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# THE BIRMINGHAM LIBRARIES' CO-OPERATIVE MECHANISATION PROJECT

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## 1. *Introduction*

The Birmingham Libraries' Co-operative Mechanisation Project (BLCMP) has designed, and maintains, a co-operative computer-based cataloguing system which currently provides services to the libraries of the universities of Aalborg (Denmark), Aston, Birmingham and Bradford, Birmingham Polytechnic, Birmingham City Libraries and Warwickshire Country Libraries.

BLCMP was founded in January 1969 with assistance from the Office for Scientific and Technical Information (part of the Department of Education and Science) by three of the current participants namely Aston and Birmingham University libraries and Birmingham City Libraries (in future referred to as the "core" libraries) and has primarily been concerned with the development of a computer cataloguing system using centrally-produced bibliographic records from the British National Bibliography (BNB) and the Library of Congress (LC), (in machine readable format (MARC)), together with bibliographic records produced locally. The system has been fully operational since early 1973.

Much of the early phase of the Project's work was spent on defining standards; the evaluation of MARC for co-operative use; the definition of cataloguing practices and filing rules; the specification of a common costing approach; the application of the MARC format to serials, music and sound recording; and finally, the design and implementation of a common processing system to generate and maintain a machine readable union catalogue. All this work involved collaboration between members of staff of the core libraries

and members of the Project team. The results of these efforts have been published (see Section 6), the publications having been taken by many libraries in this country and abroad. The contribution BLCMP has made to the fund of library automation knowledge has not only been through its publications, but also by direct contact with many visitors from libraries in this country and abroad.

In describing the work of BLCMP to date it is convenient to divide it into two: the work necessary to design a co-operative MARC-based cataloguing system, and the concomitant work to translate that into a machine system.

## 2. *The evaluation of library practices and procedures*

### 2.1. *Cataloguing practice*

Use of centrally generated catalogue records implies that libraries must standardise their catalogue practices with those of the central bibliographic agency. The publication of the Anglo-American Cataloguing Rules (AACR) in 1967, which were adopted by the British National Bibliography and Library of Congress, gave the core libraries an opportunity to review their divergent practices, and in 1969 an agreement was made to follow AACR in almost all respects for monographs cataloguing. The university of Aston Library and the City Reference Library, the latter having a separate catalogue for all post 1963 acquisitions, were able immediately to convert their current catalogues to be compatible with AACR. Birmingham University Library, with a larger single catalogue covering all stock, was not able to undertake this, and instead closed its catalogue at the end of 1971, a separate catalogue being started for acquisitions after that date. The City Lending Libraries had adopted AACR more or less immediately on publication.

The libraries use the simplified version of BS 2979 for Russian transliteration, and the 1908 Anglo-American Cataloguing Code for Greek transliteration.

### 2.2. *Surveys*

Early in preparatory work for the Project, it was recognised that it would be necessary to collect information concerning the core libraries' intakes in order to assess the potential of

centrally produced MARC records as an aid for processing these intakes.

Two surveys were carried out during the first stage of the project, one a route card survey of one in four of the libraries' normal monograph acquisitions during a six-month period in 1969, and the second a survey of the currency of BNB/MARC. The route card survey collected detailed information on the date and country of publication of items, the language of text, and the speed with which they were selected, ordered, received, accessioned and catalogued. The MARC Currency Survey collected data relating to the delays occurring between the publication of an item, its receipt at BNB, and its appearance on MARC.

The Surveys showed that a 3-year file of BNB and LC MARC records would cover over 60% of the combined monograph intakes of the libraries. This proportion varied greatly between the libraries, being less than 35% for Birmingham University and some 85% for the City Reference Library. The increase in coverage as LC MARC records become available for items published in languages other than English was also shown. Regarding the availability of MARC records, the conclusion was that notwithstanding the relative slowness of BNB MARC as at October/November 1969, MARC records should still speed production of catalogue entries at the two university libraries and the Reference Library. The Public Lending Libraries already used BNB as the major source of cataloguing information, and the use of MARC, which is marginally more current than the printed BNB, would thus only slightly improve the speed of cataloguing.

