

Rencana-Rencana/Articles

The MALMARC System - A Participant's Viewpoint

by UML Cataloguers

Abstract: *The Malaysian Machine Readable Catalogue (MALMARC) Project is a pioneering effort at mechanised co-operative cataloguing by the National Library and major academic libraries of Malaysia. Universiti Sains Malaysia Library functioned as the Co-ordinating and Processing Centre. As a participant of the Project the cataloguers of University of Malaya Library faced certain unique problems stemming mainly from the lack of centralised cataloguing in the library system. The solving of these difficulties, the benefits derived from and the limitations of the MALMARC Project are discussed.*

Abstrak: *Projek MALMARC merupakan usaha perintis untuk mengkatalog dengan menggunakan komputer dan secara bersama oleh Perpustakaan Negara dan perpustakaan-perpustakaan akademik yang utama di Malaysia. Perpustakaan Universiti Sains Malaysia telah berfungsi sebagai pusat penyelerasan dan pemerosesan. Sebagai peserta di dalam projek ini, pengkatalog-pengkatalog di Perpustakaan Universiti Malaya telah menghadapi beberapa masalah unik yang timbul kerana ketiadaan pengkatalogan secara berpusat dalam sistem perpustakaan. Usaha-usaha untuk mengatasi kerumitan-kerumitan ini; manfaat yang diperolehi dan batasan-batasan Projek MALMARC dibincangkan di dalam makalah ini.*

Background

The MALMARC (MALaysian-MACHine-Readable-Catalogue) System is a computerised co-operative cataloguing system initiated and originally funded by UNESCO as a pilot project to design a library network for university libraries in an Asian country. Malaysia's bid to host the project was approved by UNESCO in June 1975. A consultant, Dr. Bjorn Tell was appointed to make a "survey to evaluate the present state of the university library network of Malaysia. The primary purpose of that survey was to prepare recommendations which could bring about improvements and be used in the preparation of a long-term plan for the development of a university library network."¹ The resultant favourable report recommended *inter alia* the use of MARC tapes to speed up the cataloguing process and avoid duplicate cataloguing of materials among academic libraries in Malaysia. Dr. Tell, had in the course of his survey evinced that a high percentage of acquisitions among the libraries were publications in the English medium and co-operative usage of UK and LC MARC tapes would be advantageous.

As a follow up to the above report, another consultant, Stephen W. Massil, from the University of Birmingham Libraries Co-operative Mechanization Project was appointed by UNESCO "to conduct a feasibility study for the National Library

and the University Libraries on the use of MARC tapes for co-operative processing, the production of catalogue cards or catalogue data on microfilm and access to the MARC database. The MARC database at the British Library shall be used for purposes of the feasibility study as a follow up to the conclusions of Bjorn Tell's mission to Malaysia."² Massil concluded that it was feasible and economically viable to use MARC tapes in Malaysia and on his recommendation the Universiti Sains Malaysia Library (USML) and the Computer Centre at that University were made the Co-ordinating and Processing Centre for the MALMARC Project. The USM librarians are to be lauded for their enterprising spirit in meeting the challenge in undertaking this Project and carrying it to fruition. Their tenacity and resourcefulness in catering to the needs of and balancing the inter-organisational relationships between the MALMARC Consortium members is apparent from writings of their experiences in journals and in papers presented at conferences.³

However, to date no single cataloguer of the Consortium has chronicled her experiences as a contributor to the pioneering effort of setting up a mechanised union database. In an attempt to fill this lacuna the cataloguers of the University of Malaya Library (UML) herein record how they coped in switching from manual to computerised cataloguing.

UML's Entry into the Consortium

The UML participated with all the local academic libraries and the National Library in the pilot experimental project conducted by USML in 1978 to test the viability and cost-effectiveness of the MALMARC project. However when the system became operational in 1979 UML did not commit itself forthwith until a policy decision in late 1981 was made to join the MALMARC Consortium and thus launched the Cataloguing Division into the technological field in January 1982.

