CRM

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U.S. Department of the Interior
National Park Service
Cultural Resources

What To Do About Lead-Based Paint

New Guidelines Coming Soon

Sharon C. Park

From 1991-94 giant steps have been taken by the Department of Housing and Urban Development (HUD), the National Park Service (NPS), and various non-profit organizations to establish guidelines to assist building owners and managers address the hazards of lead-based paint. Since the 1970s there has been a growing concern regarding the potential for lead poisoning in both young children and maintenance or construction workers who come in contact with deteriorating lead-based paints. New guidelines will be forthcoming from HUD in the fall of 1994 which will help sort out ways to reduce lead hazards without destroying the architectural resources or destroying the financial resources of the owner.

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Disaster Relief

Flooding in nine Midwest states.

The Northridge Earthquake in California.

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Cover photos: **Top—Historic buildings should not be damaged in the process of removing or stabilizing paint. On this project, the worker is using a HEPA sander to smooth the wooden surface after chemical paste was used to remove deteriorated exterior paint. The worker is fully protected from any residual lead dust not sucked into the attached vacuum tube. Bottom—Fort de Chartres near Prairie de Rocher, IL, on the banks of the Mississippi River. The powder magazine is one of the oldest surviving structures in Illinois. Photo by Jim Rackwitz, *St. Louis Post Dispatch*..**

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What To Do About Lead-Based Paints

(continued from page 1)

This article is a follow-up to an earlier CRM *article on Lead-Based Paint in Historic Buildings (Vol. 13, No. 1, 1990).*

In 1977, the use of lead as a component of paint for residential housing was banned, but that still left millions of resources that already contained lead-based paint, often in deteriorated condition. A number of urban child lead poisoning cases prompted Congress to pass legislation to protect children. The Lead Poisoning Prevention Act of 1971 (P.L. 91-695, as amended 1987, 1988) charged HUD with developing guidelines for removing lead-based paint when renovations were undertaken on federally- subsidized low-income or Indian housing built prior to 1978. The guidelines which required 100% elimination of lead-based paint proved difficult to implement, there were not enough qualified contractors to execute the work, and the level of paint removal made the projects prohibitively expensive. In addition, there was probably not enough data available at the time the guidelines were generated to establish what constituted a lead-safe house.

More workable guidelines are now in the final stages of review by federal agencies and are part of the Housing and Community Development Act of 1992 (P.L. 102-550) which was signed into law on October 28, 1992. This legislation included Title X, the Residential Lead-Based Paint Hazard Reduction Act of 1992, and calls for HUD to issue new guidelines to assist residential property owners to reduce the hazards of lead without necessarily eliminating all the paint, particularly for well maintained properties. The significance of this legislation and its forthcoming guidelines (due out fall 1994), is that it allows an owner or manager of a property to establish a priority to address hazard reduction through a range of treatments from managing paint in place to selectively removing only deteriorating paint. By combining short-term treatments with long-term solutions, the owner can plan for the needed financial expenditures.

Title X expands the responsibility of providing lead-safe housing to all federal agencies that own, insure, or federally assist housing units. Owners of these properties are required to undertake a risk assessment, to identify where lead-based paint is located prior to disposing of a property, and in some cases, to undertake a paint removal or stabilization project to provide a lead-safe unit. The requirements of Title X affecting federal agencies go into effect beginning in 1995 (see sidebar, page 4).

Any mechanical scraping or paint removal with a heat gun will require the operator to wear, at a minimum, a half-face respirator fitted with High Efficiency Particulate Air (HEPA) cartridge filters. This worker is fully suited and wearing a full-face respirator because extensive paint removal is under way.

The forthcoming HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* provides a range of treatment options for residential buildings and even includes a chapter specifically for historic structures written by the NPS. The intent of the *Guidelines* is to encourage building owners over time to remove lead-based paint, and to deal with the most hazardous conditions first. The greatest advantage for historic buildings is that there are enough options for stabilizing existing painted surfaces to avoid total paint stripping which is often disastrous to both the historic painted finish and to the substrate to which it is attached. The chart on page 7 shows the wide range of treatments that can be implemented once the residential property has been evaluated to determine active lead threats to residents. This process is known as the risk assessment and is a critical planning step. The forthcoming *Guidelines* stresses the importance of eliminating lead-laden dust from the residential environment and from the construction site. Residential safety and worker safety go hand in hand. While many residential properties are in very poor condition with obvious peeling paint that needs to be addressed, many homes in relatively good condition can become hazardous environments for some children. Many children have suffered unnecessary contact with lead-laden dust by having renovation projects take place in the home while the family is in residence, or they have come into contact with their parents who are in the construction or maintenance field and have brought dirt and dust home on their workclothes.

What many organizations have learned and what the guidelines stress is that to protect occupants—particularly the children—the key is **thorough housekeeping and regular maintenance of the buildings.** To protect workers, the key is **responsible work practices that control contact with lead-laden dust and debris.** All residents should be discouraged from sanding painted surfaces or stripping paint as part of home remodeling projects without training in how to do it properly. Young children should not be present. Maintenance employees should be trained in the use of proper personal protective gear and in proper cleanup after the workday to avoid taking lead-laden dust home (see photo above). Worker safety is regulated by the Occupational Safety and Health Administration (OSHA). The amount of worker protection required for different tasks depends on the amount of lead-dust generated by that activity ("Lead Exposure in Construction: Interim Final Rule"; 29 CFR Part 1926).

*(**Park**—continued on page 4)*

(Park—continued from page 3)

Educational brochures are available from a number of public service agencies. The National Park Service has developed several bulletins on safety hazards for NPS employee residents.

While many administrators believe that the controls recommended by HUD and OSHA to reduce the contact with lead-based paint are excessive, the fact that regulations and guidelines now exist means that controls for safety, worker protection, and lead-safe housing must now be implemented. Careful reading of the legislation and guidelines will be necessary to keep property owners from being convinced by overzealous abatement companies that more extensive work is required.

The dilemma for historic buildings is to find reasonable ways to protect both residents and maintenance workers who are involved in their renovation or repainting often within limited budgets and within historic preservation guidelines. Because lead was an ingredient in so many paints manufactured prior to its restricted use in 1977, contact with lead-based paint will be ongoing. The threat of active hazards occurring has been well documented, and so structures should be well maintained and monitored for lead-laden dust, chipping paint, and other lead sources. Most childhood lead poisoning occurs in poorly maintained deteriorating properties. While the Centers for Disease Control in Atlanta estimates that one in six (16.6%) of the children under the age of seven have elevated blood-lead levels, a NPS survey of its own employee residents showed that only approximately 1% of the children in housing had an even slightly elevated blood-lead level and actions were taken to identify the source of the lead and make corrections. This substantiates the theory that reasonably-well-maintained properties are not the cause of most zchildhood lead poisoning.

Controlling the Hazard Without Destroying the Resource

The elimination or control of lead hazards in housing may be achieved through several measures including the following:

- informing and educating housing occupants and managers about the hazards of lead poisoning;
- investigating housing for the presence of lead as part of a risk assessment;
- developing lead-based paint interim controls for properties in relatively good condition; and,
- developing more permanent abatement proposals to remove lead-based paint hazards in more seriously deteriorated properties or properties undergoing rehabilitation.

