculation of VLF and LF Propagation in a Nuclear Environment (WEDCOM). AD-852 920L	Fld/Gp 9/2	11172-6012-T7-00 Integrated Counterinfiltration System Study, Volume 2. AD-501 917L	Fld/Gp 15/7	AEDC-TR-69-114 Calibration of the AEDC-PWT 1-Ft Transonic Tunnel with Variable Porosity Test Section Walls. AD-853 073	Fld/Gp 14/2
100 Testing of Antiradiation Agents AD-853 009L	Fld/Gp 6/15	20725-FR Fluidic Three Axis Stability Augmentation System for the CH-46A Helicopter. AD-852 858	Fld/Gp 13/7	AERL-RR-323 Instability of Hall MHD Generators to Magneto-Acoustic Waves. AD-853 084	Fld/Gp 10/2
104-69 High Visibility Display. AD-852 925	Fld/Gp 9/1	A/M-Ref-68-25T Simulation Research to Develop Objective Meteorological Prediction Capability. AD-852 690	Fld/Gp 4/2	AEW-4/69 TIDE Class Tankers, Five Bladed Noise Reduced Propeller Effect of Leading Edge Modification. AD-501 927L	Fld/Gp 13/10
471-2550-911 Adaptive Target Tracker. AD-852 870L	Fld/Gp 17/7	AA/ES-69-2 Further Development of a Thermodynamic Constitutive Theory: Stress Formulation. AD-853 048	Fld/Gp 11/6	AFAL-TR-68-129 Guidance Sensor-Interceptor Mission Interface Analysis. AD-501 912	Fld/Gp 17/7
788-1 A Description of the Office of Naval Research Motion Generator. AD-853 013L	Fld/Gp 14/2	ADTC-TR-69-24 Meteorological Sounding Rocket Launch Report (Thirty-Four Vehicles Launched Between 20 Apr-13 Jul 68). AD-852 547	Fld/Gp 19/7	AFAL-TR-68-302-Pt-1 Evaluation of Contiguous Subcarrier Barrage (CSB) Jamming Technique. Part I: Laboratory Evaluation Program. AD-501 709	Fld/Gp 17/4
1652-13-P-2 Measurement of Target and Background Characteristics. Volume II. Microwave Studies. AD-501 756	Fld/Gp 15/4	ADTC-TR-69-45 Natural Environment Test on the BLU-54/B Antipersonnel Mine. AD-501 716	Fld/Gp 19/1	AFAL-TR-68-311 Cooperative Countermeasures System Study. AD-501 909	Fld/Gp 17/4
2358-10 Time Division Multiple Access and Coherent Array Systems. AD-853 050	Fld/Gp 17/2.1	ADTC-TR-69-46 Development Test of Two Types of Very Long Delay Fuzes. AD-501 723	Fld/Gp 19/2	AFAL-TR-68-368 Penetration Aids for Tactical Fighters. AD-501 911	Fld/Gp 17/4
2604-2 Electromagnetic Bore-sight Control Problems of Radar Transmission Through a Radome. AD-852 867	Fld/Gp 17/9	ADTC-TR-69-47 Limited Evaluation of the FMU-56/B Low-Altitude Proximity Fuze. AD-852 606	Fld/Gp 19/1		
4027-11 Bulk Synthesis of Fluoroexplosives.		ADTC-TR-69-48 Test of Four Types of BLU-70/B Incendiary Bombs. AD-501 682	Fld/Gp 19/2		

EXAMPLE 8: TAB Report Number Index

4B. Meteorology

INFRARED HORIZON SENSOR ACCURACY IN THE ATMOSPHERIC ABSORPTION BANDS,
Aerospace Corp., El Segundo, Calif.
M. D. Earle. Jun 64, 31p TOR-269 (4540-80)-3
AF 04 (695)-269

Descriptors: (*Atmosphere, Infrared radiation), (*Horizon scanners, Effectiveness), Atmosphere models, Carbon dioxide, Band spectrum, Spectra (Infrared), Water vapor, Germanium, Design, Infrared detectors.

An analysis has been made of atmospheric radiance data which were computed by the weather bureau based on a variety of atmospheric models. Narrow spectral regions, located within the carbon dioxide absorption band centered at 15 microns, have been considered. It is shown that a spectral band approximately 1.7 microns wide centered very close to the absorption band shows promise, when the data is properly processed, of providing 1 sigma horizon sensor accuracies of about 0.05 degrees. A 'two color' technique involving the use of two spectral regions in the vicinity of the co2 absorption band is discussed. The possibility of using the 28.6 to 40.0 micron spectral region within the broad rotational water vapor absorption band is also considered.
(Author)

AD-460 971

HCS3.00

FEASIBILITY STUDY FOR AIRBORNE ICE-CRYSTAL DISDROMETER.

Technical Operations Inc Burlington Mass
For primary bibliographic entry see Field 14E.
AD-676 991

HCS3.00 MFS0.65

DIURNAL WIND VARIATIONS IN THE STRATOSPHERE.

Final rept. 1 Jan 65-31 Dec 67.
Wilkes Coll Wilkes-Barre Pa Dept of Physics
Alvan Bruch, Jae-Hyoung Park, Louis M. Pecora,
Martin A. Yencha, and John J. Cupani. 31 Mar 68,
137p AFCRL-68-0373
Contract AF 19 (628)-4795

Descriptors: (*Stratosphere, Wind), Diurnal variations, Ozone, Absorption, Stability, Atmospheric temperature, Oscillation, Atmospheric tides, Gravity, Harmonic analysis, Sensors, Networks, Distribution, Sounding rockets, High altitude, Thermal properties, Excitation, Mathematical models.

