

*MONOCLE*

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*A new processing format, based on MARC II and some of BNB's elaborations of MARC II. It further enlarges MARC II to encompass French cataloging practices and filing arrangements in French catalogs.*

When the Bibliothèque Universitaire de Grenoble, Section Sciences, wished to transform its card catalog into a book catalog and later into an on-line catalog, the first necessity was to build up a format fitted for the handling of complex records and the filing of non-alphabetical headings.

After several personal assays at a format, the Librarian at Grenoble had translated into French, to give French librarians the opportunity to become acquainted with them, the MARC II and BNB formats (1,2) and finding these two formats the most flexible and complete of those reviewed, he also began the work of adapting them to French cataloging rules.

The MARC format is a standard format designed purely for communication of bibliographic records on magnetic tape; MARC II is a MARC format containing Library of Congress cataloging data disseminated by the MARC Distribution Service of the Library of Congress. The MARC II format is not intended as a local processing format; indeed, even the Library of Congress uses its own internal processing format and not MARC II. Most centers using MARC II records have designed their own processing formats and file structures from which, if the center is to participate in a network, it must be possible to regenerate records in a communications format.

The BNB format, one of the derivatives of MARC, contains British National Bibliography cataloging data.

Translations of the two formats was done in January 1969. Subsequently a first French adaptation of them was discussed by a group of experts from the Bibliothèque Nationale and the Direction des Bibliothèques and was judged not good enough; a deeper work was necessary to analyze the MARC format and test its compatibility with French cataloging practices. The resultant new processing format, called MONOCLE (Projet de Mise en Ordinateur d'une Notice Catalographique de Livre), was published in June 1970 (3).

## PROGRAMS

Meanwhile, in order to test the format and to prepare the operational work as soon as possible, programmers attached to the Institute of Applied Mathematics at the University began to write several programs in COBOL. COBOL was chosen because the Institute had good practice in that language, having worked with it for several years; because it can be easily modified if there is a change in format; and because it can be used with several types of computer, enabling other libraries to use it.

The programs are still in the process of being written, but since the beginning of January 1970 all books cataloged by the Library according to current practice have also been cataloged according to the new system and their records entered into the computer, so that both systems are now working simultaneously.

The author catalog program, which is the most difficult and sophisticated, is not yet ready, but most of the following that were foreseen as necessary are actually working:

1) A test program (TSTANALY) that checks the logical structure of the records at the input stage and displays on the printout any errors (fields missing, length of tags, of indicators, subfield codes, logical links between fields and information codes, etc.);

2) A program (EXPCREAT) that creates the files, computes the directory and puts the records at their places on the disks;

3) A program (TSTNOTAB) for producing an alphabetical printed index containing author plus abridged title plus the address of the record on the disk;

4) A program for sorting records according to UDC numbers and for printing them on a two-column weekly list;

5) A program to correct and update the created files;

6) A program for sorting records alphabetically in an annual catalog;

7) A program giving a list of UDC numbers with the corresponding subject headings and vice-versa;

8) Several small modular programs for supplying statistics on the number of books and volumes, and expenditure in total and by subjects.

## INPUT AND OUTPUT

The Institute of Applied Mathematics has two computers: an IBM

360/40 and an IBM 360/67 that work together in a conversational mode during the day and in batch processing during the night. The Library uses both of these modes. The conversational mode is controlled by a system called CP/CMS (Cambridge Monitoring System) for the input of data through an IBM 1050 terminal with a paper-tape puncher and a reader, and the batch-processing mode by OS (Operating System) for the production of lists and statistics.

On-line input through the terminal is very convenient for corrections, because of quick access to non-created provisory files of 100 records and the printed list that can be proofread.

