

ASLIB CRANFIELD RESEARCH PROJECT

REPORT ON THE FIRST STAGE OF
AN INVESTIGATION INTO THE COMPARATIVE
EFFICIENCY OF INDEXING SYSTEMS

- by -

C. W. CLEVERDON

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The College of Aeronautics,
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PREFACE

It was in 1953 that the train of events started which brought about my participation in the investigation which is the subject of this report. R.G. Thorne, of the Royal Aircraft Establishment, and I had been closely associated with the development of the Nationaal Luchtvaart-laboratorium Card Catalogue of Aerodynamic Data (Ref. 1). This was an index designed for the retrieval of information in answer to very specific requests, and was far removed from the systems used in conventional library indexing. In that the average time taken to index each document was $1\frac{1}{2}$ hours, it was comparatively expensive, although the cost was shared out on a subscription basis amongst a number of organisations. Clearly, however, such an index could only be used for a relatively limited range of documents that were of particular significance, and Thorne and I were prepared to accept the possibility that in certain circumstances an organisation might be economically justified in maintaining two different types of indexes covering an overlapping range of documents. The Universal Decimal Classification was widely used in England and, in spite of many criticisms, was on the whole meeting the requirements of its users for a general indexing system. We were looking for another system which would fulfil the same function as the NLL scheme, but which might be less expensive and therefore more attractive economically for a single organisation to operate.

At the meetings of the Documentation Committee of the Advisory Group for Aeronautical Research & Development to N.A.T.O., we had reports from the two American members, Mr. K. Lowry and Mr. E. Jackson, of the developments in the United States. In particular

we heard of the work of Mr. Calvin Mooers and also of Dr. Mortimer Taube, whose Uniterm system appeared to have possibilities of fulfilling our requirements, and we decided to do a small test on this system. This, in the first place, consisted of my indexing 200 reports in the field of aircraft structures, and carrying out tests based on questions compiled by Thorne. The report on this work (Ref. 2) was written mainly with the intention of publicising the uniterm system in England, in the hope that other people would be sufficiently interested to try it. Later we indexed a further 800 reports, but this time the test results were less encouraging and we did not continue our investigations with this system.

Meanwhile we were concerned in devising test procedures, in particular with the NLL card catalogue (Ref. 3), and by this time I had become convinced that the only way to obtain a valid comparison between systems would be to control conditions in such a way that there was an economic basis for the comparison. At the Conference of the Aslib Aeronautical Group in 1955 I read a paper (Ref. 4) in which, for the first time, the necessity for controlled experiments was put forward. This conference was held jointly with the Classification Research Group, a small group of enthusiasts who, with B.C. Vickery as secretary and B.J. Palmer as chairman, met regularly to discuss problems of classification, in particular facet classification. They were the foremost and probably the only group in England who were considering these problems, but in America at this time there were a number of groups actively engaged in proposing new systems and methods. It was clear that claims were being made by proponents which, while possibly correct,

could not be considered proven by results; just as clearly many of the arguments being used by opponents of the systems were equally unproven or trivial. It seemed desirable that a serious investigation should be made so that opposing claims could be evaluated, and by this time we had definite views as to how such an investigation could be carried out.

In June 1955 I was invited to take part in a Symposium on Information Retrieval Systems at a meeting of the Scientific and Technical Division of the Special Libraries Association Convention in Detroit. Shortly before this meeting, there had been an interesting leader in American Documentation (Ref. 5), and, in the SLA paper, taking as a text an extract from this leader, I made a plea that some independent work should be done in the States to evaluate the rival claims. After the meeting, Mrs. Helen Brownson, of the National Science Foundation suggested that, if we would prepare a detailed proposal, it could be submitted to the Foundation with an application for a grant.

This suggestion was considered by the Aslib Aeronautical Group, a sub-committee of which prepared the first draft of the proposal, which was then reviewed by a special committee appointed by the Council of Aslib, and with some minor alterations was sent to the National Science Foundation in 1956. Originally the limit of our hopes was that the Foundation might be willing to make a contribution towards the cost, and it was a pleasant surprise to be told that the Foundation were willing to consider an application for the total sum of 28,000 dollars to cover the expenses involved in preparing the indexes.

Few people can have received so much co-operation and assistance as I have had in the project. First and primarily acknowledgements are due to the National Science Foundation for their generous financial support and to Mrs. Helen Brownson, of the Foundation, whose particular responsibility the project has been, and who has throughout done everything possible to assist the work. Next I must acknowledge my debt to the Principal and the Senate of the College of Aeronautics for permitting me to undertake the project, and also to those members of my library staff who have had to suffer the inconvenience of the project work going on in their midst.

Closely associated with the project from the start have been the members of a special committee appointed by the Council of Aslib, and Mr. B.C. Vickery, Mr. J. Farradane, Mr. K. Lowry, Mr. R.C. Wright and Mr. C. Hanson have all been generous in the time and thought which they have given in helping us with our problems. To my friends in the Aslib Aeronautical Group I am particularly grateful, not only for their general suggestions and criticisms, but also for the work of the Classification sub-committee in revising the aerodynamic sections of the U.D.C. From the start I have at all times had the fullest support and encouragement from Mr. L. Wilson, Director of Aslib, and I am grateful for his assistance which has made the administrative aspects of the project so easy for me.

There are many others whom I should mention and in particular those, many unknown to me personally, who helped us by compiling questions for the test programme or by doing supplementary indexing.

Finally, I would acknowledge the work done by the full-time members of the project staff, Miss Warburton, Mr. J. Sharp and Mr. J. Hadlow, and in the first few months, Mr. T. Opatowski. It was a particularly fiendish form of torture to have to index continuously against a stop-watch, and it demanded the highest personal integrity to work consistently under these conditions. Throughout the whole two years of this stage of the project I received the fullest support from the staff who cheerfully and loyally undertook every task demanded of them. It has been my pleasure and privilege to work with such a team.

This report is basically a factual account of the first stage of the project, but it was felt that every facet of the experience gained should be set down, whether it be a statement of fact or the philosophy of a particular problem as seen by the indexers. Since their experiences are virtually unique, it is reasonable that their observations should be recorded, even though no solution to particular problems can be offered. In the preparation of the report, Mr. Sharp has given much assistance, and most of Chapter 4 in particular is as he wrote it.

The College of Aeronautics,
Cranfield.

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C. W. Cleverdon