The goal then is to reduce the hazards of lead, not necessarily to remove all the lead-based paint. Over time, as renovation and replacement naturally occur, much of the lead-based paint will be removed. In the meantime, the way to reduce hazards of lead-based paint, particularly to small children, is to keep painted surfaces in good condition and to reduce lead-laden surface dust that can accumulate in housing. Because children ingest lead-laden dust by hand-to-mouth contact, it is critical that properties housing children under seven years of age be kept very clean and dust free. Interim controls that allow lead to be managed safely are particularly appropriate for historic properties where the historic paint may be significant as documentary evidence of the building.

Title X of the Community Development Act of 1992, part of the Residential Lead-Based Paint Hazard Reduction Act of 1992, includes provisions for identifying, assessing, managing, and controlling the hazards created by the presence of deteriorating lead-based paint. Following is a brief overview of some of those provisions as they relate to federally-owned housing, or housing supported or renovated with federal funds, or even, in some cases, private housing.

Title X Summary

1. All federally-subsidized Public and Indian Housing developments must be inspected for lead-based paint (LBP). All LBP is to be removed or abated in the course of modernization projects or if a child occupying the unit has been identified with an elevated blood-lead level. This appears to follow the earlier requirements as outlined in "Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing" (HUD,1990).
2. After January 1, 1995, all pre-1978 residential housing units sold or rehabilitated by any federal agency must undergo lead-based paint hazard evaluation and in some cases undergo hazard abatement.
3. Pre-1978 units receiving project-based federal assistance (including NPS, DOD, HUD Section 8 housing), are subject to HUD regulatory requirements for undertaking a risk assessment and for implementing interim controls to manage lead after January 1, 1995.
4. Housing units which receive more than $5,000 in HUD funds (including CDBG and HOME) must address lead-based paint hazards in the course of remodeling and renovation after January 1, 1995. If more than $25,000 is expended in federal funds, hazard abatement measures instead of temporary interim measures should be implemented. Note that for historic buildings, use the least damaging methods for hazard abatement to avoid having an "adverse effect" on significant historic materials.
5. For privately-owned housing, beginning October 1995, LBP warning and disclosure is required at the time of sale or rental of any pre-1978 housing unit. This includes a 10-day opportunity for home buyers to arrange for a risk assessment or inspection if one has not previously been done.

A risk assessment of the property is recommended when lead-based paint is present. The paint's location and condition should be recorded and a list of priority risk areas should be identified. Deteriorated paint and friction surfaces on windows and doors should be treated first.

When to Take Action

Action to control lead needs to be taken on a residential property if a child inhabiting the structure has been determined through a blood test (venous puncture) to have an elevated blood-lead level (above 10 micrograms per deciliter). In that case, the house should be fully evaluated, and if determined to be the source of the lead, then the property should be made safe.

The first step then is to undertake a **risk assessment** on each residential property in order to identify any lead hazards and to set priorities for managing or removing deteriorating lead. A risk assessment is an on-site evaluation of a residential property intended to identify where the problems are and how they can be addressed in a cost-effective manner. A risk assessor is generally a licensed professional capable of completing a survey of the property, but some organizations that manage a number of residential properties have developed in-house expertise for undertaking portions of a risk assessment and inspection (see photo top left).

A dust wipe test can identify the active presence of lead. A moist towelette is used to collect dust and then is analyzed in the laboratory. If a property is freshly painted and well maintained and floors have been thoroughly washed and wet vacuumed, a dust wipe test can verify that it is lead-safe.

Lead testing can be done under contract with companies that have special equipment (X-ray Florescence analyzers) or quick on-site screening can be done by trained personnel using test kits. The test kits, that use sodium sulfide or sodium rhodizonate have a tendency to give incorrect results, but they are an easy way to get a sense of how much lead may be actively present in a property. Follow-up accurate tests can be undertaken in a laboratory using paint chip samples that are subjected to Atomic Absorption Spectrometry. The risk assessor incorporates information on testing for lead, and identifies areas most likely to generate lead-laden dust, such as friction surfaces on operable windows and doors or high impact surfaces, such as baseboards or door jambs. All test data should be kept in the building folders in the building manager's office, or where it can be retrieved whenever work is anticipated.

Because the new legislation recommends setting priorities for lead reduction, and does not require full abatement if the hazard can be managed, the first priority is dealing with **active hazards.** Housing units and child daycare centers identified as containing lead-based paint during the risk assessment should be investigated to determine the presence of lead-borne dust which would signify an **active threat** to the residents. The greatest shift over the last few years has come about with using the dust wipe tests to determine if there is an active risk level from lead-laden dust present on the surface of materials (see photo, bottom left). This test needs to be done by a trained technician using a moist towelette which wipes the surface of an area and is then sent to the laboratory for analysis. This wipe test can be used to monitor the effectiveness of interim controls. If peeling paint has been properly removed and the area repainted, then a dust wipe test taken on a yearly basis can verify if the area is staying free from lead dust from this or other sources.

Removing or managing the lead in a building will be necessary if the answer to any of the following questions is "yes":

- Do you have a dust wipe test with lead above the action level?
  > 200 micrograms/sq.ft. for floors
  > 500 micrograms/sq.ft. for window sills
  > 800 micrograms/sq.ft. for window wells
- Are surfaces identified as containing lead-based paint in poor or peeling condition?
- Are there friction surfaces (window sash, jamb, door, or painted floors) causing dust?
- Are there chewable or mouthable surfaces (such as window sills) in a child's bedroom?
- Are the soil and water tests showing lead above allowable limits?

If any of these situations is present, there is a high probability of an active threat or a potential threat that should be controlled or eliminated. In most cases, and

*(**Park**—continued on page 6)*

(*Park—continued from page 5*)

Some residential properties scheduled for full hazard abatement may require a greater level of paint removal or encapsulation than non-residential properties. In this instance, loose deteriorated paint was wet sanded and then the trimwork was painted with several thin layers of a special encapsulant paint coating.

In some cases involving residences, it may be necessary to remove paint from friction, impact and chewable surfaces. In this case, easily removable trimwork has been prepared for transport to a chemical company for offsite stripping. Great care was taken to protect the woodwork from damage so that it could be reinstalled after the paint removal.

especially for historic buildings, each resource should be evaluated and a program developed that protects residents as well as the workers who will come into contact with lead-based paint.

Treatments for Historic Buildings

Because historic paint finishes and the architectural features they coat may be important to our cultural heritage, these surfaces should not be disturbed without considering the impact on the historic resource. Because paint removal or the replacement or alteration of historic materials can be very damaging to historic buildings, there must be a balance between controlling the health hazard and preserving the historic resource. The least invasive treatment should be considered first for historic buildings. This will be different in each situation depending on the type of paint, its condition, and the significance of the material to which the paint is adhered. Generally removing deteriorated paint to a sound substrate so that a new paint system can be applied will involve wet sanding, chemical stripping, or low level heat stripping, or a combination of all three methods (see cover photo). In some residential situations, using special encapsulant coatings may be necessary to seal residual lead-based paint in place, particularly on projecting or chewable surfaces (see photo, top left). In other situations, features such as shutters, doors, and some trimwork can be removed for off-site stripping of paint before they are reinstalled (see photo, bottom left). Many of the treatments recommended for removing lead-based paint in nonhistoric properties, such as permanently removing decorative trimwork or gutting interiors, will not be acceptable for historic structures.