The detailed results of these two surveys, which had considerable significance in the planning of the implementation of the MARC cataloguing system, have been published by BNB in the MARC documentation service publication series[1].

Concern about the currency of MARC is still apparent amongst libraries in 1975, especially as more public libraries, with fairly strict time constraints upon processing, are examining the feasibility of participating in MARC-based systems. Great importance is being placed on the BNB Pre-Publication Catalogue Programme, which will result in

considerable benefits to automated cataloguing and acquisitions systems.

2.3. *Costing*

The purpose of costing the manual systems of the core libraries was to establish a control against which the costs of the proposed computer system could be compared. To set these comparable costs in a wider context a costing strategy was chosen which would approach the larger problem of costing and evaluating the benefits of automation and their interaction within the whole range of library activities. Before undertaking the costing study a methodology had first to be devised; definitions of a library system were identified and standards established, for the purpose of collecting the direct and indirect costs of the cataloguing procedures of the core libraries.

A detailed investigation of the core libraries' existing cataloguing systems was then undertaken. Guide lines on duration of the investigation, the approach and data collection techniques to be used were laid down. The preparatory analysis of procedures, pilot and full work survey (by daily diary recording by each participant in the libraries' processing departments) and tabulation of results were carried out in the first six months of 1971. The costs were compared with the projected costs of the computer cataloguing system; as a result the core libraries and OSTI considered it worthwhile to continue financial support of the system. A full report of the Costing exercise has been published[2].

The methodology continues to be used to undertake costing studies in any library considering the feasibility of joining BLCMP. Such studies have been carried out at the following libraries: Wolverhampton Polytechnic, Birmingham Polytechnic, Warwick University, Bradford University and Warwickshire County Council. Within the period January to September 1975 similar studies will have been completed at Leicester Polytechnic Library, Portsmouth Polytechnic Library, Leicestershire County Libraries, and Northamptonshire County Libraries.

2.4. *Filing*

No existing set of filing rules proved adequate for the purposes of machine filing, and at an early stage BLCMP decided that a new code should be drawn up. B.S.I., B.N.B. and A.L.A. Codes were studied, and consultation was maintained with BNB and the then Library Association Cataloguing and Indexing Group Working Party on Rules for Alphabetical Filing by Computer. A draft code was prepared in 1970; this was developed and the BLCMP Filing Code was published in two sections[3], Part A consisting of the general and manual version, and Part B, of the machine version. The latter sets out the necessary rules and procedures to file MARC records to the agreed code. The length of the filing key is 242 characters.

The filing rules for name catalogues were used in full for the first time in July 1973, when the first union and individual library name/author catalogues were produced. Certain changes have been made since that date, notably concerning the arrangement of added entries in the sequence of entries, and associated with the problems of filing music. New routines to cope with filing of classified catalogues have also been written, and have been in use since February 1974.

2.5. *Formats for monographs, serials, music and sound recordings*

2.5.1. *Monographs*

The requirements of a shared cataloguing service for libraries differ to a certain extent from those of a national bibliography; it was therefore necessary to complete a detailed study of the MARC format developed by BNB and LC.

One of the first decisions taken by the Project was that although provision has been made in the MARC tagging structure for the inclusion of local information (i.e. local class number, accession number, local notes), in the general MARC record, the details for more than one library in this area could be so large as to make a single record structure unwieldy. Consequently all BLCMP local data is held in associated but separate sub records, "local records", one per library. The local records, also in a MARC format, have the same control number as the MARC record containing the general catalogue

information, (i.e. the information containing the body of the catalogue entry—the heading, title statement, imprint, collation, series note, etc.), but are distinguished by a library code. In this way the system becomes more or less open-ended, any number of libraries being able to attach their local information on to the end of a single general catalogue record.

Libraries have a great deal of control over the manner in which data is input to their local records, and this, allied to the ease of manipulation of data allowed by the MARC format, gives a great deal of flexibility in terms of specifying output to be generated by the system.

