In this article, database design for preservation project management is addressed. The system described manages a serials preservation project in which issues from multiple repositories are gathered and collated for preservation microfilming. The system accommodates the ongoing standardization of bibliographic data in the MARC format to facilitate the comparison of holdings among collections. It imports holdings records in the OCLC format and provides for the addition of condition reports and information about existing microfilm service copies, filmers, and the locations of master negative microfilm. Boolean search strategies, employing data from both bibliographic and holdings records, facilitate the identification of newprint available for microfilming. Management information, added to bibliographic and holdings records, supports the production of reports tracking preservation activity.

The computer is a relative newcomer to preservation management, although the pace of implementation is accelerating. Applications were adopted first for binding preparation activities either as stand-alone proprietary software or as components of integrated library systems in the 1980s. Since then, an increasing number of functions have been automated, including library and archival condition surveys—specifically CALIPR (Ogden and Jones 1991) and PRENAPP (RLG Needs Assessment Task Force 1993); data logging and analysis to measure and report on environmental storage conditions; selection and implementation of physical conservation treatments; and the tracking of reformatting queues for microfilming.

Some early applications were developed as stand-alone modules employing general-purpose database management software, such as dBase, FoxBase, and Revelation. Recognition of the advantages of linking preservation information to bibliographic records and associating preservation with other library functions came quickly and is increasingly in evidence (Bruer 1995). One means of making preservation information available within as well as beyond the local institution is the creation of fields in Machine-Readable Cataloging (MARC) bibliographic and item records. Many libraries have imple-
mented posting mechanisms to record preservation decisions in nationally accessible bibliographic records, storing these records in the Research Libraries Information Network (RLIN) or the OCLC Online Computer Library Center, Inc. databases.

The system application described in this article was designed to manage the California Newspaper Project (CNP), a component of the U.S. Newspaper Program (USNP) funded by the National Endowment for the Humanities (NEH). The database design was intended to facilitate the collection and incorporation of preservation information during the inventory and cataloging phase of the project, which was the first phase. Preservation data are entered into cataloging and holdings records in the system and become the content of system-produced management reports that direct, track, and inform subsequent preservation phases.

THE U.S. NEWSPAPER PROGRAM

The USNP represents an ongoing collaboration of the NEH and the Library of Congress (LC) to identify and preserve newspapers of the United States and its territories. Within the scholarly community, the American Council of Learned Societies reported that access to newspapers, an important yet impermanent resource, was one of its highest research needs (Eugene C. Barker Texas History Center 1990). Implementation of the USNP began in 1982 with grants to six repositories with holdings encompassing most of the fifty states. By 1996, all states were represented, and 29 projects representing U.S. states and territories had been completed. "Completed and current projects will produce bibliographic records for 245,000 newspaper titles and microfilm for 55 million pages of newsprint. To date, the NEH has spent $36 million in support of USNP projects, with non-federal contributions totaling $14 million" (National Endowment for the Humanities 1996). Cataloging is entered into the CONSER (Cooperative Online Serials) database in OCLC, and records are distributed on tape by LC. Holdings entered into OCLC are profiled in the USNP Union List.

USNP projects typically consist of three distinct phases: planning, inventory and cataloging, and preservation. In practice, the inventory and cataloging and preservation phases of a project can overlap. In a small number of projects, microfilming precedes cataloging. Logic would dictate that full inventory and bibliographic control of these items would be achieved prior to filming in order to identify the most complete set of holdings; however, the large number of newspapers involved, combined with the extremely vulnerable and fragile condition of many, means that many newspapers would be lost to accelerating deterioration if they were not filmed quickly. Consequently, a number of USNP projects have adopted a modified regional approach, in which details of the state's major collections are noted and then filming on a county-by-county basis proceeds as fieldwork is conducted. This was the approach envisioned for the CNP.

