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### **Fitting In: The Automation of the Archives at Northwestern University**

**Patricia Cloud**

By now the archival community has begun in earnest, though not always cheerfully, to participate in that special sector of the information revolution which involves the MARC (Machine Readable Cataloging) formats created by the Library of Congress. Most especially, many archivists are beginning to make use, or planning to begin to make use, of the recently published USMARC Archival and Manuscripts Control format, generally known as the MARC-AMC format, or simply AMC.<sup>1</sup>

Despite the heroic work which has gone into making AMC an appropriate tool for control of archival materials, that format carries for many the strong hint of matters and manners librarian rather than archival and, therefore, is not altogether welcome. The current and future problem of

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<sup>1</sup> For an introduction to the AMC format, see Nancy Sahli, *MARC for Archives and Manuscripts: The AMC Format* (Chicago: Society of American Archivists, 1985).

contrasting method may be most acutely felt in academic settings, where archivists so often work within college and university research libraries which have adopted or are now adopting automated systems wholly unprepared to accommodate the needs of archival collections. It is useful to address some aspects of the experience of the Northwestern University Archives as it has grown alongside Northwestern Online Total Integrated System (NOTIS)--the automated system developed, used, and marketed by the Northwestern University Library--and to consider in particular the manner in which the Northwestern University Library has implemented the AMC format.

The Northwestern University Archives was established in 1935, in the university's new Deering Library. Since 1973, its holdings have grown exponentially to ten thousand cubic feet, and its quarters have expanded from the one room it occupied in 1935 to an entire floor. The university archives's processed holdings include the records of several university presidents, minutes of the meetings of the Board of Trustees, and financial records dating from 1853. Administrative records from the various schools and departments of the university are also held, as are the curricular and administrative records of the university's Traffic Institute. Personal papers of university faculty include those of journalist and philosopher Baker Brownell, political scientist Kenneth Colegrove, Bergen Evans, Jean Hagstrum, Ernest Samuels, and Lilla Heston. The Northwestern University Archives collects faculty publications and has complete or nearly complete runs of all university-generated serials--over eight hundred fifty titles. The university archives's photographic collection comprises over eighty thousand still photographs and motion pictures documenting persons, buildings and campus events from the earliest days of the university to the present.

NOTIS, on the other hand, began life in 1970; in that year, the new Northwestern University Library building opened, and an automated circulation system began operating in the new building. At first, the system was simply an automated method of keeping track of circulating material. Then, in October 1971, the library began its first major shift from manual to automated procedures when it instituted automated technical services (ordering, cataloging, and check-in of monographs and serials). The system has from its beginning been based on the use of MARC format--the standard method of storing cataloging information in machine readable form--which is governed by the Library of Congress's Cataloging Distribution Service. In 1977, the system--NOTIS--underwent its first major revision, and its gradual development since has included the full automation of cataloging, acquisitions, authority control, serials control, and a public access catalog in 1980. (The card catalog was closed in that year.) Refinements have been made to the system throughout its life; it is now in its fourth generation.<sup>2</sup>

NOTIS is an integrated system. This means that all library functions--acquisitions, cataloging, circulation, etc.--are linked. A single bibliographical record for each title is the basis of the system. Each bibliographic record is linked to information such as classification number, location, and a bar code number for identification of each item. Records may be found by searching the author/title and subject indexes generated by the system, or by standard numbers (such as International Standard Book Number {ISBN}, or International Standard Serial Number {ISSN}, or Library of Congress number). Keyword and Boolean searching, which permit searching full bibliographic records for specified words or combinations of words, are in the test stages.

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<sup>2</sup> See James Meyer, "NOTIS: The System and Its Features," *Library Hi Tech* 10 (1985): 81-90.



In 1980, the university library began the sale of NOTIS to other libraries. The system is reliable and relatively simple to use. It has been functioning uninterruptedly at Northwestern University for over sixteen years. Its use is growing briskly; NOTIS is now installed at over sixty sites.

All of this has been good news for the Northwestern University Library but, for the most part, of only distant relevance to the Northwestern University Archives. As recently as 1982, the university archives pursued its mission without benefit of computer assistance of any kind, including word processing. This reflects only in part the relationship of the university archives to NOTIS, for until the revision of the Library of Congress's USMARC Archival and Manuscripts Control format in 1985, only the serials collection, a small proportion of the holdings of the university archives, was considered appropriate for control using NOTIS. A file for the serials collection was instituted in 1983; the file now contains nearly nine hundred records. Word processing, which was instituted library-wide in 1983, was and remains a concern separate from NOTIS.

