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CONTENTS

Technological Nominations	1
Historic Bridge Preservation at the Community Level	1
New Usefulness from HABS Catalogs	5
Main Street Project Implemented ..	6
Publications	6

TECHNOLOGICAL NOMINATIONS

Ways to Expedite National Register
Review

by Isabel T. Hill

Records Assistant, HAER

More and more industrial and engineering sites are being nominated to the National Register of Historic Places. HAER works closely with the National Register to review and evaluate these nominations, and to draw pertinent data from the forms to place in its nationwide inventory of historic technological sites. During this review, HAER often encounters National Register forms that inadequately describe these sites. Because most SHPOs do not have someone trained in the history of technology or industrial archeology, nominations of industrial or engineering sites are often written by staff members reluctant to address directly unfamiliar aspects of technology. Authors tend to assess the merit of these properties the way they assess the merit of purely historical or architectural properties. However, the appropriate evaluation of industrial and engineering structures requires a different methodology and perspective.

Description of Industrial Sites

Many industrial buildings are indeed of architectural merit; others are nondescript shells. In both cases it is important to document not only the appearance, dimensions, and condition of a building but also the

continued on page 4

Historic Bridge Preservation at the Community Level

Two Perspectives

by Donald C. Jackson
Civil Engineer, HAER

With the extensive bridge replacement programs (see 11593, Nov. 1977) advocated by many transportation industry interests and the almost certain passage of federal legislation providing millions of dollars for their implementation, the future of historic bridge preservation is not bright. However, there are two bridge preservation situations now evolving in America that reflect two different approaches to the problem of keeping historic bridges in operation.

The first is in Hawaii where the State Department of Transportation and a citizens' group are disputing the need to replace a number of bridges on Kauai Island. The second is in Frederick County, Maryland, where the county

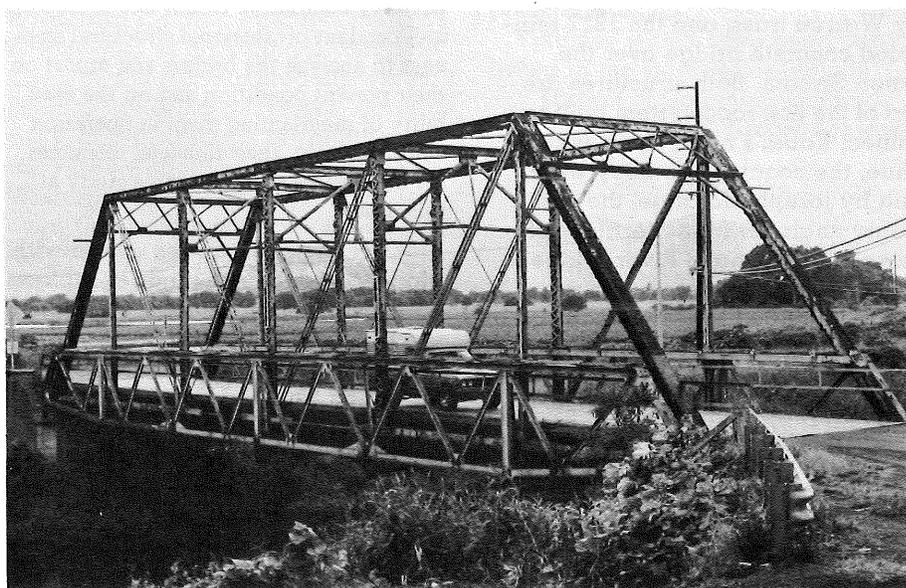
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Photo: Donald C. Jackson, HAER



Poffenberger Road Bridge (1878). This Double Intersection Pratt truss was the oldest truss bridge inventoried in Frederick County. The structure is still in its original location and has been nominated to the National Register.

Photo: Donald C. Jackson, HAER



The Hanalei River Bridge is one of the few remaining bridges in the US fabricated by the Hamilton and Chambers Company of New York. The ca. 1960 auxiliary Warren pony truss which supports the entire original structure is clearly evident.