CNP GOALS

The bibliographic phase of the CNP began at the Center for Bibliographical Studies and Research, University of California (UC) Riverside. Although the initial planning was undertaken by the California State Library (CSL) almost a decade earlier (in 1983), the project began in earnest in 1992. The project's goals were determined at this time by the project management team and were modeled on those of the other state newspaper projects. Although the exact statements were modified during the life of the project, the goals as expressed below reflect what the project intended to accomplish. The project set out to:

- Survey and inventory U.S. newspaper collections in the state
- Construct cataloging records in the CONSER database in OCLC in accordance with national standards and guidelines
- Construct holdings records in the OCLC Union List Subsystem, USNP Union List
• Provide information about California newspapers to scholars, historians, genealogists, and the public by distributing access to the project's database and producing finding aids
• Produce microfilm of endangered newspapers, meeting national preservation standards for filming and storage
• Place service copies of microfilm in libraries for public use
• Ensure continuing access to California's newspapers into the future

CNP Planning and Challenges

Despite the existence of impressive files of bibliographic information at CSL and other research libraries, as well as the existence of numerous published scholarly bibliographies and histories, no single source was found to serve as a comprehensive bibliography of California newspapers. A similar situation held for the state's serial holdings in that no single database could serve as the predominant union list from which a major set of newspaper holdings could be extracted. The three largest union lists are CALLS, the California Academic Libraries List of Serials, which is a University of California MELVYL system database that lists holdings for the University of California and several other large academic library collections; CULP, the California Union List of Periodicals, that lists holdings for the State Library and public, special, and academic library periodical collections of all types; and the OCLC Union List Subsystem, representing academic and public libraries, including the California State University. (As of this writing, the California State Serials Union List Project is building a merged union list in the MELVYL system.) Newspaper holdings are underrepresented in each of these databases.

In addition to the absence of a single comprehensive file of bibliographic and holdings information, California's newspapers are scattered throughout the state in the collections of libraries, historical societies, newspaper publishers, commercial microfilmers, and private collectors. Although estimates of the total number of titles are reputedly as high as 15,000, no more than 6,000 titles are represented in the two largest repositories—CSL and UC Berkeley. Also, these collections often house limited runs of titles, while more complete runs are held in local or county library, historical society, and publishers' collections.

Further complicating the task of collecting and organizing information was the fact that, even where cataloged, very few of these newspapers had been subjected to adequate bibliographic control or, in many cases, even inventoried or listed. In the past, national cataloging standards were not applied to resources of local or ephemeral interest (as newspapers were too often categorized), and even the largest university collections did not furnish full bibliographic records, track title changes, or record the newspapers in the library's catalog. Frequent title changes, mergers, and varying frequency of editions, if listed, were not presented in a uniform manner. Issues listed under a single title by one repository might be listed under five titles in another, due to title changes (see figure 1). The same newspaper might be represented by different forms of its title in different union lists, due to the generic nature of newspaper titles and their appearance on mastheads where the placement and size of words can make it difficult to define the title.

The challenge facing the CNP was to bring together information about California's newspapers to enable strategic planning and continual updating as the fieldwork was conducted. The body of information that was organized was complex in both its bibliographic and physical manifestations. On the project, information about newspapers from a large number of sources was collected, organized and standardized so that bibliographic and holdings identification among repositories could be compared. This was an ambitious cataloging project, requiring years for completion and a flexible database management system to support the overlay of full MARC bibliographic records on existing records as cataloging proceeded. Notes and holdings had to be moved from one record to another on an
### Figure 1. Title Changes for the San Bernardino Sun

ongoing basis as title changes were identified. And to support the preservation microfilming, information on the condition, location, producers, quality, and technical specifications of existing microfilms as well as the condition of physical newsprint on site had to be collected and associated with the bibliographic and holdings data.

Several categories of information sources were identified. The previously mentioned serial lists, together with other regional union lists of newspapers and local library systems, such as the catalog at the University of California, Los Angeles (UCLA), furnished a significant portion of the initial data for the project. The initial survey of approximately 700 collections done by CSL in 1983 and the CNP survey of 2,700 California repositories and
publishers undertaken in 1993 also provided a substantial amount of data. The CNP survey included a questionnaire that solicited information about newspapers collected, microfilmed, and indexed, as well as policies for cataloging, interlibrary loan, storage, and collection development. Additionally, a work form for reporting individual titles and issues held, their format, and condition was attached to the survey.

Other research files came from individuals. Physicist Richard L. Lingenfelter supplied the project with his extensive record of California newspaper publishing. This list (compiled for Lingenfelter's personal research) includes publishing details for over 7,000 California newspapers. Additional inventories of newspapers on microfilm were supplied by Bay (Library) Microfilms and Custom Microfilming Corporation. Last, secondary historical sources and bibliographies were used to identify additional newspapers.