For federal undertakings, the State Historic Preservation Office (SHPO) should be consulted for Section 106 compliance review if work is planned on historic properties. *The Secretary of the Interior's Standards for the Treatment of Historic Properties* should be met and all work evaluated accordingly. Historic buildings owned

Controlling Lead-based Paint in Historic Buildings

Appropriate treatments to consider after a risk assessment has been performed:

Managing the paint in place: undertake appropriate surface preparation through wet sanding, tri-sodium phosphate (TSP or equal) and water washdown, and repaint with lead-free primers and paint.

In-place paint removal: use chemicals or low heat or power sanding with attached HEPA filtering to remove lead-based paint. Repaint with regular good quality primer and lead-free alkyd or latex top coats. Remove only deteriorated paint or those on chewable surfaces such as window sills.

Off-site paint removal: use chemical stripping or dip tanks for elements easily removed from buildings, such as doors, windows, shutters, and some trim pieces. Repaint with regular good quality primer and lead-free alkyd or latex top coats after reinstallation. Be advised that many elements do not survive removal, stripping, and reinstallation.

Encapsulant coatings: use specialized paint coatings to encase tightly adhering existing lead-based paint, such as on flat wall surfaces and some simple trim work, particularly at chewable surfaces. Use several thin coats of encapsulant coatings instead of one thick layer in order to preserve the crisp detail of the historic elements. Drywall cladding may be an appropriate use of rigid encapsulants for non-decorated surfaces, such as ceilings or plain walls in less significant areas (kitchens, bathrooms).

Selective replacement of deteriorated items: use in-kind matching replacements of windows, baseboards, trim and other deteriorated features, if necessary. Replacing shoe moldings at baseboards or window sash stop trim pieces can be an easy way to eliminate friction or impact surfaces without much loss to the historic resource.

Inappropriate treatments:

Open flame or high heat removal of painted elements (fire hazard to building and will vaporize lead in excess of 1000°F).

Gutting or removing significant historic materials (irretrievable loss of decorative roof brackets, trimwork).

Replacing significant features with non-matching elements (inappropriate appearance if improperly designed, such as insulated vinyl windows).

Using rigid encapsulants over significant elements (loss of historic character through use of vinyl or aluminum siding on exteriors, or use of drywall to box out historic fireplaces or to cover over painted wainscotting).

by the NPS that are scheduled for hazard abatement should have their work plans reviewed by the regional historical architects prior to implementation to ensure that historic materials are adequately protected. If paint is to be removed, a scientific record of the paint and its chronology should be part of the work plan. Samples of the original paint chips should be kept in the park for future documentation or interpretive purposes. If deteriorated windows are to be replaced, new units should match all of the features of the historic windows, including sash configuration, muntin size and profiles, and materials.

Managing or removing lead-based paint involves hazardous material and safety precaution must be considered. Scheduling of any work beyond the interim controls should be coordinated with other rehabilitation plans, and generally should be carried out when the housing unit is unoccupied. Worker areas should be monitored to ensure that the lead-dust levels are managed and the appropriate worker personal protective equipment is worn. Comply with the proper procedures for handling and disposal of toxic waste materials.

Conclusion

Recent federal legislation and new guidelines support the reasonable control of lead-based paint hazards after evaluating the residential property through a risk assessment. Options for handling the hazard are based on the condition of the property, the active presence of lead, and combining lead reduction with forthcoming renovation projects. By including selective removal of painted elements, such as windows which have friction surfaces, or as elements deteriorate, such as kitchen cabinets, lead will naturally be reduced over time.

Controlling lead hazards in historic buildings is a balancing act between interim controls and more permanent hazard abatement treatments. While from a health standpoint removing all lead-based paint during a renovation might appear to be desirable, this approach has been found to generate too much lead dust, which in many cases has resulted in increasing the blood-lead levels of resident children or workers. It is also so damaging to building materials that it is rarely appropriate for historic buildings.

If a building's historic character is embodied in its materials and their craftsmanship, then to damage these elements, or worse, their removal, should be avoided. As described in this article, there are ways to sensitively remove hazards without damaging the historic materials within a building. By understanding the legislative requirements for lead and by knowing what is historic about a property, decisions can be made on retaining as much historic material as possible. Historic preservation need not be a stumbling block to providing a lead-safe housing unit or worker safety.

Sharon C. Park, AIA, is the Senior Historical Architect in the Preservation Assistance Division, National Park Service, Washington, DC.

MANAGING OR REMOVING LEAD-BASED PAINT IN HISTORIC BUILDINGS

Interim solutions include a combination of the following:

General maintenance	Dust control	Paint stabilization	Soil control	Education
Repair deteriorated materials; Control leaks; Maintain exterior roofs, siding, etc. to keep moisture out of building; Undertake periodic inspection with annual dust wipe tests; Perform emergency repairs quickly if lead-based paint is exposed.	Wet mop floors; Wet dust window sills and window wells; Washdown painted surfaces with high phosphate cleaners (tri-sodium phosphate or equal); Wet broom sweep porches and steps; Clean carpets with special HEPA vacuum or remove if contaminated.	Wet sand loose paint and repaint; Selectively remove paint from friction & chewable surfaces (sills) and repaint; Consider spackling window wells or using jamb and well liners for clean, friction-free surfaces; Keep topcoats of paint in good condition	Add bark mulch. sod or topsoil to areas with high lead levels; Discourage children from playing in these areas by providing sandbox or other safe areas; Do not plant vegetable garden in areas with lead in soil Be careful that pets do not track contaminated soil inside house	Notify tenants and workers as to the source, locution and condition of lead-based paint; Building owner should make repairs to areas containing exposed lead-based paint as quickly as possible. Notify tenants to avoid home remodeling projects which will generate lead dust

Hazard abatement removes the hazard, not necessarily all the paint and includes:

Paint removal;	Replace deteriorated elements;	Paint encapsulation;	Soil control;	Compliance:
Remove deteriorated paint or paint on friction, chewable, or impact surface to sound layer, repaint; Consider using the gentlest means possible remove paint to avoid damage to substrate: wet sanding, low level heat guns, chemical strippers, or HEPA sanding. Send easily removable items (shutters, doors) off-site for paint stripping, reinstall and repaint;	Remove deteriorated painted elements such as windows, doors, and trimwork and replace with new elements that match the historic in appearance, materials, and detailing. replace non-significant elements of a friction surface (parting bead of windows, shoe molding, etc.) with new elements	Remove flaking paint and repaint lead-based paint surfaces with special encapsulant coatings if required in residences - Use several thin layers instead of one thick layer; Seal lead-based painted surfaces behind rigid encapsulants, such as drywall or vinyl wall coatings for non-significant surfaces;(bathrooms, kitchen ceilings, etc.)	Remove contaminated soil to a depth of 3'-6' and replace with new soil and appropriate planting material or paving. Concentration areas within 3' of house that may be the most contaminated	Be aware of all federal, state and local laws regarding lead-based paint and/or worker safety. Dispose of all hazardous waste according to applicable laws.

