

# CRM BULLETIN

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## Computers: A Growing Cultural Resource

**Jerry L. Rogers**

The nature of information has changed radically in this decade. Evidence of this change is visible within cultural resources management in the National Park System. The published volume is becoming supplemented by the video image, the written card catalog replaced by the computer database, the architectural drawing augmented by computer aided design, and the paper schedule displaced by the automated tracking system. Computer technology is developing at a rapid rate, offering sophisticated automated systems in graphic design, image processing, budget tracking, geographic information, data management, and telecommunications.

As managers of cultural resources we must be aware of the different needs of computerized information management: the need to maintain and adapt these computer systems in step with the constant technological advancements; the need to train personnel on a regular and continuing basis; the need to share computer expertise within the National Park System; and the need to allow access to this information to the largest possible audience.

Computers have become the tools for managing this broad range of information. It is critically important to develop these tools in order to advance the cause of cultural resources management in the National Park System. The Director's "Twelve Point Plan" action program calls for the creation of usable resource inventories that are continually reevaluated and updated in order to protect park resources. Director Mott has made this a high priority for all units of the System and we are helping to meet this requirement. In recent years we have made many advancements in automating cultural resources management functions, including the Automated National Catalog System, the List of Classified Structures, the Cultural Resources Management Bibliography, the National Register Information System, and the HABS/ HAER database. Other computer systems are being developed in Washington and the field, including the Cultural Sites Inventory, the National Maritime Initiative Inventory, the Spanish Heritage Database, and the Historic Structures Preservation Database.

As these and other databases develop, they must be managed on both a servicewide and site specific basis. We must be creative and flexible in coordinating their development on a park, region, and Washington level. But our efforts should not be limited to the Park System itself. Rather, we must become leaders in developing and linking our computer systems with private organizations and public institutions as well. As the major national repository of cultural resource information, we have a responsibility to manage that information in a way that will make it useful to the National Park System and to other major and potential users. Just as the National Cancer Institute sponsors automated access to medical reference and consultation information, so should we look ahead toward on-line accessibility of technical preservation information. The computer is no longer a novelty; it is a necessity. Its benefits to the individual programs, the Park System, and to the wide range of our allied organizations will be enormous.

Jerry L. Rogers is Associate Director, Cultural Resources, National Park Service.

## About This Issue

**Alicia D. Weber**

This issue of the *CRM Bulletin* grew out of a training course that was held last December at Clemson University, South Carolina, entitled "Microcomputers for Cultural Resources Managers." The course, the first of its kind in cultural resources, offered an overview of computer and information systems in cultural resources management; fundamental training in microcomputers, including hardware, software, and terminology; and "hands on" experience and training in specific database programs. Although not inclusive, the course was a first step in informing people of the information systems available in cultural resources—their availability and access.

The course also addressed several needs for information management and computer applications in cultural resources: how to share information; how to provide servicewide training; how to ensure continued growth and development of computer systems; and the future direction of microcomputers in cultural resources.

This issue of the *CRM Bulletin* is a step toward fulfilling one of these needs—sharing information. But it is not the only step that we are taking. A monthly newsletter on CRM computer systems, "Micro-Notes," has been developed; a mailing list of CRM employees interested in computer systems has been established; and, beginning with this issue, a detachable supplement on CRM computer systems will appear in the *CRM Bulletin*.

Much remains to be accomplished. Data elements need to be standardized, databases need to be linked and coordinated, and training needs to be provided on a regular and continuing basis. It is our hope that this issue is not a final product, but rather a departure. Your ideas, suggestions, and support are necessary in order to make the databases and information systems discussed here, and others we are not aware of, become known and grow in the future.

Alicia D. Weber coordinated this issue of the *CRM Bulletin*.

# Moving Ahead With Information Management

**Ron Greenberg**

Energetic program management, individual initiative and perseverance, and a lot of plain hard work have brought the Cultural Resources programs into the "computer age" with a long list of automated information systems ranging from resource inventories to single-user applications. More and more, staff—including managers—who "never touched a computer" are using microcomputers for word processing, developing spreadsheets, and generating reports from databases. The "Microcomputers for Cultural Resources Managers" course, held at Clemson University last December, provided the first opportunity for many park and regional staff to see—and use—some of these systems. One of the most important things about the Clemson experience was that it happened at all. But it also pointed out very clearly the need to get more information out to users about these systems; to provide more training; to ensure technical support for systems already developed, and for those in the planning stages; and to coordinate information management activities.

As the Information Management Coordinator for the Associate Director, Cultural Resources, I have been charged with setting some goals for information management. Now that some of our major systems are operational (or soon to be) and some standardization of hardware and software has taken place, it is time to decide where to go from here. There is within and outside the NPS a growing consensus that it is time to begin to link our data to other preservation data and make it more widely accessible. However, there is no clearly defined strategy that would lead to this end. We need to develop achievable goals to meet NPS needs and those of outside groups to use our data. Here are some goals to consider:

- Complete the development of cultural resource inventories;
- Ensure continued technical support;
- Develop logical interrelationships among a number of Servicewide databases;
- Use the NPS COMMON Database in order for cultural data to be combined or linked with other non-cultural NPS information;
- Create an index of cultural resource databases;
- Develop standards for data elements;
- Develop a management process for evaluating new database development projects;
- Continue encouragement toward innovation to ensure that the management process does not become an inappropriate impediment.

I welcome your comments.

Ron Greenberg is an assistant to the Associate Director, Cultural Resources.

# Inventorying Ethnographic Resources Servicewide

**Muriel Crespi**

"Ethnographic resources" refers to both a concept and a category of resources. As a concept it emphasizes relationships between contemporary Native Americans or other ethnic communities and the resources, presently under Service management, that they use and require for cultural survival. As a category it covers the broad spectrum of cultural resources, including sites and structures and natural environmental features such as subsistence grounds, currently used by park-associated peoples. Examples of ethnographic resources are structures such as the active churches at San Antonio Missions or the Ellis Island buildings memorialized in myths about cultural passages from the old world to the new; landscapes such as the contemporary Timbisha Shoshone settlement at Death Valley or the Sweet Auburn community of Martin Luther King Jr. NHS; archeological sites in Hawaii or the Southwest where Native Americans communicate with spiritual guardians; and museum objects with continuing religious significance. Subsistence grounds in Alaska, catlinite quarries at Pipestone, and medicinal plants at numerous sites, among other natural resources, also fall into the ethnographic resource category because of their current use by traditionally-associated peoples. The category is not exclusive, then, but contains resources that are likely to be cross-listed in other Service inventories.

## **Inventory**

An Ethnographic Resources Inventory (ERI) is planned to systematically compile information on location, type, condition and use of resources, together with the basis for access, names of associated user groups, and cross-listings in other inventories. A management tool, it will provide the database needed to expedite compliance with congressional mandates and effective implementation of policies on religious freedoms, consultations with communities affected by Service actions, and provisions in park-enabling legislation requiring sensitivity to a people's current lifeways and associated material and natural resources. One anticipated by-product of the inventory is enhanced perspectives on the cultural context or meanings of Service holdings.

The immediate pragmatic benefits of inventory data will be to flag culturally sensitive resources and thereby help Service managers avoid actions that inadvertently obstruct religious practices or restrict the lawful consumptive use of resources. A unit's successive managers will find it useful to have an available permanent database that signals the need to consult, and the appropriate peoples with whom to consult, should planned Service actions potentially affect ethnographic resources. In addition, the inventory will have budgetary value by forecasting the need to consider costs of consultation and development of resource monitoring programs. Information about contemporary patterns of resource use will help parks determine if, and how, use might be affecting the resource. Interpretive programs on resource use will be enriched by data on the human or cultural context, although detailed data on the location of sensitive resources will be protected from public disclosure.