The Project has also, within the MARC format, developed special procedures to deal with cross-references, multi-volume works, analytical entries, and multiple copies of titles. These procedures, together with the general input conventions used by the participant library cataloguing departments, have been published in the form of a MARC Manual[4].

One of the aims of the system is to reduce the amount of cataloguing effort in the cataloguing departments. If BNB, LC, or another library in the system has already created a MARC record for an item, any library subsequently acquiring the item will be able to utilise the already available bibliographic information as the basis of its own catalogue entries.

Establishing whether or not a MARC record for a newly acquired item is present on one of the BLCMP files is therefore the first stage in the cataloguing system. This can be carried out by a visual search of the BLCMP authority file which is provided to libraries on microfilm as a union catalogue, or by an automatic search by control number (ISBN, LC series number or BNB number) on both the union catalogue file and the potential Requirements Files, the latter being the BNB and LC MARC backfiles held by BLCMP. If a visual search reveals an entry in the union catalogue, i.e. a library in the system has previously acquired the item, the searching library only needs to input its own local data—accession number, location, etc., to the system. If an automatic control number search is made successfully, a diagnostic listing of the MARC record is printed. Dependent upon the source of the record the library may have to check the bibliographic data, and some alterations may need to be made, especially to

Library of Congress records, where cataloguing practice still differs in several important areas to BNB practice. However, changes are made only in a minority of cases—for most items the only action necessary is the input of local data.

If a MARC record is not available for an item, then both general (bibliographic) and local data must be input to the system. The catalogue data is created according to the AACR, and is to full MARC standard.

The cataloguing system went live in three stages. Between January and September 1972, the libraries were creating MARC records for all their acquisitions, whether or not their items may have been covered by BNB or LC. After September 1972 files of BNB and LC MARC records were made available for use and for such items libraries only required to input local data. From August 1973 catalogues have been produced regularly (see Section 2.6) and the system has become fully operational.

2.5.2. *Serials*

A significant part of initial BLCMP work on serials concerned the development of a MARC format for serials. A format broadly compatible with the LC proposed format in their Working Document of August 1969*, but uniform in detail with the BNB format (for monographs) was drawn up. The MASS format was published in December 1970[5], and includes a description of computer file format, data elements and aims of a serials system. It has had a wide circulation nationally and abroad and has been reprinted. A second edition of MASS was published in 1973[6], taking into account various new developments since 1969. The drafting of ISBDS (International Standard Bibliographic Description for Serials), and the setting up of the ISDS (International Serials Data System) in Paris to supervise the assignment of ISSN (International Standard Serial Numbers) necessitated some reworking of the original format, to which other improvements were also made. The ISDS uses the MARC format for file handling.

* Library of Congress, Information Systems Office. *Serials, a MARC format.* Washington, August, 1969.

As a format for national use, MASS has been considered by SCONUL, the National Libraries ADP Study and the British Library. The report of the National Libraries ADP Study in discussing a national serials data base says: "A minimal subset of MASS . . . is recommended therefore, and it is currently being discussed with a view to nationwide adoption"*. The subset is now being discussed within the British Library, and a British Standards Panel has also been set up to consider which data elements are necessary for the interchange of serials records. BLCMP staff are involved in detail in planning within the British Library the establishment of a national serials data base.

Retrospective transcription of serials records has been taking place since 1970. At present the serials data base consists of MASS records for over 19,000 titles, including all Aston and Birmingham University holdings, together with a growing proportion of the serials held in the Birmingham Reference Library. The work has been carried out in sequence, so that unnecessary duplication of effort has not taken place. Similarly to avoid duplication of effort for new serials, regular meetings are held between the libraries, when all new subscriptions are notified, and decisions are made as to where cataloguing should take place.

Unlike monographs (Section 2.5.1) there are at present no files of serials records made available from other sources. Therefore for all serials both general and local records have had to be created by the libraries.