This chart indicates the wide variety of treatments that can be used to control or eliminate lead-based paint within a property. For historic buildings, the least invasive treatments should be used to solve problems identified during a risk assessment. The total abatement of all surfaces is not recommended for historic buildings as it damages historic materials and destroys the evidence of early paint colors and layering. Chart prepared by Sharon C. Park, AIA; National Park Service, Preservation Assistance Division, Washington, DC.

Aircraft Restoration Practice and Philosophy

Edward McManus

The spirited debate concerning aircraft restoration practice and philosophy vacillates between the poles of historic preservation and self-serving interests—at stake is the future of historic-aircraft preservation.

The first American aircraft restoration was conducted by Orville Wright on the 1903 Wright Flyer, during the summer of 1916, for an exhibition at the Massachusetts Institute of Technology. The forward elevator and the rudder were rebuilt, broken ribs and spars were repaired, and the center sections of both wings were recovered. The original propellers were not used because they were badly damaged in 1913. In 1928, the machine was sent to the Science Museum in London for exhibition. Prior to shipping the Flyer to London, Orville refurbished it once more, this time recovering the entire machine with new fabric. The aircraft was returned to the United States in 1948 and placed on exhibit at the Smithsonian Institution.[1]

In 1947, Orville Wright directed the restoration of the 1905 Wright Flyer. The 1905 Flyer is important because of significant design modifications that resulted in enhanced flight performance. This was the machine that demonstrated the practicality of flight. The 1905 Flyer was abandoned at Kill Devil Hills in 1908, after a period of flight testing and modification. In 1911 Wilbur and Orville returned to the ruins of their former camp and surveyed what was left of the 1905 Flyer. The aircraft was badly damaged by the weather and by field mice. The brothers rejected any notion of preserving what was left. Fortunately, soon after, the Wrights received a letter from Zenas Crane, a wealthy Massachusetts paper manufacturer, requesting that they donate one of their aeroplanes or gliders to the museum which he had established in Pittsfield, MA. Crane obtained the parts of the 1905 aircraft and related parts for a $25.00 crating and shipping fee. But without Orville's advice, an accurate restoration of the 1905 craft was impossible. For three decades, the parts remained in storage. In 1946, Colonel Edward A. Deeds, Chairman of the Board of the National Cash Register Company, decided to construct a park commemorating the role that the city of Dayton, OH, had played in the development of industry and transportation. The parts were obtained from the Berkshire Museum and the aircraft was restored by an experienced aircraft mechanic, under Orville's direction. The 1905 Wright Flyer was placed on exhibit in Carillon Park, Dayton, OH, in June 1950, where it remains.[2] According to Tom Crouch, Chairman of the Aeronautics Department of the National Air and Space Museum (NASM), the aircraft is 60% original.

The 1903 Wright Flyer at the National Air and Space Museum, Washington, DC. Photo by the author.

Spirit of St. Louis. **Photo by the author.**

The techniques and the rationale used by Orville Wright in the restoration of the 1903 and the 1905 Flyers meet today's conservation standards. The aircraft were restored to a period of historic importance, with minimal conjecture, and no enhancement. There was no intent to fly these aircraft—but to exhibit them in order to demonstrate their technical qualities. However, according to the standards of some modern restorers, these early restorations would be considered deficient.

Few aircraft restorers are aware of the American Institute for Conservation Code of Ethics and Standards of Practice. Many who are, do not believe that they are relevant to aircraft restoration. Further, restorers who return vintage aircraft to flying status have grown increasingly critical of established museums, in general, and the way they treat and interpret historic aircraft. They contend that museums are too concerned about social history. How and why has the simple honest approach to aircraft restoration, exemplified by Orville's restoration of the 1903 and the 1905 Flyers, been altered or forsaken?

One important difference between then and now is that individuals and groups purchase or recover abandoned aircraft and restore them to flying condition. This is particularly true for World War II aircraft. There is nothing intrinsically wrong with this practice, and, indeed, the sight of a period aircraft flying is, for me, a thrilling experience. Many restorers argue that this is a truer form of preservation than restoring an aircraft for static display.

Nevertheless, the fun inherent in flying such aircraft is a strong incentive for taking a restoration to this point.

Another important change is the emergence of an aesthetic among aircraft restorers that belies the true appearance and use of a historic aircraft. This is true for many museum aircraft, as well as flying aircraft. Some of the World War II fighter aircraft on exhibit at NASM exemplify this pristine look. I have heard one critic of this practice compare it to "tarting-up" one's grandmother.

A similar restoration practice is to reconfigure and repaint historic aircraft to represent famous fighters or squadrons. This has been the fate of a few humble training aircraft that never flew in battle.

An alternative to restoration is to preserve and exhibit historic aircraft in the state in which they were found. The Brookland Museum, outside of London, exhibits the

Milestones Gallery, National Air and Space Museum. Photo by the author.

wreckage of a Lancester bomber, which crashed into the sea. The R.A.F. Museum in Hendon exhibits the wreck of the Glouchester Gladiator, *Faith*, an aircraft used in the defense of Crete during World War II.[3] The R.A.F. Museum has also restored some of its other aircraft to flying condition and does fly those aircraft. Obviously, the R.A.F. Museum has made a distinction between planes that should be restored to flying condition and planes that should be preserved as is.

For many years now, restoration has reigned as the dominant treatment option. Aircraft restorations are generally accomplished by experienced aircraft mechanics and others with an interest or background in aviation. Conservators have had little involvement until recently. In the absence of recognized standards and because of multiple objectives, assumptions have emerged to justify the various restoration philosophies that now exist. I call them restoration myths. They include:

- It isn't an airplane unless it flies;
- Restoration is preservation (or conservation);
- Restoration preserves technology;
- Restoration is like zeroing the clock;
- Once restored, an airplane is good for another 100 years at which time it can be re-restored;
- Each restorer has his/her own style;
- Restored aircraft do not have to be treated like museum objects;
- Restorations should be accomplished according to flight worthy standards;
- Restoration is the only treatment option;
- Always use original parts, materials, and techniques.

Not surprising, this conservator has won very few converts to conservation methodology with this list. Many restorers are quite sympathetic to the historic integrity of the aircraft they restore and they are amenable to the worthwhile suggestions of a conservator. To them, I apologize.

Some Aircraft Restoration Guidelines

The distinction between conservation and restoration becomes clearer when we consider the primary objective of each. Conservation treatments are done in accordance with specific preservation ethics and standards that are intended to protect the history and integrity of any object, be it great or small, complex or simple. Often, the successful treatment results in no perceptible change in appearance. In other instances, a change in appearance results when later accretions, such as green corrosion on bronze sculpture, is removed. Many aircraft restorations are focused on the final appearance and the function of the machine. For example, a respectable World War II trainer may be reconfigured to represent a famous fighter aircraft. NASM's Vought F4U Corsair, *Sun Setter*, exemplifies this type of restoration. Restoration treatments are generally more extensive and intrusive than conservation treatments. Risks include the misinterpretation of the object and the loss of historically significant information. In order to mitigate the inherent risks of restoration, the following guidelines are suggested.

