

# ONLINE ARCHIVAL CATALOGING AND PUBLIC ACCESS AT THE MINNESOTA HISTORICAL SOCIETY

DENNIS MEISSNER

*ABSTRACT:* In the process of developing an online public access catalog to serve its users, the Minnesota Historical Society has had to solve problems concerning the content of catalog records, system selection, portability of machine-readable records between systems, retrospective conversion of information in manual formats, and compatibility of bibliographic data about information resources in multiple physical formats. The process was accelerated by the management goal of implementing central reference service for all the society's collections when a new State History Center opened in 1992. The results have included commitment to the USMARC AMC format for catalog records; commitment to retrospective conversion since central reference requires a *comprehensive* catalog; use of RLIN as well as membership in a statewide network (MSUS/PALS) that acts both as a local (institutional) catalog and a network union catalog; and increasing awareness of the the role of the cataloger in facilitating or frustrating research.

The road to an online public access catalog (OPAC) is not a straight road, if the experiences of the Minnesota Historical Society are any indication. For at least the past five years the Minnesota Historical Society (MHS) has been moving with increased determination in the direction of getting bibliographic information about all of its archival holdings into some kind of online environment. Objectives changed from time to time, and so did the means and tools in response. This evolving pursuit of an online catalog has variously dealt with several questions:

1. What kinds of information about our holdings do we want to capture in an OPAC?
2. What is the best vehicle for creating online catalog records?
3. What do we do about the large backlog of catalog records that already exist in manual formats?
4. How do we turn our machine-readable catalog records into a local OPAC?

What follows is an overview of the automation experiments that have brought us into the age of online public access cataloging, and the ideas about appropriate online cataloging that have developed; some observations on problems that must be dealt with in converting a manual public access system into an automat-

ed one; and a brief description of the system that is now in place and operating at the Minnesota Historical Society.

### *Early Efforts*

The idea of a bibliographic information system for MHS had its antecedents in SPINDEX projects in the late 1970s.<sup>1</sup> The goal had been simply to help provide some sort of extra-institutional access to Minnesota state and local government records (the Minnesota Historical Society is the administrative home for the Minnesota State Archives). Since the SPINDEX project was largely grant-supported, it was fairly easy to jump into that small pioneering effort, the overall objectives of which appeared laudable. During this period, we began to answer the first question: What kinds of information about our holdings do we want to capture in an OPAC? (even though SPINDEX data was machine-readable but not "online"). It also was a useful exercise in adherence to external standards for data content and data structure.

MHS has been entering bibliographic and administrative information about our holdings into national bibliographic utilities ever since. And for most of that time our efforts have been limited to government records. But beginning in the mid-1980s, the tempo and direction of our online cataloging changed, and the engine that really helped to drive these changes was the historical society's impending consolidation of its many programs and collections into a new State History Center.

Prior to that time the incrementing of our state archives holdings into national bibliographic databases—first into a SPINDEX database, and later into the RLIN database—was largely done to serve the interests of others. It was not motivated by direct in-house demands for computerized holdings information. We took summary elements of our government records finding aids—series descriptions, record group and subgroup descriptions, agency histories—and entered them into large bibliographic utilities that would then make that summary descriptive data available to researchers and other archivists in various institutions around the country.

This was not an entirely altruistic act. The infusion of grant money to get descriptions online encouraged the rapid arrangement and description of state archival holdings that had only recently come under the control of MHS, thereby putting the institution on a faster track in gaining intellectual control over a large body of materials. Also, getting series descriptions online amounted to virtual publication, thereby providing a sort of nationally available guide to the Minnesota State Archives, which had theretofore been lacking. (It had been an unrealized hope that the SPINDEX project would produce a printed guide to our government records.) Nevertheless, the main utility of entering records online was to serve extra-local needs and interests. Local access and management needs were still primarily served by the same system of manual, provenance-based finding aids that had always existed. In the fairly structured universe of state government records, provenance provided a workable basic access system.<sup>2</sup> The user could predict the governmental unit most responsible for a particular activity or likely to collect information on a particular topic. The user could therefore usually find the series of records most likely to contain the desired information. The more refined and exhaustive access afforded by name

and subject cataloging had always been too expensive to contemplate seriously, especially during times in which the only tools available were manual ones.

But the long-hoped-for move to a new building that would house the entire historical society changed that. The prospect of assembling all the staff, all the programs, and all the collections (with the obvious exception of historic sites) together in one place understandably got our administrators very excited. They got especially excited about the possibilities for expanding and improving public service. Although MHS has always thought of itself as a public service organization, it was generally understood that, in many ways, we had been serving our public somewhat shabbily over the past couple of decades. With research collections in different facilities, serviced by completely separate staffs, a certain insularity resulted. Not only were users forced to go to different locations to use materials in different formats, but MHS archivists and librarians, working exclusively with one format or another, grew less and less aware of the existence of related materials in the other locations. In concentrating on our own separate pieces of the MHS collections, we were forcing users to do *all* the leg-work—physical and intellectual—necessary to find out which collections might have information useful to them.

The Minnesota History Center would fix that. Collections and staff would be in one place, and information about collections could also be in one place: our research clientele could do one-stop shopping. They could search for information from books, serials, newspapers, maps, sound and visual media, museum artifacts, archives, and manuscripts at a single service point. This idea of “central reference” has been driving much of the work in the collections divisions of the society since the mid-1980s.

### *MARC-AMC Cataloging*

Central reference demands some kind of consolidated catalog to serve as an initial point of access to all the disparate collections. Once a query of this catalog has led users to a particular collection or item, they are in turn led to more detailed finding aids that are appropriate for materials of that format, whatever it happens to be. Those will probably be fairly traditional sorts of finding aids. In thinking about central reference, we began to answer the next question: What was the best vehicle for creating online catalog records? It was almost a given that such a consolidated catalog had to be computer-based, rather than manual. We could have placed the manual card catalogs for the several formats adjacent to each other in the combined reference area and called it central reference. But real *integration* of cataloging data does not happen until a single search is able to pull together materials from all relevant formats. Forcing researchers to repeat their queries in multiple catalogs frustrates research. We certainly wanted to enable and empower researchers in new ways. For summary information about holdings in multiple formats to coexist both usefully and peacefully in an integrated catalog, there had to be a common format for information in the central reference database. The MARC format was the obvious answer. The majority of the books and serials holdings, as well as some sound and visual materials and maps, were already in the OCLC database. And since we in the archives and manuscripts program had already been creating MARC-AMC catalog records for state archives materials, as early participants in the RLIN

Government Records Project, the obvious approach for archives and manuscripts was to get everything into RLIN.

