

The Library Catalogue: Current State and Future Trends with Special Reference to the UK

図書館目録——英国の現状と将来——

Philip Bryant

要 旨

近年の英国では、共同目録作業への参加や、各館での簡略な目録作成が可能になってきたという状況を前提として、目録作業が軽視される傾向が出てきている。目録作業の合理化それ自体は歓迎されるべきことであるが、現実には様々な問題点がある。そこで、本論文では目録作業に関わる現在の状況を分析し、その認識に基づいて将来の OPAC が目指すべき方向を探る。

英国の目録作業について考慮されるべき点は主に以下の三点にまとめられる。

- ①図書館の総合的な機械化によって、図書館はより早い段階において書誌レコードを求めるようになってきており、そのためより多様な情報源から得る方向へ向かっている。
- ②図書館にとって、出版流通における書誌データは、情報源としての重要性を増している。一方出版社、書店など出版流通に関わる側も効率的な書誌レコード作成について大きな関心を持っており、MARC の利用や AACR2 の意義についても議論がなされている。
- ③OPAC および広域ネットワークの発展に伴い、書誌レコードについては書誌記述の必要性よりもむしろ解題や、主題情報を入れることにより大きな関心が向けられている。

一方 OPAC は利用者間で好まれているが、英国の OPAC への取り組みは遅れをとっている。OPAC が利用者に好まれる理由には、①特定の文献について利用できるかどうかの情報を得られる、②その多くは自然言語で探せる、③様々な場所でアクセスすることができる、という点が考えられる。しかし同時に問題点として、利用者がシステムを過信する傾向、および利用者にとってシステムが不透明なことが挙げられる。したがって、今後一層の研究開発が行われ、さらにその成果が実際のシステムに取り入れられることが期待される。

具体的には以下の二点を今後の課題として提案する。一点目は、「基本記入」を廃止し、統一タイトルの下に諸版を集めることによって、利用者が多すぎる検索結果に困るという問題を多少なりとも解決できるであろう。二点目は、データを理解しやすいものとすることである。データが理解しやすいかどうかは、①データの性質、②コマンドやプロンプトの明確性と一貫性、③表示の質、④余白のとり方やレイアウトが適切かどうかによって依存しており、インターフェイスおよび、データの表現を改善す

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Philip Bryant: Director, Centre for Bibliographic Management, University of Bath. Bath, UK.

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ることが OPAC の今後の課題として求められている。

- I. INTRODUCTION
- II. CONTENT OF RECORDS
- III. SUPPLY AND CREATION OF RECORDS
- IV. OPACS

I. INTRODUCTION

Since I wrote my *Journal of Documentation* review article on 'the catalogue' in June 1980¹⁾ there has been a marked change of emphasis due to the development of the online public access catalogue (OPAC)—or, as I prefer to call it, the interactive catalogue—and also of the integrated library system (ILS) of which it is usually a part. Increasingly the word 'catalogue' has seemed outdated and the concern has more and more been with bibliographic management as a whole.

Firstly in this paper I am going to consider the data used—i.e. the cataloguing—and then secondly the tool which stores and presents the data—i.e. the catalogue.

During the past twenty years there have been two distinct attitudes to cataloguing. The first has been a pragmatic approach which recognizes that money is limited. The argument is that economic pressures do not allow for the luxury of investing large amounts of staff-time into the maintenance of elaborate and detailed descriptive cataloguing and classification practices. These are often seen as serving little purpose other than to create a mystique and a body of arcane knowledge. The second attitude is that of those dedicated librarians involved in activities such as the IFLA programme for Universal Bibliographic Control (UBC). These people firmly believe that the international library community should ensure that the highest standards are met by strict adherence to such protocols as AACR2, the ISBDs, the MARC format, and by the inclusion of full bibliographic description in

the catalogue records produced, and that such adherence is essential if records are to be adequately shared.

The first attitude has been adopted by an increasing number of librarians in the UK and has, with a number of other factors, led to the downgrading, or abolition, of many cataloguing posts. Library schools have ceased to give the prominence to cataloguing and classification which these subjects once enjoyed in the curriculum. The assumption has been that one either joins a shared-cataloguing service and acquires the majority of records from that source, or else that simpler catalogue records can be created in-house. Has this attitude been a well-founded one? I certainly have definite views about the need to economise on cataloguing effort—both at the local and national levels; the need not to create an unnecessary mystique, and not to presume that we know what is best for our users—nevertheless, I also believe that it is very easy to oversimplify the situation.