It has some inconveniences, however, the first of which is that it is a slow system. A typist punches the paper tape at an average rate of twenty records a day. Taking into account the time of reply, errors of transmission, and breakdowns of the system, it is not possible to read more than fifty records in a morning, although theoretical speed of reading is forty records an hour. Then the files have to be read through the TSTANALY program, printed on the line printer, then controlled by the librarians, recalled and corrected on the 1050 terminal, and then again listed, controlled and so on until they are correct. It can take several days before a file of fifty records is ready.

Though paper is a convenient means of storing data in security in case of destruction of the files, it is a slow means of transmitting data and, because it may cause errors in transmission, is not very reliable.

The 1050 terminal, although a typewriter, does not have a character set sufficient for library work. It was necessary to create multipunch codes for diacritical marks.

Because the foregoing is also an expensive means of input, the Library is experimenting with a new one. Using an IBM 72 tape typewriter already in the Library, the corrections will be made off line with the two tape boxes existing on the machine, and when several tapes are correct they will be sent to an IBM service bureau to be translated into a computer magnetic tape. The translation program, which will be written by IBM staff, is not very expensive.

Output is on an IBM 1403 N1 line printer on which is used a special print train SN with upper- and lower-case roman alphabet and to which diacritical marks have been added.

Products are 1) weekly lists of accessions according to the Universal Decimal Classification, 2) weekly lists of books according to acquisition number, 3) weekly lists of books according to call number, 4) a monthly catalog by authors, 5) an annual catalog by authors, 6) an irregular catalog of periodicals, 7) an irregular catalog of serials, 8) an irregular catalog of theses, and 9) regular statistics on the work of the Library.

It was felt that for several years catalogs in book form would be less expensive and more useful than a system of on-line inquiry that would require display terminals to be used by untrained people.

## FORMAT

Although it will be possible later on to transform MONOCLE's internal format into one suitable for information retrieval, the system in use at Grenoble is mainly conceived for printing of the lists enumerated above. This goal led to the consideration of the major problems of filing records and building an internal format to allow easy programming of correct filing, even if this correct filing is rather complicated for the computer. There were two possible ways to achieve this aim: one was to build a simple format and provide complex programming to introduce lists of dead words, tables of transcodification and translation (as "Mc" to "Mac," "Van Nostrand" to "Vannostrand"); the other was to build a more complex format to make programming more simple and generalized and computer processing less expensive. The latter way was followed by the Library of Congress and the British National Bibliography in their communications formats, so a start was made from these two projects, keeping most of their structure, tags and subfield codes.

The system to be built, however, required a working format, not a communications format, which led to the first modifications. Two files were created, each containing leader, directory and variable fields. The two parts of each record can be reassembled into one MARC record for a communications format.

### *Record Files*

The first file, called the Index (Figure 1), contains the leader slightly modified; field 008 of the MARC format, put in fixed positions and having 69 characters; and the directory, built in a different way from the MARC directory. Since there will never be a field length of 9999 characters and a starting character position of 9999, length was reduced to 999 characters and the starting character position to 999. Since twelve characters are too much for a normal field, these two numbers are only used for computation and are put in binary and both reduced to two bytes. This permits the insertion of three pieces of information between the tag and the field length: the subrecord indicator (two characters), the repeat indicator (one character) and the indicators (two characters).

The directory takes the following form:

<i>Tag</i>			<i>Subr.</i>		<i>Rep.</i>	<i>Indic.</i>		<i>Length</i>		<i>St.</i>	<i>Ch.</i>	<i>Pos.</i>
1	2	3	4	5	6	7	8	9	10	11	12	

BNB MARC allows one digit for the subrecord indicator that makes possible nine codes for nine subrecords. Since MONOCLE will require more than nine subrecords, two digits are used, thereby permitting 99 subrecords.