The motivation underlying our online cataloging changed. We were no longer getting summary information online to serve the purposes of a national database. We were thenceforth hell bent to contribute to our own institution's goal of central reference. Our processing efforts have been focused on getting MARC-AMC records into the RLIN database. We have truly been driven by the need to get information on all of our archives series and manuscripts collections into computerized form. We had, I think, been less concerned about choosing a local platform on which to mount our bibliographic database than we had about the possibility of not having enough archival records entered into the database to provide true central reference.

MARC-AMC records for nearly all of our state archives series have been entered into RLIN: about 13,000 records, including 1,500 agency histories. This large number was greatly assisted by the early SPINDEX and RLIN grant projects. The *RLIN-ization* of manuscripts collections, however, was not begun until mid-1988 and has not generated any such impressive numbers. To date we have MARC-AMC records for only 500 manuscripts collections in RLIN. We have prepared MARC records only in the course of processing our current acquisitions, and are only now beginning to mount retrospective conversion projects to input records for the 4,000 manuscripts collections and the 1,000 series of Northern Pacific and Great Northern railway records that had already been processed before our commitment to MARC-AMC cataloging.

As noted before, prior to the commencement (June 1992) of centralized reference operations in the new facility we had concentrated on getting records into an automated format. We had not, in any *significant* way, worked on getting any of that information back out, at least not in its computerized form. In the case of our current manuscripts cataloging, we do use our RLIN records to generate cards for our manual shelf list. We have, however, used our MARC-AMC records in RLIN (see fig. 1) to produce a very important paper-based product (see fig. 2) for every archives series and manuscripts collection processed. We use a PC-mounted program to manipulate and reformat the information in the MARC-AMC record to produce a collection, or series, summary sheet that becomes the initial page of every paper-based finding aid that we create.<sup>3</sup>

### *Retrospective Conversion*

Having brought ourselves to the point at which we were preparing MARC-AMC records as part of all our current archival processing work, we began to address the next question: What do we do about the large backlog of catalog records that already exist in manual formats? Because the manuscripts catalog records going into RLIN represent only the processing of our current acquisitions, we are still left with the 4,000 manuscripts collections and 1,000 railroad records series, all processed prior to the advent of our RLIN manuscripts cataloging, that still need MARC-AMC catalog records. We can't very well advertise central reference if 5,000 collections or series are not in the system. That would be more than a quarter of the catalogable bibliographic entities within the archives and manuscripts format.

Obviously, some sort of recataloging project was called for. However, it quickly became equally obvious that a review of the finding aids for all those collections and series, and the preparation of MARC-AMC records—from scratch—for each, would probably take a couple of processing archivists two or three years to complete. Much as we might like to take this very thorough route, there was no way we could free up even a single staff archivist for full-time recataloging work.

The solution was retrospective conversion based on existing summary data. Most of the structured bibliographic data and textual notes that we would need in MARC-AMC records for the 4,000 older manuscripts collections already existed in the form of the published guides to our holdings. Three successive printed guides published in 1935, 1955, and 1977 (as well as typed copy for a planned fourth guide) contained entries that were exemplars of the brief descriptive cataloging that we strive for in creating MARC-AMC records (see fig. 3). In fact, when we started doing online cataloging of our manuscripts, we used these guide entries as models for catalogers to use in determining appropriate length and content when constructing textual notes.

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ID:MNHV90-A228 RTYP:d          ST:p          MS:          EL:z          AD:02-12-90
CC:9554  BLT:bc          DCF:a CSC:d MOD:          PROC:p          UD:12-13-90
EP:mnu   L:eng          PC:1          PD:1967/1990  REP:?
MMD:          OR: POL: DM:          RR:          COL:          EML:          GEN: BSE:
035      (MnHi-Ar)MSS
040      MnHi-Ar$cMnHi-Ar$eappm
043      n-us-mn
052      4144$bT89
110 2    National Organization for Women.$bTwin Cities Chapter.
245 00   Records,$f1967-1984.
300      1.0 cu. ft. (2 boxes).
500      Related materials: Records of Minnesota NOW are also in the Minnesota
Historical Society manuscript collections.
506      Until October 15, 2006, access to the collection requires written
permission.
520      Historical information, bylaws and other legal documents (1967-1977),
minutes (1970-1990), reports and related files (1973-1981), financial
records (1970-1981), membership information (1970-1977), correspondence
(1969-1990), news releases and newspaper clippings (1972-1981), and p
rinted materials documenting the activities of an activist organization
embodying all aspects of the feminist agenda through education, public
ity, and legislation programs. The chapter is a local affiliate of Minne
sota NOW and the National Organization for Women.
520 8    $bSubject files, including correspondence, newspaper clippings, and p
rinted materials, contain information on abortion, the equal rights ame
ndment, NOW's project against the Mormon church, and sex discrimination
legal actions against the Metropolitan Waste Control Commission. A sm
all collection of photographs depicts NOW activities in Minnesota and e
lsewhere, including the national NOW convention in Chicago, a rally at
the Minnesota state capitol, and the organization's participation in th
e "Willmar 8" bank tellers' strike.
540      Until October 15, 2006, quotation or publication beyond the fair use
provisions of the copyright law requires written permission.
555 0    Container list available in repository; filed in ALPHA notebooks unde
r the heading: National Organization for Women. Twin Cities Chapter.
650 0    Equal rights amendment.
610 20   Metropolitan Waste Control Commission (Minn.).
650 0    Abortion$zMinnesota$xMoral and ethical aspects$xCitizen participation
650 0    Discrimination in employment.
650 0    Feminism$zMinnesota.
650 0    Feminists$zMinnesota.
650 0    Mormon Church$zUtah.
650 0    Sex discrimination against women$zMinnesota.
650 0    Sexism.
650 0    Women's rights$zMinnesota.
650 0    Women's organizations$zMinnesota$zTwin Cities Metropolitan Area.
655 7    Photographs.$2aat
851      Minnesota Historical Society,$cSt. Paul, MN.