I am going to deal with 'cataloguing' under two headings: content of records, and supply and creation of records.

II. CONTENT OF RECORDS

Cataloguing may be being downgraded and the term 'catalogue record' seem increasingly outdated, but in the UK interest in the 'bibliographic record', has never been greater. The significant increase in the number of automated integrated library systems (ILS) with their associated 'acquisitions' modules means that the bibliographic records needed in order for them to operate are required at a much earlier stage than previously.

Bibliographic records now have to serve the whole range of library functions—selection, ordering, cataloguing, circulation and so on. The development of OPACs and the networking of them, not only to each other but also to many other types of database, is calling for a radical re-examination of the data to be included in the records created and acquired. The whole of the bibliographic community—publishers, booksellers, library suppliers, commercial bibliographic data suppliers, as well as librarians—are becoming interested, and increasingly involved in discussions about the content of the multi-functional bibliographic record.

In 1977, at the request of the British Library, the Bath Centre commenced a major research study of the relative merits of full and short entry catalogues. The aim was to find out how far the content of bibliographic record should be influenced by users' requirements of entries in the catalogue. The researcher principally responsible under my direction for this latter study was Alan Seal who produced a report in 1982 entitled *Full and short entry catalogues: library needs and uses.*²⁾

A catalogue record consists of:

- (a) Bibliographic description
- (b) Access points
- (c) Main heading structure
- (d) Subject information
- (e) Local information (e.g. location and holdings data)

Our research was concerned with (a) and (b), and a little with (c), but (d) and (e) were excluded from the study. We decided that use of a short entry catalogue affects a library system and library users in three main areas:

- System costs
- User needs
- Usability

System costs

It can be argued that short entry catalogues result in a worthwhile cost saving both locally and nationally.

User needs

To balance the costs question, it is necessary to decide whether the data which might be omitted is really needed by users, either readers or library staff. How often does the omission of data mean that a user fails to find a title which he otherwise would have found? How often would a user be put to some inconvenience by having to check a source other than the library catalogue for bibliographic details?

Usability

We defined this as the ease with which users can consult a catalogue. It relates to 'speed' of use, 'accuracy' of searching and 'preference'. It is possible to have a catalogue which can cater for any need for, say, 5% of users, but this might only be achieved by providing a catalogue which was far more difficult to search by 95% of users. Because it is more difficult to use users may not locate the books they are looking for, so defeating the very purpose of including all details. In order to examine these factors two experimental subsets of the UK MARC record were decided upon to use in a number of the constituent projects within the study. The conclusion was reached that more than 97% of reader and staff needs previously met by a 'full entry' catalogue could be met by a catalogue entry consisting of the following MARC fields and subfields.

MARC tag

001	ISBN or control number
100.00	Personal name entered under given name
100.10)	
100.20)	Other personal names
100.30)	
110	Corporate name
111	Conference, congress, meeting name
240	Uniform title
245\$a, b	Title, subtitle
248\$g, h	Volume number, volume title
250\$a	Edition statement

260\$c	Data of publication
503	Edition and history note
600 (as at 100)	Personal name as subject
610 (as at 110)	Corporate name as subject
611 (as at 111)	Meeting as subject
700 (as at 100)	Personal name added entry
710 (as at 110)	Corporate name added entry
711 (as at 111)	Meeting name added entry
745\$a	Title added entry
9XX	References

Eight years later the recent British Library *Currency with Coverage*³⁾ policy, which provides for a lower level of detail in the national bibliographic record for certain specified categories of material, has resulted in a great deal of criticism from certain quarters. However, it appears undoubted that the object of the policy, which was to improve the currency of the BNB MARC record service by eliminating a massive backlog of uncatalogued material and also to keep pace with the ever increasing quantity of published titles, is being achieved very largely as a result of its implementation.

Despite the apparent cost-effective performance of records containing less descriptive data, the need for details in bibliographic records vary. That of the export bookseller differs markedly from that of the end-user of a library catalogue; however, whatever decision is made regarding the level of content regarded necessary for users, one will also have to decide on the most appropriate 'source' for those records.