EXAMPLE 9: USGRDR "See" References Interfiled With Abstract Entries

17/8. OPTICAL DETECTION

AD-626 146 Fld. 17/8, 20/6
CFSTI Prices: HC \$1.00 MF \$0.50
RESEARCH ANALYSIS CORP MCLEAN VA
ZOOM-OPTICS SURVEILLANCE DEVICE: A
FEASIBILITY PROTOTYPE.
Technical paper.
by Ronald R. Kessler, John W. McCall, Jr., Paul
F. Michelsen, and Robert R. Redick. Nov 65.
15p. Rept. no. RAC-TP-193
Contract SD-212

Unclassified report

Descriptors: (*Binoculars, Optical tracking),
(*Optical tracking, Binoculars), (*Detection,
Binoculars), Counterinsurgency, Combat sur-
veillance, Optical equipment, Feasibility
studies, Experimental design

This report describes the operating principle, de-
sign characteristics and limitations of a variable-
power optics device for maintaining continuous
route surveillance from a moving vehicle in such
a situation and considers possible military applica-
tions of a unit of more sophisticated design.

AD-626 089 See Fld. 17/3

AD-626 212 See Fld. 20/5

AD-626 467 See Fld. 22/3

17/9. RADAR DETECTION

AD-625 765 Fld. 17/9
CFSTI Prices: HC \$1.00 MF \$0.50
MICROWAVE ASSOCIATES INC BURLING-
TON MASS
HIGH POWER FERRITE GAS DUPLEXER.
Quarterly progress rept. no. 5. 11 Jun-10 Sep 65.
by Fred A. Jellison. 10 Sep 65. 12p. Contract
NObsr-91203 Proj. SR-008-03-01 Task 9386
Unclassified report

Descriptors: (*Radar duplexers, Ferromagne-
tic materials), Radiofrequency power, Yt-
trium compounds, Iron compounds, Garnet,
Ferrites, Heat transfer, Life expectancy, Fai-
lure (Electronics)

Analysis of the test results on the second YIG-D
prototype duplexer indicate that the failure is due
neither to non-linear behavior with peak power
nor defective epoxy bonding, but to limitations
in the thermal transfer properties of the YIG-D
material. Further effort to reduce the length of the
final duplexer design using YIG-D material are
fruitless and should concentrate on optimizing the
design of the previously successful TT2-113
model. (Author)

EXAMPLE 10: TAB "See" References at End of Abstract Entries

STANDARDIZATION OF SDI CATEGORIES

Standardization of descriptors for DDC, CFSTI, NASA would permit more efficient use of SDI programs. The committee suggests correlation of categories by definition.

Committee:

Cathryn C. Lyon, Chairman

Naval Weapons Laboratory

Kay Campbell

Control Data Corporation

The Defense Documentation Center (DDC), the Clearinghouse for Federal Scientific and Technical Information (CFSTI), and the National Aeronautics and Space Administration (NASA) issue fast announcement bulletins. However, all three use differing subject categories, fields and groups in listing documents by fields of interest.

In order to enable their users to make one selection of terminology and receive all three bulletins, the Naval Weapons Laboratory Technical Library (Dahlgren, Va.) is attempting to correlate the categories used in DDC's *Group Announcement Bulletin* (GAB), CFSTI's *Clearinghouse Announcements in Science and Technology* (CAST), and NASA's *SCANTOPICS* to produce a user profile common to all three. This represents NWL's Current Awareness Program (CAP).

In working out this program, NWL found that the NASA *SCANTOPICS*, which number between 400 and 500 topics, the most comfortable to use. The user selects from categories already established in NASA's computer program and expensive individual profiling is avoided. The CFSTI subject categories were hard to specify because no hierarchical index was available to consult. (Even CFSTI's index of *U.S. Government Research and Development Reports* (USGRDR) is in straight topical, alphabetical order.) DDC uses subject fields and group structures based on those of the Committee on Scientific and Technical Information (COSATI).

Accordingly, the subject fields and group structures of DDC, the subject categories of CFSTI and NASA's *SCANTOPICS* are the basis of the NWL coordination. (See attachment.) The next step was to define the categories with general descriptors, trying to establish a correspondence for all three agencies.

Even though at first glance it might not be easy for three information collection centers with divergent interests to see a coordination of terminology, first level descriptors could be further defined by the three computer programs of DDC, CFSTI, and NASA to provide terms such as those developed by NWL.

Since these three agencies, in addition to the Atomic Energy Commission (AEC), are the principal source of documents for the community represented by this group of DDC users, we recommend that interchangeable descriptors be developed and used, especially in the fast announcement services, so individual agencies need not develop expensive selective dissemination of information (SDI) or current awareness programs. If this were done, there would be DOD-wide savings in computer programs of this nature.

**COORDINATION OF SDI CATEGORIES FOR
DDC, CFSTI, AND NASA**

DDC	CFSTI	NASA
Aerodynamics 0101	Aerodynamics 1	Aerodynamics 01
1. Lift 2. Drag 3. Factors Affecting Pitch, Yaw, and Roll 4. Aerodynamics of Bodies of Revolution 5. Cylinders 6. Cones 7. Lifting Bodies		
Aeronautics 01	Aeronautics 2	Aircraft 02
1. Aircraft 2. Helicopters 3. Ground Effect Machines 4. Rotary Wing Aircraft 5. Hovercraft 6. Flying Platforms, etc. 7. Flight Instrumentation 8. Air Facilities 9. Aircraft Noise 10. Sonic Boom 11. Mechanical and Combustion Noise Generated by Aircraft. 12. Methods of Noise Reduction 13. Commercial Aviation and General Aviation 14. STOL/VTOL 15. Supersonic Aircraft 16. Aircraft Safety		
Agriculture 02	Food and Agriculture 14	
1. Agricultural Chemistry 2. Agricultural Economics 3. Agricultural Engineering 4. Agronomy 5. Horticulture 6. Animal Husbandry 7. Forestry		
Astronomy and Astrophysics 03	Astronomy and Astrophysics 4	Space Sciences 30 (Parts of It)
1. Astronomy 2. Astrophysics 3. Celestial Mechanics 4. Stellar Astronomy 5. Cosmology 6. Lunar and Planetary Exploration 7. Meteors 8. Meteorites 9. Lunar Surface 10. Solar and Planetary Astronomy 11. Computer Models of Astronomy 12. Astronomy Observatories 13. Astronomical Photography and Photometry 14. Astronomical Spectroscopy 15. Astronomy Telescopes 16. Astronomy Cameras 17. Astronomy Instruments 18. Geodesy		
Atmosphere Sciences 04	Atmosphere Sciences 5	Meteorology 20 and Geophysics (Part of) 13
1. Meteorology 2. Earth Atmosphere 3. Extraterrestrial Atmosphere 4. Life Support 5. Marine Atmosphere 6. Planetary Atmosphere 7. Polar Atmosphere 8. Ring Currents 9. Stellar Atmosphere 10. Tropical Atmospheres 11. Atmosphere Condensation 12. Atmosphere Composition 13. Weather Forecasting 14. Atmosphere Physics 15. Gravitation 16. Geomagnetism		