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Figure 1

The full display of an RLIN MARC-AMC record (PCL segment excluded).

But how to get all 450 printed pages of guide entries (not to mention the 500 typescript draft entries) into a computerized form? We decided to have the pages of the three printed guides optically scanned and converted into an ASCII text file. We had a vendor do so at a cost of approximately \$2,000. We are now having a staff typist edit the file of scanned guide entries and, through a multi-stage process,<sup>4</sup> convert the ASCII text into MARC-AMC records. Perhaps the biggest part of the job involves supplying name and subject access points for each record, since the guide entries contain none. Ideally, we hope to obtain funds to hire a free-lancer to do that part of the work after all the other cleanup work is done. This would then become a standalone indexing project of fairly

MINNESOTA HISTORICAL SOCIETY  
Manuscripts Collection Summary

Catalog No. ALPHA

Name: National Organization for Women, Twin Cities Chapter.  
Title: Records.  
Dates: 1967-1984.  
Quantity: 1.0 cu. ft. (2 boxes).

Description:

Historical information, bylaws and other legal documents (1967-1977), minutes (1970-1990), reports and related files (1973-1981), financial records (1970-1981), membership information (1970-1977), correspondence (1969-1990), news releases and newspaper clippings (1972-1981), and printed materials documenting the activities of an activist organization embodying all aspects of the feminist agenda through education, publicity, and legislation programs. The chapter is a local affiliate of Minnesota NOW and the National Organization for Women.

Subject files, including correspondence, newspaper clippings, and printed materials, contain information on abortion, the equal rights amendment, NOW's project against the Mormon church, and sex discrimination legal actions against the Metropolitan Waste Control Commission. A small collection of photographs depicts NOW activities in Minnesota and elsewhere, including the national NOW convention in Chicago, a rally at the Minnesota state capitol, and the organization's participation in the "Willmar 8" bank tellers' strike.

Restrictions: Until October 15, 2006, access to the collection requires written permission.

Note to users: Until October 15, 2006, quotation or publication beyond the fair use provisions of the copyright law requires written permission.

Finding aids: Container list available in repository; filed in ALPHA notebooks under the heading: National Organization for Women, Twin Cities Chapter.

Related materials: Records of Minnesota NOW are also in the Minnesota Historical Society manuscript collections.

Acc. No. Several  
RLIN ID No. MNHV90-A228  
Location(s): 28.H.10.4F (1 box) 28.K.12.3B (ov) (3 items) 28.H.11.4F (1 box)

Figure 2  
MARC-AMC data reformatted to produce collection summary sheet.

manageable proportions. (A scanned guide entry, enhanced with access points and MARC tagging, is shown in fig. 4.) We would want to hire someone with substantial library cataloging experience. A person with those credentials ought to be able to supply name and subject access points, using AACR2 descriptive rules and LCSH, which will integrate harmoniously with those access points already embedded in our archival catalog records.

1776. BRILL, HASCAL RUSSELL (1846-1922) AND FAMILY. Papers, (n.d.) and 1805, 1849-1964. 8.75 ft. See also nos. 563, 564.

Personal, family, and business correspondence, diaries, legal papers, articles, and genealogical materials of Brill, a St. Paul lawyer, judge, and trustee of Hamline University. Among the letters are 53 (1867-1910) from Regina Arthur Caw, sister of President Chester A. Arthur.

Papers of individual Brill family members include: speeches (1863-1922) of Hascal Brill; papers (1906-61) of his son Kenneth Gray Brill, also a lawyer and judge, many of which relate to his activities during World War I with the Red Cross, the Minnesota Commission of Public Safety, and the patriotic organization Four Minute Men Four; manuscripts, letters, and articles (1895-1950) of Hascal's daughters Edith and Alice Brill, both of whom worked in the fields of education and social welfare; manuscripts and dispatches (1898-1922) of his nephew William Hascal Brill, a journalist who covered the Leech Lake Chippewa uprising (1898), Alaska (1903), the Russo-Japanese War (1904-05), and World War I; notes of an interview (October 8, 1919) between William and Louis H. Roddis regarding the Leech Lake uprising; letters and manuscripts (1919-50) of William's sister Ethel Claire Brill, the author of articles, children's stories, and poems on nature and natural history.

1777. BRIN, FANNY FLIGELMAN (1884-1961). Papers, 1896-1958. 11.5 ft.

Correspondence, speeches, articles, reports, minutes, news releases, scrapbooks, printed materials, and related papers documenting Brin's involvement in social and political movements of the 1920s and 1930s. She was especially active in the National Council of Jewish Women, of which she was president (1932-37); the National Committee on the Cause and Cure of War; women's organizations; and Jewish welfare and refugee groups in which her husband Arthur was also a leader. There is considerable material on Jewish refugee programs, Palestine, Zionism, and anti-Semitism, as well as on her work in antiwar groups, her opposition to compulsory military training, and her support of U.S. membership in the World Court and the United Nations, disarmament, and the participation of women in public affairs.

1778. BRITTIN, LEWIS HOTCHKISS (1877-1952). Papers, 1898, 1913-53. 5 in.

Letters, reports, clippings, and other items concerning Brittin's activities as a promoter of St. Paul industrial development (1920s), founder and executive (1926-34) of Northwest Airways, the forerunner of Northwest Airlines, and air transportation consultant. Included is material on the U.S. Senate investigation of airmail contracts (1934) and Brittin's conviction for contempt of the Senate.

There is also biographical and family data, information on a 1921 proposal for hydroelectric power development for St. Paul, and Brittin's reports on the trade and industrial potential of the Twin Cities area (undated, 1915, 1921), and on air freight services (1944-46).

1779. BRONOUGH-YOUNGER PAPERS, 1890-1925.

23 items. Photocopies. Originals in the Western Historical Manuscripts Collection, University of Missouri, Columbia.

Letters, mainly to Warren Carter Bronough, reflecting efforts by Missouri citizens to obtain pardons for James and Cole Younger, who were held in the Minnesota State Prison, Stillwater, after their robbery of the Northfield bank in 1876.

1780. BROOK, MICHAEL. Papers, 1941, 1965-68. 8 in.

Correspondence and notes concerning Brook's research in Great Britain (1967) on manuscript sources for the fur trade, done as part of a Minnesota Historical Society project to identify and locate sources of information on the fur trade between Montreal, Minnesota, and western Canada from 1770 to 1820.