## **Identification**

The goal of inventorying the resources' contemporary significance makes it imperative to initiate resource identification with evidence of their current use.

Observed use of the site or natural feature, inferred use from remains of leis or other ceremonial offerings, combined with interview data when appropriate, will generate the entries. This will require development of a field-based Servicewide reporting format to record minimal uniform information while also allowing for unique data that characterizes particular units. Ethnographic Overviews and Assessments, and Traditional Use Studies,

conducted by cultural anthropologists, will yield information based on interviews, observations, and literature reviews. Other entries may come from archeological, curatorial, historical, cultural landscape and other reports. The dynamic nature of subsistence or other resources use makes it important to keep the information base updated so that it reflects changing patterns of resource use and changing resource conditions.

No complete inventory of field resources with religious, subsistence, residential, or other contemporary value is anticipated. Even under the best field and study conditions the inventory will have certain persistent information gaps, some of them reflecting reluctance by park-associated Native American or other ethnic groups to reveal information that might jeopardize the privacy and effectiveness of their religious or subsistence activities. Given these and other constraints, the inventory aims to be a usable, reasonably complete, but not exhaustive compilation.

### **Status**

The inventory is in its infancy, conceptually and technically. Although several parks generally know about the resources visibly used by park-associated peoples, no uniform park reporting formats or regional files exist, no elements of a servicewide ethnographic database for cultural and natural resources have been identified, and the larger computerized system has not been designed. Efforts to refine the conceptual base and consider basic elements for field reports will begin in fiscal 1988 when the Washington office anthropologist expects to confer on-site with park resource specialists, and regional staff, about feasible reporting formats, anticipated reporting problems, and other field concerns, while also training in Native American and ethnographic program concerns. In the following year, a task force with appropriate park, regional, and Washington representatives will be established to address the technical and design issues involved in developing a computerized system with relevance for parks, regional offices and Washington.

Muriel Crespi, applied cultural anthropologist/ethnographer, is senior anthropologist in the Anthropology Division.

# The Systemwide Cultural Sites Inventory

**Craig W. Davis**

The Cultural Sites Inventory (CSI) is a compendium of information about prehistoric and historic period archeological resources, both terrestrial and submerged, within units of the National Park System. It is a systemwide registry that describes and documents, among other information, the location, significance, threats, condition, and management requirements for known archeological resources. The inventory also identifies the resources that require funding for their proper management and treatment, and summarizes the extent of archeological identification, evaluation and data recovery activities in a park. It is not decided yet if the inventory will contain information about historic sites, other than buildings and structures, and vernacular landscapes. Information about ethnographic resources, once intended to be an integral part of the CSI, will be developed as part of a separate but complementary database called the Ethnographic Resources Inventory (ERI). The CSI consists of data compiled from field site forms, resource file folders, map cases, reports, archives, park and regional computer files and other sources. It is first and foremost a management database. It is not a research database, although many parks and regions may develop and maintain separate information for this purpose.

The inventory will be used for resources management by personnel in parks, regional offices, archeological centers, and the Washington office. The inventory, depending upon its final content, will be useful for a variety of purposes including resources planning, compliance, monitoring, protection, budget development, interpretation, and for providing basic resources information on demand. However, specific information about the location or character of the resources will usually not be made available to the general public in order to protect the resources from harm as provided for in both the National Historic Preservation Act and the Archaeological Resources Protection Act.

## **Management Tool**

The inventory is needed as a tool for improved resources management and because it will serve as the means for systematically collecting, ordering and maintaining information about prehistoric and historic period archeological resources associated with park units. For the first time, specific information will be gathered in a standardized format for each archeological resource in units of the National Park System. Previously, we often collected information to meet our particular needs at the time, and not in consistent forms or formats from one park or region to another. The storage and maintenance of the data, and its eventual disposition when its primary purpose was served, were not major servicewide concerns. We now recognize the need for having standard key information available servicewide about each of the archeological resources we manage. Granted, some information is unique to specific regions of the country and is not amenable to standardization, but some of it certainly is. By identifying and prescribing the collection and maintenance of select data for all archeological resources, we will have better information available than we have now to use in making management decisions about preserving and protecting the resources, and we will be able to put forward more detailed and accurate factual arguments for supporting our archeological resources management program.

## **Goal**

The goal of the CSI project is to create a core set of information about prehistoric and historic period archeological resources, and to computerize this data in a servicewide system.

Initial work to identify system requirements and data elements for the inventory was done by a task force of Service archeologists during 1985. The task force report was reviewed by field and Washington offices and an issues report consolidating and addressing comments, and containing recommended modifications to the proposed database, was issued in 1986. A task directive outlining the work and schedule for completing the design and development of the servicewide CSI has been submitted to acquire the necessary funding and positions for the project. It calls for a three-year project to design, develop and test a computerized inventory database system. The project will be initiated when it is funded.

Some parks and regions already have made excellent progress in consolidating and ordering existing information about archeological resources, and many regions have developed computerized information files. However, information is still variable in form and is being ordered and structured by different ways and means. It is clear that servicewide guidelines and standards are needed as soon as possible to identify the basic information required for the inventory, prescribe the formats for its recordation, and specify procedures for administering and maintaining the database system. Without this guidance and direction, regional and park archeological resources information will continue to develop along divergent paths, making it more and more difficult to develop a standardized servicewide database.

The project will be supervised by the Anthropology Division, Washington, and developed by a steering committee of Service archeologists and computer specialists. The Anthropology Division has made a commitment to actively involve future users of the system as much as possible in the development of the project. Project design will continue to be coordinated with other key Service cultural resources databases in development, particularly the corporate COMMON Database, and relational links will be established with them wherever feasible and practical.

Additional information about the purpose and content of the inventory can be found in the Service's Cultural Resources Management Guideline (NPS-28).

Craig W. Davis is staff archeologist in the Anthropology Division. Among his other responsibilities for the archeology program, he is coordinator for the design and development of the Servicewide Cultural Sites Inventory.

# National Archeological Database

**Francis P. McManamon**  
**Debra F. Katz**

For the past four years, development of a nationwide computerized archeological database has been one of the priorities of the National Park Service's Archeological Assistance Division. The creation of the national archeological database (NADB) was mandated by Congress as one means of eliminating redundant archeological efforts by Federal agencies and improving the Secretary of the Interior's ability to lead and coordinate Federal archeological activities.

Ultimately, NADB will consist of three parts providing summary, especially geographical, information about archeological reports, archeological projects, and other archeological databases. NADB contains information about reports, projects, and databases such as geographic location, type of report or project or database, research questions, temporal data, and keywords. The NADB User's Manual, version 1.0, describing the database fields and providing guidelines for data entry, is available.

During FY 1984 and FY 1985, the Archeological Assistance Program designed and developed the database system specifications, conducted a pilot project, and began full nationwide implementation of the report portion. In FY 1986, the database system was installed, and data collection began in four regional offices (Mid-Atlantic, Rocky Mountain, Southeastern, and Western). About 42,000 data records have been collected for archeological reports from approximately 60 percent of the states, mainly in the eastern half of the country. Records collection currently is focused upon the "grey literature," unpublished and limited distribution reports in State Historic Preservation Offices. It is estimated that there are approximately 200,000 such documents; however, some indications suggest that this estimate might be low.