**COORDINATION OF SDI CATEGORIES FOR
DDC, CFSTI, AND NASA (Cont'd)**

DDC	CFSTI	NASA
Behavioral and Social Science 05	Behavioral Science 7 and S.S. and Educa. 42 Economics 12 Information Science 17 Mgt. Planning 18	Aerospace Mgt. 3403 Information Tech. 3405

1. Mgt. Techniques 2. Economics (Costs, etc.) 3. Documentation and Information Technology 4. Political Science 5. Humanities 6. Linguistics 7. Man-Machine Relations 8. Personnel Adm. 9. Psychology 10. Sociology 11. World Law 12. World Space Programs

Biological and Medical Science 06	Biological Science 8 Medical Sciences 23	Biological Science 04 Bio. Technology 05
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1. Biochemistry 2. Bioengineering 3. Biology 4. BIONICS 5. Clinical Medicine 6. Environmental Biology (Includes Extra Terrestrial Life) 7. Space Medicine 8. Crew Safety and Protective Clothing (Escape, Rescue and Survival) 9. Life Support (Ecological and Physiological Factors) 10. Human Engineering 11. Radiobiology 12. Psychological Stress Factors from Space or Military Environment 13. Bioinstrumentation 14. Cybernetics 15. Sterilization for Space Research

Chemistry 07	Chemistry and Chemical Processing 9	Chemistry 06 Combustion 1/2 33
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1. Chemical Engineering 2. Electrochemistry 3. Inorganic Chemistry 4. Organic Chemistry 5. Chemical Analysis 6. Physical Chemistry 7. Luminescence 8. Photo Chemistry 9. Combustion

Earth Sciences and Oceanography 08	Earth Science 11 Oceanography 28	Geophysics 13 (Partly)
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1. Ocean Currents 2. Ocean Basins 3. Ocean Environment 4. Ocean Flow 5. Ocean Crust 6. Ocean Ridges 7. Ocean Temperature 8. Ocean Tides 9. Ocean Waves 10. Earth Planetary Structure 11. Earth Core 12. Earth Crust (Dry Land) 13. Earth Mantle 14. Mohorovicic Discontinuity 15. Continental Drift 16. Earth Currents 17. Earth Envelope 18. Geology 19. Hydrography 20. Hydrology 21. Marine Geophysics 22. Seismology 23. Geologic Structures 24. Topography

Electronics 09 and Electric Eng.	Electro- Technology 13	Electronic Eg. 09 Electronics 10
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1. Radar 2. Components, i.e., Semiconductor Transistors 3. Antennas 4. Circuitry 5. Electrical Eng., i.e., Motors, Generators, etc. 6. Amplifiers 7. Feedback and Control Theory 8. Electromagnetic Radiation 9. Microelectronics 10. Computers 11. Information Theory 12. Subsystems

**COORDINATION OF SDI CATEGORIES FOR
DDC, CFSTI, AND NASA (Cont'd)**

DDC	CFSTI	NASA
Energy Conversion 10	Power Source Devices 37	Auxiliary Systems 03
<p>1. Fuel Cells 2. Chemical Batteries 3. Solar Space Power 4. Hydraulic and Pneumatic Systems 5. Auxiliary Power Systems 6. Conversion Techniques 7. Power Sources 8. Energy Storage</p>		
Materials 11	Materials 20 Plastics and Elastomers 36 Metals and Alloys 24	Materials, Metallic 17 Materials, Non-Metallic 18
<p>1. Adhesives and Seals 2. Metals (Rare, Refractory, etc.) 3. Metallurgy 4. Corrosion 5. Metal Crystals 6. Plastics 7. Elastomers 8. Alloys 9. Ceramics 10. Refractories 11. Glass 12. Coatings 13. Colorants 14. Finishers 15. Fibers 16. Textiles 17. Composite Materials 18. Oils 19. Hydraulic Fluids 20. Solvents 21. Wood and Paper Products 22. Rubber Products</p>		
Mathematic Sciences 12	Mathematics and Statistics 21 Operations Res. 29 Automation and 6 Data Processing	Mathematics 19 Computers 08
<p>1. Applied Mathematics 2. Numerical Analysis 3. Probability and Statistics 4. Operations Research 5. Mathematics for Space Research 6. Computer Programs</p>		
Mech., Ind., Civil and Marine Eng. 13	Ind. 16, Eng., Marine 19 Tech. Mech. 22, Eng., Safety Eng. 41 Transportation 46	Machine Elements and Processes 15 Structural Mech. 32
<p>1. Air Conditioning 2. Heating 3. Lighting 4. Ventilation 5. Civil Eng. 6. Industrial Eng. 7. Marine Eng. 8. Mech. Eng. 9. Safety Eng. 10. Lubricants 11. Bearing and Glass 12. Machining 13. Ground Transportation Machinery 14. Pumps 15. Vacuum Technology 16. Nondestructive Testing 17. Quality Control 18. Welding 19. Friction and Wear 20. Metal Forming 21. Turbomachinery 22. Construction 23. Hydraulic and Pneumatic Eng. 24. Industrial Processes 25. Tools 26. Machinery</p>		