Bridges from page 2

highway department and the county department of historic preservation are working together on a program of historic bridge preservation. These particular situations are presented because they concern community efforts to preserve a group of historic bridges rather than just one structure. They illustrate the difference also between "fighting" and "cooperating" to save these important historic resources.

Controversy on Kauai Island, Hawaii.

Residents on Kauai Island, Hawaii, have formed the North Shore Belt Road Citizens' Advisory Committee to contest the Hawaii State Department of Transportation's plans to replace numerous bridges in Hanalei Valley. In October 1977, following years of controversy in which citizens of the valley repeatedly expressed their desire for a sensible program of bridge rehabilitation and maintenance, the state DOT announced their intention of using Federal Highway Administration funds to replace many of the existing bridges with new structures.

The most historically significant structures the DOT plans to destroy are also the first two bridges leading into the Hanalei Valley. Citizens believe these bridges are of great importance in preserving the rural and rustic environment of the area. As shown in these photos, these are the 1912 Pratt through truss over the Hanalei River, which has been structurally strengthened with an auxiliary Warren truss, and the 1912 reinforced concrete bridge over the Waioli Stream. Both structures are part of the first road system built to connect Kauai's north shore with Lihue, the county seat. They were built by Joseph Morange, the first county engineer in the territory of Hawaii. The Hanalei River bridge is the oldest American-made truss bridge identified in Hawaii. The Waioli River bridge is among the oldest reinforced concrete structures in the state, and admirably reflects the great heritage of the Hawaiian concrete industry. Because of its mild climate, Hawaii is called "concrete heaven," and the state is widely recognized as a leader in the development of innovative concrete technology.

The citizens' advisory committee believes the state's reasons for replacing these bridges are inadequate. It claims that the state study of the Hanalei River Bridge made in 1971 ignored the auxil-

iary Warren truss in determining that the structure needed replacement. It also believes the DOT statements contending that reinforced concrete necessarily has a life span of 50 years are in direct conflict

Photo: C. Kurt Holter, Frederick News-Post



Benny's Hill Road Bridge, Frederick, Maryland. Cheryl Widell, County Commissioner Paul L. Crum, Dana Keister, and County Engineer William S. Fout inspect the foundation and substructures of this ca. 1880 bowstring arch-truss bridge fabricated by the famous King Iron Bridge Company of Cleveland, Ohio.

with the basic tenets of construction technology held by engineers throughout the world. To ensure a fair evaluation, the advisory committee would like to hire an independent professional structural engineer to analyze the bridges and report on their present condition and on the feasibility of maintaining them in operation. Unfortunately, their financial resources are inadequate to fund such a study at this time.

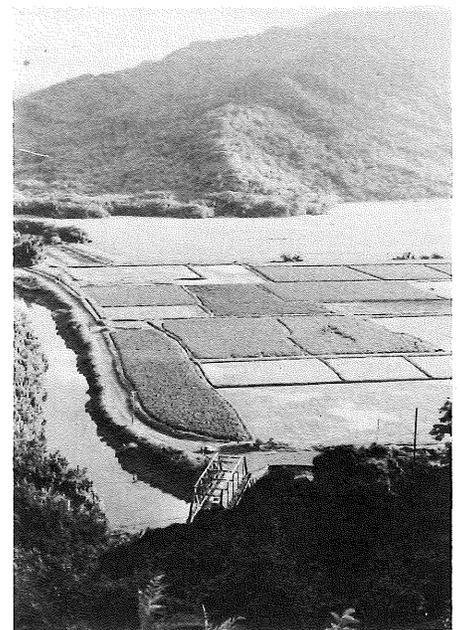
While the state moves ahead with plans to use federal funds to replace the existing bridges, Jane Silverman, the Hawaii SHPO has informed the FHWA of its responsibilities as stated in section 800.4(a)(2) of the Advisory Council on Historic Preservation's procedures for implementing Executive Order 11593 and the National Historic Preservation Act of 1966, as amended. These procedures require federal agencies to identify all historic and cultural properties in the potential environmental impact area of an undertaking, and to request that the Secretary of the Interior determine their eligibility for inclusion in the National Register of

Historic Places. The advisory committee considers the North Shore Belt Road bridges to be of great significance in the history of Kauai and is confident that they are eligible for the National Register, but recognize the desirability of challenging the state DOT's structural analyses of the bridges. Because of their concern for integrity of the Hanalei Valley, the committee wants to keep the existing bridges in operation and they are contesting the state's demolition plans.