Data collection continued in FY 1987, but alternative methods to complete data collection for the report portion of NADB are being examined. In Washington, the report records that have been collected and checked at regional offices will be combined into NADB using RELATE 3000. Also this year, the projects portion of NADB will be designed and documented.

Three objectives are determined for FY 1988: data collection will continue for the reports portion of NADB; at least a part of the reports portion will become operational for some states and agencies; and data entry will begin for the projects portion of NADB. Increased personnel costs and other operating expenses have eroded the base of funds available for NADB which will slow the development and implementation of the system, especially for outside users.

Francis P. McManamon is Chief of the Archeological Assistance Division, National Park Service.

Debra F. Katz is an archeologist working on NADB in the Archeological Assistance Division.

# LCS: Inventorying Prehistoric and Historic Structures

**Alicia D. Weber**

The List of Classified Structures (LCS) is an "evaluated" inventory of all prehistoric and historic structures that have archeological, historical, and/or architectural/engineering significance in which the NPS has or plans to acquire any legal interest. It is "evaluated" or "classified" by National Register criteria. Developed primarily as a tool to assist park managers and cultural resources specialists in the parks, regional offices, centers, and the Washington office, the LCS records planning, programming, and treatment decisions regarding listed structures. In recent years it has also developed into a research tool and contains historical information and cross reference links with other cultural resources databases including the NRIS, the CSI, the ANCS, and the HABS/HAER databases.

## **Background**

The LCS was created in 1960 based upon recommendations made at a meeting of the regional directors and the chiefs of the eastern and western offices of design and construction. The need for an "Inventory of Historic Buildings and Structures" led to a draft inventory that was distributed to the field for review in November 1960 and finally to an "Historic Structures Inventory" that was transmitted to the field in May 1963. In the late 1960s and early 1970s, this inventory evolved into the List of Classified Structures. In 1975-77, the LCS was updated, computerized, and revitalized with new management data elements which were further expanded in 1981.

## **Where We Are Today**

The LCS and its associated database, the CRBIB, are identical in design, operation, and accessibility. The LCS is currently functioning on two levels: a servicewide system maintained in WASO and regional systems maintained on microcomputers in the cultural resources management division in each regional office. The servicewide LCS is maintained on an IBM mainframe computer at Boeing Computer Services, Vienna, VA, using an INQUIRE (U.S. Patent Number 3670310) database management system. At present there are approximately 13,000 structures on the LCS. Read-only dial-up access to this servicewide system is available to anyone within the National Park System with a 1200 baud rate modem. This dial-up access provides user friendly screens that allow the user to produce six specialized computer reports in a pre-designed report format that may print out in each regional office, center, or WASO. A pre-designed report on an individual structure may be printed on the user's own printer.

The regional LCS has developed after two years of enhancement, testing, and revision in each regional office and several selected parks. The regional LCS is a duplicate of the servicewide system but only contains data for the appropriate region. Data is added and corrected on the regional databases, then transferred to WASO and the servicewide system on a regular and continuing basis. Each region may select which park(s) can have a park-based system identical to the regional system so that data may be added and corrected at the park level, transferred to the regional system for review, and then uploaded to the WASO servicewide system. In this way all systems remain current. A dial-up access report system, similar to that available servicewide, is also available on the regional LCS. The regional LCS is maintained on an IBM or compatible microcomputer. Software is being converted from DataEase to dBASE III PLUS, the servicewide standard. We anticipate having all software and hardware development finalized in 1987. In addition, a user manual containing instructions for accessing the IBM mainframe and for completing and managing the regional

(and park) microcomputer systems for both the LCS and CRBIB will also be distributed in 1987.

### **The LCS in the Future**

Although the LCS is now considered finalized with regard to database specification, standard report formats, and data entry and update procedures, no database is ever truly final. The LCS should change and develop as uses and needs change and develop. A five-year review period will be mandatory to insure the continued growth of the LCS.

Many needs remain to be fulfilled. Detailed subsets, or catalogs, will be developed from the LCS database offering in-depth information on particular structure types such as landscapes, monuments and statuary, and historic interiors. Two new databases are proposed that will grow from and complement the information in the LCS. The first, the Historic Structures Preservation Guide (HSPG) database, will provide preservation maintenance and management information; physical condition and inspection data; and a routine, preventive maintenance and cyclic work list for the historic structures identified on the LCS. The HSPG provides the link between the inventory function of the LCS and the planning and action functions of directing work activities of the Maintenance Management System (MMS) for prehistoric and historic structures. The second database, the Historic Structures Assessment System, provides guidelines for an inspection methodology and checklist that will simplify preparing a Historic Structures Assessment Report (HSAR). This is the first analytical step in making decisions about the treatment and use of a historic structure. As these treatment decisions and their costs are finalized, this data will replace the same information in the LCS. Thus, the LCS identifies the prehistoric and historic structures requiring HSARs and the HSAR and its database provide the data necessary to update treatment type, use, and cost figures in the LCS. Accurate treatment costs have been a constant need for the LCS.

As the LCS faces this adolescent period, its possibilities for growth seem limitless. As it advances into maturity, the LCS should not only be a vital management tool for the National Park System, but also a valuable research tool accessible to professionals, scholars, and the general public.

Alicia D. Weber is a historian in the Park Historic Architecture Division. She is the database manager for the LCS and CRBIB databases.

# Cultural Resources Management Bibliography

**Sharman E. Roberts**

The Cultural Resources Management Bibliography (CRBIB) is a computerized servicewide inventory of over 8,000 reports documenting cultural resources within the National Park System. Developed from the "Preliminary Bibliographical Inventory of Park Historical and Architecture Studies" which contained all historical and architectural research reports in WASO, the bibliography was expanded, updated and computerized in 1975-77. Initially designed to assist cultural resources personnel on a park, region, or WASO level in tracking documentation, the CRBIB is also a valuable research tool.

The CRBIB lists reports located either in the park, regional office, centers, or WASO. These reports cover a variety of subjects: planning and management; history; architecture; archeology; ethnohistory; and curatorial studies. Information in the CRBIB can be retrieved by title, author, date, study type and location. The importance of the CRBIB is twofold: one, it informs the users of those reports available, making accessible unique information; and secondly, it serves as an indicator to managers of the current status of planning, action and research documents. This information can aid in the preparation of future documentation needs and help avoid duplication of studies.

Representing a vast source of research materials, it is important that the information contained in the CRBIB is accessible to the largest number of researchers and managers possible. The design of the CRBIB duplicates that of the LCS, its associated database. The servicewide CRBIB currently resides on an IBM Mainframe at Boeing Computer Services in Vienna, VA, using an INQUIRE (U.S. Patent Number 3670310) database management system. Regional CRBIB databases containing appropriate regional data, and allowing data entry and correction are available on IBM-compatible microcomputers in each regional office and selected parks. Originally developed on DataEase software, the CRBIB is now being converted to dBASE III PLUS which will be available in 1987. Like the LCS, the CRBIB contains several pre-designed computer reports that are available both on the servicewide and regional databases. A user manual documenting the CRBIB and LCS will also be released in 1987.

