

Use of Technical Reports and Standards

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A 20% systematic random sample of technical reports and standards of ISRO Satellite Centre (ISAC) Library has been examined to record over 400 lentout use. The use of reports has been analysed with frequency table to identify the unused and fairly used reports. The relative use of reports of different issuing agencies, of different year of publication and year of acquisition are also discussed. The longitudinal use of reports over time factor is examined. Concludes by noting scarce use of reports and negligible use of standards made and by providing appropriate feedback for collection development.

0 Introduction

A lentout use study of technical reports and standards of ISAC Library based on a simple systematic 20% random collection sample has been carried out during second half of 1983. An earlier paper¹ on lentout use of books, reports, journals and standards has presented results and observations at broad level in addition to highlighting the background, data collection methods and limitations. Six hundred and seventeen sample reports issued out 416 times so far

(i.e. since 1978) and 137 times during ten months just prior to survey (to 72 users) are analysed in this paper by number of times issued, by issuing agency (organisation) of report, by year of publication and year of acquisition in addition to a longitudinal analysis to see how they are borrowed during latest ten months compared to cumulative use so far.

1 Frequency distribution of use over number of reports

Table I presents the frequency distribution

of use over number of reports. As could be seen from the table, 78% of reports have not yet been issued out even once. The balance 22% only belong to the core collection. It is clear that little less than 8% of reports met nearly 67% of total lentout use and 12% were responsible for 85% of use. Plotting cumulative percentage of reports against cumulative percentage of use an expected parabolic type distribution can be seen.

It is surprising that the reports have been, by and large, scarcely used, though they are believed to be one of the important sources of information in space science and satellite technology areas. It may also be noted that by very nature reports cannot be expected to be used as intensively as books and journals are used. Some of the reasons for low usage of reports are as follows. The development of a centralised reports collection at ISAC Library was started in 1978 though library existed since end of 1972. Secondly, reports being semiformal publications are available as gratis to many users. Thirdly, many internal and Indian reports in the collection are otherwise accessible to most of the users. Fourthly, free reprographic service has enabled many users to possess their own copies of reports. Fifthly, since reports deal with specific topics/problems very few users are interested in any report. Further, out of about 1100 members, only 800 were technical staff and of which nearly 400 were lower level operational staff. A majority of 400 higher level technical staff have broad specialisation such as mechanical engineering, electronics, computer science and physics. All these areas have been better covered by books and journals,

and there are very few reports in the broad disciplines. On the other hand, the high rate of mishits or noncost-effective acquisition of reports is attributable to the fact that most of the reports are either acquired on standing order basis or by selections based on titles. There is absolutely no scope for examination of reports before selection (like approval books). Nor critical reviews of reports are available. At the most, stale report announcement bulletins can be consulted which in no way help to screen out any report.

Standards are much less borrowed than even reports. Like reports, standards collection was also started from 1978 and standards other than ISI were acquired much recently. As such except ISI no other sample standards are ever borrowed. Out of 630 sample standards ISI standards have been issued 15 times. Secondly, many standards such as MIL, JSS are decentralised and concerned groups have much stronger collection than library. In fact, Library's standards collection was recently enriched by partially transferring the collection of different groups and by receiving as gratis from individuals. Thirdly, since standards are issued for 3 days without renewing facility (unlike books and reports which are issued for 21 days with renewing facility) probably users would prefer to consult standards within the library.

2 Relative use of technical reports of different issuing agencies

Table II presents organisation (or originating agency) wise use of technical reports and standards. The table also shows a comparison of estimated percentage of stock with percentage of sample in each of the group based on

TABLE—I Frequency Distribution of Use over Number of Reports

No. of Times Issued	Reports			Total Issued out 'Use' of Reports		
	No.	%	Cumulative %	No.	%	Cumulative %
0	480	77.8	77.8	0	0.0	0.0
1	63	10.2	88.0	63	15.1	15.1
2	26	4.2	92.2	52	12.5	27.6
3	8	1.3	93.5	24	5.8	33.4
4	10	1.6	95.1	40	9.6	43.0
5	6	1.0	96.1	30	7.2	50.2
6	6	1.0	97.1	36	8.7	58.9
7	6	1.0	98.1	42	10.1	69.0
8	4	0.6	98.7	32	7.7	76.7
9	3	0.5	99.2	27	6.5	83.2
10	0	0.0	99.2	0	0.0	83.2
11-15	3	0.5	99.7	37	8.9	92.1
16-20	1	0.2	99.9	16	3.8	95.9
21-25	1	0.2	101.1	22	5.3	101.2
Error	0	0.0	101.1	-5	-1.2	100.0
TOTAL	617	100.1	101.1	416	100.0	100.0

simple systematic random sample. The highest variation is found in NASA reports (+22.3%). Next comes others category reports (-12.1%), internal reports i.e. ISRO/DOS/PRL reports (+3.8%), GFW (-3.2%) and RAE (-2.7%). The variations in estimation in other groups are very less. In case of standards, BSI has +4.1% and ISI -2.7% variation of estimated stock from stock based on sample. The difference in percentage of estimated stock and sampled stock in case of foreign and Indian reports is 2.5.