A short training stint was arranged at USML for the cataloguers to familiarise them with the codes in the MALMARC manual and the operational sequences. On their return the cataloguers drew up a detailed workprocess manual and a flowchart to train the clerical and other support staff.⁴ The staff had to re-orientate and adjust their traditional cataloguing practices drawn up to suit their clientele -- the doyen of the academic institutions -- to accommodate procedural changes mooted by a sister institution -- a younger sister at that! USML's Chief Librarian intuitively voiced this dilemma thus: "One of the difficulties of evolving a suitable co-operative structure stems from the fact that academic libraries have always prided themselves on their autonomy, and librarians have for a long time sought to provide comprehensive services to their clientele with minimal reliance on outside institutions. To design a new organisational structure which removes some of the autonomy from individual institutions is very difficult".⁵

However once the hand had been put to the plough the UML geared itself to the MALMARC operation made up of the following components:

- I. Selection of records from MARC tapes.
- II. Creation of original MARC records.
- III. Production of various types of library catalogues in COM and special listings.
- IV. Updating and amending records in the MALMARC database.

The ups and downs experienced by the cataloguers in respect of each of these components are discussed in turn.

I. Selection of Records

In the manual method of cataloguing at UML, the search clerks identified the entry for an item in hand from the Library of Congress Catalogs, British National Bibliography or other bibliographic tools, copied the data on slips and passed these to the cataloguers for editing. This process was translated in MALMARC to mechanical selection of relevant entry from the UK or L.C. MARC tapes by matching control numbers submitted by UML to the processing centre at USML. The control numbers were either the L.C. card number, ISBN, Malaysian National Bibliography number (MNB), or for items not possessing any of these, a locally assigned number issued by USML and located from the union catalogue generated in respect of the MALMARC database holdings. Against each control number for a particular item its accession number was also included so that when a match or "hit" was made the resultant printout (termed diagnostic) came with the accession number appended thereto for ease of matching.

Once the control numbers had been despatched the books had to be stored strictly by accession number order to facilitate matching with the diagnostics when these arrived after a lapse, on an average, of three weeks. If an item was in the meantime on urgent request, it was manually catalogued on a data input sheet and processed for the reader. The data sheet was attached to a dummy card and inserted in the appropriate accession number order to be used to edit the relevant diagnostic when it eventually arrived.

The batch processing procedure required each batch of diagnostics to be edited and returned en bloc. Colour coding of the batches prevented mix-ups in the event of two or more batches arriving simultaneously. In the editing of the diagnostics UML cataloguers faced certain unique problems due to the lack of centralised cataloguing at the Main Library. The branch libraries located at the Law Faculty, Medical Faculty, Institute of Advanced Studies and the Academy of Islam in Kota Bharu catalogued their materials independently and elected to send control numbers directly to USML to continue the practice of separate processing. Classification schemes too differed. Whilst the Main Library adhered to the Library of Congress classification, the Law Library adopted the Los

Angeles County Law Library K classification and the Medical Library followed the National Library of Medicine (NLM) scheme. USML managed to accommodate these variations by creating repeat levels at the call number tag (090) except for the NLM call number which was provided for in the original input format at tag (096). Then there was the need to distinguish the location of the UML holdings in the master institutional COM catalogue which replaced the individual card catalogues maintained by the component libraries. The cataloguers solved this problem by ascribing to each component library a unique number to be used as the first digit of the nine digit accession number. The distinguishing digits were:

- O - Main Library
- 1 - National Collection (a special collection with closed access within the Main Library)
- 2 - Institute of Advanced Studies Library
- 3 - Academy of Islam Library
- 4 - Law Library
- 5 - Medical Library

Thus each entry in the catalogue indicated via accession numbers the number of copies available in the UML system and the location of each copy by the unique first digit.

For reader education purposes instructional articles were published describing the manner of using the fiche reader, the format of each entry in the COM catalogue, (including the locational codes), and changes in personal and corporate headings effected in conformity with the AACR II cataloguing rules.⁸

Before the edited diagnostics were despatched to the Processing Centre a card for each item with abbreviated data entry was typed and filed as an in-process catalogue. Each in-process card contained the control number, call number and main entry data up to publication level information (Tag 260) plus the accession numbers. The original intent was for the in-process catalogue to serve as a temporary record until receipt of COM catalogues from USML and the cards to be weeded out after checking against the COM catalogues to verify accuracy and comprehensive input. However, the unexpected time lapse of 4 to 5 months from the despatch of records to USML and the appearance thereof in the COM

catalogues made the in-process catalogue an invaluable tool for checking of additional copies, dealing with reader enquiries on the availability of recent publications and other bibliographic searches. The decision was then taken to maintain the in-process catalogue as a permanent feature until UML goes on-line and it would then serve as the master list to verify if the MALMARC database contains all the records input to date.