III. SUPPLY AND CREATION OF RECORDS

The question of how records should be acquired and/or created provided me with a major part of the stimulus for proposing the establishment of the Centre at Bath in 1977. What are the relative benefits of acquiring records from an external supplier as compared to the creation of them in the library by one's own staff? We have never really tackled this question as fully as originally intended, but it is still one of considerable

interest to many librarians in the UK—not least because of the installation of so many stand-alone ILS.

External Supply

The main sources of externally supplied bibliographic records in the UK are the:

- British Library National Bibliographic Service
- Shared cataloguing co-operatives (e.g. BLCMP and OCLC Europe)
- Commercial bibliographic record suppliers (e.g. Blackwells, or library suppliers such as John Menzies. Library suppliers tend in the main to service the needs of public rather than academic libraries)
- Other bibliographic agencies (e.g. Whitaker, whose data-base is mainly used by libraries for acquisitions purposes)

A new factor in record supply is the rapid development of wide area networks (WANs). In the UK, academic libraries are looking to the Joint Academic Network (JANET) to provide the possibility of an additional facility for the acquisition and exchange of records. JANET is a network linking UK university and polytechnic computers for the purposes of research, but already, because of the tremendous potential for libraries, there is a lively JANET User Group for Libraries (JUGL). JANET is an X.25 packetswitched network, with gateways to other academic networks, especially in Europe and North America.

(At Bath University we have just established the UK Office for Library Networking (UKOLN) to work in association with the Centre for Bibliographic Management under my direction. The British Library R & D Department are funding it until October 1992 in the first instance.)

Another area of recent considerable activity has been in relation to publishers' bibliographic data. At present there are only two or three publishers in the UK with their own established computerized databases, but in 1987 a new commercial venture—Book Data—was established with the aim of assisting publishers with the creation and manage-

ment of their bibliographic data. Book Data's declared objective is "to serve publishers, booksellers and institutional buyers—including libraries, with particular emphasis on the acquisitions function—by creating a database of very full descriptive (N.B. 'descriptive' here refers especially to subject data) records about titles currently available or soon to be published, and by offering a range of services tailored to the needs of particular users." The view has been expressed that the 'continuum' of record supply should be harnessed to the needs of users, without the duplication, at so many stages, of record generation. That continuum of record production should extend from the time that a title is a scribbled note on a publisher's editor's desk to the time that details are consulted by an end user of an OPAC. It is generally agreed that more subject data is required in this age of interactive systems, so why continue to recreate data at so many different stages?

The Bath Centre is in fact currently involved in a research project which is investigating the performance of an OPAC using bibliographic records using additional subject information as provided by Book Data e.g. short abstracts, contents pages, etc.

If a library decides to make use of an external source, especially a cooperative, then it ought *not* to be amending or adding to records unless an obvious mistake has been spotted, but I am afraid that many UK libraries in the past have not been prepared to accept records as they are and thus have lost the benefit of the cost saving which could have been achieved. Indeed they may well have spent more money than if they had decided to create all their records themselves.

In-house creation of records

However many records are obtained from an external source there are always a proportion of titles for which they will not be available and for which a record will have to be created in-house by the local library. Some libraries, including that of Bath Univer-

sity, create all their records in-house, but the great majority endeavour to make sure that they are compatible with the MARC format so that, if a decision is ever made to use an external source of supply, the process would be made that much easier as a result.

Quality and performance measurement

The Bath Centre has always maintained that the three essential elements of the 'quality' of a catalogue record, whether produced locally or externally, are: *consistency*, *accuracy* and *timeliness* (i.e. the record is available when it is required). Probably everyone agrees about the importance of *accuracy* and *consistency*, but not everyone agrees about *timeliness*. Following the publication of the British Library's consultative paper *Currency with Coverage*, mentioned earlier, there were a number of individuals and groups who expressed the view that if waiting results in better quality, by which they mean records with fuller bibliographic description, then they would prefer to wait. The problem with 'fullness,' however, is how to define it. It is a little bit like the old question we ask in Britain—"How long is a piece of string?" Certainly MARC records are considered by many to be far from satisfactory in their content. Many believe them to be encumbered with a good deal of descriptive data which users do not want, while lacking the subject information and other details which would provide far more terms for searching in OPACs and also provide useful annotation to enable better judgements to be made regarding the relevancy of items sought.

