

## CHAPTER 1

### INTRODUCTION

In July, 1957, the National Science Foundation awarded a grant to Aslib (Association of Special Libraries and Information Bureaux) for an investigation to be made into the comparative efficiency of four indexing systems. The work was to be undertaken at the College of Aeronautics, Cranfield, under the direction of the Librarian, Mr. Cyril Cleverdon. The grant was to cover the first stage of the investigation which consisted of the preparation of four separate indexes, for which 18,000 documents were indexed by the Universal Decimal Classification, an alphabetical subject index, a special facet classification and the Uniterm system of co-ordinate indexing. Various controls were included in the work, and these, which are discussed in detail in the Report on the First Stage (Ref. 1), may be summarised as follows:-

1. Indexing staff were selected for their different experience
2. The time for indexing each document was strictly controlled and varied from 16 minutes to 2 minutes
3. Working with batches of 100 documents, the documents in each group were divided equally between
  - (a) Papers dealing with high speed aerodynamics and general aeronautical subjects
  - (b) Research reports and periodical articles
  - (c) American papers and papers from other countries.
4. A complete cycle of indexing variables covered 6,000 documents, and by repeating this sub-programme three times, there was the possibility of assessing the learning factor.

To permit testing to be done, it was necessary to compile the indexes in a physical form that could be used in searching. The methods used were conventional card catalogues for U.D.C., Alphabetical and Facet and aspect cards posted with document numbers for Uniterm. The reasons for these decisions are explained in detail in Reference 1, and here it is only necessary to re-emphasise that the investigation was not basically concerned with the physical form of the indexes but concentrated on the characteristics and performance of the descriptor languages.

The three individuals concerned with the indexing were Mr. J. Sharp, Miss B. Warburton and Mr. J. Hadlow. Mr. Sharp was a Fellow of the Library Association and had previous experience both as regards indexing and as regards the subject matter, since he had been a technical librarian with a large aircraft firm. Miss Warburton, an Associate of the Library Association, had previous indexing experience as Librarian of the United Steel Co. Ltd., but the subject field was new for her. Mr. Hadlow had joined the project staff direct from work in a public library, and therefore had no previous experience of the type of indexing involved, nor of the subject field.

Mr. Sharp left the staff at the completion of the indexing and took no part in the testing. Mr. Hadlow joined the staff of the library of the College of Aeronautics and was able to do some testing until his resignation in February, 1961. Miss Warburton, who remained on the project staff until her marriage in July, 1961, and returned afterwards on a part-time basis, did much of the testing and was responsible for most of the analysis described in Chapter 5. Mrs. J. Aitchison joined the staff in May 1961, and took part in the third round of testing and assisted with the analysis. She was also mainly concerned with the work involved in the test on the W.R.U. index described in Chapter 7. Other testing was done by the Director and Miss A. Scott of the College Library staff. In addition five graduate students of the College, Lt. A. Ashmore, R.N., Mr. W. Elder, Flt. Lt. E.J. Whitehead, Flt. Lt. B. Jewell and Mr. P. Young, spent periods of from six to ten weeks making searches during the summer vacation of 1960.

An Advisory Committee consisting of Mr. B.C. Vickery, Deputy Director of the National Lending Library, Mr. J. Farradane, Information Officer, Tate & Lyle Ltd., Mr. R.C. Wright, Librarian, Royal Aircraft Establishment, Mr. R.A. Fairthorne, Royal Aircraft Establishment and Mr. C.W. Hanson, Aslib, met on a number of occasions to discuss the progress of the work.

The Report on the First Stage of the Investigation (Reference 1), deals with all aspects concerning the indexing of the documents and the preparation of the four indexes. It includes a number of tables relating to this stage of the project, but Tables 1.1, 1.2, 1.3 and 1.4 are repeated here in that they have a particular bearing on the matters considered in this report.

U.D.C.	4052	headings in alphabetical index
	2350	different notational elements
ALPHA	2864	main headings
	1560	<u>see</u> references
	592	subheadings
FACET	1686	notational elements
* UNITERM	3174	terms

\* (including 607 Proper names and 267 numbers)

TABLE 1.1  
NUMBER OF HEADINGS OR NOTATIONAL ELEMENTS  
USED DURING THE INDEXING PROGRAMME

Indexer A	U.D.C.		ALPHABETICAL			FACET		UNITERM
	Total	Elements	Total	Main Headings	Sub Headings	Total	Elements	
16 minutes	2317	1307	1371	870	831	876	3413	4813
12 minutes	1544	1075	1193	869	879	725	2534	3685
8 minutes	1571	1109	1094	807	882	644	2383	3844
4 minutes	1335	982	990	801	634	599	1896	3379
2 minutes	1142	926	904	695	748	555	1719	3056
Indexer B								
16 minutes	2349	1645	2120	1417	1047	597	2908	5581
12 minutes	1866	1430	1244	947	918	662	2631	4691
8 minutes	1434	1254	1246	902	680	569	2241	4093
4 minutes	1109	1107	871	783	554	576	1621	3150
2 minutes	947	959	724	649	537	458	1274	2950
Indexer C								
16 minutes	2763	1997	2069	1523	1190	841	3278	4464
12 minutes	2479	1768	1940	1344	1090	789	3154	3845
8 minutes	1764	1464	1494	1096	851	616	2078	3084
4 minutes	1529	1287	1195	915	728	477	1682	2751
2 minutes	1074	1013	883	740	566	426	1351	2311

TABLE 1.2  
TOTAL POSTINGS FOR DIFFERENT TIME  
ALLOWANCES DURING FINAL SUB-  
PROGRAMME

Note: The columns "Total" represent the number of cards required by the indexer to be put in the catalogues. For U.D.C. and Facet the column "Elements" represents the number of different notational elements which were actually used. In Alphabetical, "Main Headings" and "Sub-Headings" represent the different headings which were actually used.

Time in minutes	U.D.C.		ALPHA.		FACET		UNITERM	
	Report	Jnl.	Report	Jnl.	Report	Jnl.	Report	Jnl.
16	9.1	7.6	5.0	4.7	1.8	1.7	11.8	11.0
12	5.5	4.4	4.5	3.8	1.9	1.7	9.5	8.4
8	4.7	3.2	3.0	2.7	1.9	1.8	8.6	7.3
4	3.7	2.8	2.6	2.2	1.3	1.3	10.4	8.5
2	2.8	2.3	2.2	2.2	1.2	1.2	7.2	6.0
Average	5.4	4.1	3.5	3.2	1.6	1.5	9.5	8.2

TABLE 1.3  
AVERAGE POSTINGS PER DOCUMENT FOR REPORTS  
AND JOURNAL ARTICLES

	U.D.C.	ALPHA.	FACET	UNITERM
Royal Aircraft Est. Reports and Notes	5.5	3.5	1.7	9.0
National Advisory Committee for Aeronautics Notes and Memoranda	6.1	3.8	1.6	10.3
Flight & Aeroplane	1.5	1.6	1.4	6.3
Aircraft Engineering	5.5	4.5	2.0	9.3
Metallurgica & Metal Progress	7.3	5.3	2.3	12.0
Royal Aeronautical Society Journal	3.6	3.1	1.8	6.8
Journal Aeronautical Sciences	4.1	3.2	1.5	8.8

TABLE 1.4

AVERAGE POSTINGS BY SERIES AND JOURNALS