## **Reports**

Currently, copies of some reports are available on microfiche and/or hard copy through the National Technical Information Services (NTIS) and on microfiche through the Denver Service Center, Technical Information Center (DSC/TIC). In a more comprehensive effort to preserve and reproduce the reports on the CRBIB, the NPS entered into an agreement with Chadwyck-Healey, Inc., a private publishing company, to reproduce on microfiche all unrestricted reports on the bibliography. The information has been screened to prevent the release of sensitive data. During the past two years, over 5,000 reports have been filmed at no cost to the NPS. The first phase of the project, to be completed in the early fall, will release complimentary copies of the microfiche to the parks and regions. A master copy will be retained in the Washington office. The microfiche will also be available for purchase by universities, libraries, and the general public. The Chadwyck-Healey project is making it possible for unique historical information—reports and photos documenting the early development of parks and structures and reports illustrating restoration work of the 1930s and 1940s—to be released to a broader audience. It also insures an archival record of this invaluable resource. It is hoped that as more parks and regions become aware of the importance of this comprehensive microfiche project more "missing" reports will be added to the bibliography, which is to be updated annually. Ordering numbers for Chadwyck-Healey, NTIS, and DSC/TIC microfiche, as well as Government Printing Office (GPO)

stock numbers and Library of Congress catalog numbers are included in the CRBIB in order to give the user several opportunities for obtaining copies of reports.

It is now time for the emphasis for the CRBIB to shift from development to implementation. The goal for the CRBIB is to provide a comprehensive list, available to the NPS staff and the general public, of the large collection of reports illustrating the history and development of cultural resources within the National Park System. In order to make the CRBIB the most comprehensive and accessible database possible, it is important to coordinate with other NPS databases and for unique information to be preserved in a usable form. These reports, to be used by managers to better manage cultural resources and by researchers and scholars interested in NPS history and architecture, archeology, ethnography and museology, can only be enriched by their continued and increased use. The CRBIB is an effective means of sharing with the public our understanding of cultural resources and cultural resource issues.

Sharman E. Roberts is a historian with the Park Historic Architecture Division. She is responsible for maintaining the CRBIB and Chadwyck-Healey microfiche project.

# The National Register Information Systems

Mary J. Farrell

The National Register of Historic Places is the official list of the Nation's cultural resources worthy of preservation, and includes resources that are significant in American history, archeology, architecture, engineering, and culture. The National Register includes all National Historic Landmarks, all historic units of the National Park System, such as national historic sites, national battlefields, national battlefield parks, and national historical parks. Additionally, the National Register includes hundreds more individual cultural resources in park units which are primarily natural resource or recreation areas, such as historic lighthouses at national seashores, historic ships at Golden Gate National Recreation Area, and early log structures and bridges in natural parks.

The National Register Information System (NRIS) will eventually comprise at least five subsystems:

1. Listed Properties Subsystem (1986)
2. Determined Eligible Properties Subsystem (1987)
3. Pending Properties Tracking Subsystem (1987)
4. Records Inventory Subsystem (1988)
5. Records Circulation Subsystem (1988)

Data entry for the Listed Properties Subsystem was completed in August 1986. The database now comprises records on more than 47,000 listings representing more than 750,000 resources. (One listing, such as a historic district, can include many resources such as buildings, sites, structures, and objects.)

Each record in the subsystem contains 45 data elements, including the name, location, resource type (building, site, structure, object, district), nomination type (multiple or single), areas and periods of significance, architectural style, materials, and park code, and may contain up to 2,000 characters.

Park and regional personnel can use the NRIS to learn the status of pending NPS nominations and to conduct research for purposes of documentation, evaluation, or interpretation of park resources, by placing those resources in the context of a great number of comparable or related resources, in their immediate area, in other parks, in other parts of the country, or in the country as a whole. Those developing documentation for park properties already listed on or determined eligible for the National Register can use the system as an index to look for examples of documentation of similar park properties nominated in the single (individual properties and districts) or multiple property format.

## Access

Editing of the "Federal Register level" data (name and location) is now being done in conjunction with the state historic preservation offices and the National Conference of State Historic Preservation Officers (NCSHPO). As of June 1987, corrections had been made to approximately 70 percent of the data. It is anticipated that editing of name and location data will be completed by the end of FY 1987. Accordingly, National Register staff is now preparing to provide access to NPS park and regional personnel. User's manuals and access codes will be mailed to regional offices for distribution to parks during the last quarter of the fiscal year.

NPS personnel already have on-line access, through the NPS COMMON Database, to information on park resources listed on the National Register. A National Register "module" for COMMON was created in FY 1986 so that park, regional, and WASO personnel could inter-relate that National Register data with other park information in the COMMON Database, such as park acreage, visitation statistics, and natural resource information. The National Register module in COMMON also includes information on whether National

Register documentation has been completed for each of the listings. Standard reports in the COMMON "report library" enable the user to organize data and generate printouts of National Register data by park and region. For further information on COMMON, users should contact Kevin Killeen, WASO Information and Data Systems Division, FTS-343-4463, or their regional information coordinators.

Both the NRIS and the COMMON Database are maintained on the WASO Hewlett-Packard superminicomputer, which is managed by the Information and Data Systems Division. The minicomputer has a communications facility that allows it to be accessed by telephone through GEONET, the Interior Department's nationwide communications system, using any microcomputer or computer terminal that has a modem and communications software. The National Register system is currently the largest system on the minicomputer. Hewlett-Packard software employed by the NRIS includes the Image 3000 data base management system, the View-3000 subsystem, and RELATE, a relational database management system for the NP-3000. Data entry is done through screen entry. The programs are menu-driven using COBOL, SPL, and RELATE.

The National Register, in cooperation with the Smithsonian Institution, is currently conducting an Optical Disk Pilot Project to test the concept of using optical disk technology to make copies of National Register documentation available to park and regional personnel. The project began in 1986 with the test filming of some National Historic Landmark documentation. The results will be evaluated this fiscal year.

Mary J. Farrell is Technical Information Specialist and Chief, Information Management Unit, Interagency Resources Division.

# HABS/HAER Database: A Cooperative Project

**Ellen Boone Minnich**

America's historic buildings and structures are vigorous evidence of our Nation's past. To understand what these buildings and structures can tell of the past, to put that knowledge in perspective, and to insure that records remain of those buildings and structures that are demolished, it is necessary that these historic buildings and structures be properly documented.

This approach of preservation-through-documentation of America's historic architecture and engineering accomplishments has been led by the Historic American Buildings Survey (HABS) and the Historic American Engineering Record (HAER). Since 1933 and 1969, HABS and HAER, respectively, have been producing this documentation in the form of architectural measured drawings, large format photographs, and written data. After the documentation is edited in the HABS/HAER office, Washington, it is transmitted to the archival HABS/HAER collections housed in the Prints and Photographs Division, Library of Congress, Washington. The two collections contain over 45,000 measured drawings, 119,000 large format photographs, and 65,000 pages of written architectural, engineering and historical data. These records provide information on more than 21,500 buildings and structures in all 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands.

Early in the 1980s, it became apparent that a comprehensive listing of all the buildings, structures, and sites in the HABS/HAER collection was desperately needed. Computerization of the two collections occurred in late 1982. By that time over 16,000 buildings or structures had been recorded and included in the HABS and HAER collections. The automated information database has been used extensively since then as an inventory, tracking, and management system for everything in the HABS and HAER collections.