Copies of the BLCMP serials data base have now been received by the libraries of the universities of Newcastle, London, Dublin, Southampton and Utrecht. This distribution of the data base was undertaken very largely as a result of discussions within the National Serials Working Group, the direction of whose work was closely monitored by the British Library. The serials data base has also been taken by the British Library to serve as the basis of the National Serials data base.

* Department of Education and Science. *The scope for automatic data processing in the British Library.* London: HMSO 1972. Para. 294.

2.5.3. *Music*

A MARC format has been developed for printed music, gramophone recordings and phonotapes. The Library of Congress formats for music and sound recordings were studied, but as with serials, the BLCMP format is uniform in detail with the BNB format for monographs. The format and procedures were printed as an appendix in the *BLCMP MARC Manual.*

MARC records for printed music and recordings have been produced by the BLCMP libraries since 1972. As far as is known, these are the only fully structured MARC records for these types of material being created in the United Kingdom, and their value to any potential data bases should be considerable. Discussions are to take place between BLCMP and the British Library about possible national use of these records.

2.6. *Catalogue format and output media*

The Products and Services Group, comprising both Project staff and members of the core libraries; and in particular, two of its sub-groups, the Monographs Sub-Group and the Cataloguing Sub-Group, spent many months defining the contents and format of catalogue entries. Similarly the Serials Group specified the contents and layouts required for serials catalogues. In all cases specifications were drawn up for several kinds of catalogue, e.g. Union and Local, name, classified and title. These recommendations, which were put into effect on a permanent basis with the production of first catalogues in August 1973, therefore represent the culmination of 4 years of system planning and design, the progress of which has been reported periodically in *Program*[7].

It had always been the intention of BLCMP that catalogues would be output in book form. But by mid-1971, when the planning and costing of catalogue production was undertaken in earnest, it became apparent that a book-form catalogue, produced in the quantities and updated with the frequency necessary to the system, would be quite an expensive undertaking—almost prohibitively so if upper and lower case

products were required. It was at this time that COM technology was beginning to get established in this country. Also, within BLCMP, the University of Birmingham Library had evaluated means of reproducing its pre-1972 card catalogue—including microfilm[8]. Consequently it was decided to draw up a catalogue output system which was completely flexible as to medium of output: the edited magnetic tape which results from the machine system can be used to produce either line-printer output on computer stationery (for photographic reduction and duplication), or computer-printed catalogue cards of varying formats, or book catalogues via phot-composition, or COM (Computer Output Microform). In the event the latter 3 processes are all used, one way or another, by the BLCMP libraries. The University of Aston Library has converted its pre-1972 card catalogue to AACR and has therefore decided to maintain this card catalogue by inter-filing computer-printed 5 in. × 3 in. cards. Since regular production of these cards commenced in January 1974, Aston have discontinued their previous parallel running system. The Lending Libraries division of the Birmingham Public Libraries has opted for book catalogues produced by computer type-setting. These share with COM the advantages of upper and lower case, variable fonts and provision of special characters (and, in the future, diacriticals), but are more costly to produce, duplicate and update. The Birmingham Reference Library, Aalborg University Library, Birmingham Poly-technic Library, and Warwickshire County Library decided that they would have their catalogues on COM, following the example of the University of Birmingham Library. Stock cards for the Birmingham Public Libraries are computer-printed on 5 in. × 3 in. stationery, as are the cards used by the University of Birmingham Library to notify British Library, Lending Division of its current accessions, whereas 6 in. × 4 in. computer-printed cards are used as this library's stock cards. The University of Bradford Library proposes to maintain a master card catalogue and have microfiche catalogues.

The Union Catalogue is held on COM (fiche and film) at all the BLCMP libraries. At the University of Birmingham Library, a total microfilm system was implemented. Details

have been published in an article[9]; COM films (and those of the pre-1972 card catalogue) are produced by a bureau on 16 mm films and used in VSMF cassettes on CIL 600 series manual readers. Recently, motorised readers for staff use and a reader-printer were purchased.