**COORDINATION OF SDI CATEGORIES FOR
DDC, CFSTI, AND NASA (Cont'd)**

DDC	CFSTI	NASA
Methods and Eng. 14	Reprography and Recording Devices 40 Testing and Analysis 45	Facilities, Research and Support 11 Instrumentation and Photography 14
1. Laboratory Facilities 2. Cost Effectiveness 3. Test Facilities 4. Test Equipment 5. In- strumentation 6. Recording Devices 7. Reprography 8. Simulators 9. Wind Tunnels 10. Shock Tubes		
Military Sciences 15	Military Sciences 25	
1. ASW 2. CBR 3. Defense 4. Offense 5. Strategy 6. Tactics 7. Intelligence 8. Lo- gistics 9. Nuclear Warfare 10. Limited Warfare 11. Disarmament 12. Arms Control		
Missile Technology 16	Cannot Tell What Its Using	Not Especially Applicable as Such
1. Missile Launching 2. Ground Support 3. Trajectories 4. Warheads and Fuzes 5. Missile Construction 6. Missiles		
Nav., Comm., De- tection and Countermeasures 17	Comm. 10 Nav. and Det. 26	Comm. 07 Nav. 21
1. Space Communication 2. Reentry 3. Lunar 4. Interplanetary 5. Satellite and Space- craft Communications 6. Communication Satellites 7. Tracking 8. Communication Equip- ment 9. Communication Systems 10. Radio Noise 11. Communication Theory 12. Nav- igation Systems (Aircraft, Ships, Spacecraft) 13. Guidance Systems 14. Rendezvous and Docking 15. Acoustic Detection 16. Direction Finding 17. Electromagnetic and Acoustic Countermeasures 18. Infrared and Ultra Violet Detection 19. Magnetic Detection 20. Opti- cal Detection 21. Radar Detection 22. Seismic Detection 23. General Detection 24. Tar- get Acquisition 25. Torpedo Detection 26. Exhaust Detection 27. Telemetry		
Nuclear Science and Technology 18	Nuclear Science 27 Reactor Tech. 39	Nuclear Eng. 22 Physics, Atomic Molecular and Nuclear 24
1. Nuclear Physics 2. Atomic Physics 3. Molecular Physics 4. Radioactivity 5. Isotopes 6. Nuclear Explosions 7. Nuclear Instrumentation 8. Radiation Shielding and Protection 9. Reactor Technology 10. Reactor Materials 11. Radioactive Wastes and Fission Products 12. Reactor Physics		

**COORDINATION OF SDI CATEGORIES FOR
DDC, CFSTI, AND NASA (Cont'd)**

DDC	CFSTI	NASA
Ordnance	Ordnance	Not Applicable
<p>1. Ammunition 2. Explosives 3. Pyrotechnics 4. Bombs 5. Combat Vehicles 6. Explosions 7. Ballistics 8. Armor 9. Fire Control and Bombing Systems 10. Rockets 11. Guns 12. Underwater Ordnance</p>		
Physics 20	Physics (Gen.) 32 Physics (Hi Energy) 33 Physics (Sol.State) 34 Plasma Res 35 Optics 30	Physics (Gen.) 23 Physics (Plasma) 25 Physics (Sol.State) 26 Fluid Dynamics 12 Masers Thermodynamics 33
<p>1. Acoustics 2. Crystallography 3. Electricity and Magnetism 4. Fluid Mechanics 5. Masers and Lasers 6. Optics 7. Particle Accelerators 8. Particle Physics and Nuclear Reactions 9. Plasma Physics 10. Quantum Theory and Relativity 11. Mechanics 12. Solid State Physics 13. Wave Propagation 14. Thermodynamics</p>		
Propulsion and Fuels 21	Fuels and Lubricants 15 Propulsion Sys. 38	Propellants 27 Propulsion Sys. 28
<p>1. Combustion and Ignition 2. Electric Propulsion 3. Fuels 4. Jet and Gas Turbine Engines 5. Nuclear Propulsion 6. Reciprocating Engine 7. Rocket Engines 8. Rocket Propellants 9. Engine Components 10. General Engine Concepts 11. General Propulsion Concepts 12. Liquid Propellants 13. Solid Propellants 14. Rocket Nozzles 15. Rocket Thrust Chambers, Auxiliary Propulsion</p>		
Space Technology 22	Space Mechanics 43 Space Vehicles 44	Space Radiation 29 Space Sciences 30 (Parts of It) Space Vehicles 31
<p>1. Astronautics 2. Spacecraft 3. Space Craft 4. Trajectories and Reentry 5. Space Craft Launch 6. Vehicles and Ground Support 7. Space Radiation 8. Cosmic Radiation 9. Solar Radiation 10. Radiation Belts 11. Reentry Vehicles 12. Lunar Vehicles 13. Planetary Vehicles</p>		

FIELD OFFICE VIEWING FACILITIES

There is a consensus that a genuine need exists for the immediate scanning of documents. The committee recommends the re-establishment of a Field Office or equivalent viewing facilities in the Greater Washington D.C. area.

Committee:

Ruth R. McCullough

Westinghouse Defense & Space Center

Any questionnaire or survey of Defense Documentation Center (DDC) users probably would elicit a unanimous request for a DDC Field Office "so I can run down and look at what they have." Known needs indicate that a relatively small but critical percent of urgent requests could best be served by the easy accessibility of facilities to scan documents immediately.

The alternative to a Field Office service which allows a user to view documents before ordering is to request a DDC subject bibliography and then order copies of all the documents listed. Quite obviously this is wasteful in terms of time, personnel and materials. It is expensive for all concerned. The redundancy of documents to be ordered, received and reviewed by the user is high. The unnecessary workload of reproducing, handling, controlling and shipping unneeded copies is a drag on the flow of needed documents. Time is a critical concern when the user has a short-term study or must respond to a request for a proposal.

Therefore, it is recommended that a viewing facility be established in the area of Greater Washington, D.C. If a DDC Field Office proves not to be feasible, investigation should be made of the possibility of establishing area depositories in public or private facilities where properly cleared users, upon request and through established channels, could view documents before ordering or instead of ordering.