## **Data**

The HABS/HAER database is a cooperative undertaking between the Prints and Photographs Division of the Library of Congress and the HABS/HAER Division of NPS. The HABS/HAER database is supported by the RELATE/3000 relational database management system and runs on the National Park Service's Hewlett-Packard 3000 minicomputer in Washington. Data input is made by personnel of the Prints and Photographs Division and the HABS/HAER Division. The objective of the database is to provide a source of basic information about the buildings and structures in the two collections, including names and locations, types and amounts of documentation, unique identifying numbers for each, and file location information for the documentation of the collections. Other information in the database includes names of people and organizations associated with the building or structure (i.e., architect, engineer, builder, designer); date of completion, alteration, demolition; and historic and subsequent uses. Future plans include information on exterior materials, structural systems, microfiche and microfilm numbers where the documentation may be viewed. In the longer term it may be possible to integrate this database with video disk depictions of the HABS and HAER collections. The Library of Congress has been active in experimenting with video disk applications for picture collections.

One of the first major reasons the collections were computerized was to publish the comprehensive listing of their contents, the first since 1941. Since then the database has been expanded, maintained and updated as the primary catalog and identification resource for the collections. Automated acquisition and transmittal reports, collection statistics, and reports listing the entire contents of the collections are produced on a regular basis for use by the Library of Congress and the HABS/HAER office in responding to the many inquiries

about the collections. Also, computerized reports are provided by the HABS/HAER office to the NPS regional offices, the State Historic Preservation Officers, and other individuals as necessary. The Prints and Photographs Division of the Library of Congress accesses the HABS/HAER database from a terminal located there. Three view screens exist for each record in which the Library inputs specific filing information.

By querying the database, information can be gained about specific types of structures, e.g., lighthouses recorded by HABS/HAER, buildings with which a certain architect is associated, all records in the collections with the same geographic locations.

The documentation in the two collections is in the public domain. Inquiries about the documentation in the HABS and HAER collections should be directed to Mary Ison, Prints and Photographs Division, Library of Congress, Washington, DC 20540 (202/287-6399). For inquiries concerning the database, contact Ellen Minnich (202/343-9599).

Ellen Boone Minnich is Collections Management Specialist, HABS/HAER.

# Automated National Catalog System

**Ann Hitchcock**

The Curatorial Services Division is introducing the Automated National Catalog System (ANCS) to accession and catalog its vast museum collections that number over 25 million objects. The ANCS has a cultural component which will be used to catalog collections that include history, archives, fine arts, archeology and ethnography; and a natural history component to catalog biology, geology, and paleontology specimens. Field-generated data such as field notes, photographs and media files are accommodated in the system.

The ANCS, a microcomputer-based relational database management system can process large volumes of museum records that will be entered in over 300 park museums throughout the United States. The ANCS uses dBASE III PLUS software and requires MS/PC DOS 2xx or higher, 384 K (RAM), and a hard disk drive. It has the capability for future networking and centralization of records at regional and national levels. This user-friendly system validates discipline-specific and collection management data and produces a variety of standard reports on fields such as collection provenience and object condition, as well as scientific and common names and can readily produce ad hoc reports on selected data elements such as material, photo number or eminent figure association.

Standardization of certain data fields facilitates universal searches, researcher access to collections data, inventories and accountability for cultural and natural history collections. The classification system is applicable to cultural objects and natural history specimens from throughout the U.S. Because of its wide-ranging application the system will be of interest to other museums. In accordance with the Freedom of Information Act, the ANCS program disks and accompanying user manual will be made available at cost to the public by the end of 1987.

Updates will be issued on a regular and continuing basis to registered NPS users. Future versions will include multi-user and networking capabilities.

Ann Hitchcock is the Chief Curator of the National Park Service and Chief of the Curatorial Services Division.

# Inventorying Maritime Cultural Resources

**James P. Delgado**

The United States has always been a maritime Nation, depending on ships for trade, commerce, defense, communication, national expansion, recreation, and transportation. In the fabric of American history, maritime activities and culture have been a pervasive thread. This is particularly represented by the range and scope of maritime cultural resources preserved in the U.S. Unfortunately, many of these reminders of America's maritime past are in danger. Historic ships rot and threaten to sink at their moorings, maritime artifacts and archives languish in need of adequate conservation and cataloging, historic lighthouses tumble into the sea, and shipwrecks are wrenched from the bottom by dredging, or are looted by treasure hunters.

A national emergency exists in maritime preservation. While historical and archeological resources elsewhere in the country have received the attention of the historic preservation movement over the past 20 years, maritime resources have largely been ignored. Less than 200 historic vessels are listed on the 47,000-entry National Register of Historic Places. Generally accepted standards and guidelines for the preservation and maintenance of historic vessels do not exist. Many Americans who would ordinarily blanch at the thought of pothunters plundering a prehistoric archeological site, condone the destruction of historic shipwrecks by treasure hunters using deflected propeller blasts and dynamite. Innumerable memories of the nautical past and maritime folkways disappear forever as scores of elderly sailors, shipyard workers, fishermen, shipwreck survivors, and the last practitioners of maritime crafts and folklore meet the limits of their mortality.

## **Directive**

Increasing requests for assistance and funding ultimately led to a special Congressional directive, now known colloquially as the "national maritime initiative." In the 1985 NPS budget appropriation, Congress directed the NPS to work with the National Trust for Historic Preservation and the maritime preservation community to inventory the Nation's maritime resources, and recommend priorities, standards, and appropriate government and private sector roles for their preservation. To meet these responsibilities, the Service's History Division created a special adjunct office at Golden Gate National Recreation Area in San Francisco. Golden Gate was selected because of the park's leading role in the Service's maritime preservation activities and the park's management of the historic fleet, collections, library, and archives at the National Maritime Museum, San Francisco. Over the past year, the office, also known as the National Maritime Initiative, has accomplished a significant portion of the task outlined by Congress. These activities, which were fully discussed in a previous issue of the *CRM Bulletin*, need not be reintroduced here.

The major job of the initiative, and the longest-running, is the task of inventorying maritime cultural resources. The diversity and large numbers of maritime cultural resources compelled an initial sorting of eight categories: large preserved historic vessels (greater than 40 feet in length or 20 tons measurement), small craft, shipwrecks and hulks, aids to navigation, maritime complexes, maritime documentation collections (archives, libraries), maritime artifact collections (including preserved, memorialized parts of historic vessels), and intangible resources (folklore, skills-training programs). The inventory was then divided to address each category separately.

After some discussion, it was decided that the best means of creating an inventory which could readily expand and change, while offering sorting and analytical capabilities, was by computer. The program selected was Ashton-Tate's dBASE III PLUS. The benefits of the program are many; dBASE is a long-running program which has evolved through use. The program now offers easy access for first-time users as well as sophisticated

features for experienced users. It works quickly, pulling from a variety of files, can be modified to reflect changing needs, and is readily accessible and commonly used around the country. The dBASE III PLUS program used by the National Maritime Initiative is IBM compatible, and can be accessed by system users through a modem. To facilitate data input, the initiative uses a Compaq personal computer with a hard card and a Hayes 1200 baud internal modem. The 32-pound Compaq can be lugged around the country in search of maritime resource inventories and information.

After consulting with maritime historians, archeologists, preservationists, and museum professionals and state offices of historic preservation, specific formats for each category of the initiative inventory were developed. Sample formats for shipwrecks and hulks, small craft collections, and maritime complexes are illustrated. The principal goal of the inventory is to provide a basic review of pertinent data about the maritime resources. The inventory is drawn from existing sources of information— National Register forms, state inventories, and lists prepared by museums and professionals. No physical inventory activity is being conducted at this time.