Compromise in Frederick County, Maryland

In contrast to the battle being fought in Kauai, a much more positive relationship between preservation interests and transportation officials is developing in Frederick County, Maryland. The county is in the western part of central Maryland and covers over 660 square miles. It retains an abundance of historic sites and structures dating from the 18th through the early 20th century. Until recently, these structures have remained unthreatened because of their relative isolation. However, the Baltimore/Washington suburban sprawl is beginning to encroach upon the rural landscape of the county, and concerned citizens are aware of the important role bridges play in controlling the environmental quality of their communities.

Photo: Donald C. Jackson, HAER



General view of the Hanalei Valley on the north shore of Kauai, Hawaii, with the 1912 Pratt through truss over the Hanalei River in the foreground. The bridge controls access to the entire valley.

Cognizant of this, Dana Keister, Director of the Frederick County Department of Historic Preservation, and Cheryl Widel of her staff, conducted a comprehensive inventory of all truss bridges in the county. Using *Bridge Truss Types: A Guide to Dating and Identifying* (T. Allan Comp, Donald C. Jackson, May 1977) as a reference aid, they identified 39 metal truss bridges of widely varying types. Among these were a ca. 1880 bowstring pony arch-truss and many others, including numerous Pratt pony trusses.

This inventory was conducted during the summer and early fall of 1977 and was integrated into the other work of the office. Widel, whose position is 50 percent funded by the Maryland Historical Trust, performed most of the fieldwork and discovered that hunting down potentially historic bridges was a great way to explore various out-of-the-way parts of the county which otherwise might have gone unnoticed. By using older bridges as signposts of the past, a wide variety of historic structures and developments were encountered that had previously escaped their attention.

Following the completion of the truss bridge inventory, Keister and Widel determined that a number of bridges were of considerable historic significance and believed that they should be preserved. Meetings with the county highway department were held to sound out their reaction to the nomination of truss bridges to the National Register. Although the highway department was expected to express concern that such nominations might affect their future construction plans, once the issue was discussed openly many anticipated problems failed to materialize and the preservation and highway interests realized that their aims were not incompatible.

The result of this interchange was that the highway department would, as an initial measure, support the nomination of six metal truss bridges and three covered wooden bridges in the county to the National Register. These structures include the 1878 Double Intersection Pratt through truss, two ca. 1880 Pratt through trusses, two ca. 1880 bowstring arch-trusses, and the only Parker through truss in the county. In return, the Department of Historic Preservation recognized that some significant older bridges are in a condition and location that necessitates the construction of new spans as replacements. These include structures that have been closed down since hurricane Agnes hit the area in the summer of 1972.

The three-span reinforced concrete flat slab Waioli Stream Bridge dates to 1912 and is essentially unaltered. The impressions of the wooden forms used during construction can still be seen in the concrete. The smooth surfaces and sharp lines of the structure indicate that little deterioration has occurred in the last 65 years.

Photo: Donald C. Jackson, HAER



The sensitivity shown by the county highway department is commendable and in many ways reflects the progressive attitude of the entire Frederick County government. They realize the historic resources of their county serve as an attraction to Baltimore-Washington area residents. Frederick, the county seat, is one of those rare cities where the urban renewal craze of the 1950s and 1960s failed to have much impact. The countryside surrounding the city contains quiet little towns with their own distinctive charms—an important aspect of the historic environment that visitors find so attractive. The people of the county recognize the significance of their historic bridges in preserving this environment, and they are moving rapidly in implementing a program of bridge preservation that will help insure the retention of their communities' integrity and uniqueness.