The advantages of COM are seen as: lower costs (comparative costs for the first year's output for the University of Birmingham Library: COM, £212; upper-case line-printer, £900–£1,300; upper and lower-case line-printer, £3,491); ease and cheapness of reproduction (multiple copies); ease of updating (no supplements—a total update is produced each month); full upper and lower-case and variable fonts.

A complete systems investigation was carried out at the University of Birmingham Library before the introduction of the microfilm catalogues. In particular, potential user reaction to microfilm, choice of microfilm formats and cost factors were looked at. At the time, there was encouraging evidence of user reaction from other libraries using COM catalogues (e.g. Cornwall County Library, Westminster City Library—see bibliography in above-mentioned article). Impressions of favourable reaction to the microfilm catalogues were borne out by a survey carried out in Birmingham University Library in November 1973, where it was shown that more people were using microfilm catalogues than those consulting the pre-1972 card catalogue, at present also retained in its original form[10].

Systems design studies were undertaken by the Project to examine different formats of microfilm, e.g. fiche, 35 mm film, 16 mm film, as well as the costs, referred to above, of producing catalogues by other means. As already mentioned, line-printer outputs, whether reproduced by multi-part carbon stationery or by xerography, were ruled out as being both expensive and unattractive. Catalogue production by computer typesetting was not felt economically justifiable; furthermore, use of this process brings problems of updating; it was felt preferable to avoid if possible a complicated system of supplements to the catalogue.

Microform therefore provided a positive solution to several of the problems involved in catalogue production, as well as being economically attractive. Choice of format was not a

difficult decision. 35 mm is not a usual medium for film output, and cannot in any case be cassetted; the choice therefore was between fiche and 16 mm film in cassettes. Production costs are very similar; however some libraries felt that fiche presented handling and security problems consequently 16 mm film in cassettes has been the dominant choice, although one library has chosen fiche.

2.7. *Data Preparation*

It was the original intention of the core libraries that each library would use its own tape-typewriter to produce data input to the machine system. However a series of papers[11, 12, 13] circulated within BLCMP spelt out the disadvantages of such a system and the benefits and economies that would result from the establishment of a central Data Preparation Unit, using paper-tape punch/verify machines instead of hard copy tape typewriters.

Accordingly, early in 1971, the Data Preparation Unit was established. Initially it comprised a Supervisor and two operators, but numbers of both staff and equipment have been gradually increased with the growing throughput of work. The staff complement now comprises a Supervisor, a Deputy Supervisor, and 7 operator posts; the equipment used is 1 Ultronic paper-tape typewriter, 6 Datek punch/verify machines, and 2 Kode punch/verify machines.

Because BLCMP verify data in addition to punching it, high standards of accuracy have been achieved. At the same time punching speeds have increased: our experienced operators average 10–12,000 keystrokes per hour. Punching is done from hand-written input proformas completed by the cataloguing staffs of the libraries.

Alternative means of data input are being looked at. An initial survey of direct data entry equipment has been undertaken. In this context BLCMP have looked at both the IBM 3740 data entry system and the Olivetti DE 523—the latter, in an upper and lower-case version, was on loan to Birmingham University Library for evaluation during February 1974—the Ventek Datapoint 2200, and the Singer 1501—which has also been on loan for evaluation in all the Birmingham-situated libraries. By getting cataloguers to key data

directly onto the magnetic tape cassettes on the machine (these are subsequently converted to standard magnetic tape), the whole data preparation cycle, including the production of proof listings on the line-printer, would be eliminated.

2.8. *Ordering and accessioning*

In order to complete the design of a BLCMP automated ordering and accessioning system, a special sub-group was established in January 1974 to discuss the detailed requirements of the participating libraries. It was composed of representatives of the Acquisitions Departments of the BLCMP libraries, representatives of the main book supplier and Project staff.

As a preliminary, various members of the group made a number of visits to libraries where automated ordering systems are already in operation. These included the Atomic Weapons Research Establishment at Aldermaston, Southampton University Library and Cheshire County Libraries. Each visit was fully reported and discussed by the Group.

The existing practices of the participating libraries in terms of ordering and accessioning routines, use of stationery, relations with book suppliers, etc. were compared in order to identify those elements of the system common to all.