II. Creation of Original MARC Records

In every batch of control numbers submitted to USML for selection of MARC records the average hit rate was 50% and 80% for UK and LC records respectively. The items for which no match was available were weeded out for manual cataloguing on prescribed MALMARC data input sheets for creation of original MARC records. In the early stages these input sheets were despatched by post to USML to be keypunched into the database. In March 1986 UML acquired microcomputers and thereafter all original cataloguing was input into diskettes and sent to USML for downloading. For Malaysian imprints without ISBNs the input sheets had first to be sent to the National Library for allocation of control numbers resulting in delays in inputting of Malaysia materials. At times Malaysia imprints of varying titles were found to have identical ISBNs. This arose when publishers who had requested for and been allocated ISBNs prior to publishing a work erroneously printed the numbers or caused mix-ups. USML returned these input sheets for correction of control numbers and further delays ensued in seeking to verify and correct the error.

III. Production of Catalogues in COM and Special Listings

The end product of cataloguing is the library catalogues which serve as the key to the institution's collection. In the manual method of producing card catalogues there was undue delay from the time an item was processed to the appearance of the author/title/series and subject cards in the respective catalogue cabinets due to tedious sorting and filing of copious cards. When UML committed itself to the MALMARC Project it was envisaged that the speedier production of catalogues would enhance collection exploitation. Initially there were monthly paper printouts of the Institutions's input superseded by cumulative

quarterly COM catalogues culminating in annual cumulations.

However, within a year the monthly printouts were discontinued to curb costs. Finally the COM outputs for UML consisted of:

- a) COM divided catalogues of author/title and subject plus the shelf list. The branch libraries of Law, Institute of Advanced Studies and Academy of Islam received in addition to the foregoing an extra shelf-list of exclusively their own holdings. These fiche catalogues were quarterly issues with annual cumulations leading in due course to quinquennial cumulations.
- b) A monthly printout listing items processed by the Centre for UML for the current month. This list was for checking against and weeding out the in-process card catalogue but for reasons explained above this step was by-passed.
- c) A monthly accession list printout from which copies were made for distribution to academic and library staff. This list served in a limited manner to alleviate the lack of currency of the quarterly COM catalogues. However the branch libraries continued to produce their accessions lists manually from their respective in-process card catalogues.
- d) A semi-annual printout of list of Southeast Asian materials input by UML. Copies of this specialised subject listing were distributed to interested parties.
- e) A union catalogue in COM of the entire holdings of the MALMARC database embodying the total input by the participants of the Consortium. The frequency of issue followed that of the institutional catalogues. The union catalogue is generated by main entry order only to curb expenditure but the lack of subject access is mitigated by USML's willingness to entertain requests for special subject searches as a fee-based service. This bibliographic output is the only tool currently available for the dissemination of sources of information in the nation's major academic and national libraries.

To some extent this union catalogue meets the shortfall highlighted by Massil that "a major obstacle to the satisfactory sharing of resources

nationally is the lack of knowledge regarding the availability of items rather than the inhibiting factors of distance and delivery amongst the libraries. The lack of an effective national union catalogue is thus a considerable drawback."⁷

IV. Updating/Amending of Records

The need to update records in the MALMARC database arose when additional copies of a title were received or cataloguing data needed to be amended or deleted. In a card catalogue these objectives were immediately achieved by the simple task of adding accession numbers of the additional copies to the shelf-list or effecting the requisite data amendments to the relevant cards. However, with the holdings in a mechanised MALMARC database hundreds of kilometres from UML these operations proved quite tedious.

A prescribed form (Naskah tambahan/pindahan) had to be filled in stipulating the control number of the record to be updated or amended. Details of the author, title and call number had to be coded and the update/amendments had to be specified at the appropriate tags and highlighted by circling in red. These forms could only be sent to USML for action after the record in question had appeared in the COM catalogue signifying its existence in UML's institutional file.