Nevertheless, the university archives and NOTIS, both of which have developed and grown dramatically over roughly the same period of time, have followed distinct trajectories which have for much of the time seemed to be taking them even farther from profitable concord. The difficult relationship which has existed at Northwestern may be emblematic of relationships in many academic libraries which are confronting automation. This relationship can be analysed under three informal rubrics of unequal weight: communication, legitimacy, and oversight.

Communication concerning automation has been predictably both a complicated and a troubled procedure in the relationship of the Northwestern Library Archives to the Northwestern University Library. There are, for example, at least four administrative units which have direct responsibility for some aspects of the use of NOTIS for the control of

university-generated serials. The serials department approved the set of data elements to be used in each record. The Northwestern University Library's Information System Development Office (ISDO) opened the file and established the various protocols associated with it. The technical services department established the necessary authority guidelines and routines to be followed, and the Northwestern University Archives creates individual records. Each of these administrative units remains involved in the use and maintenance of this file and participates in ongoing consultation, review, and oversight. Decisions concerning the online catalog at the Northwestern University Library involves, therefore, many persons, each with particular constituencies and concerns. Questions and problems are often, despite the best of intentions, inadvertently bounced from one decision maker to another, and delays are predictably very common.

Communications among these several units and the archives have been made more difficult by the lack of a shared language between archivists and librarians. "Processing," to choose an obvious example, is a quite different activity for the librarian and the archivist. In the one case, "processing" involves cataloging and classifying a particular item, whether monograph or serial. For the archivist, "processing" involves weeding, sorting, boxing, arranging, and describing material which can range in extent from a few folders to many hundreds of cubic feet and more.

The questions which arose during consultations at Northwestern have included how to classify an archival series within an automated system designed to accommodate only monographs, serials, or monographic series. (Archival series have elements in common with all of these but should properly be in a class by themselves.) Archival materials rarely have item identifiers such as a call number, and archivists would be horribly burdened by having to use them. This fact was at first difficult to communicate to the librarians who oversee the NOTIS system at Northwestern, as

was the function of series level identification numbers. For their part, the archivists involved were at first unfamiliar with a host of terms associated with library and library automation procedures.

Clarity is most readily achieved in a climate of mutual respect, which encourages the cheerful admission of uncertainty and unfamiliarity of terms, and such now is the happy state at Northwestern. This fortunate situation has been hard won at the price of much persistence on the part of the university archives and an equal measure of patience and considerable helpful instruction from the overseers of NOTIS. Nevertheless, despite the abundant good cheer and accessibility of other units in the university library, the weight of learning and adaptation have fallen squarely on the staff of the university archives. The archivist has had, in this case, to learn to speak the language of the librarian and to interpret archival matters in that language. It is difficult to see how else the trials of communication between these two professional groups will be moderated in such settings.

Archivists in library settings will almost always be in the position of the supplicant when questions concerning automation are addressed. The distinct professional background of the archivist often does not involve formal training in the technical processing of library material. Learning proper cataloging procedures, including MARC tagging and *Anglo-American Cataloging Rules, 2d ed. (AACR2)*,<sup>3</sup> is a challenge in the best of circumstances, and these procedures can seem hopelessly arcane and forbidding to the uninitiated. Mastery of these principles is vital, nevertheless, and it is neither surprising nor unreasonable that librarians charged with the oversight of automated catalogs will require some evidence of this mastery before accomodating the newcomer.

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3 (Chicago: American Library Association, 1978).



Before the university archives began to create records in NOTIS, archives staff were trained in the use of the system and introduced to cataloging principles in AACR2. Long-term consultation, extending over almost a calendar year, was required before permission to create records was granted. For the creation of AMC records, the archives staff went through training offered in 1984 by the Research Libraries Group (RLG), consulted at first on a weekly basis with members of the cataloging department, and made use of various pertinent professional publications, such as the standards described in Steven L. Hensen's *Archives, Personal Papers, and Manuscripts: A Cataloging Manual for Archival Repositories, Historical Societies and Manuscript Libraries*.<sup>4</sup> The right to create records in the NOTIS database has not been lightly granted at Northwestern, and AMC records created by the university archives are still subject to special scrutiny in certain cases.