While the Bath Centre has undertaken some research projects relevant to the 'accuracy' and 'consistency' of records I know of no ongoing performance measures in these areas. In relation to 'timeliness', however, we implemented a performance measure in 1980 which to my knowledge is the only one of its type in the world. This is the BNB MARC Currency Survey⁴⁾ which for the past nine years has monitored the currency and

coverage of the UK MARC records at the time libraries have needed them for cataloguing their accessions in a prompt manner. We are now also monitoring their availability at the time of book ordering.

So consideration of cataloguing in the UK demonstrates the following main trends:

- (i) Libraries want their bibliographic records at as early a stage as possible because of the installation of ILS and they are more and more prepared to take them from a variety of sources.
- (ii) Book-trade sources of bibliographic data are becoming increasingly important for the library world; the book-trade in its turn—publishers, library suppliers, booksellers—is also very concerned with its own need for effective bibliographic records and are actively discussing matters such as the use of MARC and the value of AACR2.
- (iii) There is now less emphasis on the need for bibliographic description and far more on the annotation and enrichment of bibliographic records with subject information because of the development of the OPAC and of wide area networks.

IV. OPACS

I would now like to turn our attention to 'the catalogue' itself. Although the conventional catalogue will continue to exist for many years to come I am going to speak specifically about the OPAC.

My colleague Stephen Walker has pointed out that OPACs are information retrieval systems,⁹⁾ in principle not unlike online retrieval systems such as DIALOG, but their significant feature is that they have to be designed so that no intermediary is required—*they should be usable at sight by anyone*. It is this factor which poses so many problems in their satisfactory development and I have to say that both Stephen and I believe that there is still a very long way to go before commercially produced OPACs achieve a

truly adequate standard. (There are, at present, about 20 commercially available systems in the UK). For vendors, the logistical problems of trying to design, sell and maintain systems all at the same time in a limited market place have frequently appeared to prove too much for them. For libraries, lack of finance has meant that in the UK there have not been the resources available necessary to develop in-house OPACs typical of some of the more sophisticated systems in the United States. For both vendors and libraries there has also been a lack of systems and programming staff with the expertise and necessary time to ensure an adequate design capability.

There is no doubt that OPACs are popular with users and many of them are unaware of the problems which they face when searching them. There are, I suggest, three very good reasons for the popularity:

- (i) The OPAC provides 'availability' information e.g. is the book on loan, on order or at binding?
- (ii) Most OPACs offer a 'free language' or 'keyword' searching facility. Users can search on words and phrases included in any part of the record and do not have to match their searches to the highly structured heading chosen by the cataloguer.
- (iii) OPACs allow for 'distributed access' i.e. from all departments or branches of the library, from offices, or from the home, and across networks.

Nevertheless, I am very concerned that users can understand and operate our systems effectively. This concern also relates to the more traditional forms of catalogue; however, I believe that OPACs can affect users in two quite opposite ways.

Firstly the user can feel *over-confident* about the system because of a misplaced trust in the 'authority' of the computer. In other words, even if the OPAC is wrong or inadequate in its performance, the user thinks that it is his fault.

The second way in which users can be affected is by a sense of *uncertainty*. When

nothing, or very little, appears on the screen as a result of a search, the user can easily feel totally lost, as if there is a chasm in the system. The scale and structure of the database behind the screen is an unknown world—a sort of 'black hole'. At least with card, book or COM catalogues users have some idea of the size of the system they are dealing with and whereabouts they are when using it.

The major dilemma for OPAC designers is how can OPACs be developed so that anybody can use them profitably at first sight while at the same time ensuring that the experienced user and those with good knowledge of online information retrieval techniques are not patronised and frustrated by the over simplicity and slowness of the system with which they are faced. Certainly it is a problem which has still not been adequately solved.