## **Data**

The first category of the inventory to be completed in its preliminary form is the inventory of large preserved historic vessels. With some 215 vessels inventoried, dBASE allows for easy modification of existing files, such as deleting one historic schooner dismantled last year, or adding a Great Lakes freighter overlooked in the initial effort. Printed and distributed around the country to the owners and managers of the vessels, as well as State Historic Preservation Officers and others, the inventory is improved as errors are noted and corrected and gaps in the information base are provided. Perhaps the most significant aspect of the large ships inventory is through the basic analysis that dBASE provides. With a few fast maneuvers with the keyboard, lists can be retrieved and sorted to offer a chronological, geographical, or typological assessment of the vessels in the inventory. Graphic displays also provide accurate, informative, and analytical means of seeing just how the "pie" is cut when it comes to large historic vessels.

At this writing, hundreds of shipwrecks and hulks, lighthouses, complexes, small craft, and maritime documents and collections are being added to the inventory. By the end of the summer, a preliminary inventory of the historic maritime resources of the United States, with several thousand entries, will be released for major national review, correction, and addition. The completion of this draft inventory will not be the end of the job. Rather, it will be a significant beginning for a national database, maintained by the NPS, accessible to the maritime preservation community, which can serve the needs of planners, preservationists, researchers, and managers. The inventory is cross-referenced to the NRIS, LCS, HABS/HAER, CSI *and* can also be integrated into state inventories using dBASE.

As the inventory of historic maritime resources develops, it will become a strong preservation tool, aiding State Historic Preservation Officers and others in identifying logical candidates for state landmark studies, National Register nominations, and NHL studies. The loosely-knit maritime preservation community can better link with each other as the true nature of the maritime preservation "universe" is charted. Researchers working to assess or document a specific maritime complex or shipwreck can find similar sites for comparative study, or locate appropriate sources for further research. Managers grappling with complex preservation issues have a source to turn to when they seek answers to problems others have faced and perhaps resolved. And, in the long run, the serious business of deciding who gets the limited funds and attention available will probably best be started by analyzing the heartwood and the deadwood of maritime cultural resources through the facilities of the inventory.

James P. Delgado is the Acting Maritime Historian, National Park Service.

# NHL In-Depth Inspection Methodology

**Jean E. Travers**

Since 1985, a number of deteriorated and damaged National Historic Landmark (NHL) buildings have been selected each year to be inspected by a team of architects, historians and engineers using a standardized inspection methodology based on a microcomputer database program. These in-depth inspections are funded and coordinated by the NPS as part of its technical assistance efforts on behalf of endangered National Historic Landmarks.

The need for more in-depth inspections was identified through ongoing NPS monitoring and technical assistance efforts to NHLs. Over the last several years, it has become increasingly apparent that severe building deterioration resulting from inadequate maintenance is the greatest threat to NHL buildings; it accounts for approximately half of all NHLs reported to Congress each year as seriously damaged or threatened. These buildings are often privately owned, either by individuals or non-profit groups, and usually cannot take advantage of the Federal tax incentives for historic buildings. Many of these NHL owners do not have the technical expertise to identify the preservation work needed, the money needed to undertake the work, or the capability to tap sources of financial assistance. The NPS lacked detailed information on the specific preservation needs of endangered NHLs, making it difficult to respond to inquiries from potential donors regarding projects worthy of funding.

The use of a microcomputer database program allows in-depth inspections to be performed in a timely and cost-effective manner. Information is quickly compiled in a consistent format on the condition of the building, thereby allowing comparisons between buildings and comprehensive cost figures to be easily and accurately prepared.

The program also generates a condition assessment report based on the inspection. These reports are made available to Landmark owners, preservation organizations, and interested public and private groups. Each report contains an analysis of the condition of the Landmark, recommendations for corrective measures, and estimated costs for preservation. These reports are an important planning document used by Landmark owners to prioritize work needs; they also serve as useful documents in fundraising efforts.

## **Methodology**

This computerized methodology was developed by the Georgia Institute of Technology under the guidance of the Preservation Assistance Division. It is derived from the Building Inventory Inspection Program (BIIP), also developed by Georgia Tech for the Engineering and Safety Services Division for use in inspecting and estimating maintenance costs for non-historic, NPS-owned park buildings. Significant changes were made in the methodology and report format to accommodate data collection on the historic significance and building materials of NHL buildings.

Using a standardized list of 208 building elements ranging from site work to mechanical systems, and including concerns such as fire and life safety, the inspection team examines the building and identifies and evaluates each building element. The team describes each of the building elements on preprinted building inventory sheets, and using standardized definitions, ranks the historic significance of each element, identifies the quantity of material, and determines its condition. Slides are taken of both the interior and exterior of the building. Major dimensions of the building are taken in order to prepare scale drawings of the floor plan. The inspection should take approximately one day to complete, depending on the size and complexity of the building.

When the team returns to the office, needed repairs are ranked, beginning with the most urgent. Work recommendations and cost estimates are also prepared. Simple scale drawings

of the floor plans and a site plan are made. Rooms and features of primary and secondary historic importance are identified. Data from the completed building inventory sheets and work write-up sheets are entered into the computer. The computer program compiles this information and prints a building condition assessment report.

Approximately 34 NHLs nationwide, ranging from the adobe semi-ruins of Warner's Ranch in California to the turn-of-the-century stone castle "Grey Towers" in Pennsylvania, have been inspected to date using this methodology. Although the basis of this computer program is a standardized inventory of building elements, it is flexible enough to be adapted to a variety of building sizes, styles and materials. The reports have been extremely useful, according to several NHL owners. They have provided prioritized work needs and cost estimates for a relatively low cost to the NPS (an inspection and report cost approximately \$5,000 for each building). NPS-funded inspections have enhanced perceptions of the building's importance, and have given credence to fundraising efforts within several communities.

The methodology was implemented in 1987 in the five regional offices responsible for external cultural programs. Presently, NPS regional offices expect to perform approximately 10 inspections each year on deteriorated or damaged NHL buildings. The methodology is being modified once again by Georgia Tech for the Park Historic Architecture Division for use on historic, NPS-owned buildings. The software and user's manual are scheduled for completion by April 1988.

A Preservation Tech Note on the development and use of the NHL methodology is planned within the next six months and will be included in the *CRM Bulletin*.

Jean E. Travers is an architectural historian with the Preservation Assistance Division, working to monitor and provide technical assistance to endangered National Historic Landmarks.

# The National Natural Landmarks Program Database

**Wendy E. Ormont**

This year, the 25th anniversary of the National Natural Landmarks (NNL) Program, heralds the beginning of new friendships and working relationships with other programs within the NPS, other Federal and State agencies, private organizations, as well as the general public. The key to establishing these relationships is better communication. The means is the creation of programmatic links through increased sharing of data. Our objective, through information management, is to encourage the integration of natural landmarks data into public and private planning and decisions to help protect these unique sites.

Cultural resources managers may wonder, first, what the National Natural Landmarks Program is, and second, why *natural* landmarks are included in this publication on cultural resources management. The National Natural Landmarks Program, organizationally under the Associate Director, Cultural Resources, was established in 1962 to encourage the preservation of the best examples of the major biotic communities and geologic features in the continental United States, Hawaii, Puerto Rico, the Virgin Islands, Guam, the Commonwealth of the Northern Marianas, American Samoa, the Federated States of Micronesia, and the Republics of Palau and the Marshall Islands. This article is intended to let cultural resources managers learn more about the National Natural Landmarks Program, which in several ways, parallels NPS cultural resources management programs.