A DATABASE MANAGEMENT SYSTEM
The choice of a system best suited to management and manipulation of bibliographic and preservation data was considered essential to the project's success, and the desired functionality was comprehensive. Throughout the project, the system supported the ongoing work of field teams based at three locations: UC Riverside, UC Berkeley, and CSL. It was necessary to generate lists of repositories and collections sorted by zip code, city, county, or region to assist the field teams in planning for canvases. It was necessary to produce cataloging work forms selected by library or region, which carried all information previously gathered by the project staff, so that as additional issues of a title were encountered in the field, cataloging could be upgraded to incorporate new information. When the preservation phase of the project got underway, it was necessary to produce management reports that could identify candidate titles for preservation microfilming and track work throughout the preservation process.

It was important that the project adopt a system that could be used immediately in support of data entry and cataloging but which could be further developed to add functionality. This was needed because catalog records were being created at the same time that survey responses were being keyed and other data were being received from other sources. The system had to facilitate the import of MARC and non-MARC records and allow record overlay in either direction. Records were often supplemented with information keyed from secondary sources, such as extensive notes on editors and publishers, unverified information about publication patterns, other frequency editions, and related titles. Such information would later be confirmed by catalogers in the field and added in defined MARC fields to cataloging records. Holdings records were supplemented with information on format and condition that would later assist in the selection of candidate titles for preservation microfilming.

Once the fieldwork was completed, future needs required that the database be able to produce reference lists of titles and holdings selected by library, city, county, region, subject, language, or ethnic audience. Finally, the system had to serve as a production platform both for a comprehensive bibliography of California newspapers and a research database covering California's newspapers at the conclusion of the project.

SELECTION CRITERIA
Although a formal request for proposal was not required, criteria for the system selection were established by project management for use in evaluating software packages and reflected the functional needs that project management foresaw. The system needed to
- import data in both MARC and ASCII text formats,
- export USMARC bibliographic records
and ASCII text files,
- provide relational capabilities for flexible linkage of records in different databases,
- accommodate large text fields,
- permit ongoing changes to record structures and indexes when new needs were defined,
- enable project staff to define search keys and design specialized reports to serve the needs of field canvassers, librarians, and researchers,
- be accessible from the same PC-compatible computers used by project staff to access the OCLC system and run Windows applications, and
- be accessible by project staff located at remote sites as well as by catalogers in the field.

Following a comparative evaluation of software, the Cuadra STAR system was selected. STAR is an information management and retrieval system used by many librarians, museum curators, and information professionals, and database producers and publishers (Cibarelli 1992). While not strictly a relational database system, STAR has strong relational functionality. Unlike many relational databases, it supports variable field lengths and repeatable fields. It supports user design of record structures and local definition of indexes, reports, and global operations for importing and overlaying records and changing record content. In addition to the basic package, the CNP also purchased MARCPLUS, a MARC database record template, with facilities for import and export of USMARC records. Initially, the system ran on a 486sx PC under the SCO UNIX operating system. Later, when the application had grown, both in size and value, it was converted to a more powerful Sun SPARC platform running under the Solaris UNIX operating system.

**CNP DATABASES**

The CNP system application was defined to consist of four primary databases: MARCNEWS, NEWS, HOLD, and CONTACT.

MARCNEWS was the MARC database composed of authoritative serial CONSER records imported in batch mode records from the OCLC-held CONSER database (see figure 2). Originally, CONSER records are created and entered by CONSER-participating library catalogers, which includes the CNP project catalogers.

The second database, NEWS, contained a record for each California newspaper title identified by the project, as well as out-of-state titles cataloged at libraries by the field teams. Titles in this file were keyed or imported from a number of sources, including the project's survey of libraries and publishers, secondary historical sources, union lists, and local library systems (see figure 3). When these newspapers were cataloged in OCLC, the newly created MARC records were imported into STAR and overlaid on existing records in the NEWS file. In this process, certain defined non-MARC note fields were retained (see figure 4). The NEWS file was larger than MARCNEWS, as it included titles that had not been fully cataloged by the project and, in some cases, those for which issues had not been identified.