Although at a national level in the UK there has been a lack of resources for OPAC research and development, the BLRDD has done magnificently to support as much work as it has over the past decade. In my opinion by far the most important research it has funded has been that undertaken at the Polytechnic of Central London by Stephen Walker and his colleagues. (Stephen Walker is now based at City University, London.) Even though it is now five years old I do particularly recommend.⁹⁾ This was the final report of a two year project and it describes the development of Okapi, a prototype OPAC on a local area network (LAN). The importance of Okapi lay in the fact that it demonstrated that an OPAC can be both easy to use and effective, and the prototype provided a good test system for further development and evaluation. Over the past few years one of the trends has been an increase in the application of information retrieval (IR) techniques in the development of OPACs. A gratifying feature of the Okapi project was that the leading member of the team had significant IR systems design and programming experience and two of the IR techniques which have been applied by

Stephen Walker in the further development of Okapi are:

- (i) *Fuzzy matching*. A method for retrieving relevant items when users search with only partial, or inaccurate, information, e.g. THOMSON instead of THOMPSON is a simple example.
- (ii) *Relevance feedback*. A method which allows the system to display an array of records in response to a user's search and then, if a relevant record appears in this array and the user selects it, the system will use some other element of data present in that record, for example the classification number, to look for other records containing the same element. The user can then be presented with further alternatives from which to select, by which method the search results can be further refined.

It is most desirable that, however complex and sophisticated the process operating behind the VDU screen, the system should be 'transparent' to the users, who ought not to be aware of the techniques used.

I spoke earlier about the emphasis which is now being placed on the inclusion of more subject information in the bibliographic records used in OPACs.

This can obviously be considered in the case of new records, but what about records for old stock? Improved retrieval techniques in OPACs can help a great deal to compensate for lack of data. This is important because the enhancement of bibliographic records retrospectively is unlikely to occur, except in a very few specific instances, and therefore any method which can exploit the data which is already present in the existing records is to be welcomed.

I have already talked about the unsatisfactory quality of many commercially available OPACs. It does seem a pity that there is so little evidence in the West that publicly funded research has had any impact on the systems sold to libraries. It is disappointing that progress in OPAC development has hardly been made since the Okapi team

identified three categories of OPAC in use. Most of these were in the United States and roughly equated to Charles Hildreth's three generations of OPAC which he listed in a paper he wrote in 1984 entitled 'Pursuing the ideal: generations of online catalogues'.⁷⁾

The *first generation* was referred to by the team as phrase-indexed or precoordinate OPACs. These have access points which are usually similar to those of hard copy catalogues: author, with title, and sometimes subject headings as a phrase. There may also be 'derived' or 'acronym' keys which the user has to know how to construct.

The *second generation* are 'keyword' or 'post-coordinate OPACs'. Their access points are similar to those provided by the traditional online reference retrieval systems such as DIALOG: 'words' taken from both the free and controlled text of the bibliographic records. Several of the second generation OPACs have two levels of user interaction—a simple one for inexperienced users and an advanced one which uses the full command language of a typical Boolean IR system, e.g. University of California's MELVYL system.

The *third generation*, in addition to the features of the first two, have their bibliographic records enriched by the inclusion of additional access points and, most importantly for me, they will accept search expressions in ordinary language, provide automatic guidance—not just as 'help' screens but in an interactive 'point of need' fashion, with the data on the screen being only partially removed or 'wiped' in order to allow these messages to appear within the context of the user's search. Of course modern workstations which use 'windowing' software or hypertext type techniques provides this facility, but such workstations, although increasingly used by research staff, are not the terminals usually provided for general use due to the costs involved.

The 'main entry' and the OPAC

One of the particular problems which faces users of major online databases and OPACs both in large academic, national and research

libraries, and linked through networks, is the often unacceptably high number of items retrieved, even when the searches are framed in quite specific ways. This problem was recognized by OCLC and Elaine Svenonius was commissioned to undertake a project which considered methods for clustering equivalent bibliographic records.⁸⁾ For example, in the case of searches for Smollet's *Humphry Clinker* 105 items were retrieved representing various 'manifestations' of the work. It is certainly a problem which is going to require a solution in Europe now that major programmes of retrospective conversion are being actively encouraged and planned.