Considerable time elapsed before the updated/amended record was sighted in the catalogue. The integrity of the COM catalogue suffered as users would be referring to the unamended record in the interim period. The in-process card catalogue however, reflected the changes made and proved a boon for quick reference by staff members.

The foregoing recounts the overall and general experience of the UML cataloguers. The cataloguers of the branch libraries and special collections have expressed their special views in Appendix II.

MALMARC Database

I. Quality Control

In the management of the MALMARC database USML did not attempt to exercise quality control of the data input into the system. Every member of the

Consortium was expected to be responsible for the integrity of its institutional input. Problems arose in this arena as voiced by USML's Chief Librarian: "A final problem that we are facing at the macro level is the difficulty of getting participants to be more actively committed to the system, and be more careful about the quality of the data input into the system. Within each of the institutions, the remoteness of the system makes it hard for the staff to feel committed to it. There is also the feeling that any errors in the data made will be picked up during the processing stage in the Universiti Sains Malaysia".⁸

As a result the contributed cataloguing by Consortium members created varying entry format for a single publication. Differing main entry and cataloguing practice resulted in multiple entries of the same item. For example, a publication of seminar proceedings of the *Urban Transport and Environment Seminar* organized by OECD in 1979 input by two institutions appears in the union catalogue thus:

- a) One entry by title: *Urban transport and the environment seminar*, 1979. 10-12 July 1979/organised by OECD ...
- b) Second entry as multi volume work catalogued with main entry by corporate name:
 - i) *Urban Transport and the Environment Seminar (1979 : Paris). Case studies.*
 - ii) *Urban Transport and the Environment Seminar (1979 : Paris). Volume III: overview.*
 - iii) *Urban Transport and the Environment Seminar (1979 : Paris). Volume IV: conclusions*

In fact USML only controlled duplicate inputs by an institution vide a special program to check and eliminate duplicate control numbers within a batch submitted for selection of records. By this program duplicates were eliminated and the respective accession numbers were added to the relevant record automatically. In this context UML experienced a fair amount of duplicate numbers due to the aforementioned lack of centralised cataloguing. Inevitably overlaps occurred in acquisitions by the Main Library and the special libraries. Publications on forensic medicine would be taken by the Law and Medical libraries, Islamic

law by the Law Library and Academy of Islam Library and output on sociological aspects of disciplines of law, medicine and economics must evidently be duplicated in the holdings of the Main Library and the respective branches. Independent remission of control numbers to USML by the branches led to duplication of input. In such duplicate records, if discrepancies occurred in choice of main entry, call number or subject tracings, USML printed out these records for verification by UML as dropped records. Considerable professional time was expended in re-checking and re-editing these dropped records. Ultimately what was gained in the swings of speed in inputting of data seemed to be lost in the roundabouts of re-editing dropped records.

II. Authority Control

To enhance exploitation of UML's premier holdings, the cataloguers made every effort to maintain strict authority control of personal, corporate and series entries to ensure collocation of publications emanating from a particular source. In the manual method the main author/title/series card catalogue served as the chief source for authority checking. In MALMARC the corresponding COM catalogue could not assume the same role due to its lack of currency. Again the UML cataloguers, in addition to despatching an authority input form to the USML Processing Centre, resorted to a temporary authority card catalogue which now runs into 120 catalogue drawers. This will serve as a checklist against the authority records input into MALMARC when UML eventually sets up its own automated library system.

Conclusion

The MALMARC database is the product of an experiment in co-operative cataloguing. Currently it is the only source available on the holdings of the National Library of Malaysia and the major academic libraries in the country. The union catalogue of the MALMARC database for the operational years of 1979 to 1989 runs into 95 fiches which embody bibliographic details of over 500,000 records and could well form the nucleus of the ultimate goal of a national information network based upon the resources of the nation's unique and expanding collections.

UML's participation has produced a machine readable database of over 100,000 items acquired over the last decade ready for reader access when the computerised library network system is launched this year.⁹ The readers, after some initial reluctance, have become familiar with and gained confidence in accessing the COM catalogues. Visions of closing the card catalogue totally with the advent of MALMARC has not materialised but the experience gained is immeasurable. As problems faced by a new undertaking can always be listed more readily after the fact than they can be predicated in advance, participation in the MALMARC system has enlightened and prepared the UML cataloguers for cataloguing online.