The third database, HOLD, was composed of holdings records, supplemented with information about format and condition. Holdings data were keyed into STAR from survey responses, union lists, and inventories (see figure 5). These records were later replaced by OCLC local data records that were prepared by project catalogers after the issues were inventoried and cataloged on-site (see figure 6). While local data records in OCLC represent library collections only, records in the HOLD database included the collections of microfilmmers, publishers, and private collectors as well. This made it possible to compose a more complete list of issues filmed, as well as those available for filming. Holdings records were linked to bibliographic records by NEWS record numbers and, once titles were cataloged, by OCLC record numbers. The system's linked design (and a STAR system function named Supersearch) meant that holdings could be reformatted and displayed with associated bibliographic records retrieved in a search (see figure 7).
Figure 2. MARCNEWS Record (Exported from OCLC)

It also meant that NEWS record numbers could be edited in the holdings records to link holdings to a different bibliographic record when a title change was identified. A defined global operation then matched the edited NEWS record number in HOLD with the related bibliographic record and replaced the OCLC control number in HOLD with a revised OCLC control number (see figure 6).

Last, the CONTACT database included a record for each library collection, museum, publisher, microfilmer, and individual contacted in the survey or identified for contact in the course of fieldwork. The database supported the organization of fieldwork, tracked progress, and recorded action items. Records carry names, addresses, and phone numbers, responses to the CNP survey questionnaire, and the dates and results of phone contacts and fieldwork on-site (see figure 8).

This database was employed to produce mailing labels, which could be selected by county, type of institution, or other search criteria. By means of a designed report, labels could be sorted by zip code, institution, or another defined field. A code assigned by the project to each CONTACT record links it to holdings records. A second linking field, the OCLC four-character collection code, was added to the CONTACT record once the CNP profiled a library for participation in the U.S. Newspaper Program Union List in OCLC. By employing this linking field, a global cross-load operation
supplied the collection name to OCLC-style local data records imported into the HOLD database once OCLC cataloging and union listing took place (see figure 6). Imported local data records were defined by the project as verified holdings, in contrast to keyed holdings, which were viewed as preliminary information subject to verification. Keyed holdings were dropped from the HOLD file at the conclusion of work with a collection by means of a global delete operation. This was done after condition statements, filmers, storage locations, and notes were cross-loaded to imported local data records.

**System Support of Fieldwork**

Prior to conducting fieldwork, which includes inventory and cataloging operations, the CONTACT database was searched to generate a list of libraries, publishers, and individuals identified in the place to be visited. For work in a large city, such as Los Angeles or San Francisco, a search might be defined for a specific zip code or codes, while for a sparsely populated county, records for the entire county might be retrieved subsorted by city. Appointments were made to visit each library, museum, publisher, or individual holding newspapers, and records in the CONTACT file were updated to reflect current information, such as updated addresses, number of titles held, hours of operation, or interlibrary loan policy, acquired during the phone conversation. A note was added to record the date of the phone contact and any subsequent field visit. In the course of phone interviews and field visits, information about additional collections and contacts in the county were often uncovered, and this information was added to the CONTACT database for later pursuit. Once the collections to be canvassed were identified,
and, in some cases, after an inventory had been conducted by the project, work forms were produced by searching on collection codes carried in holdings records in the NEWS database (see Figure 9). When a title had previously been cataloged and a full MARC record was available, a MARCNEWS record was also printed. This work was conducted by student assistants at the CNP headquarters office. When titles were thought to have changed or be related, but the evidence was insufficient to establish linking entries in the cataloging record, that information was put in note fields of the NEWS records to inform field teams of research to be conducted in the field. Although the project’s original plan was to have field teams access the system online via dial access or telnet to the system server in Riverside, the uniform difficulty of securing phone lines or network connections at the site of newspaper collections where the work took place (often in storage or remote areas of a library or publisher’s office) made this means of access impractical. Instead, work forms were printed and carried into the field. If a reasonably accurate or comprehensive inventory of a collection had previously been done by
the library or the CNP field team, the forms were sorted in shelflist order using that inventory. Otherwise, forms were sorted by city of publication, then title. A separate printout of the county’s newspapers was produced, so that the team could update the list with any new information that is gathered in the course of fieldwork (see figure 10).

At the conclusion of work at a library (after records have been loaded into the STAR system), the project delivered a printed reference list of newspaper titles and holdings (see figure 11).