1781. BROWN, ANDREW DENISON (1818-1911) AND HOSMER A. (b. 1830). Letters, 1852-84. 27 items.

Letters by two brothers with information on their business activities in California, including building construction, real estate, and trade (1852-65); their sugar and cotton plantation near New Orleans, La. (1860s); farming, the marketing of farm products, and life in Brownsdale, Mower County (1860s-80s); and Hosmer's grain and lumber business and Andrew's flour mill there.

1782. BROWN, DAVID M. (b. 1857) AND FAMILY. Papers, 1884-1911. 1 ft.

Correspondence, accounts, advertisements, and other materials relating to Brown's career as foreman and superintendent of a farm operated by Ames, French and Co. in Otter Tail County (1884-89); his work as an agent for the Mutual Life Insurance Co. of New York (1889-97); his activities as chairman of the Otter Tail County Republican Committee (1894-95); and his service as mayor of Fergus Falls (1910-11).

There is information on equipping and managing the farm and on marketing cheese, butter, meat, grain, and other products; insurance sales techniques and Brown's relationships with insurance buyers and with Mutual's St. Paul agency; county and state politics, including the Republican and Populist parties; Fergus Falls city ordinances and taxes, and discussion of the sale of malt beverages in temperance saloons; and a Dry Land Farming Congress held in Seattle, Wash. (October, 1910).

Letters from family members in Oswego County, N.Y., discuss family matters, agriculture, and local events. Correspondents include

Figure 3

A page from one of the printed guides to MHS manuscripts collections.

The railroad records will be more work, since their finding aids will not scan as neatly as the published guide entries. We do, however, have one-page series summary forms for each processed series of NP and GN records (see fig. 5), and these can provide the basis for at least minimal MARC records, though more significant editorial labor will surely be required. The retrospective conversion of manuscripts guide entries and railroad records series summaries, combined with the government series-level records and current manuscripts cataloging will give us an archival collections file of about 18,000 MARC-AMC records.

### *A Local System for Central Reference*

Given an installed base of bibliographic records sufficient to serve the needs of a central reference operation, representing research collections in all formats held by MHS, what do we do to maximize access? This is the point at which we arrived some time ago, the point at which we had to answer the final question posed at the outset of this article: How do we turn our machine-readable catalog

1777. BRIN, FANNY FLIGELAAN (1884-1961). Papers, 1896-1958.  
11.5 ft.

Correspondence, speeches, articles, reports, minutes, news releases, scrapbooks, printed materials, and related papers documenting Brin's involvement in social and political movements of the 1920s and 1930s. She was especially active in the National Council of Jewish Women, of which she was president (1932-37); the National Committee on the Cause and Cure of War; women's organizations; and Jewish welfare and refugee groups in which her husband Arthur was also a leader. There is considerable material on Jewish refugee programs, Palestine, Zionism, and anti-Semitism, as well as on her work in antiwar groups, her opposition to compulsory military training, and her support of U.S. membership in the World Court and the United Nations, disarmament, and the participation of women in public affairs.

100 1 Brin, Fanny Fligelman, \$d 1884-1961.

245 00 Papers, \$f 1896-1958.

300 11.5 cu. ft.

520 Correspondence, speeches, articles, reports, minutes, news releases, scrapbooks, printed materials, and related papers documenting Brin's involvement in social and political movements of the 1920s and 1930s.

520 8 \$b Brin was especially active in the National Council of Jewish Women, of which she was president (1932-37); the National Committee on the Cause and Cure of War; women's organizations; and Jewish welfare and refugee groups in which her husband Arthur was also a leader. There is considerable material on Jewish refugee programs, Palestine, Zionism, and anti-Semitism, as well as on her work in antiwar groups, her opposition to compulsory military training, and her support of U.S. membership in the World Court and the United Nations, disarmament, and the participation of women in public affairs.

650 0 Women in charitable work \$z Minnesota \$z Minneapolis.

650 0 Zionism \$z Minnesota \$z Minneapolis.

651 0 Minneapolis (Minn.).

650 0 United Nations.

Figure 4

*A guide entry for a manuscripts collection. (Top portion shows text as scanned; bottom shows text reformatted and tagged, with access points added.)*

records into a local OPAC. We wanted a system to hold and manipulate all these diverse bibliographic records, *and* to provide efficient access to them in a way that would not intimidate our users.

It has, I think, been obvious to us almost from the start that RLIN cannot be that creature. RLIN, like OCLC, is still largely a tool for catalogers. Despite that, RLIN has served a very useful purpose in getting our cataloging records online. And it will, as far as our present plans go, continue to serve that purpose. We do not intend to abandon it as a cataloging vehicle. Perhaps more important, we recognize its importance as a national research database and will continue to value the access it gives nonlocal researchers to our archival holdings. But it is not the vehicle to provide local access to our archival collections, let alone any of our other resources.

To serve those access needs, we have turned instead to a statewide bibliographic utility that supports a collection management and access system with the acronym PALS (Project for Automated Library Systems). PALS software was created at Mankato State University for the Minnesota State University System. The system, which runs on Unisys mainframe computers, consists of

GREAT NORTHERN RAILWAY COMPANY RECORDS		
<b>Department:</b>	SECRETARY	Code # 0002
<b>Subgroup:</b>	GN Consolidation Committee	
<b>Series:</b>	Minutes	
<b>Inclusive dates:</b>	1956-1968	
<b>Quantity:</b>	1 in. (1 v.)	
<b>Location:</b>	17.D.1.5B	
<b>Record type:</b>	Minutes (loose-leaf)	
<hr/>		
<b>Description:</b>	<p>The minutes document the work of the internal GN committee charged with effecting an efficient consolidation with the other roads with which GN expected to merge: the Northern Pacific; the Chicago, Burlington and Quincy; and the Spokane, Portland and Seattle. Each of those roads had its own internal committee, as well, and the members of those four internal committees formed a Joint Consolidation Committee with overarching responsibility for creating an effective consolidation. The GN committee saw that GN's interests were represented during the long consolidation process.</p>	
<b>Accession no.:</b>	5343	

Figure 5  
Series summary sheet for railroad records.

subsystems for an OPAC, as well as for circulation, acquisitions, serials control, and interlibrary loan. MSUS/PALS is a statewide network that uses the PALS software and State University System hardware to provide a union catalog for Minnesota state universities, community colleges, state government units, and several private colleges and special libraries. The PALS software has also been marketed by Unisys (with royalties paid to MSUS/PALS) and is installed at various libraries outside the MSUS/PALS network.<sup>5</sup>

As an interface for users PALS is everything that RLIN is not. To start with, the default PALS display (see fig. 6) is, I think, more easily understandable at first glance than are any of the RLIN displays. On the PALS screen, each field occurrence is preceded by a prominent label so that it is fairly obvious what sort of information is contained on that line or paragraph. At the bottom of each screen are instructions for moving to succeeding or preceding screens or for summoning online help.