## **Registry**

Like other Cultural Resources programs, the NNL Program is a "registry" program which identifies, evaluates, and officially recognizes nationally significant resources, including those that are located outside units of the National Park System. Natural areas which are determined to be nationally significant and to meet National Natural Landmark criteria are designated by the Secretary of the Interior. These sites comprise the National Registry of Natural Landmarks. To date, 578 areas have been designated as National Natural Landmarks and over 3,100 sites are under consideration.

The selection of sites for NNL designation is based on data from regional inventories and comparative on-site evaluations of natural areas in each of the 33 physiographic provinces of the U.S. Because the selection of NNLs is not constrained by agency jurisdiction or administrative boundaries, the NNL Program has identified and designated sites administered by almost every land managing agency of the Federal Government, as well as State, regional, county and municipal governments, Indian lands, and private property. In some cases, National Natural Landmarks are situated close to culturally important resources, such as the Salt River Bay NNL and the Columbus Landing Site National Historic Landmark (NHL) in the Virgin Islands. Viewed holistically, the NNL comprises the environmental setting for the historical and archeological resources of the NHL. Together, the two designations offer more cogent evidence for resource protection in the area.

## **Data**

In addition to extensive manual files and a library of 70 published natural regional and theme studies, the NNL Program maintains the NLIS, the program's primary computer database, and has a module within the NPS COMMON Database. The database comprises one of the most comprehensive sources of information on significant natural areas in the Nation; no other nationwide database contains information for both ecological and geological sites regardless of ownership or administration. Also, the program is developing a new data-

base on a microcomputer for monitoring and reporting on the condition of designated national natural landmarks and resource threats.

Operational since about 1980, the NLIS uses an IMAGE database management system on a Hewlett-Packard 3000 minicomputer. It contains three types of information, including (1) descriptive information about each site, such as its name, location, size, ownership type, and significant resource types contained on the site; (2) administrative data for tracking and documenting the site review and designation process, including the dates for initial consideration of the site, evaluation and peer review, public notification, and designation or inactivation of the site; and (3) the "Section 8 history" of the site; that is, summary information indicating whether each site was ever listed as threatened or damaged in the annual "Section 8 Report" to Congress, and if so, the year (1977-1986) and general reason for listing. In summary, the database includes 74 data elements for 3,915 records, with a maximum database size defined to be 5,000 records.

The NLIS is a servicewide database in that all NPS regions have direct, on-line access. This year, we trained our designated NNL coordinators from each NPS regional office on how to produce reports using the NLIS, in hopes of stimulating greater use of the data within the NPS, and of providing better response to local information needs. Information from the NLIS often is requested by other Federal and State agencies, county and municipal governments, private conservation organizations, businesses, and the general public, for such purposes as natural areas inventory and management activities, transportation planning, environmental impact assessment, or simply to satisfy general interest.

In 1986, the NNL Program added a module on natural landmarks to the NPS COMMON Database. Users of the COMMON Database may run a standard report on natural landmarks that are located wholly or partially in units of the NPS. Users may run the report for designated or potential NNLs, or both, and may select the area of coverage, including all or specified NPS regions or parks. The report provides the site name, state, status, type of ownership, and the significant resource types on the site. Anyone who has a microcomputer or "dumb" terminal connected to a modem and standard communications software may access COMMON and the Natural Landmarks module.

### **Preservation Tool**

Under Section 8 of the General Authorities Act of 1970, as amended, the NNL Program monitors the status and condition of natural landmarks, and submits annually to Congress (in conjunction with the NHL Program) a report listing and describing threatened or damaged landmarks. Currently, the NNL Program is designing a "Section 8" database on a microcomputer using dBASE III PLUS software, which will expand and replace the "Section 8 history" portion of the NLIS.

Although this new database will be relational to the NLIS, we hope, eventually, to integrate the NLIS and the Section 8 database into one system. This new database will be used to maintain annual records of threats or damages to resources within natural landmarks, and will enable us to monitor the condition of all sites over time, not just those listed in the Section 8 Report. Also, it will provide a classification framework for reporting threat and damage to NNLs. When implemented, the database will be used to generate an annual statistical summary, which will enable analytical assessment of the effectiveness of program activities toward the preservation of designated sites.

The NNL Program wants to ensure that its information on national natural landmarks has the broadest use possible.

Wendy E. Ormont is an ecologist and the database manager for the National Natural Landmarks Program, Interagency Resources Division.

# Historic Preservation Tax Incentive Projects: Tracking Systems and Databases

**Betsy Chittenden**

Since the first law providing tax incentives for rehabilitating historic buildings was enacted in 1976, more than 17,000 buildings have been rehabilitated. No single computer system exists with complete data on all these projects. Instead, the "tax incentive program computer system" is really a decentralized network of separate manual and computerized systems in four NPS regional offices, WASO, and the National Trust for Historic Preservation. While each system started with similar basic requirements, each has evolved in response to particular conditions and circumstances, and has been tailored to the specific office that it serves. This article gives a brief tour of the various computer systems that contain information on tax incentive projects. Also included is a chart showing which of the major computer systems contains what piece of information, and whom to call in each place with questions.

## **Applications**

Five NPS regional offices review tax incentive project applications: Alaska (ARO); Mid-Atlantic (MARO); Rocky Mountain (RMRO); Southeast (SERO); and Western (WRO). The computerized systems in these offices are the foundation of the overall tax incentive computer system, containing both descriptive information and project tracking data. The regional offices must review tax incentive projects and certify that the building is historic and the rehabilitation work meets certain standards (set out in the Secretary's Standards for Rehabilitation). Depending on the project, up to three application forms may be involved, and several years may pass between the submission of the initial application, which may be submitted before construction work begins, and the final application, submitted when the project is complete. Accurate project tracking and record keeping are obviously extremely important in administering the program efficiently.

The regions must also collect descriptive information on projects, such as the building's size, the estimated cost of the project, and the use of the building after rehabilitation. Descriptive information on tax incentive projects is used primarily by WASO for policy, planning, and overall management decisions. The information is collected directly from the various project applications, entered into the regional systems, and used to generate reports that are periodically sent to WASO.

Currently there are computerized systems operational in three of the five regional offices that handle tax incentive projects. The RMRO was the first to take the plunge when, in 1982, they implemented a system on the mainframe Datapoint computer, written in Databus. This system, which underwent a major revision in 1985, is the leanest of all the regional systems (see chart). It contains the descriptive information to WASO, and minimal project tracking information—much of the project tracking is done manually. This is feasible since RMRO handles only about 20 percent of the nationwide total of 3,000 projects per year. The WRO, which typically handles less than 5 percent of the total projects, has tried several systems with mixed results. Currently they are developing an RFP to design a new system. The ARO, with only a handful of projects each year, does everything manually.

In contrast, the system in SERO and MARO, which handle about 30 percent and 50 percent of the total projects respectively, are set up to do complete project tracking. In both systems the entry screen on the computer, when printed out, actually becomes the project cover sheet that accompanies the file. SERO's system, called "HIPS", was recently updated from dBASE II to dBASE III PLUS. It is unique in that it runs on a local area network of IBM-compatible PCs. MARO's system, started in 1985, is the newest of the three, and the most extensive, containing data elements not collected by any other region, such as the date

the building was constructed. MARO's system is written in Oracle and runs entirely on a single IBM-AT clone, with external hard disk drive (to handle their large data volume).