- ***Thorough Technical Examination Prior to Treatment***
  An assessment of the condition of the aircraft and basic historic research will enable the restorer to have a better understanding of the project and to proceed in a methodical manner.
- ***Clearly Stated Objective of Treatment***
  The restorer should have a clear understanding of how the aircraft will look following treatment and what modifications will be necessary to achieve that end.
- ***Documentation***
  The restoration process should be documented with before-and-after 35mm photographs, as well as during-treatment photography and a written account that describes how and why things were done.
- ***Original Material, Historic Modifications, and Repairs***
  Every effort should be made to retain original materials and modifications or repairs that are historically significant.
- ***Differentiation between Original Construction and Restoration***
  It is important to be able to identify the restored areas from original fabric.
- ***Modern Materials and Salvaged Parts***
  There is nothing inherently wrong with the use of modern materials and parts salvaged from wrecks. Discretion is required. Treatment materials and the sources for replacement parts should be identified in the written report.
- ***Respect for the Integrity of the Object***
  The tendency to make a historic feature better or stronger is to be avoided. In my opinion, restored aircraft should never look better than they did when they were in operation (or better than new).

*(**McManus**—continued on page 10)*

(*McManus—continued from page 9*)

- ***Limitations***
  An honest evaluation of what can and cannot be accomplished with the available funding, time constraints, and the skill level of the restorer is advised. An important object should never be used for experimentation or practice.
- ***The A.I.C. Code of Ethics and Standards of Practice***
  I believe that it is possible to restore an aircraft according to these standards; many have been, intentionally or unintentionally. More specific standards, similar to those outlined in the Secretary of the Interior's *Standards for Historic Vessel Preservation Projects,* need to be developed for aircraft.

Restoration will continue to be the primary treatment for historic aircraft for many years to come. However, several steps can be taken to achieve agreement between aircraft restorers and preservationists, as well as conservators.

Build Consensus

Several organizations are involved with the preservation and restoration of aircraft. These include the International Association of Transport Museums (IATM), the AAM Mutual Concerns of Air and Space Museums Group, The International Group for Historic Aircraft Recovery (TIGHAR), The EAA Aviation Foundation, The Confederate Air Force, and War Birds of America. These and other groups need to be brought together in order to adopt standards that we can all agree upon.

Establish Categories of Significance

Flying a P-51 Mustang and the *Spirit of St. Louis* are not the same thing. There is only one *Spirit of St. Louis*. The same is true for the *Spruce Goose*. However, military aircraft were generally mass produced and many have survived; therefore, the risks inherent in flying them may be acceptable. Or, if you are interested, companies such as the Texas Airplane Factory near Ft. Worth, TX, will build you a new old airplane. The company is now building five Messerschmitt ME 262s.[4]

Adopt Standard Terminology

TIGHAR has published *The Guide to Aviation Historic Preservation Terminology,* which is a good beginning.

Recognize Dissimilar Missions

The primary mission of a museum is to preserve what is collected. The collection process is deliberate. Museums such as NASM do not fly historic aircraft because of the inherent risk. Further, it would be extremely expensive and impractical to operate such an air force. In most museums, the emphasis is on preservation; full scale restorations are accomplished in support of the exhibit schedule. It is not necessary to restore everything in the collection. Aircraft are treated as artifacts. Unfortunately, some organizations that fly historic aircraft have usurped the term museum to describe a mission that is more closely related to that of an aero club or a flying circus. I believe that their commitment to preservation and education is secondary.

Mutual Respect

The common interests shared among airplane enthusiasts can serve as the glue to unite dissimilar objectives if we develop a mutual respect for each other. There is an important place for private collectors and organizations who fly historic aircraft.

Conclusion

The polarity that has developed over the treatment of historic aircraft has been unproductive and troublesome. This is one conservator's characterization of the problem. I hope that these remarks are informative and that the recommendations prove to be productive. It is important that we recognize the validity and the quality of good aircraft restoration.

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3 Schneide, Karl S., NASM Aeronautics Department, verbal communication, February 14, 1994.

4 "The Role of the Replica," *TIGHAR Tracks,* September 15, 1993, Volume 9, Number 3.

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For additional reading, see *CRM,* Vol. 15, No. 2; CRM, Vol. 16, No. 10; and Viewpoint, this issue.

Disaster Relief

Grants for Historic Preservation

Joe Wallis

Recent natural disasters prompted the United States Congress to approve supplemental appropriations for disaster relief. Public Law 103-175 included $5 million out of a total $6 billion appropriated to aid recovery from the flooding in 1993 in the Midwest. On January 17, 1994, the Northridge Earthquake caused significant damage in three counties around Los Angeles, CA. Congress responded in Public Law 103-211 by earmarking $10 million for historic preservation activities from a total appropriation of $550 million from the President's Discretionary Fund for Unanticipated Needs.

Consultations between the National Conference of State Historic Preservation Officers (NCSHPO), the National Trust for Historic Preservation (Trust), State Historic Preservation Officers (SHPOs) in the affected states, and the National Park Service (NPS) quickly reached a consensus about procedures for dividing the funds and for coordinating the emergency relief to be assisted by these grants.

The 1993 flood relief funds were divided as follows: $910,000 each to Illinois and Iowa; $905,000 to Missouri; $100,000 each to Minnesota, North Dakota, South Dakota, and Wisconsin; $50,000 each to Kansas and Nebraska; and $1,775,000 to the National Trust to be used for work in the nine Midwest states. Special attention was given to ensure close coordination among preservation organizations, to speed the delivery of services, and to avoid duplication of effort. One of the specific requirements placed on the grant awards by the NPS was that the Trust negotiate and sign a written agreement with each of the nine SHPOs. This agreement varied a little in different states, but clarified how the Trust and the SHPO would coordinate their activities and their public information, technical assistance, and subgrant selection processes.

The Ferry Building (1922) on Hollywood Boulevard, damaged by the earthquake, has since been demolished. Photo courtesy Historic Resources Group, Hollywood, CA.

The Trust decided to use its flood relief grant to fund nonconstruction activities such as on-site inspections by teams of preservation professionals to inspect buildings and provide technical advice. The Trust also assisted with the rapid reprinting and widespread dissemination of a technical booklet put together by the Wisconsin SHPO, with assistance from the Preservation Assistance Division of NPS, entitled *Treatment of Flood-Damaged Older and Historic Properties*. The states' grants are being used to replace furnaces and wiring, to repoint masonry, to repair floors and siding, and to provide technical assistance on how to stabilize and dry out flooded properties.

In 1994, Public Law 103-211 appropriated $550 million for disaster relief. Of this sum, $5 million was earmarked for the Trust to subgrant to Ste. Genevieve, MO, to help protect the highly significant French Settlement district. An additional $5 million has been divided between the California SHPO and the Trust to preserve and protect properties damaged by the Northridge Earthquake. The SHPO will receive $3.5 million and the Trust $1.5 million. Both offices will execute agreements with the Los Angeles Conservancy, which will serve as the focal point for all subgrant applications to avoid confusion among the property owners. Of particular concern in California is the repair and protection of significant adobe buildings from the state's Spanish and Mexican historical periods, and the seismic retrofitting of many historic buildings.

El Adobe Market (c. 1920) on Hollywood Boulevard showing earthquake damage. Photo courtesy Historic Resources Group, Hollywood, CA.