PALS has very strong help facilities. There are separate help screens explaining the PALS system and its component modules, the full palette of search commands, and the system's implementation of Boolean operators, as well as help on how to use the help system itself. For example, the help screen explaining title searches (see fig. 7) gives a detailed but understandable discussion on how the system indexes a title, and gives several examples of effective title search construction. Help can be accessed at any time from the command line.

Searching is also very effectively implemented on PALS. In addition to the usual author, title, and subject searching in fields indexed specifically for those purposes, PALS employs a powerful "term" search (see fig. 8) that searches all of those bibliographic fields, including a few note fields, for terms that may not be specific subject or name headings. PALS allows the user to limit searches to the holdings of any member library or certain sets of libraries, and it has a well implemented browse facility.<sup>6</sup>

The MSUS/PALS governing structure seems very much interested in expanding end-user services. The Library of Congress name and subject authority files were loaded onto the system in 1991 and, later that year, Information Access Corporation's Magazine Index, Expanded Academic Index, Business Index, and Company Profiles were added. We successfully petitioned their governing board to implement keyword indexing of the 520 note, which now permits term search access to all the information embedded in the content notes of archives and manuscripts records.

Participation in MSUS/PALS enhances our public service in other ways. The MHS library's books and serials have been in MSUS/PALS for some time, so the addition of MARC-AMC records brings us within sight of a true central reference system. Furthermore, the MSUS/PALS bibliographic files are accessible to anyone via modem or the Internet. People throughout the state can search the database, usually for the price of a local phone call. So PALS really does give us statewide public access to information about our holdings.

Though we are happy to have our MARC-AMC records online in MSUS/PALS, getting them in the system was a headache, some of the effects of which still linger. The initial 11,400-record tape provided by RLG proved difficult for PALS to swallow and kept one programmer busy for several weeks writing patches that would allow the RLIN MARC records to exist within the MSUS/PALS database. Before our tapeload, MSUS/PALS contained only

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Screen 001 of 002 Record 0006 of 0006 MHS                               Catalog MHS
LOCATION:  MANUSCRIPT COLLECTION ALPHA
AUTHOR:  National Organization for Women. Twin Cities Chapter.
TITLE:   Records, 1967-1984.
DESCRIPTN: 1.0 cu. ft. (2 boxes).
RESTRICTN: Until October 15, 2006, access to the collection requires written
           permission.
SUMMARY:  Historical information, bylaws and other legal documents
           (1967-1977), minutes (1970-1979), reports and related files
           (1973-1981), financial records (1970-1981), membership
           information (1970-1977), correspondence (1969-1981), news
           releases and newspaper clippings (1972-1981), and printed
           materials documenting the activities of an activist organization
           embodying all aspects of the feminist agenda through education,
           publicity, and legislation programs. The chapter is a local
           affiliate of Minnesota NOW and the National Organization for
           Women.
SUMMARY:  There are also newsletters, correspondence, and other papers of
           subsidiary chapters within the Twin Cities metropolitan area
           (1970-1984), including Excelsior, Minnetonka, North East Area,
           St. Paul, Suburban, University Community, and Wayzata.
SUBJECT:  Equal rights amendment.
SUBJECT:  Feminism--Minnesota.
SUBJECT:  Feminists--Minnesota.
SUBJECT:  Sex discrimination against women--Minnesota.
SUBJECT:  Sexism.
SUBJECT:  Women's rights--Minnesota.
SUBJECT:  Women's organizations--Minnesota--Twin Cities Metropolitan Area.
GENRE:   Photographs.
----Type RE to Recall index screen / DI for next index screen
    
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Figure 6  
A MARC-AMC record as displayed on PALS terminal.

records created on OCLC. The attempted tapeload of RLIN records revealed inconsistencies in the way the two utilities handled a few of the MARC fields. For example, the 69X fields—defined in USMARC for local non-LCSH subject terms—were supported by RLIN, but not by PALS. Given the widely lamented failings of LCSH as a comprehensive source of subject terms,<sup>7</sup> it is not surprising that there are a number of important topics or events in Minnesota history—

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Screen 001 of 001                                                    Catalog MHS
TITLE SEARCH HELP

To search by the exact title of a work, type TI followed by the first four
words of the title. Space after the command and between words. Do NOT include
A, AN and THE, or their foreign equivalents, as a first word. If you are not
sure of the exact title, try a TT (title term) search. For a TT search,
include any important words, you are sure of, from the title.

-----
To search for the title:                                           Type this:
-----
Roots                                                                TI Roots
Bury My Heart at Wounded Knee                                       TI Bury My Heart at
The Life of Abraham Lincoln                                         TI Life of Abraham Lincoln

To search when the title is something like: Type this:
-----
The crisis in Iraq                                                  TT Iraq crisis
Agriculture in the upper midwest                                    TT agriculture upper midwest

For detailed information on title searching, type HELP TS . For detailed
information on term searching, type HELP TM .
    