In April 1974 BLCMP staff undertook a systems and costing study of the relevant areas of the participating libraries so that cost and quality comparisons could be made with the projected automated system.

An hybrid system has been designed[14] which will be interactive between locations and the central data capture/concentration point and remote entry from that point to the central data base.

3. *The Machine System*

The Project Team initially specified the machine system to generate, maintain, reorganise and edit the proposed MARC-based Cataloguing System. The important elements of this work were the systems definition (systems description, file definition, volumes and timings, and systems flow charting), systems processing costs, evaluation of processing systems, evaluation of output media, and reproduction costs.

The most significant problem of the system was file organisation, due to the variable MARC format and the potential size of the data bases. The organisation of this data determines both the speed and cost of processing. With these factors in mind, it was decided to develop a file organisation technique known as DISAM (Direct/Indexed Sequential Access Method)[15]. This technique allows maximisation of storage capacity, minimisation of access time and so the reduction of processing costs.

Large-volume MARC files also present reorganisation problems. To minimise these problems it was decided to develop a filing and output system that minimises large-volume data manipulation and retains flexibility of reorganisation[16].

The MARC backfiles (both BNB and LC) and the Union Catalogue file are held on magnetic disk and organised and manipulated as described. Volumes were determined by estimated annual intakes, and consequent file sizes and processing speeds calculated.

Locally-generated cataloguing data is input to the system as paper tape punched by the data preparation department. This data is converted to IBM code, validated, MARC formatted and written to magnetic tape. A diagnostic listing of the records with errors flagged is printed for checking by the cataloguers.

Bibliographic data is also received via the weekly magnetic tape service from BNB and LC; this is validated and modified as necessary and written to the MARC backfiles. The centre piece of the system is the Union file maintenance program. Records resulting from local cataloguing or bibliographic searches of the backfiles are added to the union file. Records on the Union file may also be amended or deleted. A transactions tape of the week's movements against the union file is produced together with diagnostic listings for each library of relevant records.

The transaction tape is submitted to a program to produce catalogue cards and stock cards for those libraries requiring them.

The weekly transactions are submitted to the main catalogues filing program. This program extracts information from

records, translates according to filing requirements and then builds up filing keys from the filing elements. Several keys may be produced from one record for a catalogue, and the keys for all catalogues required are produced in this programme. The disk address of the union file record (but not the record itself) is added to each key.

The next program separates the keys for each individual catalogue from the output tape produced in the filing program. The resultant strings of catalogue keys may be put to individual tapes or output as separate files on one tape as required. The keys are then sorted for each catalogue.

The disk addresses attached to each key record are used to call directly the appropriate union file bibliographic record. This retrieval process produces in sequence, for each catalogue required, a file of keys plus records for every catalogue entry. Again, each catalogue file may be held as an individual tape file or as part of a multi-file tape as required. A simple merge program is used to merge each week's retrieval data for the month and at month-end the cumulated tape(s) for all catalogue entries results. This data is submitted to the catalogue formatting program. According to catalogue and library code, catalogues are formatted for all individual library and Union catalogue requirements. At present about thirty-five different catalogues are produced by this program. Each formatted entry is output to magnetic tape, preceded by its filing key which acts as a leader record. As required, this monthly tape may be processed on its own or by merging with any previously produced catalogue tape(s). The final tape is input to the page formatting program. The preformatted entries are built up into complete page images and output to tape or printer as required. This program is controlled by parameter cards to vary the final product.

To ensure that any amendments are accurately reflected in the catalogues, when a change occurs, the original record (with a deletion indicator) together with the new record, is put through the output suite so that a totally new set of entries is produced, together with a set of deletion entries. The deletions are automatically removed when merging together with their original entries.