It is not surprising that NASA reports forming 27.2% of sample accounted for 55.3% of total use. Next highest usage of 15.1% of total use is made of ESA/ESRO reports which form 9.2% of sample. The percentage of use of all other reports is less than the corresponding percentage of sample. None of the sample reports is issued out at least once in case of AMCP, BARC, COSPAR, GSFC, NAL, NOAA, NRC, TAC and TIFR. This once again suggests that lot of standing order

supplies and gratis reports are adding dead-weight to reports collection. Further, foreign reports forming about 85% of sample resulted in 92% of total use as against 15% of Indian reports resulted in 8% of total use.

One important observation regarding reports and to some extent standards is that library should reexamine its policy of accepting reports on gratis, exchange and standing order bases.

It is not economical to accept a gratis report and spend considerable processing and maintenance cost on it when the same is not even issued out once. All those reports or series of such reports which are never used may be considered for weeding out of library including transferring to concerned sections of the centre. Internal reports even though less used for obvious reasons may have to be maintained in the library to meet the archival function for internally generated information.

The frequency scores are also tabulated individually for reports of each issuing agency.

TABLE—II Organisationwise Use of Reports and Standards

Orgn. Code	Acronym of Originating Agency/Orgn.	% of Stock	% of Sample	Use of Sample Reports/Standards		% of stock - % of Sample	% of Use - % of Sample
				No	%		
REPORTS							
A	AMCP	0.8	0.3	0	0.0	+0.5	-0.3
B	BARC	0.5	0.6	0	0.0	-0.1	-0.6
C	COSPAR	4.6	4.2	0	0.0	+0.2	-4.2
D	ESA/ESRO	8.5	9.2	63	15.1	-0.7	+5.9
E	GEC	0.8	0.6	1	0.2	+0.2	-0.4
F	GFW	1.8	6.0	2	0.5	-3.2	-5.5
G	GSFC	0.9	2.4	0	0.0	-1.5	-2.6
H	LSRO/DOS/PRL	15.5	11.7	32	7.7	+3.8	-4.0
I	JPL	1.1	0.6	1	0.2	+0.5	-0.4
J	KGD	0.9	1.3	3	0.7	-0.4	-0.6
K	MSFC	1.2	0.2	1	0.2	+1.0	0.0
L	NAL	0.9	1.0	0	0.0	-0.1	-1.0
M	NASA	49.5	27.2	290	55.3	+22.3	+28.1
N	NOAA	0.5	5.7	0	0.0	-0.2	-5.7
O	NRC	0.6	0.8	0	0.0	-0.2	-0.8
P	NTIS/JPRS/PB	2.2	2.8	6	1.4	-0.6	-1.4
Q	RAC	0.6	1.3	4	1.0	-0.7	-0.2
R	RADC	1.7	2.4	6	1.4	-0.7	-1.0
S	RAE	1.7	4.4	15	3.6	-2.7	-0.8
T	TAC	0.6	0.3	0	0.0	+0.3	-0.3
U	TIFR	0.3	0.2	0	0.0	0.1	-0.2
V	OTHERS*	4.6	16.7	52	12.5	-12.1	-4.2
TOTAL	—	99.8	99.9	416	99.8	—	—
	Foreign	82.4	84.9	382	91.8	-2.5	+6.9
	Indian	17.6	15.1	34	8.2	+2.5	-6.9
	TOTAL	100.0	100.0	416	100.0		
STANDARDS							
W	ANSI	1.3	1.3	0	0.0	0.0	-1.3
X	BSI	5.4	1.3	0	0.0	+4.1	-1.3
Y	IEEE	1.3	2.1	0	0.0	-0.8	-2.1
Z	ISI	89.6	92.3	15	100.0	-2.7	+7.7
S	JSS	0.6	2.0	0	0.0	-1.4	-2.0
H	MIL	1.8	1.0	0	0.0	+0.8	-1.0
TOTAL		100.0	100.0	15	100.0		

* Others include about 56 organisations. Some of them are NSSDC/NDC, IISc, ONERA, UTIAS, CRC, AD, etc.