```

Figure 7  
PALS help screen for title searches.

well documented in our archival holdings—for which LCSH offered no suitable headings. We constructed what we considered to be sensible, direct headings, paralleling LCSH syntax and employing keywords that researchers were bound to use in their queries (e.g., Grasshopper plagues, 1873-1877—Minnesota). We were loathe to abandon them, feeling that user access would be compromised significantly. Loading the RLIN tape into PALS would have simply stripped out all 69X terms. That forced us, or rather the PALS programmer, to find other places to dump those local access points so that the information would not be lost. There were several other such specific inconsistencies between RLIN MARC and PALS (based upon OCLC MARC), in their implementation of various extensions to the USMARC fields, that complicated our tapeload into MSUS/PALS.<sup>8</sup>

A more vexing problem was a PALS record-length limit of 7,000 bytes, which 20 of our archival records ran up against. The system accepted the records, but will display only the first four screens and will not index information that follows the display truncation point. Our only *immediate* solution is to

```
Screen 001 of 001                                     Catalog MHS
TERM SEARCH HELP
To search by key words, type TE followed by any word or words for which you
are looking. Use this search to locate library material by words that are not
specific titles or subject headings. You can link words with the Boolean (BO)
operators AND, OR, or NOT.
```

```
TE WORD-1 <BO> WORD-2 <BO> WORD-3
```

EXAMPLES:

```
Search on DRUGS only
TE DRUGS
Search on INDIANS and MINNESOTA
TE INDIANS AND MINNESOTA
Search on ABUSE or CRUELTY to CHILDREN
TE ABUSE OR CRUELTY AND CHILDREN
Search on MATH but not CALCULUS
TF MATH OR MATHEMATICS NOT CALCULUS
```

For detailed information on term searching, type HEI,P TM.

Type your command or type MENU to recall menu screen.  
MHS=>he tm