The general philosophy of the output system is to minimise

duplication of processing, vital when faced with large volumes of output. Each entry is only filed and formatted once and then held on magnetic tape with its filing key. It then becomes a matter of tape handling to decide whether to produce a monthly, three-monthly, six-monthly, total cumulative or supplementary catalogue by merging the appropriate tapes. It is only on the last step when the output has to be re-paged that entries are re-processed, and here it is unavoidable. The process of sorting keys only and then retrieving the Union records is much faster than sorting the keys with the records attached. In addition this lessens machine constraints since less work space is required to perform the sorts.

This method of dealing with the organisation of catalogue output results in a tremendous saving in processing cost and time. Even if 40% of the Union data-base records were amended during one month (which is hypothetical), the monthly catalogue production would not be as expensive as producing filing and formatting from scratch. Also a great deal of flexibility is included in the programs so that even if significant changes were required in catalogue requirements it would not be necessary to go back to the Union data base and regenerate. This option is however always available if required, without any programming.

## 4. *The BLCMP services and their costs*

### 4.1. *Participation*

The MARC concept, that a bibliographic record is broken into all its separately identifiable parts, which may then be manipulated by a computer with total flexibility, lends itself completely to schemes of co-operation in cataloguing.

From the beginning the advantages of co-operation were taken to arise not only from the vastly increased service potential that can be provided, but also because of the potential economies of scale that can result from the pooling of resources.

Participation in the Project offers a complete bibliographic service to libraries—the individual library only being responsible for initiating bibliographic searches of the data base by inputting ISBN/control numbers for search, and generating catalogue entries on input forms for entries not held on the

data base. The individual library also collaborates with members of the Project Team in the initial specification of output. Data preparation, file processing and output production is the responsibility of the Project. Costs are allocated on an entry unit cost basis. No charge is made for systems implementation services, which include consultancy services. The preparation of cataloguing data in the MARC format for local data involves little more than a formal, identifiable breakdown of the type of information in any catalogue entry.

All forms of catalogue can be produced—name, author, title and classified, as well as stock cards or shelf cards. The computer system gives the facility to produce output in a variety of medium and format: catalogue cards, book form catalogues, microfilm and fiche catalogues.

A significant element of the BLCMP data base offers a wide range of foreign and older material in MARC format which is not available from the BNB or LC MARC services.

The cost of participation is based on a library's actual annual intake:

| Annual intake (up to 000s) | Cost per annum £ |
|---|---|
| 5 | 3300 |
| 10 | 4950 |
| 15 | 6600 |
| 20 | 8250 |
| 25 | 9900 |
| 30 | 11550 |

These costs do not include the cost of the physical production of output which depends on the volume of entries per catalogue, and the variety, medium and frequency of catalogue production.

Below are some examples of the total annual cost libraries of various sizes would incur. The BLCMP subscription covers the cost of the services described above. In addition a library would have to pay an annual royalty to the British Library (collected by BLCMP) for the right of access to the current BNB MARC data which BLCMP receives weekly from the British Library; and the cost of the physical production of Union and Local catalogue output. The cost of output quoted

below assumes production of one copy of the Union catalogue and 10 copies of the local catalogues (Name and Classified), monthly on microfilm.

The total costs in the first year are:

| (a) 5000 titles (current annual intake) | £ |
|---|---|
| BLCMP subscription | 3300 |
| British Library royalty | 250 |
| BLCMP Union Catalogue (1 × monthly) | 175 |
| Local Name and Classified catalogues (10 × monthly) | 200 |
| | 3925 |

| (b) 10000 titles (current annual intake) | £ |
|---|---|
| BLCMP subscription | 4950 |
| British Library royalty | 250 |
| BLCMP Union catalogue (1 × monthly) | 175 |
| Local Name and Classified catalogues (10 × monthly) | 260 |
| | 5635 |

| (c) 15000 titles (current annual intake) | £ |
|---|---|
| BLCMP subscription | 6600 |
| British Library royalty | 250 |
| BLCMP Union catalogue (1 × monthly) | 175 |
| Local Name and Classified catalogues (10 × monthly) | 330 |
| | 7355 |

| (d) 20000 titles (current annual intake) | £ |
|---|---|
| BLCMP subscription | 8250 |
| British Library royalty | 250 |
| BLCMP Union catalogue (1 × monthly) | 175 |
| Local Name and Classified catalogues (10 × monthly) | 400 |
| | 9075 |

Currently BLCMP offers libraries shared cataloguing services from one union catalogue data base. While access to that data is the essential element of the concept of shared cataloguing, the production of a universal union catalogue for libraries is not.