At a time when the question of the value of the Masters in Library Science in archival work is still the subject of debate, it is of interest to note that an archives staff member's possession of the MLS apparently was not required in the development of the relationship between the university library and the university archives at Northwestern. The initial automation project carried out by the university archives--the creation of serials records in NOTIS--was proposed and executed by a staff member who did not have the MLS. The grant-funded project described below to create AMC records in the bibliographic utility of the Research Libraries Group, the Research Libraries Information Network (RLIN), was completed by a new staff member who possessed an MLS degree. The cataloging department and the ISDO showed an evenhanded skepticism toward the records created for both projects and have never suggested that a professional degree is either necessary or sufficient to the task of good cataloging.

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4 (Washington, D.C.: Library of Congress, 1983).



Of central concern to the cataloging department, as well as the systems managers at Northwestern University Library, has been oversight of authority control, or the routine maintenance of standards for the creation of headings within the NOTIS database. When problems of consistency are encountered, they are handled by the use of "error" reports within the library. Ongoing consultation with the authorities librarians helps to coordinate the establishment of headings. Nevertheless, since many headings in the system naturally are originated by the archives, such as those for departments within the university, proper understanding of cataloging principles in choice and form of heading is crucial.

In 1984 and 1985, the archives participated in a grant-funded project to create AMC records in RLIN and, for this project, created 1,168 such records. These records are currently accessible in RLIN, but have not yet been transferred to the local NOTIS database. This is in part due to differences between the implementation of AMC in RLIN and in NOTIS. Although the variations are only slight, the transfer requires some special programming. The priority assigned this tape transfer will be determined less by technical problems than by policy regarding priorities in the university library.

The university archives has and will always have a relatively small number of records--probably never more than fifteen hundred--to create within a system which has over nine hundred thousand bibliographic records. The archives staff members are newcomers to the use of automated systems in an institution which has been in the vanguard of such developments since 1970 and relative newcomers to the use of MARC and AACR2 in an institution which is justifiably proud of its rigorous cataloging standards. As a constituency, therefore, the university archives has been, like Dorothy in the Wizard of Oz, both small and meek.

Additionally, NOTIS's success has not been without some costs to the archives. ISDO has been greatly pressed by the competing needs of the Northwestern University Library and NOTIS. (Formation of NOTIS Systems, Incorporated, as a separate, for-profit corporation owned by Northwestern University, distinct from the Northwestern University Library, occurred on 30 August 1987.) NOTIS Systems, Inc. has begun a process of official and ongoing communication with the archival community in supporting the newly formed Society of American Archivists's NOTIS User's Group, which should provide a suitable mechanism for continued consultation between NOTIS and its new archival customers. Many projects of heroic scope have been in process for some time, including redesign of the index and implementation of the MARC holdings format. There has been little time to spare for small files such as those in the university archives. So, in part due to the low visibility of the university archives as a NOTIS constituent and in part to the great pressure under which ISDO has operated, the university archives was not consulted in any significant way concerning the NOTIS implementation of AMC.

ISDO was concerned chiefly about the potential length of the AMC record--given the facility for extensive narratives within the record--and about the potential number of added entries for an AMC record--since archival materials can generate a very high number of access points. Both total record length and the total number of indexed headings have a significant effect on the overall efficiency of operation of an automated system. At Northwestern University, potential problems were averted by mandating a total record length of slightly over four thousand characters. This is the across-the-board record length limit at Northwestern University Library, but, it is important to stress, this limit is specific to Northwestern; NOTIS users elsewhere can set their record length limit as high as approximately eight thousand characters.

Shorter record length and fewer access points contribute to the efficient operation of the NOTIS system and keep response times within a reasonable range. These limits also make full use of the new format almost impossible. While working with RLIN, in which record length limits were so high as to be of virtually no concern, the Northwestern University Archives created records ranging in size from 761 characters to 6,668; no more than a handful were over 4,000 characters, but a significant number were over 3,000. With use of the archival control segment for tracking processing activities, the NOTIS record limit on many records would be exceeded within a fairly short time.