While SHPOs have found the Federal Emergency Management Agency (FEMA) to be more sensitive to historic preservation issues as a result of past disasters (Hurricane Hugo and the Loma Prieta Earthquake in 1989, and Hurricane Andrew in 1992), the funding furnished by these two supplemental appropriations has enabled the Trust and SHPOs to mount large-scale efforts to protect and preserve historic properties affected by the Midwest Floods of 1993 and the Northridge Earthquake of 1994.

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Cultural Resources Management in Mexico

Jack Corbett
Nelly Robles Garcia

Although over the past two decades the concept of cultural resources management has come into widespread use in the United States, it is almost unknown among Mexican archeologists and preservationists. This is not due to a fundamental difference in roles; many of their responsibilities, e.g., research, protection, or interpretation, are comparable to those of their counterparts in the United States. There are, however, significant differences in context, institutions, and operational processes. These differences, in turn, alter the organizational and societal landscapes of professional practice and make more problematic the transferability of CRM as it exists in the United States.

Context

Perhaps the most noteworthy aspect of CRM as practiced in Mexico is the exceptional complexity of the country's cultural patrimony. A few examples:

The indigenous population, both past and present. The most visible legacy of the pre-conquest population is the extraordinary array of monumental archeological sites associated with the Aztecs, Maya, Zapotecs, and other Mesoamerican cultural groups. Today several million people still speak indigenous languages and maintain some continuity with traditional culture.

The colonial past. After the Spanish conquest Mexico experienced nearly three centuries of colonial rule, leaving a notable imprint in the form of architecture, religion, fine arts, and language. Sometimes this imprint reflected a process of gradual diffusion, but in many cases it was a consequence of deliberate imposition by the dominant society.

The emergence of mestizo society. Unlike the United States, where immigrants from Europe largely displaced and marginalized the indigenous population, the mixing of ethnicities in Mexico produced a distinctive society, particularly in terms of nonmaterial culture. In turn, this has been modified through penetration by external influences.

Regional variations. While to outside observers Mexico may appear to be a homogeneous country, in reality there is substantial regional diversity. Southern states such as Chiapas and Oaxaca are home to large indigenous populations; the food, music, and Spanish of Veracruz is quite different from that of the U.S.-Mexico borderlands; and most of the monumental pre-Hispanic architecture is found south and east of Mexico City.

Hall of the Columns, Mitla, Oaxaca. This is the finest and most complete structure remaining at the site.

Land tenure. At least five different land tenure systems exist, each of which confers different rights and/or constraints. In addition to private and government property, lands may be held communally, to be managed by a public committee for the common good; as *ejido* land managed by *ejido* members for their benefit under the agrarian reform laws passed after the Mexican Revolution; and occasionally church lands, which although outlawed more than 130 years ago are still granted recognition in some communities. Frequently land title is unclear and the same plot of land may be subject to more than one tenure system.

In Mexico, then, the practice of CRM exists in an environment of overlapping mosaics. Furthermore these mosaics are dynamic, not static; people migrate, technology and economic development alter land use, and new forms of communication lead to changes in language and cultural expression. Remarkable cultural resilience and substantial pressures for change further complicate cultural resource management and policy.

La Fortaleza, Mitla, Oaxaca. Unexcavated stone and adobe fortress overlooking the principal site.

In a sense, efforts to manage cultural resources pre-date the Spanish conquest. There is ample evidence from Teotihuacan, Chichen-Itza, Mitla, and other sites of repair, expansion, and adaptation of sacred public spaces across time. The few surviving documents from the pre-Hispanic period, i.e., the codices, and the remaining wall murals clearly refer to people, history, legends, and myths as a means of transmitting cultural knowledge across generations. During the colonial period the management of cultural resources implied a dual process of exploitation of indigenous cultures by stripping the population of its valuables for export to Spain while repressing or displacing many cultural forms in favor of their European counterparts.

Native people sought to protect core beliefs and practices by merging them with or hiding them within the dominant culture. This provided some historical continuity but also transformed elements of both indigenous and Spanish colonial culture, contributing to the mosaic effect alluded to previously.

The central plaza at Monte Alban, Oaxaca. Monte Alban is the largest and best known of several thousand sites in the state.

More formal efforts to manage cultural resources appeared early in the 19th century. One of the first pieces of legislation passed after Mexican independence was a law forbidding export of "antiquities." At intervals there followed additional laws and executive orders governing property rights, excavation permits, federal oversight of archeology, and other matters related to CRM. On a number of occasions the federal government affirmed its control over all archeological sites and activity in the country, largely as a response to looting, vandalism, and foreign archeologists' export of data and materials (Lorenzo 1984: 90-92). By the early-20th century national government interest in cultural resources extended beyond regulation to direct participation in archeological excavation and site restoration. Although written during the turmoil of the Mexican Revolution, Article 73 of the 1917 Constitution granted Congress the specific authority "...to enact laws concerning the archeological, artistic, and historical monuments whose conservation is in the public interest" (Lorenzo 1984: 90).

Institutions

For more than a century after independence there was little institutional development or continuity in cultural resources management. At various times responsible agencies included the Museo Nacional Mexicano (Mexican National Museum, 1831), the Museo Publico de Historia Natural, Arqueologia e Historia (Public Museum of Natural History, Archeology, and History, 1865), the Inspeccion General de Monumentos (Inspector General of Monuments, 1885), and others (Olive Negrete and Castro-Pozo 1988: 9-14). Sometimes these agencies were autonomous, while at others they were but part of a broader, Cabinet-level department. The instability and frequent reorganizations after the Revolution meant, the new Mexican Constitution notwithstanding, limited opportunity to institutionalize archeological research and protection.

It was not until 1939 that President Lazaro Cardenas consolidated several programs and functions in a new federal agency, the Instituto Nacional de Antropologia e Historia (National Institute of Anthropology and History), commonly referred to as INAH. This consolidation paralleled the creation of several other resource management agencies, e.g., in petroleum and electricity, but INAH was assigned to the Department of Education, a reflection of Cardenas' view that INAH's focus would be research and education. He was particularly concerned that INAH contribute to national integration and an appreciation of Mexico's cultural heritage by fostering greater awareness of the contributions and significance of the indigenous population. Today, INAH's mandate in cultural resources management stems from the Ley Federal de Monumentos y Zonas Arqueologicos, Artisticos, e Historicos (Federal Law for Archeological, Artistic, and Historic Monuments and Zones, 1972), as amended. It gives INAH lead responsibility for site registry, protection, and managerial oversight.

INAH differs from its predecessors in several respects. First, while the laws defining INAH's authority and operational responsibilities have been modified several times since 1939, its mission remains essentially unchanged. This provides a sense of continuity and institutionalization of functions. Second, it has a far broader intellectual and disciplinary base than earlier agencies. Among its area of specialization one finds archeology, restoration and preservation, linguistics, social and physical anthropology, and museums. Under the influence of American cultural ecology and European Marxism the research focus has widened in two ways. Particularly in the last generation the concern has shifted from the study and protection of monumental archeological sites themselves to a more complete examination of dwelling areas, infrastructure systems, and trade routes. The integration of archeology and anthropology also means greater attention to settlement patterns, commerce, production, and power relations within and between communities.