The repeat indicator of one digit is necessary if several identical fields are repeated in one record (e.g., in the case of several editors). A cross

IMAGE DES ENREGISTREMENTS

INDEX

Guide

Etat	Type	Forme	N° Disque	Adresse données		Adresse index		N° de la notice				Nombre de zones		Longueur notice		Longueur index		Blanc
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

Codes d'information

Date entrée			Code Date	1ère Date				2e Date				Code Pays			Illustration		Niveau	Type Reprod.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

Ouvrage de référence			Publ. Off.	Conf.	Mél.	Index	Vedette	Litté.	Biogr.	Périod. 1er n°	Publ. Sc	Coll.	Suite	Langue		Sujet		
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38

Notice # regis.	Source catal.	Périodi- cité	Nbre vol.		Source	Fournisseur		Nbre ex.		Prix					
39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54

Empreinte					Empreinte									
Vedette auteur ou titre anonyme			S/Vedette	1er mot du titre ou de l'éditeur				2e mot	Lieu	Ed.	Date			
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69

Répertoire

Etiquette			N° sous-notice		N° Répéti- tion	Indicateur		Longueur		Adresse		Etiquette			Adresse	
1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	11	12

FICHER PRINCIPAL

Codes sous-zone	Données				Codes sous-zone	Données			
1	2				1	2			

Codes sous-zone	Données				Codes sous-zone	Données				# #
1	2				1	2				

Fig. 1. Map of Index and Cataloging Data Records.

reference can be directed towards one of these fields, and to prepare the sort field it is easier for the programs to look only for the tags than to test every "\$a" in a field, which requires testing every character in the field. The repeat indicator has another function, that of linking several fields to be associated in the processing.

On the worksheet (Figure 2), tags and indicators are written in the

INITIALES		N° Bordereau			Date rédaction				BORDEREAU DE CATALOGAGE										
MS		69																	
Etat	Type	Forme	Code date	1ère date (4c.)				2e date (4c.)				Pays		Illustration	Niveau	Reproduc.			
N	A	M	M	1	9	6	9	9	9	9	9	U	S	A	R		R		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
Ouvrage de référence			Pub. offi.	Congrès	Mélange	Index	Vedette	Littérature	Biograph.	Périod. ler.	Pub. Sc.	Collection	Suite						
F						1							1						
20	21	22	23	24	25	26	27	28	29	30	31	32	33						
Langue		Sujet		Notif. enr.	Source cat.	Périodicité	Nbre vol.	Source	Fournisseur	Nbre ex.		Prix							
E	N	G	E		S		0	1	A	H	A	0	1	0 2 0 5 0 0					
34	35	36	37	38	39	40	41	42	43	44	45	46	47	48 49 50 51 52 53 54					
Vedette auteur ou titre		S. vedette	1er mot titre ou éditeur			2e mot		Lieu	Ed.	Date									
G	E	N	E	Ø	C	A	S	P	E	N	A	9	6	9	#	*	*	*	*
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69					
Etiquette	Indic.	Code s.-z.																	
010	00	\$a 68...8429...#																	
020	00	\$a 12...163301 - 2 #																	
035	00	\$a Sc. 7072 #																	
041	00	\$a																	
080	00	\$a GEN. 575 #																	
090	00	\$a Ea. 4933 \$c 5732.S #																	
245	00	.\$a./ Genetic organization \$b A comprehensive treatise \$c Ed. by Ernst W.[olfgang] Caspari... Arnold W[arren] Ravin... #																	
260	00	.\$a New York \$a London \$b Academic Press \$c 1969 → #																	
300	00	.\$a vol. \$b 23 cm \$d fig. #																	
504	00	.\$a Bibliogr. en fin de chapitre #																	
505	00	.\$y.1 \$e 1969. - XIV-525 p. #																	
700	11	.\$a CASPARI \$m Ernst Wolfgang \$g Ed. #																	
700	11001	.\$a RAVIN \$m Arnold Warren \$g Ed. #																	
681	04	.\$a Génétique...# #																	

Fig. 2. Worksheet.

following order: tags, indicators, subrecord indicators, repeat indicators (e.g., 100 00 001). On the magnetic disk, however, the order is as follows: tag, subrecord indicator, repeat indicator, indicator (e.g., 100 001 00).