The Future of Historic Bridges

Often preservationists find themselves at odds with elements of the transportation industry over the desirability of new highway developments and their effects upon communities. While new highway construction during the past several years has declined, impetus has shifted to rebuilding and replacing historic bridges. The present bridge safety standards, de-

termined by the American Association of State Highway and Transportation Officials (AASHTO), could easily be used to show how almost all bridges built before 1950 are in some manner structurally deficient or functionally obsolete. But safety is an extremely relative term; because a structure does not adhere to standards set for new "super highway" bridges does not mean it can't be safe.

It should never be thought that the intent of historic bridge preservation is to subject the public to an unsafe environment. The intent is to preserve aspects of our nation's engineering heritage, but in a manner that contributes to the safety and stabilization of neighborhoods, communities, and historic districts.

It seems FHWA is beginning to realize this, as shown through the recent controversy over the historic Elm Street Bridge in Woodstock, Vermont, and its "inadequate" width and alignment. It appears the problem will be resolved by a compromise between the town's residents and FHWA. The proposed compromise will require extensive reconstruction and realignment of the bridge; but when complete, the bridge will have a roadway width of only 24 feet, far less than that stipulated by AASHTO standards. Although the FHWA states explicitly that the exception is made for this one particular bridge site, the compromise opens the door for future mitigation over other bridges.

continued on page 4

Bridges from page 3

The situations in Hawaii and Maryland illustrate two approaches being taken to address this problem on a community level. HAER will be happy to assist and encourage any other communities in their efforts to either save threatened bridges or devise a program of bridge preservation. HAER is interested in learning of proposed bridge replacements throughout the US so that the preservation responsibilities of the FHWA can be determined during the planning process. The HAER staff is interested in learning of successful bridge rehabilitations that have preserved the historic integrity and profile of the structure.

Copies of the Technical Information Leaflet No. 95, published by the American Association of State and Local History (AASLH) entitled *Bridge Truss Type: A Guide to Dating and Identifying* (T. Allan Comp and Donald C. Jackson) may be ordered from the AASLH, 1315 Eighth Ave., South, Nashville, TN 37203, at 50¢ a copy. A Xeroxed copy of the article "Railroad, Truss Bridges, and the Rise of the Civil Engineer" (Donald C. Jackson), which appeared in the October 1977 issue of *Civil Engineering*, may be obtained by writing HAER directly. This article outlines the significant role truss bridges played in the development of civil engineering and preservationists might find it of use in demonstrating to highway officials why truss bridges are historic.

from page 1

activities that occurred within. Whether the property is a factory, a hydroelectric plant, a railroad shop, or a brickworks and whether or not it has architectural merit, the activity that went on inside is as important as the structure itself.

When describing an industrial or engineering site

- specify on the nomination form what the industry was and address any changes in its function over time
- include information about the main machinery, such as date, serial number, patent number, location and components
- mention what power sources, whether steam, electric, diesel, etc., as well as associated machinery, were used
- record whatever parts of the structure were built to facilitate the process (For example, mention ramps in a cannery, turntables in a railroad shop, or separate picker rooms or engine rooms in a textile mill.)

- include a brief history mentioning any known engineers, architects, or designers associated with the structure
- mention any alterations in machinery or interior functions, as these are facets of a structure or complex's history
- note any event that has played a part in the structure's past
- include the type of structure in the nomenclature. (For example, "Fair Haven Flour Mill" is far more descriptive than "Fair Haven Mill." If the type is not indicated in the historic name, put it in parentheses.)

HAER recently reviewed a nomination of a mill that did not specify its type. No interior photographs were included and of the four exterior photographs sent, none adequately revealed whether the site was a gristmill, spice mill, flour mill, or snuff mill. Furthermore, no machinery was mentioned in the nomination, making it impossible to determine the type of milling operation that existed.

Photographs, both exterior and interior, are primary methods of description. Many times interior photographs are either not included or limited to one view that gives only a hint of the industrial process or of the surviving machinery. If no machinery remains, it should be noted. If in doubt about the type of machinery or industrial process, include interior photographs so that reviewers in HAER may have an opportunity to evaluate it.

Description of Engineering Sites

Similarly, engineering structures such as bridges, viaducts, and canals require thorough photographic and written documentation. In describing such properties be sure to include its approximate dimensions, what materials were used in different components, and any additions or alterations.