IFLA/UNESCO Pre-Session Seminar for Librarians from Developing Countries, Munchen August 10-19, 1983. Munchen : K.G. Saur, 1985. p.119-134.

- (c) Lim, Chee Hong. MALMARC in relation to AACR2. Paper presented at LAS/PPM Joint Cataloguing Seminar, Singapore 1980.
- (d) The experience in operation of the MALMARC system. Paper presented at the 6th Congress of Southeast Asian Librarians. Singapore, 1983.

4. See Appendix I

5. Lim, Huck Tee. Choosing the moment (*supra* 3 (b)) at p.128-129

6. (a) Chuah, Molly. Bentuk tajuk nama :perubahan-perubahan di dalam katalog-katalog Perpustakaan Universiti Malaya. *Kekal Abadi* 2(1) (Mac 1983) : 3-10

(b) Selvaratnam, M. Entri katalog COM : setengah ciri baru. *Kekal Abadi* 2(1) (Mac 1983) : 11-13

7. Massil, S.W. *Study of the Feasibility of Using MARC Tapes for Co-operative Processing* (*supra* 2) at p.9.

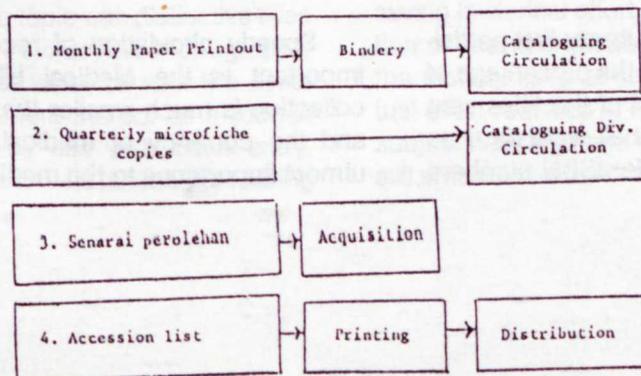
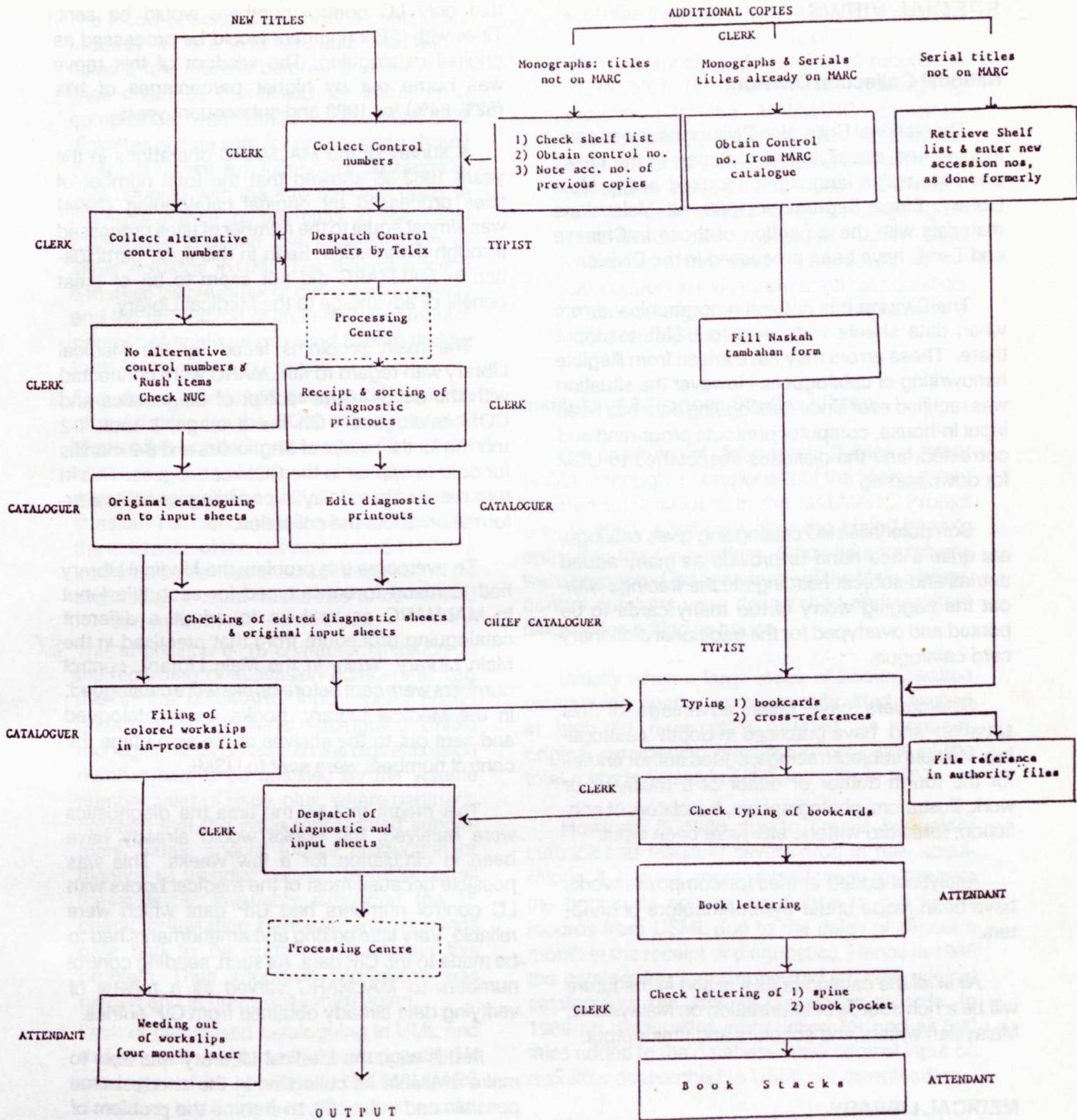
8. Lim Huck Tee. Choosing the moment (*supra* 3(b)) at p.129.