It is noticed in the frequency table that in case of NASA reports, 4 had 11 or more uses and 29 never used out of 167 sample reports. In case of ESA/ESRO reports 37 out of 57 were never used. Other reports were scarcely used and hence found not worth probing further.

3 Longitudinal use of reports

Use of reports during last 10 months is

compared with the cumulative use so far in this section. Table III presents a picture of longitudinal use of reports of different agencies. Foreign reports have recorded an increase in use by 6% during last 10 months where as Indian reports have faced 6% decline in use. Ignoring the nonused categories of reports, ESA/ESRO reports have found 4.6% increased use during last 10 months followed by RAE

(+2.3%), RAC (+1.9%), NASA (+0.9%) and NTIS/JPRS/PB (+0.1%). Highest decline in use (-5.5%) is faced by internal reports i.e. DOS/ISRO/PRL reports. Other reports which showed marginal decrease in use are RADC (-1.4%), reports in 'others' category (-0.8%), KGI (0.7%), GFW (-0.5%) and GEC, JPL and MSFC (each -0.2%).

4 Frequency distribution of use over age (Year of publication) of report

There is a general belief that use of document declines with age in a negative exponential pattern. This section deals with use against age and the next deals with use against year of acquisition of reports. The data of year of publication of reports versus use is presented in table-IV. Since the survey started in 1983 itself, the data about 1983 and to

some extent 1982 reports are quite inadequate. It can be seen from the table that maximum number of reports in the collection (14.1%) are published in 1979 which is followed by 1978 (13.1). Nearly 96.8% of reports in the library are published within last 12 years and 70.7% of reports are published since 1975. (It may be noted here that library was started from end of 1972). It is also revealed by the table that there is no clear correlation of use with age of reports. The average use per report increases steadily as we go backwards (except 1982 and 1983) understandably due to the fact that reports of earlier years might have been acquired early by the library and hence circulated more number of times. Almost all reports published earlier to 1961 are not used at all.

An analysis of mode year of publication of

Table III—Longitudinal Use of Reports

Origination Agency/ Orgn. Code	% of Sample	Use of Sample Reports				Use During Last 10 Months - % Cumulative Use ie (4)-(6)
		During Last 10 Months		Cumulative Use So far		
		No.	%	No.	%	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A	0.3	0	0.0	0	0.0	0.0
B	0.6	0	0.0	0	0.0	0.0
C	4.2	0	0.0	0	0.0	0.0
D	9.2	27	19.7	63	15.1	+4.6
E	0.6	0	0.0	1	0.2	-0.2
F	6.0	0	0.0	2	0.5	-0.5
G	2.4	0	0.0	0	0.0	0.0
H	11.7	3	2.2	32	7.7	-5.5
I	0.6	0	0.0	1	0.2	-0.2
J	1.3	0	0.0	3	0.7	-0.7
K	0.2	0	0.0	1	0.2	-0.2
L	1.0	0	0.0	0	0.0	0.0
M	27.2	77	56.2	230	55.3	+0.9
N	5.7	0	0.0	0	0.0	0.0
O	0.8	0	0.0	0	0.0	0.0
P	2.8	2	1.5	6	1.4	+0.1
Q	1.3	4	2.9	4	1.0	+1.9
R	2.4	0	0.0	6	1.4	-1.4
S	4.4	8	5.9	15	3.6	+2.3
T	0.3	0	0.0	0	0.0	0.0
U	0.2	0	0.0	0	0.0	0.0
V	16.7	16	11.7	52	12.5	-0.8
Total	99.9	137	99.9	416	99.8	-
Foreign	84.9	134	97.8	382	91.8	+6.0
Indian	15.1	3	2.2	34	8.2	-6.0

the sample reports based on issuing agency did not reveal any clear trend as most of the reports are acquired in last 4-5 years. However, it may be noted that ESA/ESRO reports showed four mode years of publications viz. 1973, 1977, 1979 and 1980 and NASA reports have 1976 as mode year of publication as against the mode year 1979 for reports as a whole.

5 Frequency distribution of use over year of acquisition of report

In the above analysis of age of reports, the year of acquisition of report would have a much stronger effect on total use than mode year of publication of report. Table V presents data about distribution of use over year of acquisition of reports. Also presented in the table is the total number of reports acquired in the year by the library for comparison purpose. No clear trend in the average use per report can be seen in this table. Number of reports acquired in each year differs considerably and

maximum were acquired in 1983 (1085) which is followed by 1980 and 1979.