(Corbett—continued on page 14)

(*Corbett—continued from page 13*)

Still a third major change from the past is INAH's assumption of a number of collateral responsibilities, from public education to training most of the cultural resource professionals in Mexico in its own university system. Yet a fourth change is INAH's assumption of the central role in salvage archeology, an important consideration in a country rich in archeological sites and experiencing rapid economic development.

As INAH's responsibilities have broadened its organizational structure has become more complex. Overall policy guidance comes from the Consejo Nacional para la Cultura y las Artes (National Council for Culture and Arts), primarily through its Technical Secretary. Policy implementation also requires consultation with appropriate departments within INAH and other federal agencies. Decisions at a project level are implemented through the responsible units, e.g., a department, research center, or one of INAH's state-level offices, after receiving approval from the Archeology Council. The Council consists of directors of research units, representatives from the state offices, and outside advisors. Its function is to review and approve projects planned by Mexican archeologists or by foreign institutions. Without such approval no archeological project may go forward; thus, the Council wields enormous influence over Mexican archeology.

Monte Alban tourist flow taxes the limited facilities and absorptive capacity of the site.

INAH departments most involved in cultural resources management include:

Archeology. This department serves as the link and coordinator between senior INAH policy-makers and the Archeology Council on the one hand, and practicing archeologists on the other. It oversees both archeological research and restoration projects, particularly as these relate to other INAH departments or INAH's state offices.

Archeological Registry, Monuments, and Archeological Zones. This is the entity charged with the responsibility for background and evaluation studies permitting official declaration of federal protection for archeological sites. Such studies include assessment of not only the site itself but also adjacent homes, infrastructure, and other aspects of the overall setting. It defines the criteria to be applied in delimiting zones deemed to be in danger of destruction or damage. It also drafts executive orders establishing archeological zones or monuments and historic sites.

Salvage Archeology. This department plans and executes salvage archeology through agreements with other federal agencies, state governments, public corporations, and private enterprise. Most of its activity has to do with public works projects such as dams, pipelines, highways, and the Mexico City Metro or subway.

Underwater Archeology. Responsible for protection and research on archeological sites and materials at inland and marine locations, this department is still in its infancy. Given the apparent absence of a sea-going tradition in pre-Hispanic Mexico, most of its work involves materials recovery from the cenotes in the Yucatan.

Cultural Property Restoration. This department handles the restoration work necessary for INAH properties. Much of its responsibility involves providing technical assistance to other departments in INAH.

Museums and Exhibits. This department handles the planning, organization, and preparation of museums and traveling exhibits which draw on INAH's collections. The department serves both an educational and a custodial function, and provides national, state, site, and agency museums with technical assistance and exhibit support.

At the state level INAH will have a center to administer sites and projects, conduct research, and carry out national policy. State centers vary in size and staffing. Some, such as Yucatan or Oaxaca, employ several hundred people due to substantial research, preservation, or other activity. Other states have modest offices and depend more heavily on specialists dispatched from Mexico City. To some degree state centers receive basic funding from INAH, but research and project budgets depend in large part on the ability of center managers and researchers to generate projects which win the endorsement of the Archeology Council.

Note that the above pertains most directly to archeology; linguistics or physical anthropology have somewhat different organizational arrangements, although they also will be represented in the state centers. Note also that these arrangements call for considerable consultation and coordination if they are to be effective, and in practice even the largest centers depend heavily on INAH's central administration for approval and oversight. Some archeologists with projects strongly supported in Mexico City function largely autonomously, with little state office supervision.

Challenges

- Mexico's administrative system is concentrated in Mexico City, and despite the dispersal of INAH employees across the country, special projects, and state centers, INAH is no exception to that pattern. To the extent this

centralization affects INAH's decision-making it means that operational decisions at the field level must be referred back to Mexico City for review and approval. Given the complexity of the country's cultural patrimony, central decision makers may be ill-prepared to understand the nuances of difficult local matters. Indeed, their preferred solutions and operational practices may be at variance with those best suited for local conditions.

- Mexico has received substantial international recognition for its research, training, and preservation efforts; indeed Mexico frequently serves as a model for other Latin American countries. INAH aggressively seeks UNESCO World Heritage Site designation for key sites as a means of underscoring such recognition, as a competitive factor in seeking international funding, and as a selling point for international tourism. It means, however, that INAH must be responsive to the standards and priorities of UNESCO, and this sometimes leads to internal conflict between those who attach importance to UNESCO standards and to those who give greater weight to local criteria.
- Since the 19th century the federal government has maintained a tight control over archeological practice and permits. Mexico, for example, has neither contract archeologists nor state preservation officers. While this means Mexican cultural resource managers spend less time than their American counterparts coordinating activities of many different agencies and actors, it also means that all of the research and other activity which gets farmed out in the fragmented American system must pass through the hands of a limited number of archeologists or cultural resource managers. As budgetary constraints make it difficult to add staff and centralization of authority channels decisionmaking upward in the organization, INAH finds itself pressed to respond to needs in a timely fashion.
- The processes of urbanization, industrialization, and economic development generate significant pressures on cultural resources. Urbanization creates demands for modification or replacement of old building stock, even when this may have historical value or be protected by law. The expansion of human settlements in areas adjacent to archeological sites means a continuing problem with land invasions and conversion to other use, as in the effects of the city of Oaxaca's suburban sprawl on Monte Alban. Infrastructure construction, while necessary to meet other national needs, threatens known and unidentified sites. And the decision to emphasize tourism as a means of promoting national economic development means increasing visitor traffic without the planning or investment necessary to manage it effectively.
- To the extent CRM exists in practice in Mexico it does so informally and within an institutional framework designed for other purposes. INAH's internal complexity and multiple roles complicate the policy and administrative integration which facilitate CRM; cultural resource managers find it difficult to mobilize the authority and expertise necessary for prompt problem-solving. Architects, archeologists, and anthropologists tend to coexist uneasily rather than work readily as teams, and managerial performance depends more on individual charisma than trained capacity.

Watch for our next article in a future issue of *CRM* which will provide a specific illustration of the ways in which these challenges interact with cultural complexity as INAH seeks to address CRM dilemmas.

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Photos by the authors.

For additional reading, see *CRM* Vol. 17, No. 3.

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Cataloging Archival Materials

The Lincoln and Jefferson Memorials

J. Steven Moore

Washington is a city of monuments. From one end of the federal district to another, it is possible to see represented the entire epic of American history from Christopher Columbus to the Vietnam War. The styles of the monuments are as varied as the subjects they depict with many hearkening to classical antiquity for their inspiration, while others are more modern in design.

Two of the city's more important monuments that fall into the first category evoke images of ancient Greece and Rome more than most. They are the Lincoln and Jefferson memorials. Occupying two of the most prominent locations in the city's grand plan, they stir images of democracy and freedom comparable in degree to such hallowed landmarks as the Capitol dome or the Statue of Liberty and succeed to that extent precisely as their planners envisioned.

Aerial view of the Lincoln Memorial. Photo by Bill Clark, NPS, 1980.