DDC already has plans for selective dissemination of information (SDI) using COSATI descriptors and fields. Depositories could be selected and designated according to these same subject categories.

The committee is willing to assist and cooperate in any way toward investigation and/or implementation of this recommendation.

ACQUISITIONS PROCEDURES

The confusion in regard to use of DDC forms leads to a recommendation for greater user orientation, clearer instructions and simplification of the forms themselves.

Committee:

Kay Campbell, Chairman

Paula Strain

Lucille Achauer

Control Data Corporation

Booz-Allen Applied Research, Inc.

Naval Ship Systems Command

The most consistent problem with both the DDC and CFSTI ordering forms and procedures stems from a lack of understanding on the part of the users. The committee believes that this could be remedied by giving the contract monitor full instructions on the use of DDC and its forms. It is suggested that courses be initiated at DDC or the user facility explaining what the forms are and how to use them. Also it is recommended that DDC issue several copies of all necessary DDC forms to a facility when a new contract is registered. In addition, it has been suggested that all forms have a prepunched user's code.

Special emphasis should be placed on the use of Form 55, *Request for Limited Document*. Much of the confusion surrounding the use of this form would be eliminated by educating private industry and government contractors in what is required from each before an "L" document can be ordered. Since this is less of a problem for the military activities than for private industry, perhaps two Form 55s are needed.

The committee feels that Form 1 would be more useful to the user if it were issued in multiple copies. This would enable the requester to have one for filing. By placing DDC's and CFSTI's addresses on the order form in the lower right hand corner, the user could employ window envelopes. This would save typing the address on plain envelopes.

It is recommended that two types of Form 1 be devised: one to order those documents with known AD numbers; and the other for those without AD numbers. When items ordered by bibliographic information and having no AD number arrive in house it is sometimes difficult to match it with the original order.

The final suggestion is that the Clearinghouse billings carry better identification of items. A method of determining the service charge for documents would also be appreciated.

DDC USERS' SURVEY

**Based on responses from 18 major DDC users in the
Greater Washington, D.C. area**

The results of a questionnaire distributed for the purpose of identifying mutual problems and needs of the group, assessing the impact of DDC's July 1, 1968, decision in regard to service charges, and compiling selected statistics to support and illustrate these concerns.

Committee:

Donald C. Eising, Chairman

IBM Corporation

Dorothy B. Lear

Control Data Corporation

Joanne Lappin

**Naval Ship Research &
Development Center**

Walter Templeman

Goddard Space Flight Center

QUESTION:

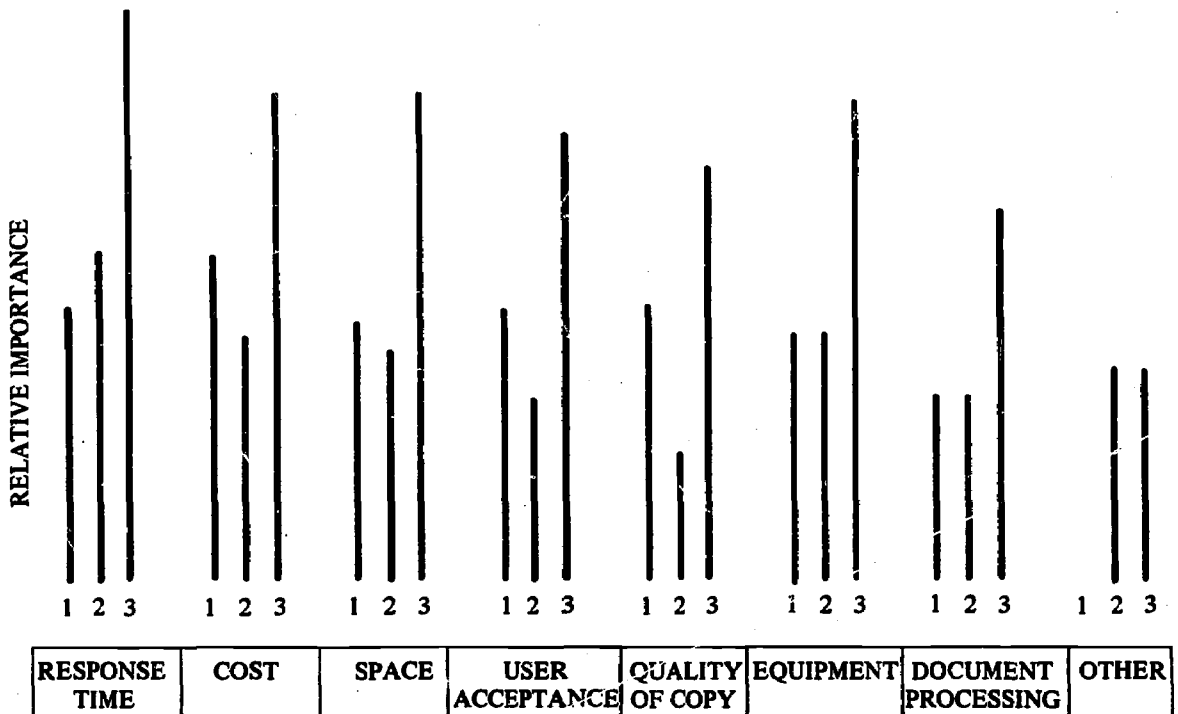
Mutual problems and needs (re-arrange in order of importance)

1. Response time
2. Cost
3. Space
4. User acceptance
5. Quality of copy
6. Equipment
7. Document processing
8. Other

RESPONSE:

Weighted according to importance as assigned in responses

1. Government Agencies
2. Government Contractors
3. Total



QUESTION:

Impact of DDC's July 1, 1968, Decision

RESPONSE:

	Government Agency	Government Contractor
Present ordering policy		
Order only hard copy and pay, if necessary	5	
Order either hard copy or microform, at request of user	6	6
Order both hard copy and microfiche simultaneously, to hold microfiche in file and circulate hard copy	1	3
Order microform and print hard copy inhouse automatically		
Order microform and print hard copy inhouse only on demand		1
Order microform to replace hard copy already held in file		3
Present equipment in use:		
Reader Printers - 20		
Microfiche Viewers - 64		
Microfilm Readers - 4		
Microcard Readers - 3		
Microfiche Reproducers - 3		
Number reporting no equipment - 2		

QUESTION:

Present procedures for handling microforms

RESPONSE:

There appeared to be a variety of procedures for handling microforms.