**REFERENCE USES OF THE NEWS DATABASE**

As the project has progressed, and the NEWS database has become the most comprehensive source of information about California newspapers, an increasing number of reference queries have been received from librarians, researchers, and genealogists from across the country. If the CNP is unable to identify newspaper issues sought by a researcher, the query is posted to a record in the NEWS database so that a response can later be provided when additional issues are located in the field. In responding to reference queries, the project has fostered contacts with persons knowledgeable about California newspapers and their locations; this information can be used to identify additional issues for microfilming by the project. The NEWS and HOLD databases have proven so valuable that the CNP plans to make them more widely available on CD-ROM or via the Internet.

**PRESERVATION MICROFILMING**

One of the most important functions of the system in the support of the preservation process has yet to be realized. The selection process, as well as the management, organization, and tracking of microfilming, will be greatly facilitated by the selection of relevant bibliographic records, associated holdings, condition reports, and management information in the form of specialized reports. The CNP databases do serve in planning for the project’s preservation phase. Throughout

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**Figure 5. Holdings Record Keyed into HOLD Database**

**Record: 4485**

<table>
<thead>
<tr>
<th>NEWS#</th>
<th>871</th>
</tr>
</thead>
<tbody>
<tr>
<td>INST CODE</td>
<td>bancr</td>
</tr>
<tr>
<td>INSTITUTION</td>
<td>UC Berkeley, Bancroft</td>
</tr>
<tr>
<td>FORMAT</td>
<td>film</td>
</tr>
<tr>
<td>NOTE</td>
<td>Edges brittle. Feb. 4, 1859 issue badly stained.</td>
</tr>
</tbody>
</table>

---

**Figure 6. Holdings Record in OCLC Format (with Keyed and Cross-Loaded Data)**

**Record: 9745**

<table>
<thead>
<tr>
<th>OCLC#</th>
<th>11534768</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEWS#</td>
<td>871</td>
</tr>
<tr>
<td>INST CODE</td>
<td>cuyt</td>
</tr>
<tr>
<td>OCLC HOLD CODE</td>
<td>CUYT</td>
</tr>
<tr>
<td>INSTITUTION</td>
<td>UC Berkeley, Bancroft</td>
</tr>
<tr>
<td>FORMAT</td>
<td>film</td>
</tr>
<tr>
<td>FILMER</td>
<td>LPS</td>
</tr>
<tr>
<td>REPOSITORY</td>
<td>NRLF</td>
</tr>
<tr>
<td>NOTE</td>
<td>Edges brittle. Feb. 4, 1859 issue badly stained.</td>
</tr>
</tbody>
</table>
Record: 871

OCLC NUMBER 11534768
SN NUMBER 84-38812
UNIFORM TITLE Mariposa gazette (Mariposa, Calif. : 1857)
TITLE Mariposa gazette
AUTHOR Holmes, L. A.
PUBLISHER L.A. Holmes
PLACE Mariposa, Mariposa County, California
FREQUENCY Weekly
BEGINNING YEAR 1854
ENDING YEAR 1863
GENERAL NOTE Yosemite National Research Lib. has the early issues of this paper which fill in Berkeley’s film holdings. Librarian says this is the only paper of central Mariposa County.

OCLC NOTE Description based on: Vol. 2, no. 32 (Feb. 13, 1857).
RELATED TITLES Continued by Gazette-Mariposan.
GEOGRAPHIC Mariposa (Calif.) — Newspapers.
PREVIOUS TITLE Continues: Mariposa chronicle.
LATER TITLE Continued by: Mariposa weekly gazette (Mariposa, Calif. : 1863).

HOLDING Huntington Lib., Rare Books Dept.: 252861. (HUVM)


Figure 7. NEWS Record Display with Associated Holdings from the HOLD Database

Other more comprehensive reports will support the project’s selection of titles for microfilming. Holdings records for newsprint carry information about the condition of the original, specific issues held, whether the issues are bound, and their availability for filming. As selection for preservation microfilming is undertaken, titles that are candidates for filming will have a field marked in the bibliographic record. Searching on this field will permit project staff to select a list of newspapers for filming from each county, to evaluate attached newsprint holdings, and to make the best selection for microfilming (see figure 13).