6 Results and observations

To recall some of the observations, NASA and ESA reports have been relatively more used, library has to reexamine its present policy of accepting gratis, exchange and standing order supplies of reports and standards and weed out appropriate categories and series of unused reports. Foreign reports have recorded an increase in percentage of use in recent months. About 78% of reports are not issued out even once and nearly 9% of reports accounted for about 74% of total use. About 97% of reports in the library are published within last 12 years and 71% of them are published since 1975. A further study of correlating use of reports with various user characteristics is also being done separately.

It may be concluded that, by and large, reports are scarcely used and use of standards is negligible. This survey has enabled the

Table IV :—Year of Publication of Reports Vs Use

Year of Pub.	Sample Reports Covered		Lent Out 'use'		Average 'use' per Report
	No.	%	No.	%	
83	1	0.2	5	1.2	5.00
82	9	1.5	12	2.9	1.33
81	12	1.9	0	0.0	0.00
80	63	10.2	23	5.5	0.37
79	87	14.1	32	7.7	0.37
78	81	13.1	53	12.7	0.65
77	60	9.7	36	8.7	0.60
76	75	12.2	24	5.8	0.32
75	56	7.8	33	7.9	0.59
74	35	5.7	25	6.0	0.71
73	30	4.9	33	7.9	1.10
72	20	3.2	36	8.7	1.80
71	23	3.7	26	6.3	1.13
66-70	44	7.1	52	12.5	1.18
61-65	14	2.3	27	6.5	1.93
56-60	2	0.3	0	0.0	0.00
51-55	0	0.0	0	0.0	0.00
Upto 50	2	0.3	0	0.0	0.00
n. d	2	0.3	0	0.0	0.00
Error	+1	+0.2	-1	0.2	—
TOT AL	617	98.7	416	100.1	0.67

Table V :— Year of Acquisition of Reports Vs Use

Year of Acq.	Total Acquired		Sample Reports Covered		Lentout 'Use'		Average 'Use' per Report
	No.	%	No.	%	No.	%	
83	1085	21.6	14	2.3	28	6.7	2.00
82	919	18.3	91	14.7	54	13.0	0.59
81	515	10.3	62	10.0	13	3.1	0.21
80	1064	21.2	196	31.8	98	23.6	0.50
79	1037	20.7	182	29.5	176	42.3	0.97
78	400	8.0	72	11.7	42	10.1	0.58
Error	0	0.0	0	0.0	+ 5	+1.2	—
TOTAL	5020	100.1	617	100.0	416	100.0	0.67

library to know the majority of unused and least used reports and also how use is distributed among different issuing agencies and other criteria of report. This served as a useful feedback for future collection development policies. But unfortunately, one important question remains unanswered. That is, the use study has indicated the unused categories for weeding out and also to properly control free reports and standing order supplies in future. Due to certain inherent problems in selection and procurement of technical reports

can anything substantially be done to make reports acquisition a better cost-effective ?

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REFERENCES

1. SRIDHAR M. S. "A case study of lentout use of a special library" (To be published).

List of Acronyms and Abbreviations Used

AMCP	- Army Material Command Pamphlet (USA)
ANSI	- American National Standards Institution
BARC	- Bhabha Atomic Research Center (India)
BSI	- British Standards Institution
COSPAR	- Committee on Space Research (International)
DOS	- Department of Space (India)
ESA	- European Space Agency
ESRO	- European Space Research Organisation
GEC	- General Electric Company (U. K.)
GSFC	- Goddard Space Flight Centre (USA)
ISI	- Indian Standards Institution
ISRO	- Indian Space Research Organisation
JPL	- Jet Propulsion Laboratory (USA)
JPRS	- Joint Publications Research Service (USA)
JSS	- Joint Services Specification (Ministry of Defence, India)
KGI	- Kiruna Geophysical Institute (Sweden)
MIL	- Military Standard (USA)
MSFC	- George C Marshall Space Flight Centre (USA)
NAL	- National Aeronautical Laboratory (India)
NASA	- National Aeronautics and Space Administration (US)
NOAA	- National Oceanic and Atmospheric Administration (USA)
NRC	- National Research Council (USA)
NTIS	- National Technical Information Service (USA)
PB	- Publication Board (USA)
PRL	- Physical Research Laboratory (India)
RAC	- Reliability Analysis Centre (Rome Air Development Centre, USA)
RADC	- Rome Air Development Centre (USA)
RAE	- Royal Aircraft Establishment (UK)
TAC	- Technology Application Centre (The University of New Mexico, USA)
TIFR	- Tata Institute of Fundamental Research (India)

About the Author

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