Three organizations indicated no procedures at all because no microforms were ordered (or received).

Three other organizations indicated direct distribution of microforms to the requestor (i.e., no maintenance within library).

Five organizations file microforms by report number (e.g., AD number, report number).

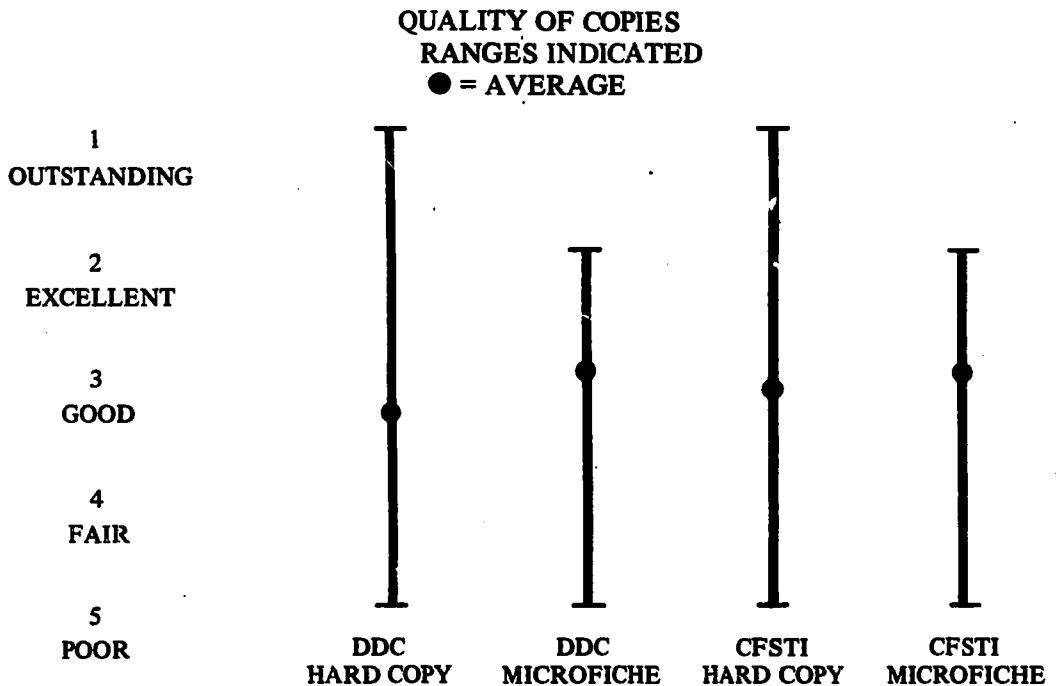
Another five organizations make an effort to mark unclassified log numbers and classified control numbers on envelopes and cover sheets or directly on the fiche by various methods (including typing/spraying or using white correction tape on the film).

QUESTION:

Quality of copies received from DDC and CFSTI
(Rate 1 - outstanding, 2 - excellent, 3 - good, 4 - fair, or 5 - poor)

- DDC hard copy
- DDC microform
- CFSTI hard copy
- CFSTI microform

RESPONSE:



QUESTION:

User acceptance of microforms

RESPONSE:

There was a very mixed response to this query.

Only two replies indicate excellent or good acceptance of microforms.

Six replies indicate a degree of acceptance ranging from undecided, to reluctant (a nuisance acceptance) to improving.

Eight replies indicate poor to very slight acceptance. These include cases when no other copy is available or where no microform capability exists in the location.

QUESTION:

Future plans

RESPONSE:

The majority of responses (12) gave indication of a significant number of ambitious plans to increase the utilization of microforms. Included were these comments:

“Obtain more readers to provide convenient access throughout the plant, especially portable readers to permit more home study of information.”

“We hope to get our own microfiche printer so we can produce our hard copy as required.”

“To convert substantial portions of collection to microform.”

“We plan to duplicate fiche to fiche as well as produce our own hard copy (via EL-4) to cut cycle time.”

“Institute a retrieval system for the now-expendable microform.”

“We hope to have only microform, with viewers in each user’s office or office group.”

Only two replies indicated limited or negative plans for microfiche and another two indicated no future plans at all.

QUESTION:

Potentially useful services that could be provided by DDC or CFSTI or other source.

RESPONSE:

Responses were compiled and re-submitted to the participants for rating in order of importance.

- a. Eliminate Clearinghouse as a middleman between user and DDC
- b. Provide unified index of DDC and CFSTI by subject, title, etc.
- c. Improve the expediting service for urgently required documents from DDC
- d. Provide free hard copies
- e. Reduce number of limited documents by reviewing and changing policy on limitations.
- f. Simplify order card (i.e., prepunch user code, eliminate signature)
- g. Re-establish facility for viewing and reading DDC documents in the DC area
- h. Give more feedback on literature searches and search techniques
- i. Communicate more with users
- j. Standardize
- k. Provide remote query of DDC files (e.g., NASA-RECON)
- l. Provide an SDI system based on keywords (not COSATI categories)
- m. Convert old DDC microforms to microfiche
- n. Update TEST (Project LEX Thesaurus)
- o. Lessen restrictions for DoD acquisitions
- p. Lease micro-readers to DDC users.

QUESTION:

Present programs for microfilming documents.

RESPONSE:

Five locations (two government agencies, three contractors) have a current program for microfilming internal reports which are unavailable from DDC.

One location feeds 16mm film into microfiche jackets, another generates microfiche via a locally developed microfiche camera, another is converting 16mm film to microfiche, another is supplementing its companywide microfiche program with locally produced 16mm film, and the fifth converts all hard copies of documents over five years old to microfiche.