Another field added to the bibliographic record has been defined for the notation of issues wanted for microfilming (see figure 14). A report has been defined as a finders’ list, selected by searching “not null” values in this field (see figure 15). The selection of titles can be limited to a specific city or county for distribution to the local media of a specific community or communities. Other fields in holdings records have been defined to carry information about the specific issues selected for filming, the date on which issues are retrieved from a collection, whether the owner needs newsprint returned after filming, and the date on which issues are returned (see figure 16). This information will assist project staff in tracking the gathering, collating, and delivering of issues.
Record: 3233

STAR CODE: paspl
INSTITUTION: Henry Hoover Public Lib.
CONTACT: John Smith, Library Director
CONTACT: Betty Jones, Serials Asst.
ADDRESS: 30 Sunny Way
CITY: Hooverville
COUNTY: Riverside
ZIPCODE: 90001
PHONE: (619) 232-8294
NEWSPAPERS?: YES
SIZE: 00026
MAIL?: YES
CATALOGED?: NO
OCLC?: YES
UNION LIST: Inland Library System Union List of Serials
ILL?: YES
FILMING?: YES
FILMING CO.: Data Microfilming Corp.
MASTER NEG: Data Microfilming Corp.
INDEXES: The Desert Sun
INDEXES: Riverside Press-Enterprise (Desert Section only)
CLIPS: The Desert Sun
CLIPS: Riverside Press-Enterprise
NOTE: Newspapers are indexed both manually and on computer.
NOTE: The Desert Sun is a Gannett paper and may be indexed online.

Figure 8. Record from the CONTACT Database

Record: 24

OCLC NUMBER
SN NUMBER
UNIFORM TITLE: American and Chinese Commercial Newspaper
VARYING TITLES
AUTHOR: Kee
PUBLISHER: San Francisco, San Francisco County, California
PLACE: Weekly
FREQUENCY: Chinese
PAST FREQUENCY: 2/16/1883-1901
SUBJECTS: Misc. newspapers (Reel 11, Item 4))
PREVIOUS TITLE
LATER TITLE
OTHER EDITION
HOLDING
HOLDING
HOLDING

Figure 9. Cataloging Data Sheet
Record: 72

OCLC NUMBER 30337734
SN NUMBER 94-51085
TITLE Colton daily courier
VARYING TITLE Colton courier
PUBLISHER F.S. Hosfelt
PLACE Colton, San Bernardino County, California
FREQUENCY Daily (except Sat. and Sun.)
PAST FREQ. Daily (except Sun.)
BEGINNING YEAR 1912
ENDING YEAR 1942
DATES PUBLISHED Published 3/5/1912-1942
OCLC NOTE "Daily" appears within masthead ornament.
RELATED TITLES Continued by Colton courier Continues Colton chronicle
GEOGRAPHIC Colton (Calif.) Newspapers.
HOLDING Colton Area Museum (J. Hofer reports holdings here)
HOLDING Colton Public Library Dates: 1912-1942.
HOLDING Huntington Lib., Rare Books Dept.: 494217. (HUVM)
HOLDING LAPL, Central, History and Genealogy: FR979. (LPUH)
Dates: <1937:3:29>. (Sixtieth anniversary ed.)

Record: 73

SN NUMBER 73
TITLE Colton page
PLACE Colton, San Bernardino County, California

Record: 83

SN NUMBER 83
TITLE Crestline courier-news
VARYING TITLE Crestline courier news
PUBLISHER Desert Community Newspapers
PLACE Crestline, San Bernardino County, California
FREQUENCY Weekly
BEGINNING YEAR 1991
ENDING YEAR 19999
DATES PUBLISHED Began in 1991.
GEOGRAPHIC San Bernardino Mountains Region (Calif.) Newspapers.
HOLDING Crestline Courier-News Dates: 1974-. (Info provided by publisher)

Figure 10. First Page of Printout of San Bernardino County Newspapers
Natural History Museum of Los Angeles Newspapers