```
Screen 001 of 003                                     Catalog MHS
DETAILED TERM SEARCH HELP
```

The term search is used to locate library material by words in the TITLE, SUBJECT, SERIES, ALTERNATIVE TITLE, CORPORATE AUTHOR, and selected NOTES. This allows you access by words that are not specific subject headings or titles. There are 5 commands available for searching by terms (words).

TE ANY-WORD	(General Term Search)
AT CORPORATE-AUTHOR-WORD	(Author Term Search) (NOT for personal author names)
TT TITLE-WORD	(Title Term Search)
ST SUBJECT-WORD	(Subject Term Search)
NT NOTE-WORD	(Note Term Search)
RT SERIES-WORD	(Series Term Search)

The TE command is the general term search. It combines all of the other 5 term commands. The AT, TT, ST, RT, or NT commands are subsets of the TE command, and may be used for a more precise search. Term searches generally result in many matching records. Because of this, you are allowed to use boolean operators to connect several terms together in one statement.

----Type NS and press NEWLINE RETURN or ENTER key for Next Screen  
MHS=>ns

Figure 8  
PALS help screen explaining "term" searches.

shorten those records and reload them. Arbitrarily restricting the length of every MARC-AMC record is not an appropriate long-term solution for us. There are many large and topically rich manuscripts collections, especially, for which lengthy records with many access points are very appropriate. An intermediate solution, at least for some collections or series, will be to redefine the catalogable unit. For collections with a large degree of internal structure we may create separate shorter catalog records for their subunits and link those sub-collection records to a general summary record for the entire collection or series. While this may work well for some collections, it may be a forced accommodation for others. There is some hope that we can get the system to accommodate our needs here, rather than having to adjust our cataloging to suit it. MSUS/PALS did accommodate our request on indexing content (520) notes; they seem to value the substantial archival presence in the database. But, given that we still represent a very tiny fraction of system holdings, and that we generate an even tinier fraction of their revenues, we will have to pick our fights carefully.

Screen 002 of 003

Catalog MHS

The following boolean operators are available to relate words to each other:

AND (Record must contain both words)  
 OR (Record must contain either word or both words)  
 NOT (Record must not contain word following NOT)

The following lines then represent the TERM search commands:

TE ANY-WORD-1 <BO> ANY-WORD-2 <BO> ANY-WORD-3 ...  
 AT AUTHOR-WORD-1 <BO> AUTHOR-WORD-2 <BO> AUTHOR-WORD-3 ...  
 TT TITLE-WORD-1 <BO> TITLE-WORD-2 <BO> TITLE-WORD-3 ...  
 ST SUBJECT-WORD-1 <BO> SUBJECT-WORD-2 <BO> SUBJECT-WORD-3 ...  
 NT NOTE-WORD-1 <BO> NOTE-WORD-2 <BO> NOTE-WORD-3 ...  
 RT SERIES-WORD-1 <BO> SERIES-WORD-2 <BO> SERIES-WORD-3 ..  
 \*<BO> represents one of the boolean operators (AND, OR, or NOT)

The boolean operations are performed from left to right. This means that the result of the boolean operation on word-1 and word-2 will be connected to word-3 by the next boolean operator and that result  
 ---Type NS and press NEWLINE, RETURN or ENTER key for Next Screen  
 MHS=>ns

Screen 003 of 003

Catalog MHS

will be connected to word-4 by the next boolean operator and so on. The computer will display the results of each intermediate operation. This gives you a chance to check your boolean logic and to see how the different words affected the command result.

Search words may also be truncated. This is done by placing a # where you feel the search word is significant. The title term (TT) search below would locate all titles containing the word stem SPEAK. The search would locate titles with SPEAK, SPEAKS, SPEAKER, SPEAKERS, and any other records with words beginning with SPEAK.

TT SPEAK#

This would replace the need for a search like this:

TT SPEAK OR SPEAKS OR SPEAKER OR SPEAKERS

See also truncation explanations under HELP TR.

Upon completion of the search, the computer will display a count of the records that matched the search. It will also prompt you with a print command to print the matching records. If more information on the display command is needed type HELP DI.

Figure 8  
 (continued)

We are pleased with PALS as an access catalog for our archival holdings, at least for the next few years, but we will continue to rely on RLIN as our vehicle for entering MARC-AMC records. At present it does not seem practicable to create records with the PALS MARC Editor (the PALS module for record creation and record editing) and then transmit them to RLIN.<sup>9</sup> Therefore we will continue creating records on RLIN and downloading them into the PALS system individually (and electronically) via the RLIN "pass" command. And, of course, RLIN is still valuable in the sense that it is our extra-local OPAC. It will continue to disseminate our holdings information to national and international audiences. However, the PALS database very recently became accessible on the Internet. Therefore, interested and informed researchers anywhere in the world, using the Internet as a gateway to MSUS/PALS, should be able to search our MARC-AMC records as though their own computers were MSUS/PALS nodes. This certainly has the potential to depreciate the value of RLIN as an extra-local disseminator of our cataloging information.

### *Central Reference: Initial Results*

The MHS Research Center opened its doors to the public on June 1, 1992. Its OPAC contained, in addition to the usual library holdings documentation, MARC-AMC records for all of the holdings of the Minnesota State Archives and for 10% of the manuscripts collections. Although the complete centralization of research collections still lay well in the future, the most important first steps had been realized: physical and intellectual access to all library materials and archives had been centralized in a single place, and an OPAC integrating all bibliographic formats was operational.

For the time being, researchers must settle for the limited centralization afforded by catalogs in the same room in lieu of the full integration of catalog records in the same OPAC. At present, the six OPAC terminals are accompanied by three separate card catalogs containing access points for all the books, serials, manuscripts collections, and sound and visual materials still lacking PALS records. Meanwhile, retrospective conversion efforts continue for materials in all formats, and are a high divisional priority.

The initial results of central reference are encouraging. For the state archives holdings, especially, the ability to search for name and subject terms in the online catalog has greatly enhanced accessibility. It puts government records access on a par with that available for the manuscripts collections and print materials. The indexing of the 5XX note fields has further enhanced accessibility, although it is not as useful as it would be if vocabulary controls were in place. Text string searching definitely places a burden on catalogers to use language very precisely. It also requires users to be especially exhaustive in their search strategies if they are to make good use of the information in these descriptive notes. Online cataloging has also not displaced provenance and archivists' memories as important search tools. In response to many queries, the reference archivists still go right to the full finding aids, bypassing the OPAC entirely. However, the OPAC is always valuable in locating the great majority of things for which provenance and memory are useless or inadequate tools. The OPAC's availability to home computer users with modems has also increased our accessibility to people outside of the Twin Cities. Although dial-

up use is the smallest part of PALS usership, it also appears to be the fastest growing segment.

The integration of formats in a single catalog, although a work in progress, has also been very beneficial. Researchers do not have to remember to look for information in different formats, and are often led to formats in which they did not expect to find relevant information (or that they did not even know existed). Identical searches do not have to be repeated in separate catalogs (this is, of course, not yet entirely true). It's also easy to bounce back and forth between catalog records for materials in several formats without having to do any physical legwork.

The downside of this integration is that some users (especially the inexperienced) do not always understand what it is they are seeing when presented with a sequence of catalog records representing materials in different formats. A good deal of confusion can result, which the reference archivist eventually has to sort out. This seems to be true even though each record displays with a prominent label that identifies the format of the item or collection that is being described. We are clearly challenged either to improve the lucidity of the display, or to invest more heavily and creatively in instructional materials. A more profound (though only in the short term) source of user confusion and frustration stems from the half-implemented state of central reference at the present time. Having the OPAC (with its integrated formats) in close juxtaposition to several format-specific card catalogs places a real burden on the reference staff to make sure that the users understand what they are in fact seeing when they look at the records in different catalogs, in terms of the nature of the materials being described and in terms of the relationship of the materials in each card catalog to the things that are in the OPAC. Complete consolidation will resolve that problem.

Complete consolidation, however, may go on to create quite a different problem. The few times when telecommunication lapses or PALS system crashes have taken our OPAC off line have suggested to us the vulnerability created by complete centralization of cataloging information in an online vehicle. It has certainly made us think seriously about maintaining a regularly updated COM fiche backup file (though quite expensive, MSUS/PALS could produce a dictionary catalog in that format).

The central reference experience is still too novel to have affected our archival cataloging in any conscious way. There have certainly been no policy or procedural changes yet. However, all the archival catalogers (who now work two hours each week at the reference desk) are, I think, gaining a heightened sense of the importance of the MARC-AMC record in the descriptive continuum, and the power that their cataloging has to facilitate or to frustrate access. I expect that we may be taking a critical look at the precision of our descriptive language, as well as congruity in the selection of subject cataloging terms among catalogers and across formats.