## Reports

WASO's Preservation Assistance Division does not maintain any master database containing data on individual tax incentive projects. Its major task is to take the information reported by the regions, analyze it, and produce reports and other information documents. PAD uses a variety of software on an IBM-XT clone to do this, including programs written in dBASE III PLUS (done both in-house and on contract), Symphony spreadsheet and graphics, and NWASStatpak statistical software. Since writing reports is a major WASO function, several word processing packages are used with a laser printer to produce high quality reports, fact sheets, and information bulletins. One small but important tax incentive database maintained by WASO is that of appealed projects— projects that are denied certification in the regional office and appealed to the Washington office.

Finally, there is the National Trust for Historic Preservation's PRIME database. The PRIME database had its genesis in the large PRIME econometric project, which was begun in 1984 when the tax incentives program was under increasing threat of being eliminated or reduced. PRIME's original purpose was to use statistical and econometric methods to analyze the effects of the tax incentive program, and to develop information to defend it on Capitol Hill. In order to do this, a very complete and detailed database of tax incentive projects was needed. Although using the information already in the NPS regional computer systems was considered, it was quickly apparent that the differences in their design would be technically difficult to overcome, and that PRIME needed more information than the regional systems contained. So the Trust started from scratch to collect descriptive information about all the tax incentive projects, nationwide, from the program's beginning. Since they were interested in how different types of buildings fared under the program, and what tax provisions were in effect when the owner applied, they collected very complete descriptive information, and almost none of the tracking information used in the regional systems (see chart). The PRIME database now contains information on all projects nationwide from 1977 through 1985, and is being continually updated. Originally developed using dBASE III on an IBM-PC, PRIME is now in RPG3 on an IBM System 38 mini-computer. The Trust has just completed designing a series of standard reports from PRIME, and by the time this article appears these reports should be available on request at either their regional offices or in Washington.

In 1987, then, there are four computerized information systems on tax incentive projects (in MARO, SERO, RMRO, and the National Trust), and one being developed (in WRO)—all of different design, software, hardware, and, to some extent, purpose. Over time, there has been an improvement in both system design and compatibility, as systems are redesigned and updated. The National Trust is exploring ways to download data directly from MARO's database to PRIME. People often ask if there will be one unified, national "tax incentive project database"? But one might ask if there is a need for such a database that justifies the cost of creating one? While all these systems could be improved and refined, they generally work reasonably well for the purposes for which they were designed, and many of the functions of a national database are fulfilled by PRIME.

Betsy Chittenden is a program analyst with the Preservation Assistance Division WASO.

# The Historic Structures Preservation Database

**David G. Battle**

In 1986, a series of hearings were held in Washington by the Office of Technology Assessment (OTA) pertaining to historic and prehistoric preservation technologies.<sup>1</sup> One of the major findings of these hearings was that "efficient access to (preservation) information remains one of the greatest impediments to effective management of cultural resources."<sup>2</sup>

In the 21 years since the enactment of the National Historic Preservation Act of 1966, the NPS has given considerable attention to the education of park staffs and the general public on the subject of historic preservation, but it has often been accused of paying too little attention to the development of technical capabilities. In fact, there wasn't too much technical information available anywhere 20 years ago. Today, it's a different story, and NPS preservationists have been instrumental in the development of much of that technology.

Today, as recognized by the OTA study, the problem is not so much one of a lack of technical information, but rather, the communication of that information. Where can one go for that "efficient access" to technical preservation information?

The NPS has not been unaware of this problem. In the mid-1970s, when the need for information about the preservation maintenance of historic and prehistoric structures became recognized, the lack of such information was painfully evident.

NPS preservationists were equal to the task, however, and began to develop this information, assembling it into various Historic Structure Preservation Guides (HSPGs). But researchers might not know of the development of a particular piece of information by someone else, and find themselves "reinventing the wheel" as they attempted to develop the same information for some other park.

In 1984, the Park Historic Architecture Division, WASO, contracted with an architectural firm specializing in historic preservation to review all of the HSPGs that had been produced as of that date, and to assemble a composite, computerized HSPG database of preservation maintenance information on the various subjects covered by those guides. This project was completed in 1986. Although it did bring a lot of useful information together in one place, it did not provide the "efficient access" to that information that the OTA felt essential.

## **Database**

As a result, I was asked to assemble the data into a more usable form. The obvious advantage to this was that, as a historical architect, I understood what information was needed; as an experienced programmer, I could devise ways to provide it. The outcome is the Historic Structures Preservation Database (HSPD).

The HSPD not only incorporates all of the data from the HSPG database, but a full range of technical preservation information needed by professional historic preservationists. Consequently, its importance has expanded far beyond being just a reference for preservation maintenance procedures, to a reference system on various materials and structural types; the causes of their deterioration; the monitoring of that deterioration; and major repair techniques. Although the information it contains is necessarily a synopsis, assembled from a number of sources, those sources are completely referenced. Thus, in addition to the information itself, the database contains an extensive technical bibliography that can also be searched according to various topics. Finally, the database contains a list of NPS employees who are considered to be experts on various topics, which can also be searched according to various criteria.

The software will run on any IBM-compatible personal computer with dBASE III or dBASE III PLUS installed on it. It is quite user friendly. Information may be searched by bibliographic references, maintenance information, definitions, descriptions, and materials

specifications. The subject may then be further specified by any combination of structural component, material type or component, or problem associated with the component or material. Bibliographic data or information about experts in a given field may also be searched by name. In the case of the experts, a search by location, special skills, and language abilities is also possible. The software, data, and subsequent revisions will be supplied on 5 1/4" 360 kilobyte floppy computer diskettes. The system will be accompanied by an illustrated and easy-to-follow user's manual. The HSPD system is 90 percent complete, needing only streamlining, testing, debugging, and data entry.

It is anticipated that the software will be complete and sufficient data entered into the system so that, by the time funding becomes available in FY 1988, the system can be installed in the regional offices, WASO, and the Denver Service Center.

### **Access**

Access will be limited to these areas for several reasons. First, to efficiently make the system available to everyone would require a mainframe or dedicated microcomputer that could be accessed from various offices by use of a modem connection to their own computer. Until the system is thoroughly tested and its usefulness established, this would be an unwarranted expense. Secondly, it would be very time consumptive and expensive to make data available on floppy diskettes to all 337 parks plus the various regional and center offices. If offices wish to make the data further available to the various parks or other offices in their region, they may do so. Thirdly, a large percentage of the information contained in the database may not be applicable to a given park because it contains information about a very broad range of materials and building types. This information must also be somewhat generic in nature, because the database cannot possibly contain specific information such as mortar mixtures and paint colors for each park. For this reason, a separate system that can draw on information from the HSPD, be customized to a particular park, and be compatible with the servicewide Maintenance Management Program is slated for development in FY 1988. In effect, it will be a computerized HSPG.

### **Review**

Information contained in the HSPD is subject to review by the various preservation offices in the regions, the DSC, and WASO before it is made available. Such reviews will take place three or four times a year. Changes resulting from the reviews will be incorporated in the next release. In case of disagreement between various reviewers, final decisions will be made by me as keeper of the database and/or the Park Historic Architecture Division.

The system is intended to be an information base created and used by professional historic preservationists. The information that is entered into it, and the accuracy of the data, depends on the input of various users. Therefore, appropriate contributions are earnestly solicited. Contributions may be sent to: David G. Battle, Senior Historical Architect, Division of Professional Support, DSC.

David G. Battle is Senior Historical Architect, Division of Professional Support, Denver Service Center, and keeper of the HSPD.