The second file is the main file. Records in this file have the same general design as the MARC II communications records, and MONOCLE has retained all the fields designed by the Library of Congress. Each field begins with a two-character subfield code. Grenoble does not use fields 001 to 009, but since the Bibliothèque Nationale will use these fields, MONOCLE retains them.

Another characteristic of the second file is that records are input in random order and are given identification numbers that are their physical addresses on the disk. The address, which is put in the leader, is made up of ten digits, of which one is the number of the disk, four the number of the track and five the number of the record. Access to every record is simple, since the identification number is also the physical address. A printed abridged alphabetical list giving author, title and this number indexes a printout of the main file. Additions and corrections are made on this printout and then added to the computer file through a correction tape. The identification number is the access point. No supplementary internal index is needed, nor is any sequential search. There is direct access to every record in the file.

Some fields have been added for MONOCLE, some deleted, and some modified. The main field deleted is field 130 (main entry uniform title heading) because its place was considered to be in the group of title fields. Accordingly fields 630, 730 and 930 are deleted. That is to say, they are kept on the format, but not used, as is the case with many other fields.

Field 008 contains codes different from those of the MARC format. These 69 codes (see Figure 1) are put in fixed position just after the leader and before the directory. This permits various studies and manipulations (statistics, sorts, etc.) without going to the main file, which is in a variable-length form and whose contents are therefore less easily accessible than those of fixed fields.

Field 080 for Universal Decimal Classification was not developed by the Library of Congress or BNB. For MONOCLE it has been given a structure that permits differentiation of the call number (when the book is classified on the shelves according to the UDC) from the UDC number, which is only used for the card catalogs. In this structure "\$a" represents the call number and "\$b" represents the continuation of the UDC number, as shown in the following example:

080 00 \$a DUR 539.143 \$b (083) : 547.1

The colon instructs the computer to make a cross reference from the second number to the first.

In field 100, main entry author personal name, the general layout was

retained, but the subfield codes changed for filing purposes. As a matter of fact, the filing rules for personal names at the Bibliothèque Nationale differ in many aspects from American Library Association rules. In designing MONOCLE, the Library tried all along to give filing value to subfield codes in order to simplify programming. For instance, the filing order for the same name is:

Saint  
 Pope  
 Emperor  
 Kings of France  
 Kings (other countries)  
 Forename single  
 Surname plus forename

This gives:

John, Saint  
 John, King of England  
 John  
 John, Bishop of Chartres  
 John, Peter  
 John, Peter, Ed.  
 John, Peter, Advocate

Therefore the following subfield codes have been adopted:

Names	\$a	
Saint	\$b	
Pope	\$c	
Emperor	\$d	
King of France	\$e	
Other Kings	\$f	(Alphabetized by name of kingdom)
Relator	\$g	
Date	\$h	
Numeration	\$i	
Precedent epithet	\$k	
Filing epithet	\$l	
Forename	\$m	

This structure is closer to that of the BNB than to MARC's, but an important change has been made in the indicators. MARC and BNB indicators for this field were chosen for communications purposes and are therefore not necessarily convenient for internal processing. In fact, the program had to test every character and take action on some of them (delete a blank, transform a hyphen into a blank, etc.), which takes a lot of computer time. To facilitate construction of sort keys a change of indicators was made that assigned to each of them a specific action.

For first indicator 1 no action is assigned. That is to say that a name

is filed exactly as it is, whether it is a single surname or a compound surname:

100 10 \$a DURAND \$m Charles  
 " SMITH \$m John  
 " CASTRO CALVO \$m Frederico  
 " HOA TIEN SU  
 " SANTA CRUZ \$m Alonso de

Eighty percent of names are put under this indicator and put in the sorting field without any test, which saves much computer time.