It is my friend Mr. Fred Ayres, previously the University Librarian at Bradford University and now a Senior Research Fellow there, who uses the word *manifestation* and a paper of his entitled 'Duplicates and other manifestations: a new approach to the presentation of bibliographic information' which has been submitted for publication in the *Journal of Librarianship* is one which I recommend to you when, as I anticipate, it is published. Fred Ayres firmly believes that there is a need to move away from the concept of the 'main entry' to the 'manifestation entry'. He says that, although there is a growing view that the main entry is no longer an essential element of the cataloguing operation, its influence remains as strong as ever. He lists the following as the most important arguments put forward for its retention:

- (a) It is necessary for the assembling of the editions of a work.
- (b) It is need for shelfmarking.
- (c) It promotes the standardisation of a bibliographic citation.
- (d) It is useful for the arrangement and sub-arrangement of entries.

However, he goes on to point out that now there is no reason for retaining systems which demand that each manifestation of a work has its own main entry. The main entry was designed primarily for the production of catalogue cards, but it is now possible to link record and access points in a more

efficient way than was possible in the manual catalogue. A method is needed which allows the user to decide, not only whether a work that is required is held on the database, but also whether any of the manifestations are in a form which provides the information that is required. What Fred Ayres suggests, and I completely agree, is that a 'uniform title' should be used wherever more than one manifestation of the work appears in the catalogue. Linked to the 'uniform title' would be a descriptive element which, *in one place*, would collect the information on the various manifestations of the work which are available in the library, or represented in the database.

The OPAC interface and presentation of data

I cannot stress too strongly the importance of good and effective 'presentation' of data and this is now being more widely recognized. You can produce the fullest and most subject-rich information in the world, but unless people can use with ease the equipment provided, and comprehend with speed and clarity the presentation of the data, a great deal of time and effort will have been wasted. A major problem with commercial OPACs is that, not only is there a lack of consistency between them in how they can be searched (which poses difficulties when the OPACs are made available over wide-area networks such as the UK's JANET), but they can also be inconsistent within themselves. For example, one well-known system sometimes uses the RETURN key to mean 'stop' and sometimes it uses it to mean 'continue'. This is bad. In OPAC research a lot of consideration is rightly being given to more sophisticated retrieval techniques and the problems of improving subject access, but I believe that a major priority has to be the encouragement of manufacturers to develop interfaces which, even when systems are not very sophisticated, can be used with confidence because they are *consistent* and *predictable* in use.

In whatever physical form the catalogue

is presented, the ease with which the data can be comprehended is dependent on the:

- (i) nature of the data;
- (ii) clarity and consistency of 'commands' and 'prompts'
- (iii) quality of the graphics
- (iv) its spacing and layout

It is important that jargon be avoided, whether this be *about the data* e.g. "uniform title", "holdings"; *of the data* e.g. "25 cm"; and, in the case of OPACs, *that used in the system itself* e.g. "TYPE PS and RETURN".

Over abbreviation should be avoided at all costs. If a full form of words can be used then do so, but if space does not allow for this then at least meaningful abbreviations should be used.

Punctuation can cause a great deal of confusion—not least ISBD punctuation.⁹⁾

The quality of the graphics used is also of great importance. If one does not have access to facilities which will provide the graphics quality one would ideally like, then sensible use of spacing and layout of the data on the card, page, frame, or screen can greatly aid its legibility. In the UK some of the best work in legibility studies was undertaken at the Royal College of Art in London and I recommend a review article written by Linda Reynolds for the *Journal of Documentation* entitled 'Legibility studies; their relevance to present-day documentation studies'.¹⁰⁾

The presentation of data on OPAC screens has been the subject of much comment, but of relatively little experimental study. Certainly the conventional 80 character 24 line screen is very constraining, but the new workstation screens with their high resolution graphics, and the availability of software packages for facilities such as 'windowing', offer the prospect of better things to come.

In conclusion

If the number of words spoken or written over the past decade about OPACs was representative of financial support then there would certainly be no lack of resources for their development. There can have been

few topics in librarianship that have resulted in so much enthusiastic, sometimes euphoric and often repetitious comment.

It is my opinion that more care should be taken in defining an OPAC. The 'revolution' claimed by the protagonists of the OPAC is really one that relates to the revolution taking place in electronic communication as a whole. Many persons view the ideal OPAC as a public enquiry terminal through which users can gain access to a whole range of local and external, primary and secondary data such as institutional or community information, reference files, DIALOG, etc. Rather the reverse is true—an OPAC is just one of the functions which can be offered from a terminal, or microcomputer providing an integrated approach to the whole world of information. The design of a 'good' OPAC still presents its own particular problems.

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