It is possible, of course, to create shorter records, particularly by making use of linking entry fields in the AMC records and creating subseries level records. Nevertheless, the 4,000 character limit interferes significantly with full use of the archival control fields, for detailed tracking of actions concerning a collection. It interferes also with full use of the AMC note fields for extensive narrative descriptions. Since these two features are among the most useful aspects of the AMC record and are the most specific to the archival profession, the possibility of defining a higher record length limit for AMC records was proposed, but ISDO felt that this would decrease system efficiency too dramatically to be considered.

An additional difficulty with AMC as first implemented by NOTIS has been the inability to mask from public view those MARC fields (541 and 583) designed to be used for the recording of information concerning the acquisition and processing of material. If used as intended, these fields should properly be masked from public display. While at Northwestern the university archives has been required to canvass all processing units in order to request that public display of these fields be suppressed for all records in all formats, other repositories will undoubtedly seek a more



flexible solution to the problem. NOTIS Systems, Inc. is currently reviewing this aspect of their AMC implementation.

NOTIS can, of course, be used in different ways at different institutions. It is possible to create numerous separate files and have them accessed by patrons from a menu screen. However, there is at Northwestern a commitment to the single file for all units and all media. The single file is a point of orthodoxy in part because of the simplicity it promises for patrons. In addition, separate files have been proposed where it has been thought that something less than the standard authority work was appropriate, where, for example, backlogs of certain kinds of material were to be handled on a special basis. Generally speaking, separate files of this sort have proven unpopular with both the systems and cataloging departments at Northwestern. The university archives has always had as its goal the integration of its MARC records in the library's online catalog and, for this reason, has gone to considerable effort to maintain the required cataloging and authority standards. Creating records has often taken longer than was hoped, but the additional time spent has gone far toward winning valuable trust from the cataloging department and ISDO, both of which are responsible for protecting the integrity of the existing database.

The librarians who have developed and who now oversee NOTIS look for a basic knowledge of the tools of the trade and a basic sensitivity to the problems they face. As negotiations have progressed over the last several years, the university archives has succeeded in demonstrating competence as system users, respect for the requirements of the system, and willingness to learn and to accommodate as well as to make requests. The creation and maintenance of the university archives's small serials file in NOTIS enables the university archives to approach the ISDO as a NOTIS user. Of help, too, has been participation in creating AMC records in RLIN, which was inspired in part by a wish to gain

experience in the use of the new format and to begin the creation of records representing the university archives's most important materials. Working with the AMC format in RLIN helped to increase the visibility and legitimacy of the university archives as a user of MARC.

Many years ago the university archives established automation as a high priority. In addition to the self-evident, potential progress in efficiency of file and record keeping, the use of automation at Northwestern University promised the integration of records representing the university archives's holdings in the university library's public access catalog and the resulting improved access to and visibility of the university archives's collections. These goals have been achieved in part, and this success has involved the university archives in extensive exchange and consultation with several departments of the university library. The process has brought some increase in understanding and visibility to the Northwestern University Archives within the university library. This and enhanced access to the university archives's collections have been purchased at the price of conformity to national and local cataloging standards and to the stringent requirements of the online system at Northwestern.

The initial costs of using MARC format in an automated system are unquestionably high, and the very real benefits of doing so are often less apparent at first. Creating proper catalog records for the university archives's serials titles, for example, took considerably longer than had been predicted. The system requires meticulous attention to recording title and author changes and to the maintenance of authority control; this ongoing work, as well, represents a greater than expected investment of staff time. An additional cost has been the trial of shifting from a system with record group access to publications to one which provides only author and title access. This has proven a frustrating adjustment for some staff members. On the other hand, since under the new system serials are filed strictly according to title (with

author and title changes recorded in MARC, according to AACR2), student filing errors, one a significant problem, have been virtually eliminated. Perhaps more importantly, the NOTIS serials file provides a detailed record of all university archives serials holdings, which did not exist before, and permits the online check-in of serials with minimal trouble. The time-consuming tracking of title and agency name changes and authority records creates a constantly growing, sophisticated reference tool, as easily used by naive searcher as by those familiar with the university archives's record group system. On the strength of this example, it would seem that the benefits of automating with MARC will emerge gradually and not without significant adjustments. That the long-term benefits outweigh the costs seems beyond question.

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