First indicator 2 changes a hyphen into a blank in a compound name. The internal hyphen becomes a blank because it is filed as a blank:

MARTIN-CHAUFFIER MARTIN CHAUFFIER  
 PASTEUR VALLERY-RADOT PASTEUR VALLERY RADOT

First indicator 3 is used for the compound names in which a character (blank, hyphen, apostrophe) is deleted:

LA FONTAINE (Filed as LAFONTAINE)  
 MAC INNIS (Filed as MACINNIS)  
 O'NEIL (Filed as ONEIL)  
 VON NOSTRAND (Filed as VANNOSTRAND)

There seems nowhere a clear explanation of the reasons for creating a special field for family names (the use of this indicator in MARC II). For French libraries it is useless for filing purposes, family name being filed as a surname.

First indicator 4 is used when a complex filing is necessary, that is to say, when the technique of inserting vertical bars (or any other characters) is used in the way proposed by R. Coward. The use of this specific indicator for these three bars enables the program to test for them only when this indicator is present. This means that there is just one test per name instead of ten or twenty on each character of every name. As this indicator is in the directory, the processing of the names before the sorting itself is hastened.

MARTIN | DU GARD | DUGARD  
 DUPON | de LA GUERIVIERE | LAGUERIVIERE  
Mc ALESTER	MACALESTER
Mc GRAW-HILL	MACGRAW HILL
MÜLLER	MUELLER

First indicator 0 also has a filing function. As names of saints and kings will be a small part of the files, and in order to file them correctly, three bars are inserted to mark omissions for alphabetization.

100 00 \$a THERESE | d' || AVILLA \$b Sainte  
 100 00 \$a THERESE | de l' || ENFANT JESUS  
 \$b Sainte \$k Marie Francoise Therese Martin

In field 110 the subfield codes of the communications format were not sufficient for a good filing. First, there seemed no reason to separate name (inverted) and name (direct order) because there is no difference in the

filing of these names, which is strictly alphabetical. There is also no logical difference between them. So MONOCLE retains only two of these indicators: 10, for name of a corporate body entered under the name of a place and 20, for other corporate bodies. This will be useful either for research purposes or for giving priority in filing to the name of place following upon the other name. As there are the same filing problems as in the author field, the indicator 40 has been added, which means that the three vertical lines are used.

110 40 \$c Martin | von || Wagner Universität

The subfield coding is rather succinct in the MARC format, and a change was made from the BNB coding because French practice does not use form subheading and "treaty" subheading. Moreover, under the name of a corporate body there can be a subheading such as "conference." This subheading has to be interfiled with a subheading of subordinate department and then should have a different code.

Library Association. Londres. Conference.

Library Association. Londres. Cataloging Group

The subfield codes are:

- |     |   |   |
|-----|---|---|
| \$a | French name of the corporate body               | } Uniform title used by<br>the Bibliothèque Nationale |
| \$b | Place   |   |
| \$c | Name  |   |
| \$g | Relator   |   |
| \$h | Name of congress or conference                  |   |
| \$l | Subordinate department                          |   |
| \$j | Additional designation (number of the congress) |   |
| \$k | Date of the congress                            |   |
| \$m | Place of the congress                           |   |
| \$n | Remainder of the title                          |   |
| \$o | Type of jurisdiction                            |   |
| \$p | Name of larger geographic entity                |   |
| \$q | Inverted element                                |   |

MONOCLE does not use the "\$t" proposed in MARC, and the same is true with many other fields (410, 610, 710, 910).

MONOCLE makes important changes in the title fields, following British MARC but going a little further. Tags have been assigned to titles in the following order:

- 240 Collective filing title (complete works)
- 241 Uniform title (Bible)
- 242 Original title
- 243 Translated title (used only for the filing of Russian or Greek words according to the roman alphabet)
- 244 Romanized title
- 245 Title

A book may have several titles, in which case they are filed under the name of the author in the numerical sequence of the tags. A collective

title (the complete work) is filed before a uniform title (if it exists), and the latter before an original title, which is in turn filed before an actual title. Classical works of which there are many translations have to be regrouped under the original title, but this may not be true of scientific works or of popular novels, which are filed under actual title. Moreover, filing of titles can be different in different libraries and for different books in the same library, which is why the filing order will not be determined on the worksheet, but by the program.