For example, when describing a truss bridge include:

- dates of construction
- engineers and manufacturer, if known
- number of spans and lengths
- distance between upper and lower chords
- type of truss
- definition of materials (cast-iron, wrought-iron, steel, or a combination of materials)

or when describing a canal include:

- dates of construction
- number of locks
- approximate lock dimensions
- source of water supply
- elevation of each terminus and summit

This data can be recorded by someone with a basic understanding of the structure and does not require an extensive knowledge of the history of engineering or the development of the specific type of structure. As with industrial nominations, include the type of structure in the name, as well as any corporate affiliation. For example "Pennsylvania Railroad: Bush River Bridge" is more useful in the review than "Bush River Bridge."

Statement of Significance

The Statement of Significance should be a concise, factual statement about the particular site being nominated. It should present the structure in its historical context, relating to the industrial process or the development of an engineering form. Too often nomination forms cite expansive views of industrial or engineering history and fail to give information about the significance of the particular structure. A recent nomination for a canal included a comprehensive view of canal development as an economic function of commerce and transportation in America. It did not include in its statement of significance a precise examination of the canal being nominated, nor of its relation to greater canal development.

To expedite the review process in the National Register and HAER offices, information on the National Register forms needs to be complete, descriptive, and accurate. To improve the quality and thoroughness of incoming nominations, HAER is eager to assist any state office with questions they may have about industrial or engineering properties. Inquiries should be directed to Historic American Engineering Record, Office of Archeology and Historic Preservation, Heritage Conservation and Recreation Service, Department of the Interior, Washington, DC 20240.

NEW USEFULNESS FROM HABS CATALOGS

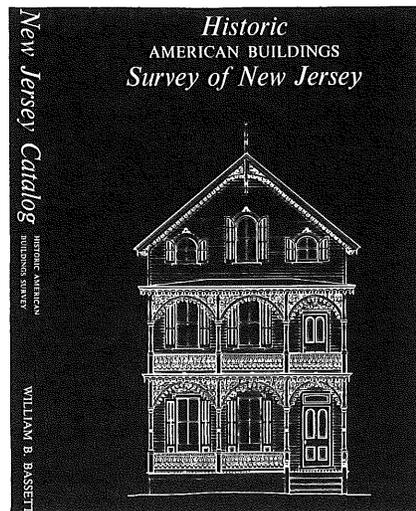
by S. Allen Chambers
Architectural Historian, HABS

Since November 1933 HABS has been assembling "a complete resumé of America's building art." Housed in the Prints and Photographs Division at the Library of Congress, the HABS collection is one of the world's largest archives of its kind.

Recording the structures and then depositing the records in the Library of Congress, however, is only the beginning of the HABS task. Besides providing the public with reproducible records and copies from the Library of Congress at a reasonable price, HABS must also inform the public of the records existence, usefulness, and availability. Moreover, HABS must keep itself informed about the status and condition of structures represented within the collection. To meet these needs HABS has started a project to publish a complete series of state and regional catalogs, containing entries on the represented structures and citing what records are on deposit at the Library of Congress.

The 1938 *National Catalog* was HABS' first attempt to provide a complete listing of its records. Although the catalog tried admirably to list all the records in one volume, it contained almost as many pitfalls as it did aids for researchers. Detailed historical information was seldom listed, because at that time it was not considered a major part of the records. No addresses or descriptions were given; the name of a structure was likely to be that of the owner or occupant during recording rather than the historic name of the structure.

A second *National Catalog*, published in 1941, attempted to correct many of its predecessor's faults. (This catalog is still available as a reprint from the National Technical Information Service.) Although the second catalog does give brief addresses, and often briefer descriptions, many structures are listed simply as "house," "row house," or "store." A 1959 Supplement to the 1941 *National Catalog* provides fuller addresses and descriptions, but some entries are still confusing. For example, the Pennsylvania section opens with a catch-all entry "Artery to Western



Migration." The cryptic title refers to all the bridges, culverts, and toll houses on the old National Pike; yet, these properties are listed with no addresses, even though the pike wandered some 91 miles through western Pennsylvania.