Because of the geographical spread, and the different nature of users of the libraries participating in BLCMP, it has been suggested that different catagories of Union catalogue be produced.

An obvious candidate for such a service is the West Midlands, within which 5 of the participating libraries reside. Similar regional or national union catalogues could be maintained and produced for the North East of England (Bradford University) and Denmark (Aalborg) if a number of the libraries in those areas, actively considering participation in BLCMP, decided to join.

Such regional/national data bases could reflect the particular needs of an area—e.g. the extended alphabetic character set used in Denmark, which affects the filing sequence of catalogue entries.

While such regional/national files may be held and maintained separately, because of the common MARC format, they would utilise common software and be accessible to other regional/national files, so maintaining the advantages to be gained from shared cataloguing.

This approach would have particular appeal to two groups of libraries in the United Kingdom actively considering co-operative shared cataloguing—the Scottish Academic and Public Libraries Co-operative group SCOLCAP (Scottish Libraries Co-operative Automation Project) and the London University Libraries.

Such a local/regional/national shared cataloguing service could be offered immediately by BLCMP.

4.2. *Search Service*

For those libraries not wishing to take the participation service BLCMP offers a bibliographic search service.

The union data base is listed on microfilm monthly; this together with the weekly BNB lists will provide the key to the BLCMP data base. By listing the control numbers of entries

required a library will have direct access to the machine entry.

A weekly search service is offered: a library lists the control numbers of the items required, these are punched to paper tape, input to the machine system, and compared against the data base, matched entries are listed to magnetic tape and lineprinter, and despatched.

An inclusive unit search charge of 10p is made.

4.3. *Consultancy*

Before any library considers participating in the services of the Project it may be necessary to undertake a feasibility study within that library. The study analyses the existing cataloguing procedures of the library and a costing exercise can be carried out, together with an intake analysis. This exercise takes about twelve weeks to complete. A report is produced for the Librarian's consideration.

The BLCMP team is the most experienced library automation team in the country: it is a mixed discipline team of computer systems analysts and library systems analysts, all with at least five years specialised experience of library automation.

A consultancy charge of £200 plus the cost of travel and subsistence may be made to a library considering participation, if that library does not ultimately participate.

5. *The coverage and content of the BLCMP data bases (as at March 1975)*

The BLCMP data bases can best be broken down into three categories: monographs, serials, and music and sound recordings.

*Monographs*

The *potential requirements file* contains:

| | |
|---|---|
| 170,000 BNB records | (1970– ) |
| 260,000 L of C records | (1972– ) |

In addition, the 400,000 + records resulting from the conversion of BNB entries 1950–74, and the 800,000 records resulting from the conversion of the LASER file, are soon to be obtained.

The *union catalogue data base* at present includes just over 130,000 monograph records. These reflect most of the intake of the core libraries since 1st January 1972. Of these records, the proportion of non-BNB/LC entries, i.e. items catalogued in MARC format by the libraries, is 48,000 monograph records (41 %).

*Serials*

The core libraries have undertaken to convert to machine-readable form their entire serials holdings. Over 20,000 records are now on the data base. A further 13,500 records are soon to be added, bringing the total to 33,500 titles.

*Music and sound recordings*

The Music Libraries of Birmingham University (BU) and the Birmingham Public Libraries (BM) have developed the MARC format to handle music books, printed music and gramophone records, tapes, etc., of all kinds.

The intake of the two libraries since 1st January 1972 is:

Music monographs, etc.:

| | | | |
|---|---|---|---|
| BM: | 12,000 | BU | 2,000 |

Recordings:

| | | | |
|---|---|---|---|
| BM | 9,000 | BU | 550 |

## 6. *Bibliography of BLCMP publications*

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