### *Conclusion*

By way of conclusion, let me return to the questions posed in the introduction, around which the information in this paper has coalesced. First, *What kinds of information about our holdings do we want to capture in an OPAC?* The

need for economy in description, our experiences in preparing summary guide entries for our manuscripts holdings, the promulgation of the MARC-AMC standard, and its embodiment in RLIN all worked to bring us to what we think is an appropriate complement of description in a public access catalog. We have always viewed the catalog as just the first point of access to our holdings, a set of pointers to fuller finding aids. It should contain essential bibliographic information (name, title, extent, location), brief notes, and comprehensive name, subject, and form of material added entries. The rest of archival description should be handled in other vehicles, linked in some systematic way to the catalog records.<sup>10</sup>

*What is the best vehicle for creating online catalog records?* We are, at least for the time being, creating MARC-AMC records on RLIN. Creation of records in a non-USMARC format would not be acceptable; we would lose all ability to port our cataloging data to any other system, including our own local system. For MHS, RLIN represents the culmination of computer tape-based cataloging input that began for us with earlier iterations of SPINDEX.

*What do we do about the backlog of catalog records in manual form?* The retrospective conversion procedures related in the article should result in a comprehensive OPAC (with regard to archival materials) within a couple of years. Our experiences suggest that while this is an arduous exercise, it is neither prohibitively expensive nor outside the bounds of our abilities. An alternative for archives willing to substitute money for staff involvement is to hire one of the library vendors specializing in retrospective conversion ("recon") work. In MHS's case, this alternative did not show any cost-benefit.

*How do we turn MARC-compatible catalog records into a local OPAC?* The PALS public access database, and the MSUS/PALS utility on which it is mounted have provided MHS with a very serviceable OPAC, one that acceptably meets the basic public access needs of the several format collections served by the catalog. PALS transforms USMARC records in ways that serve local access needs well. Its displays are quite lucid (given the limits of a character-based display format); it has a fairly powerful search engine; and it has a very good help module (though it is not particularly context-sensitive). Furthermore, the MSUS/PALS system has increased the accessibility of the catalog itself. Potential users can search MHS holdings from any MSUS/PALS member library. Furthermore, every Minnesota home or workplace with a modem becomes a virtual MHS reference room. The Internet gateway then has the power to expand that access level exponentially. We do not know that MSUS/PALS will remain our OPAC forever. It might be supplanted by the sort of integrated cataloging, access, and collection management system envisioned in the Research Library Group's AMIS project,<sup>11</sup> for which MHS is serving as a test site. But for the time being, PALS is a good fit.

The important thing for MHS is that we have defined the style, content, and format of our archival cataloging records; we are getting them into a MARC-AMC-based cataloging database; and we have a serviceable local access tool. We're open for business.<sup>12</sup>

**ABOUT THE AUTHOR:** Dennis E. Meissner supervises the arrangement and description of manuscripts collections at the Minnesota Historical Society, and is responsible for their online cataloging. An earlier version of this paper was presented at the May 1991 MAC meeting.

## NOTES

1. For more information on SPINDEX, and on various SPINDEX projects, see Richard Noble, "The NHPRC Data Base Project: Building the 'Interstate Highway System'," *American Archivist* 51 (Winter and Spring 1988): 98-104.
2. Provenance as the basis of an access system is explained and evaluated in some detail in a pair of articles by Richard H. Lytle: "Intellectual Access to Archives: I. Provenance and Content Indexing Methods of Subject Retrieval," *American Archivist* 43 (Winter 1980): 64-75; and "Intellectual Access to Archives: II. Report of an Experiment Comparing Provenance and Content Indexing Methods of Subject Retrieval," *American Archivist* 43 (Spring 1980): 191-207. In Lytle's experiment provenance and content indexing fare about equally well as access tools, though neither does a very effective job solely on its own.
3. We use a small program, written by former staff member Marion Matters, using the user programming (macro) language built into the XyWrite III+ word processor. It simply takes the ASCII file of a full RLIN MARC-AMC record (downloaded via modem), strips out fixed field data and screen garbage, reformats various bibliographic and note fields, and attaches necessary display constants, so that the MARC-AMC data is presented in a way that is immediately sensible to the user and that works well in paper form. This is a very useful tool that anyone with MARC-AMC records in a bibliographic utility can create with the script language found in any good quality word processor to automatically produce usable paper finding aids. Part of the whole *point* of computerized description is being able to manipulate the online bibliographic information *ex post facto* to produce desired ancillary products. Automated cataloging ought to help us save effort—or at least help us get more outputs from the same level of inputs into the system—and this is one case in which it does.
4. Some readers may be interested in the process that we are using. 1) Entries from the three printed guides are scanned, producing an ASCII text file that is then imported into our word processing software. Typescript guide entries that had been intended for the fourth published guide are typed directly into the word processor (they are in too many different typefaces, and contain too many handwritten changes, to scan well). 2) Basic formatting and cleanup of scanning errors is done on the word processor. Information in each guide entry is organized into data fields, with appropriate characters added to mark the beginning and end of fields and records, and the file is exported as a comma-delimited file that can be read by a database manager. 3) The resulting file is loaded into a database manager (in this case Q&A) where additional editing is done in a vehicle where data can actually be viewed in fielded form. 4) The database file is exported into a program (in this case, Data Magician) that actually converts the fielded data into MARC-compatible records. 5) The file of MARC records is loaded via disk into the PALS Universal MARC Editor where they receive final editing and from which they can be uploaded directly into the PALS library catalog. 6) Subsequently, the PALS records will be sent to RLG for a disk-load into RLIN.
5. PALS was formed in 1979 by the Minnesota State University System to develop and maintain a better vehicle for public access to the holdings of the seven institutions comprising the state university system (there were three other charter members not affiliated with MSUS). The PALS online union catalog, hosted at the Mankato State University campus, debuted in 1980. User satisfaction was high, and all participants subsequently closed their card catalogs. Since that time the system has expanded rapidly in both size and geographical area. As of December 1992 institutional membership had increased to 55, and the library catalog contained 4.1 million records, of which 1.8 million represented unique titles. The catalog contained 48.5 million access points. MHS, as might be expected, had the highest proportion of unique materials (80%) on the system.
6. A fairly recent modification of the browse searching feature permits the searcher to cumulate the results of successive browse searches. That accumulation can then be treated as a separate searchable set of information for more refined subsequent searches. This is an example of the access improvements that MSUS/PALS seems committed to pursuing.

7. A number of librarians have written acerbically on this topic. For example: Michael Gorman, "Fate, Time, Occasion, Chance, and Change; or How the Machine May Yet Save LCSH," *American Libraries* 11 (October 1980): 557-558; and Sanford Berman, *Prejudices and Antipathies: A Tract on the LC Subject Heads Concerning People* (Metuchen, N.J.: Scarecrow Press, 1971).
8. See Walt Crawford, *MARC for Library Use*, 2nd ed. (Boston: G.K. Hall & Co., 1989), especially chapters 19-21 (pp. 243-290), for a full description of extensions to the USMARC format made by utilities like OCLC and RLIN, and the limitations to compatibility that result. Although pure USMARC is a rigidly maintained standard, extensions to the format result in "supersets" (like OCLC MARC and RLIN MARC), some of whose fields and subfields may not be ported successfully from one system to another. This inconsistent treatment of certain USMARC field extensions was the source of our tapeload problems.
9. The reason for entering records into RLIN and then downloading them to PALS, rather than doing all the work within the local system, is logistical and financial. We want our archival catalog records to exist on both PALS and RLIN. RLIN, the preeminent utility serving the community of archival users in the U.S., remains our nationwide access vehicle in the absence of a proven alternative. It also has functionality for describing archival materials—the implementation of the "process control segment" of MARC fields 007 and 008 for recording acquisition and processing information, for example—that PALS lacks. Given those considerations, the relative costs of data entry, batch downloading, and batch uploading are such that it makes sense to enter catalog records into RLIN first and then "pass" them to the local system individually. This procedure is certainly subject to change as the variables relating to service costs and data entry mechanics change.
10. The best description of appropriate archival cataloging is found in Steven L. Hensen, *Archives, Personal Papers, and Manuscripts: A Cataloging Manual for Archival Repositories, Historical Societies, and Manuscript Libraries*, 2nd ed. (Chicago: Society of American Archivists, 1989).
11. For a description of the AMIS (Archives and Museums Information System) project, see Ellen S. Dunlap's remarks excerpted in the article "Rosenbach Director Talks About AMIS," *The Research Libraries Group News* 21 (Winter 1990): 17-19.
12. Some MHS archival cataloging statistics may be of interest. The average length of a state archives record is about 1,500 characters, while the average for a manuscripts collection is about 2,500 characters. The number of access points varies widely from record to record, but manuscripts records probably average about 18, while government records series probably average about 10.