When the 1959 Supplement was published, HABS was just beginning to initiate larger and more intensive recording programs. HABS realized that future cumulative listings were unfeasible and that updates would have to be state or regional catalogs. The first two such catalogs were for New Hampshire, published in 1963, and for Wisconsin, 1965.

Together these first two state listings set precedents for future HABS catalogs. The format of the *New Hampshire Catalog* provides the prototype for future volumes. The *Wisconsin Catalog* attempts the ambitious goal of providing a complete visual index to measured drawings. Besides updating addresses, descriptions, and statements of condition, the volume contains all the HABS Wisconsin drawings. To do this, however, the drawings were so reduced that a magnifying glass is needed to study them in detail. But most significantly, the *Wisconsin Catalog* sets the precedent of contracting outside professional help to compile such catalogs.

With its limited permanent professional staff, along with its other duties, HABS can hardly prepare the larger catalogs for states with collections such as New Jersey (834), Virginia (900), or California (1000+). Spurred by the success of the *Wisconsin Catalog*, HABS embarked on a program to have catalogs prepared by outside professional architectural historians. These compilers visit each building and compose a brief entry

that includes a succinct architectural description, a chronology, and a list of survey documentation. Compilers also write an essay on the architectural history of the state, if little has been published; or, if a corpus already exists, the compiler provides a comprehensive, critical bibliographic essay on the sources available for study.

While the compiler is at work, the HABS staff seeks support within the state or area for the publication of the individual catalog. Some arrangements may differ, but generally HABS assumes all costs in preparing a final manuscript and furnishes illustrations; the co-sponsor is responsible for layout, publication, sale, and distribution. HABS finds this approach mutually beneficial. Such an approach not only provides an updated list of HABS records but also allows the cooperating agency a way to express its role in preservation at the state level. By including maps and definite addresses, the volumes may be used as reliable guides to states' historic architecture, while they also help assess historic preservation activities within the states. Such assessment is valuable to the preservation community but sometimes it reveals discouraging trends. For example, in New Jersey it has been determined that 135 of the 834 buildings recorded in the 1930s either have been demolished or are in such a ruinous state to preclude preservation.

Volumes which have been published in the state series include:

District of Columbia Catalog
1974, (1976), Nancy Schwartz,
(HABS staff)

Chicago and Nearby Illinois Areas, (1966), J. William Rudd
Maine Catalog, (1974), Denys
Peter Myers, (HABS staff)

Massachusetts, (1965), John
Poppeliers (HABS staff)

Michigan, (1967), Harley J.
McKee

New Hampshire, (1963, 1967),
John Poppeliers (HABS staff)

New Jersey (1977), William B.
Bassett

Philadelphia (1976), Richard
Webster

Texas (1974), Paul Goeldner
(HABS staff)

Utah (1969), Paul Goeldner
Virginia Catalog (1976), joint effort
of HABS and the Virginia Historic
Landmarks Commission

continued on page 6

HABS Catalog from page 5

Wisconsin (1965), Richard W. E. Perrin, F.A.I.A.

Other volumes have been published in temporary form, and either await comments from architectural historians or await final arrangements. These include *Delaware, Indiana, Iowa, Ohio, Rhode Island, South Carolina, and Vermont*. Currently under contract are catalogs for Alabama, California, Georgia, Illinois, New York, North Carolina, Pennsylvania, Tennessee, and West Virginia. A HABS Publication List indicating volumes in print may be obtained from the HABS office. HABS publications are also listed in *A Bibliography of Historic Preservation: Selected Publications of the Office of Archeology and Historic Preservation* by Robert E. Haynes and Kenneth T. Pribanic. The Bibliography is available at no cost from Publications and Archives, National Register Division, Heritage Conservation and Recreation Service, Washington, DC 20240.

"Preservation through Documentation," a recent HABS exhibition, succinctly explains HABS' role in preservation. The state catalogs project is an important part of that effort, and provides a substantial contribution to the preservation and documentation of America's historic architecture.