This problem in filing order was raised by the Bibliothèque Nationale, which does not want to have determined in the record itself which of several titles will be the filing title; titles will be put under their respective tags according to their nature, and the program will, according to certain tests, choose the filing title. However, a completely satisfying solution to achieving flexibility and unambiguity in filing has not been arrived at. MONOCLE now uses only sequences 240, 241 and 245, using about the same indicators as the MARC format but with a slightly different meaning. The first indicators in field 241 have also been changed in order to achieve proper filing whether or not a conventional title contains a personal name. For example "Exposition Chagall" will be filed before "Exposition Bibliothèque Nationale."

The second indicator set to "1" shows that there should be a cross reference from this title to the title used for filing (actual title to original title, alternative title to main title). The second indicator set to "9" shows that the title is not significant and will not be used in a title catalog; field 900 is thus not used and repetition of the cross reference is avoided.

MONOCLE also employs in title fields the indicator "4" used in field 100 for complex names and an added indicator "5" for title without personal names. Subfield codes have also been modified in such a way as to use their alphabetical value as filing value as well as to identify data elements within a field. The following codes are used in fields 240, 241, 242, 243, 244 and in corresponding fields 440-444, 740-744, 940-944):

- \$a Title
- \$b Filing number for a logical order of the Bible, Koran, etc.
- \$c Adaptation or extract
- \$d Remainder of the title
- \$e Filing number for languages
- \$f Language
- \$g Filing number for dates
- \$h Dates
- \$k Name of person
- \$l Epithet
- \$m Forename
- \$p Place
- \$q Corporate body

The following are examples of this subfield code use:

241 50 \$a Bible \$b 03 \$d A. T. Pentateuque, Genese \$c Extraits  
\$e 7 \$f francais \$h 1967

241 50 \$a Exposition \$p Paris \$q Bibliothèque Nationale \$h 1967

241 10 \$a Exposition \$k Chagall \$m Marc \$h 1963

For field 245 MARC indicators have been retained and "40" added for title with complex filing. These titles use the three vertical lines.

245 40 \$a | Le XXème | VINGTIEME | Siècle

For more simple filing the virgule or slash is used to eliminate articles at the beginning of titles. This is more flexible than the use of one indicator to determine the number of characters to avoid in filing, especially as there can be more than nine characters to avoid.

245 00 \$a The / Chemistry of Life

The foregoing two techniques are used in all the fields x4y of MONOCLE (445, 945, etc.).

There are slight modifications in other fields. For example, in the "collation" field the American and British formats do not make any mention of volumes. As it comes first in MONOCLE collation, the subfield codes of 260 are modified as follows:

\$a Volumes

\$b Height

\$c Pagination

\$d Illustration

This situation may change if an international standardized catalog description is agreed upon.

In fields 400, 600, 700 and 900 the MARC and BNB MARC projects have foreseen only one subfield "\$t" to put the title after the name, and only one field, 740 or 940 for titles alone. To permit filing author-title series or an author-title added entry with titles of works of the same author, the following title fields were constructed in exactly the same way as fields 240-245: 440, 640, 740, 940. The following fields were added, with the same indicators and subfield codes as 240-245: 441, 442, 443, 444, 741, 742, etc. The repeat indicator is used to link the author to the title in order to make one entry, since author entry and title entry may be quite independent.

410 20 001 \$c NATIONAL RESEARCH COUNCIL

445 00 001 \$a / Publications \$y 1708

100 00 \$a MEYNELL \$m Esther

241 00 \$a The / Little Chronicle of Anna Magdalena Bach  
\$f Francais \$h 1957

245 01 \$a La / Petite chronique d'Anna Magdalena Bach  
\$c trad. par M. E. Buchet

700 11 \$a BUCHET \$m M. E. \$g Trad.