9. See Appendix III

References

1. Tell, Bjorn. *Pilot Project on the Development of a Library Network*. Paris : Unesco, 1976.
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3. (a) Lim, Huck Tee. The Malaysian MARC (MALMARC) project. *Program* 14 (1980) : 101-120.
- (b) 'Choosing the moment : a review of the organisational problems and changes arising out of conversion to computerised systems' in *University Libraries in Developing Countries*

FLOW CHART FOR COMPUTERISED CATALOGUING



Appendix II

SPECIAL VIEWS

National Collection Division

The National Collection Division has been cataloguing and classifying all materials in the Malay and Indonesian languages acquired at the Main Library. Since September 1988, all Malaysiana materials with the exception of those in Chinese and Tamil, have been processed in the Division.

The Division has noticed typographical errors when data sheets were sent to USML for input there. These errors may have arisen from illegible handwriting of cataloguers. However the situation was rectified ever since cataloguing data has been input in-house, computer printouts proof-read and corrected, and the diskettes despatched to USM for downloading.

Computer assisted cataloguing gives cataloguers quite a free hand to provide as many added entries and subject headings in the tracings without the nagging worry of too many cards to be printed and overtyped for the traditional dictionary card catalogue.

Cataloguers have taken advantage of this situation and have practised in-depth cataloguing. Multiple subject tracings, added author entries for the fourth author or editor of a multi-author work, illustrators, photographers, translators of non-fiction; foreword writers; etc. have been input.

Analytical added entries for composite works have been made under the contributors of chapters.

All in all the catalogue as it is and in the future will be a rich source of information on Malaysiana, Malaysian writers and scholars and their output.

MEDICAL LIBRARY

In 1982, when the Medical Library first participated in the MALMARC Project, the percentage of hits (43.7%) was less than half of the titles sent and of the hits obtained, almost all were for titles with LC control numbers. Hits for ISBN numbers

were negligible. To ensure therefore that medical titles would have a higher hit rate, it was decided that only LC control numbers would be sent. Titles with ISBN numbers would be processed as original cataloguing. The wisdom of this move was borne out by higher percentages of hits (62%-84%) for 1983 and subsequent years.

A survey of the MALMARC operations in the years 1982-88 showed that the total number of titles processed by original cataloguing (2994) was almost equal to the number of titles processed through diagnostics. Seen in this light, participation in MALMARC did not seem to be of great benefit or advantage to the Medical Library.