MAIN STREET PRESERVATION PROJECT IMPLEMENTED

Last year the National Trust for Historic Preservation initiated the Main Street project (see 11593, vol. 1, no. 2). Aimed at revitalizing commercial districts of architectural distinction in small towns, the program has been implemented in three Midwestern towns. Using a team of professional architects, economic developers, and legal consultants, the Main Street project is designed to determine the problems confronting each town, to consider feasible solutions to those problems, and to recommend to its citizens plans to revitalize and restore their blighted commercial districts.

The towns selected for the pilot phase of the Main Street Project—Madison, Indiana, Hot Springs, South Dakota, and Galesburg, Illinois—each have a particular preservation problem. The uncontrolled expansion of a local nuclear power station threatens the architectural character of Madison; Hot Springs faces the

problem of tapping its tourist trade to provide a profitable economy without altering the town's character; and Galesburg suffers from vacant buildings and competition from a nearby shopping mall.

Data An Important Aspect

As the project continues, methodological data is being collected and will later be analyzed for insights into revitalizing additional towns. The information gathered during this project will be compiled in a detailed manual of main street restoration guidelines and documented in a 28-minute film. Project Administrator Susan R. Garber conducts the project under the leadership of the Trust's Midwestern Regional Office Director Mary C. Means, who considers the data resulting from the Main Street Project an important aspect of the project. Commenting on the direction and results of related programs in the United Kingdom and on others in the US, Means says "no specific, methodological data was collected in any of the projects so far, so it is difficult to pinpoint exactly what the impact of main street rehabilitation has been." Careful monitoring of the project will produce a "process for revitalization" that can serve as a useful tool in rehabilitating other towns whose commercial centers have deteriorated, but are architecturally noteworthy and eligible for preservation funding.

PUBLICATIONS

Reports Available from IAS and NTIS

Interagency Archaeology Services (IAS) publishes a growing number of reports that deal with various aspects of cultural resource management. These reports are available either through the IAS in Washington or through the National Technical Information Service (NTIS). NTIS distributes IAS publications and unpublished reports on archeological data recovery projects (see 11593, Sept. 1976 and the Annual Report to Congress, 1976). The following is a list of IAS publications and information about their distribution.

Available Only from NTIS

An Overview of the Prehistoric Resources of the Metropolitan St. Louis Area by Elizabeth Benchley. NTIS order number PB265016/AS \$5 paper; \$3 microfiche

Prehistoric Resources of East-Central New England: A Preliminary Predictive Study by Dena F. Dincauze and Judith W. Meyer. NTIS order number PB265019/AS \$4.50 paper; \$3 microfiche

Available from NTIS or IAS-Washington

The Importance of Small, Surface and Disturbed Sites as Sources of Significant Archeological Data by Valerie Talmadge and Olga Chesler. NTIS order number PB270939/AS \$4 paper; \$3 microfiche

Cultural Resources Evaluation of the Northern Gulf of Mexico Continental Shelf by Sherwood Gagliano.

Archeological and Historic Data Recovery Program. Annual Report to Congress, 1975. Copies available only through IAS office.
Archeological and Historic Data Recovery Program. Annual Report to Congress, 1976. Copies available only through IAS office.

Archeological Survey: Method and Uses by Thomas F. King. In press. Estimated availability is April 1978.

Scholars As Managers edited by Alice Portnoy. In press. Estimated availability is April 1978.

New Cultural Resource Management Volume

IAS has added a new publication to its Cultural Resource Management Series: *Cultural Resources Evaluation of the Northern Gulf of Mexico Continental Shelf* by Dr. Sherwood M. Gagliano. This is a study of the predictability of submerged prehistoric and historic sites on the Outer Continental Shelf (OCS) area from the Rio Grande River to the Florida Keys. It presents a method of evaluating the archeological possibilities that may be tested with the limited data that can be presently gathered from the OCS. The methodology developed in this study is illustrated with a case study of the Mississippi Delta area.

Address correspondence to the contributing editors and their appropriate divisions, in care of the Office of Archeology and Historic Preservation, Heritage Conservation and Recreation Service, Washington, DC 20240.