900 10 001 \$a BACH \$m Anna Magdalena \$g Auteur supposé

945 00 001 \$a La Petite Chronique \$r voir \$z 241 000

945 00 002 \$a La/Petite Chronique d'Anna Magdalena Bach  
\$r voir \$z 241 000

This is a very useful tool, which permits generalization of the program to interfile records of books published by an institution with records of series published by the same institution, something not possible if one is under "\$t" and the other under 245. The technique is not used, however, when the name is part of the title, as in "Holden Day Series in Mathematics." It is also useful because MONOCLE treats large handbooks as series, which is more simple than using "\$d" and "\$e" in the 245 field and repeating the name of the treatise in every record or using the subrecord technique.

Field 502 has also been modified to permit filing dissertations by subject, towns, date and number. The details of the indicators and subfield codes can be found in MONOCLE (3).

One of the main problems encountered was the processing of multi-volume sets. It was thought necessary to develop a provision to permit interfiling volumes of a multivolume set. There are three cases, the most simple being that in which volumes are simply numbered 1, 2, 3 . . . with or without a title and a date by volume. Field 505 is used in this case, with subfield codes slightly modified:

- \$y Volume number
- \$a Title
- \$b Subtitle
- \$e Remainder (Date, pagination)

Following is an example:

505 00 \$y 1 \$a The Practice of Kinetics \$e 1969, 450 p.  
           \$y 2 \$a The Theory of Kinetics \$e 1969, 436 p.

In the second case, when each volume has authors, title, and date, the subrecord technique can be used, each volume having its own subrecord. This is possible only for treatises with few volumes, since the complete record cannot be too long.

For very complicated handbooks the series technique is employed. A record is made for the main title as a guide record, and other records are made for each volume, the name of the main treatise being repeated in fields 400-445. This case could be treated by the subrecord technique, but this would give very long and complicated records, too long to be processed by computer and difficult to correct each time a new volume comes in. Although the technique used is not very logical, the guide record is made only once, and a record is made for the volume only when it comes in, without any modification to the records already in the computer. When the records are sorted in alphabetical order, one entry will be made to the individual volume and by the "series note" will find its place under the guide record (3). There is of course no logical link internal to the file between records of different books of the same series, nor of them with their guide record. If there is a multivolume work as part of a series, in which each volume bears a different number in the series, there are two possibilities: either to use field 505 and 445 for each volume, linking them by the repeat indicator, or to use the subrecord technique. MONOCLE

makes a choice according to the complexity of the records.

At the request of the Bibliothèque Nationale and of some documentalists wishing to use the format for bibliographies of articles, some fields were added.

Field 270 contains name of the printer, the place and date of printing.

Indicators 00

Subfield codes \$a Place  
 \$b Printer's name  
 \$c Date

Field 545 is the title of a periodical from which is extracted the article in the main entry. This tag was chosen because 500 is the note number (the title of the periodical is not an entry) and 45 is the title number and can be constructed as a title field.

Indicators 00

Subfield codes \$a Title  
 \$b Subtitle  
 \$c Year  
 \$d Month  
 \$e Day  
 \$y Volume  
 \$f Issue  
 \$g Pagination  
 \$h Bibliographical references

“\$y” was kept for volume for the sake of consistency throughout the format.

Since it was undesirable to alter MARC fields 660 and 670, MONOCLE employs 680-682 for French subject headings. However, name subject heading tags were retained as 600, 610 and 611, but with modified subfield coding. As in French filing geographical names are filed before topical names, the following tags were assigned:

680 Geographical names  
 681 Topical names  
 682 Topical names for indexes only

The last tag was created in order to differentiate between subject headings for information retrieval and headings for printed indexes only. If there is a relation between two headings, the slash is used between them to tell the computer to make an inverted entry. For example,

680 04 \$a Chemistry / Physics

gives two entries, one under chemistry and the other under physics.