The main problems faced by the Medical Library with regard to MALMARC were connected with the delay in the receipt of diagnostics and COM catalogues. On the average, it took 1-2 months for the receipt of diagnostics and 8-9 months for data to appear in the COM catalogues. This in turn resulted in a delay in providing up-to-date information about the collection.

To overcome this problem the Medical Library had to resort to cards typed for each title input in MALMARC as well as to adopt a different cataloguing procedure from that practised in the Main Library. While in the Main Library, control numbers were sent before books were catalogued, in the Medical Library, books were catalogued and sent out to the shelves at the same time the control numbers were sent to USML.

This meant that by the time the diagnostics were received, the books would already have been in circulation for a few weeks. This was possible because most of the medical books with LC control numbers had CIP data which were reliable. Very little editing and amendments had to be made to the CIP data. As such, sending control numbers to MALMARC served as a means of verifying data already obtained from CIP entries.

In this way, the Medical Library was able to make available its collection in the shortest time possible and indirectly, overcome the problem of delay.

Speedy circulation of recent acquisitions is important to the Medical Library because its collection is much smaller than the Main Library and the currency of medical information is of utmost importance to the medical fraternity.

Periodicals Library

1. The inflow of serial titles is not a continuous process. It is a slow sporadic one, and it takes a few months before the requisite 50 titles could be cumulated for inputting in compliance with UMSL's indication that diskettes of data sent for processing should preferably have a minimum of 50 records. This coupled with the 4 to 5 month delay in the appearance of the titles in the COM catalogues impaired the dissemination of serial holdings in UML. The maintenance of a manual visible index of current acquisitions and the production of an in-house computer printout of holdings provided interim finding tools for reference purposes.
2. The above mentioned delay in the sighting of serial titles in the COM catalogues also hindered the updating of records. On receipt of subsequent volumes of a serial title the requisite data coded on the prescribed form (Naskah Tambahan) had to be withheld until the existence of the relevant record in UML's institutional file was assured. Information on availability of latest issues had to be verified for readers from the visible index.
3. The imposition of 15 character limitation in the recording of accession numbers at Tag 999 in the MALMARC input codes posed great problems in serial cataloguing. Unlike monographs, for serials the nine digit accession number had to be qualified by the volume number, year of issue, plus, where pertinent, notation that the issue represented supplement, index, special jubilee production or biennial or triennial output. Inclusion of all these details invariably exceeded the 15 character limitation. Hence essential holdings data had to be curtailed to contain this problem. Thus important information was hidden and at times quite misleading.
4. Lack of centralised cataloguing in UML and the production of a master institutional COM catalogue of its holdings in the MALMARC database highlighted conflicts in the cataloguing of certain serial titles. Serially issued works on a specific topic with distinctive titles input by the Main Library as monographic series appeared at variance with the serial cataloguer's treatment thereof as a journal and cataloguing by title with open entry. Quick remedial action was taken by preparing

serials/series authority cards indicating the cataloguing format adopted in respect of every such title input into the MALMARC database.

5. With the anticipated merging of records in PERPUNET (a union serials cataloguing project) with the MALMARC database, tracing bibliographic information on serials titles, especially local publications which do not appear in New Serial Titles or CONSER, will be greatly facilitated. Cataloguing in MALMARC has impressed upon UML cataloguers the need to liaise with fellow cataloguers in the system to obviate conflicts in processing of serials and contribute to a more refined database.

Institute of Advanced Studies Library

The Institute of Advanced Studies Library (IASL), although a component of the Main Library decided to participate in the MALMARC Project only in 1983, a full year after the Main Library's entry into the Consortium. Since its acquisitions were processed independently of the Main Library, control numbers were despatched and resultant diagnostics edited in-house.

Initially when a large stock of books awaited cataloguing control numbers submitted resulted in high hit rates (82% - 90%). In contrast, original cataloguing constituted only 32% of the total records added in 1986 and 27% in 1987.

However, in 1988 due to drastic budgetary cutback and resultant severe drop in new acquisitions it proved more expeditious to process the books via original input than to call for hit records from USML due to the delay of almost a month in the receipt of diagnostics. Hence in 1988 the cataloguing input consisted of 72% original cataloguing and 28% of diagnostic records. In 1989 no diagnostics were called for and all 590 titles added to the database were original input on diskettes despatched to USML for downloading.