El Aguacero. Los Angeles, California. Weekly. Began in 1878.—
Cf. Gregory, W. Amer. newspapers.OCLC #10213884
Amigo del pueblo (Los Angeles, Calif.) Los Angeles, California.
Weekly. Began in 1861.—Cf. Gregory, W. Amer. newspapers.OCLC #10213494
American sentinel (Oakland, Calif. : 1886) Oakland, California.
Weekly. Began in Jan. 1886; ceased in 1890.—Cf. Gregory, W.
Amer. newspapers. OCLC #13881968
LA Natural History Museum (Box 240 A;). Dates: <1889:9:4>.
Condition: good.
(Nov. 21, 1929); Ceased in 1944. Continued by: Altadenan.
OCLC #30304226
Condition: good. (Scattered issues wanting.)
The Alliance farmer. Los Angeles, California. Weekly. Vol. 1,
no. 1 (Mar. 7, 1891)—v. 2, no. 11 (Dec. 24, 1891). OCLC
#11840002
Condition: poor. (Scattered issues wanting.)
Alhambra (Alhambra, Calif.) Alhambra, California. Weekly. OCLC
#30210793
LA Natural History Museum (Spec. Bundle #6).
Acton rooster. Acton, California. Monthly. Published 1891-
1915 OCLC #30306105
Condition: fair.
American and Chinese commercial news = Hua Mei hsin pao. San
Francisco, California. Weekly. OCLC #34582275

Figure 11. First Page of Sample Reference List
Carta editoriale.

Riverside, Riverside County, California


Citrograph (Redlands, Calif.)

The citrograph.

Redlands, San Bernardino County, California.

Weekly.

1887

1908

Vol. 1, no. 1 (July 16, 1887)-Ceased with Nov. 14, 1908 issue.-Cf. Gregory, W.

Amer. newspapers.

Citrograph (Redlands, Calif.)

The citrograph.

Redlands, San Bernardino County, California.

Weekly.

1887

1908

Vol. 1, no. 1 (July 16, 1887)-Ceased with Nov. 14, 1908 issue.-Cf. Gregory, W.

Amer. newspapers.

24451032


Enterprise (Riverside, Calif.: 1977)

The enterprise

Riverside, Riverside County, California

Daily

1977

1981


27823090


Figure 12. First Page Printout of Riverside County's Microfilmed Newspapers

Search: COUNTY=RIVERSIDE AND FORMAT= Film
Figure 13. Title Marked as Candidate for Preservation Microfilming in the NEWS Database

Figure 14. Issues Needed for Filming Noted in NEWS Record
San Bernardino County
Newspapers Issues Needed for Microfilming


The Colton chronicle. Semiweekly. Colton, California. Published from 1888 to 1911. ISSUES NEEDED: 1888; 1898-1904; other scattered issues.

**Figure 15.** Finders List Produced from the NEWS Database
Search: COUNTY=SAN BERNARDINO AND NEED NOT=-'

for filming, seeing that they are filmed in a timely fashion, and disposing of newsprint once filming has taken place. Examples of potential reports are:
- Titles delivered for filming before a certain date, but not yet filmed (DELIVERED<8/96 AND FILMED="")
- A listing of issues retrieved for filming from a specific library (LIBCODE=XXXX AND RETRIEVED NOT="")
- Filming completed after a specified date (FILMED>8/15/96)

The last report will serve as a notification and queue for cataloging preservation masters subsequent to filming. Other reports, such as one comparing turnaround time among microfilmers, can be defined as needed. New fields, indexes, and reports will be required, which highlights the advantage that new data structures, indexes, and reports can be modified or created in the CNP system.

**CONCLUSION**

The CNP system has the capability of managing and associating bibliographic, holdings, and preservation data created in a preservation microfilming project. The flexible system design, the integration of MARC and non-MARC data, and a high level of user control over indexing decisions and report definition model a new system design for managing a broader spectrum of library functions. The system

<table>
<thead>
<tr>
<th>TITLE</th>
<th>California chronicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBLISHER</td>
<td>Frank Soule &amp; Co.</td>
</tr>
<tr>
<td>PLACE</td>
<td>San Francisco, San Francisco County, California</td>
</tr>
<tr>
<td>FREQUENCY</td>
<td>Semimonthly</td>
</tr>
<tr>
<td>BEGINNING YEAR</td>
<td>1853</td>
</tr>
<tr>
<td>ENDING YEAR</td>
<td>1858</td>
</tr>
</tbody>
</table>

**Figure 16.** Issues to be Filmed Displayed in Association with the NEWS Database
is an indispensable tool for directing current project day-to-day operations, and, in the future, the resulting databases will be the most comprehensive resource for information about California's newspapers.

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