To allow each library to have its own subject heading system the second indicator is used to indicate this system: for example, 04 is for Bibliothèque de Grenoble.

Codes for MONOCLE are partially taken from the British codes instead of the American ones because they are given a filing value. They are, however, slightly different, in that there is no form subdivision. Subfield codes are as follows:

- \$a Heading
- \$t Chronological subdivision
- \$u Geographic subdivision
- \$w General subdivision, 1st level
- \$x General subdivision, 2nd level
- \$y General subdivision, 3rd level
- \$z General subdivision, 4th level

The levels have been requested for some information retrieval systems that have multilevel thesauri.

As a general rule, the attempt was to give a filing value to most of the subfield codes in order to simplify and hasten processing without any table of translation. The latter is always possible, but burdens the program.

The Library of Congress has published a special format for serials. Thinking it not very useful, and feeling that serials could be processed by the MARC format for books, the librarians at Grenoble simply added to the MONOCLE format some fields specifically for serials, as follows:

- 030 Coden
- 210 Abbreviated title
- 515
- 525 Not used
- 555

In MONOCLE 503, bibliographic history, is used for the "followed by" and "following" notes of a periodical, because they are simply notes and not added entries. Fields 780 and 785 are not necessary, since in a catalog an entry is usually not made for these titles. Most periodicals are processed by the format without any trouble. The holdings of the Library are put under 090 \$b, as shown in the following example:

- 090 00 \$a CbP. 185 \$b 1, 1967- \$c 5732s.
- \$a Call number
- \$b Holdings
- \$c Location

## SUMMARY

As stated at the beginning, the Library of Congress in its MARC II communications format has published the most comprehensive and the most detailed analysis of a bibliographical record. Some, mostly documentalists, do not agree with the MARC II complexity in coding, but their aims are not the same as those of librarians who want, first, to catalog books and catalog records according to rules required for a catalog of a large stock of books. A simple, alphabetical sort on the author names is not adequate and is quite unusable by a reader. However, an arrangement that is good for a weekly bibliography may not be sufficient for a complete catalog. The British National Bibliography made a thorough study of catalog entries and produced a better filing structure in accordance with the Anglo-American rules.

MONOCLE translated the MARC format with slight modifications, but subsequent trials led to more modifications. MONOCLE format has been made from a librarian's point of view, but sometimes a programmer's view of the system has brought about an improvement in it.

MONOCLE is working, but not without difficulties. These difficulties come not from the format itself but from the on-line system, which is not working as well as expected. The system organization may not be of the best and perhaps needs a thorough study before being put into operation.

The format is not completely satisfactory and needs improvement. Documentalists are right when they say it is too complex and expensive. Synthesis between the documentalists' format, which is too simple, and the MONOCLE format will be undertaken to simplify the worksheet and speed up input time.

From the librarian's point of view there are still problems to be solved. Processing of complex titles is not easy, elegant and clear. The analysis should go deeper to determine more logical relations between data, avoidance of duplication of information in the record, and speeding up of processing at every stage.

The technique of links between fields and records is not developed in MONOCLE as it is in other systems. It may be helpful to connect data by use of pointers and to do away with repetition of series notes that are already input elsewhere. Hierarchical links between records should be useful.

Hence, there is much work still to be done, but the most immediate goal is to make the MONOCLE format operational not only for the Library of Grenoble University but also for the Bibliothèque Nationale, which has adopted it for the automation of the *Bibliographie de la France*.

The philosophy behind the modifications introduced in converting the MARC communications format to the MONOCLE processing format can and should be discussed, but they have all been made in order to improve the structure of the record not only for an internal processing but also for the interfiling of records, which is much more complicated. Until now work has been done only on descriptive cataloging and on author-title filing. Subject indexing and information retrieval are quite another job.

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