QUESTION:

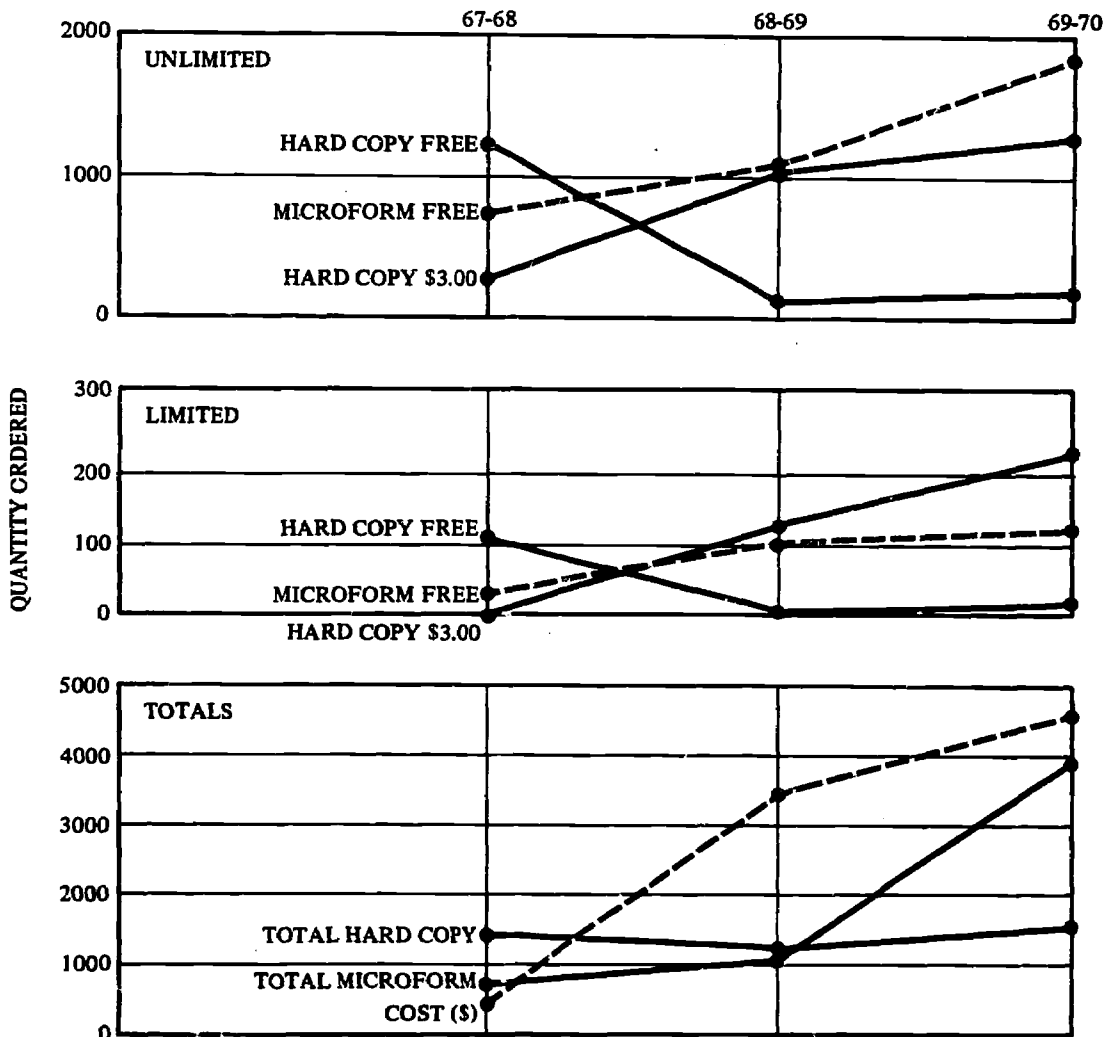
Total AD documents ordered July 1967 to June 1968, July 1968 to June 1969, and number estimated to be ordered July 1969 to June 1970.

Average time from order to receipt

RESPONSE:

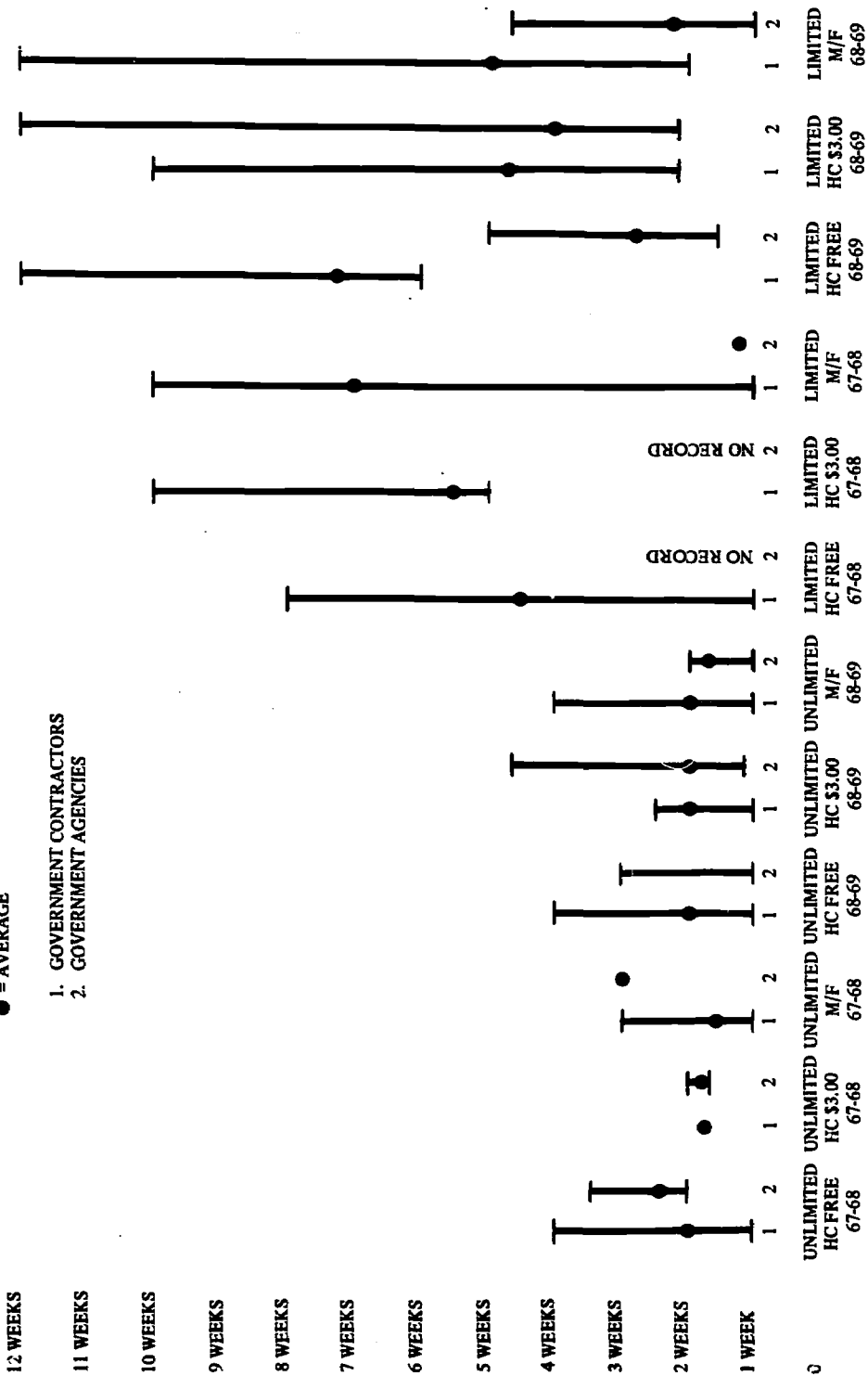
First question charted on Graph 1

Second question charted on Graph 2



GRAPH NO. 1

AVERAGE TIME FROM ORDER TO RECEIPT:
 RANGES INDICATED
 ● = AVERAGE



1. GOVERNMENT CONTRACTORS
2. GOVERNMENT AGENCIES

GRAPH NO. 2

CONCLUSIONS

Changes are recommended in policies and/or procedures of the Defense Documentation Center (DDC) and the Clearinghouse for Federal Scientific and Technical Information (CFSTI), as follows:

Abstract Bulletins and Indexes:

Standardize CFSTI's *U.S. Government Research and Development Reports* (USGRDR) and DDC's *Technical Abstract Bulletin* (TAB), preferably following the format and editorial policy of the latter.

Standardization of SDI Categories:

Coordinate subject categories used in DDC's *Group Announcement Bulletin* (GAB), CFSTI's *Clearinghouse Announcements in Science and Technology* (CAST), and NASA's *SCANTOPICS* so a field of interest profile for selective dissemination of information (SDI) can be developed from one selection of terms.

Field Office Viewing Facilities:

Re-establish a DDC Field Office, or equivalent viewing facilities, in the area of Greater Washington, D.C., where users can scan documents.

Acquisition Procedures:

Provide user-orientation with fuller instructions; re-design Form 1 to provide multiple copies and the use of window envelopes; and identify more clearly items included in CFSTI billings.

DDC Users' Survey:

Eliminate CFSTI as a middleman between the user and DDC; improve expediting service for urgently required documents from DDC; provide free hard copies; and reduce the number of limited documents by reviewing and changing policy on limitations.

PARTICIPATING LIBRARIES AND INFORMATION CENTERS

**Army Materiel Command
Harry Diamond Laboratories
Connecticut Ave. & Van Ness St., N.W.
Washington, D.C. 20438**

**Atlantic Research Corporation
Shirley Highway at Edsall Road
Alexandria, Virginia 22314**

**Bendix Corporation
E. Joppa Road
Baltimore, Maryland 21204**

**Booz-Allen Applied Research, Inc.
4733 Bethesda Avenue
Bethesda, Maryland 20014**

**Central Intelligence Agency
Washington, D.C. 20505**

**Control Data Corporation
7735 Old Georgetown Road
Bethesda, Maryland 20014**

**Control Data Corporation (WS&DSD)
11428 Rockville Pike
Rockville, Maryland 20052**

**Department of Transportation
(FAA and Coast Guard)
800 Independence Avenue, S.W.
Washington, D.C. 20546**

**Informatics, Inc.
4720 Montgomery Lane
Bethesda, Maryland 20014**

**Institute for Defense Analyses
400 Army-Navy Drive
Arlington, Virginia 22202**

**International Business Machines
Federal Systems Center
18100 Frederick Pike
Gaithersburg, Maryland 20760**

**NASA - Goddard Space Flight Center
Greenbelt, Maryland 20771**

**NASA - Headquarters Library
600 Independence Avenue, S.W.
Washington, D.C. 20546**

**NASA - Scientific & Technical
Information Facility
P.O. Box 33
College Park, Maryland 20740**

**Naval Air Systems Command
19th & Constitution Ave., N.W.
Washington, D.C. 20360**

**Naval Oceanographic Laboratory
Washington, D.C. 20390**

**Naval Ordnance Laboratory
White Oak, Maryland 20910**

**Naval Research Laboratory
Washington, D.C. 20390**

**Naval Scientific-Technical
Intelligence Center
Naval Observatory, Bldg. 52
Washington, D.C. 20390**

**Naval Ship R&D Center
Washington, D.C. 20007**

**Naval Ship R&D Center
Annapolis, Maryland 21402**

**Naval Ship Systems Command
18th St. & Constitution Ave., N.W.
Washington, D.C. 20360**

**Naval Weapons Laboratory
Dahlgren, Virginia 22448**

**Technical Operations, Inc.
1901 Ft. Myer Drive
Arlington, Virginia 22209**

**TRW Systems
1735 I Street, N.W.
Washington, D.C. 20006**

**Westinghouse
Defense & Space Center
Box 1693
Baltimore, Maryland 21203**