By participating in MALMARC there was some saving in clerical effort, particularly as the production of the microfiche catalogues did away with the manual filing of cards. However, the intellectual effort required in determining form of entries, subject headings and classification numbers was still an essential task required of every cataloguer.

Contrary to the misconception of many, MALMARC did not do away with basic descriptive and analytical cataloguing tasks. MALMARC merely set a standard machine-readable format for recording bibliographic details which have first to be determined by cataloguers.

A shortcoming of the MALMARC system detracting from its usefulness is the batch mode of obtaining and processing hit records. For a branch library like the IASL where the stock is small, to resort to calling for hit records in batches caused undesirable delay in processing. It was much faster to check the NUC or transcribe acceptable CIP data and keypunch these records. Moreover the hits for UK Marc records often required heavy editing and this overrode any saving in time and effort that came with obtaining diagnostics.

IASL, like the Main Library, continued to produce a main card and shelf list for immediate reference of users and library staff. In addition its holdings were reflected in the in-process card catalogue at the Main Library vide distinctive green cards with abbreviated data entry to obviate duplicate cataloguing. From the shelf-list cards quarterly accessions lists were produced manually, keeping readers abreast of current acquisitions until the receipt of the COM catalogues.

In the long term the IASL's participation in the MALMARC has enabled it to join in the mainstream of automated bibliographic and house-keeping activities. The titles added by IASL will be downloaded together with the bulk of the titles from the Main Library and other branch libraries into UML's soon to be acquired ATLAS system, thus enabling IASL to have access to as well as

contribute to the entire University's bibliographic database.

Academy of Islam Library

Academy of Islam Library (AIL) located in Kota Bharu participated in the MALMARC Project as a component of UML, processing its acquisitions independently. It experienced a 69% hit rate for control numbers submitted but the greater portion of AIL's input was via original cataloguing.

The major drawback of MALMARC for AIL was the inability of the System to accept input in the Arabic or Jawi script. All such titles had to be transliterated for input, while a card catalogue in the original script was maintained *in situ* for users. At times records input never appeared in the COM catalogue necessitating re-input of data. A fair amount of the diagnostics received needed heavy editing thus belying the much touted speed of input theory.

Delay in receipt of the COM catalogue adversely affected use of the collection. AIL requested the issue of a separate shelf-list of exclusively its holdings but when a stock-take was done in 1989 from a computer printout of this shelf-list it was found to be corrupted by inclusion of call numbers and accession numbers of other institutions.

On the whole however, the MALMARC system as a pioneering attempt at setting up a union database has afforded an avenue to gain experience in automated cataloguing. Cataloguers of participating institutions have realised the need for standardizing bibliographic data in co-operative cataloguing.

Appendix III

Statement of expenditure and records processed between 1982 and 1989

	1982	1983	1984	1985	1986	1987	1988	1989
Basic annual subscription	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000
Payment for processing new records	2,445	12,276	12,369	11,091	8,566	16,602	7,480	-
Payment for processing duplicates	101	679	865	1,118	1,217	1,140	1,400	-
Payment for processing selected branch records separately	276	651	406	349	485	428	363	44
Payment for COM and Catalogues/ Accessions Lists	2,940	1,889	1,941	4,083	4,926	7,686	12,190	27,272
	<u>\$27,762</u>	<u>\$37,495</u>	<u>\$37,581</u>	<u>\$38,641</u>	<u>\$37,194</u>	<u>\$47,856</u>	<u>\$43,433</u>	<u>\$49,316</u>
Records processed	1982	1983	1984	1985	1986	1987	1988	1989
Selected MARC records	6152	5739	4151	4497	4786	4334	1650	129
Original cataloguing	2737	6725	8347	7536	6329	9703	9070	14917
Total Catalogued	8889	12464	12498	12033	11115	14037	10720	15046
Duplicate records	156	1045	1331	1720	1873	1754	2154	1681
Processing of branch records separately	579	766	741	699	971	856	403	88
% Selected MARC records	34%							
								Total
								31438
								65364
								96802
								11714
								5103