The architects who designed the Lincoln and Jefferson memorials, Henry Bacon and John Russell Pope, respectively, had in mind two of the ancient world's most significant architectural treasures when they conceived their plans. Bacon's Lincoln Memorial was modeled after the Parthenon (432 B.C.) in Athens, Greece, considered by architectural historians as the crowning achievement in the Golden Age of Greece. Pope's Jefferson Memorial borrowed from the Pantheon (128 A.D.) in Rome. The design bears further significance, because Jefferson himself admired the Pantheon and used the dome form in his own home, Monticello, and in the Rotunda at the University of Virginia in Charlottesville. Unfortunately, like these treasures of the ancient world, the Lincoln and Jefferson memorials are not immune to deterioration. Unlike their cultural antecedents, however, they did not require two millennia, wars, and the uncontrolled effects of air pollution of this century to show the impact of age.

Begun in 1914, the Lincoln Memorial was formally dedicated in 1922 with President Harding presiding and Lincoln's own son, Robert Todd Lincoln, in attendance. But even before this had occurred, the approaches and terrace wall surrounding the memorial required additional shoring. The original foundation for these two structures consisted of a slab foundation which was separate from the rest of the building. It proved wholly inadequate to support the weight and began settling almost immediately. It became necessary to build concrete piers down to bedrock, the same method as had been used for the subfoundation of the memorial. Between 1921 and 1922, 104 concrete piers were added to support the terrace wall and 72 for the approaches.

Less dramatic in terms of its obvious impact, but no less significant was the long-term deterioration of two paintings flanking the north and south walls of the chamber above the inscriptions of the Gettysburg Address and Second Inaugural Address. Entitled "Emancipation" and "Reunion," the murals depict allegorical figures showing an Angel of Truth freeing a slave in the first picture and the reunion of the North and South in the second. Each stands 12′ high and 60′ long.

View of the attic ornamentation at the Lincoln Memorial showing deterioration.

Painted by Jules Guerin, the murals originally displayed vivid colors of blue, red, and yellow, but the intervening 70 years have all but dulled their appearance to the point of oblivion. It is still possible to discern the images, but the effect is like viewing a sunset while wearing a pair of tinted glasses. Although under cover and pro-

A maintenance worker repairs a stylobate joint at the Jefferson Memorial. Photo by the author.

tected from direct sunlight and rain, the murals are still exposed to the yearly extremes of temperature and humidity that have been the scourge of Washington since its founders first considered it as a site for the national capital. Guerin was not ignorant of these conditions, but planned to offset them by mixing the 300 pounds of paint required with white wax and kerosene. Similar to the wax used by the ancient Egyptians, it was designed to harden and prevent the paint from cracking. As time has shown it was not a full-proof solution. It might have worked well in the hot, dry climate of Egypt, but ran afoul of Washington's weather rather more quickly. It is, of course, true that short of placing a material in an inert environment where it is not effected by the vagaries of the planet Earth, any substance will eventually show the effects of age. In 1940, just over two decades after the murals had first been placed in the memorial, $28,000 was requested in a Department of the Interior appropriations bill for a heating system to protect the paintings from condensation caused by cold weather, but this money was later eliminated from the final version of the bill.

While Congress debated the merits of preserving one memorial, a second one of equal proportions and significance was rising a short distance away. The groundbreaking for the Jefferson Memorial occurred in 1939. It was finished in the summer of 1942 and dedicated by President Franklin D. Roosevelt the following year.

View of a broken volute on an interior column at the Jefferson Memorial, c. 1962.

Settlement of peripheral approaches became a problem here just as it had at the Lincoln Memorial. *The Evening Star* reported in September 1946, that the roadway and walks at the northeast corner of the grounds had sunk about 18". Settlement of the walks continued and in 1949 the National Park Service pumped mud underneath the sidewalks to raise them to their proper level. The park superintendent emphasized that the memorial itself was structurally sound.

A more serious problem appeared in 1961 when a volute comprising the capital on one of the columns

A worker removes a broken volute from a column capital at the Jefferson Memorial.

broke and crashed to the chamber floor. Causes for such stone failure vary, but include a natural, existing weakness in the formation of the marble, vibration, and water penetration. The same situation repeated itself in 1990 when another volute failed. Additionally, a second was accidentally knocked loose during a scaffolding inspection. The inspection revealed cracks in six more volutes which were removed at this time as a safety precaution. Algae in the cracks indicated water penetration had occurred.

Both the Jefferson and the Lincoln memorials are subject to a variety of almost constant wear and abuse that damages the structures. This includes air pollution, bird droppings, insects, rain, and such innocuous things as visitors who inadvertently spill a soda drink or spit out their chewing gum on the floor. With two million visitors a year, most of whom are not guilty of these transgressions, it adds up, nevertheless.

So what can be done to preserve these national treasures for future generations? In 1990, the National Park Service undertook an architectural survey to ascertain the memorials' condition and determine a course of action for their upkeep. The main scope of this project involved photogrammetry, whereby each stone—numbering almost 8,000 in the Lincoln Memorial and approximately 6,000 in the Jefferson Memorial—was photographed and the pictures used to make scale drawings. This will provide a record from which final decisions may be made concerning what to do about such things as cracked volutes.

*(**Moore**—continued on page 18)*

(*Moore—continued from page 17*)

As an adjunct to this, research has been done on primary design and construction documents on the memorials. The research entails cataloging each separate archival item whether it be a letter, photograph, architectural drawing, or report using the Pro-Cite database (see sidebar, page 19). Pro-Cite provides work forms for a variety of different documents or sources in addition to those previously listed—everything from artwork to videos. Work forms allow the researcher to store information about documents in the database. Although there is some variation from one to the next, each includes space for such information as the author, date, storage location (i.e., the National Archives or Library of Congress), an abstract, and the ICAP codes used to identify a document with a specific architectural feature of the memorials.

ICAP refers to Inventory Condition Assessment Program.[1] Each ICAP code is a four-digit number and provides the key for unlocking Pro-Cite. For instance, in a four-page letter written September 25, 1913, to the Lincoln Memorial Commission, the congressionally-mandated agency charged with selecting a site and design for the memorial, Henry Bacon analyzed the construction bids, recommended his choice for contractors for the foundations and superstructure, and stated his preference for Colorado Yule marble. The ICAP code numbers in this entry are for buildings, exterior envelope, exterior wall covering/surface, exterior wall structure, interior, interior wall covering/surface, interior wall structure, foundation, pier, pile, functional design, and site design. Another entry concerns four similar black and white photographic prints of the illuminated statue of Jefferson from February 1956. Numerical codes for this entry are for buildings, building utility systems, electrical, lighting fixture, and sculpture.

On the great axis, planned over a century ago, we have at one end the Capitol, which is the monument of Government, and to the west, over a mile distant from the Capitol is the monument to Washington, one of the founders of government. The Lincoln Memorial, built on this same axis still farther to the west,... is the monument of the man who saved the Government, thus completing an unparalleled impact to each of its monuments a value in addition to that which each standing alone would possess.

The accepted design of the memorial itself, as prepared by the office of John Russell Pope on a scheme which received his approval, is in the classic style which Jefferson introduced and advocated for the building of the Capitol. It is of the general type of the Roman Pantheon, which he admired—a circular building with a low dome, its curved outline contrasting with the rectangular mass of the Lincoln Memorial. A surrounding circular colonnade distinguishes the monument from others of the type and enriches its effect from the Potomac.

—Henry Bacon
on the Jefferson Memorial's symbolic significance to the city's other major memorials

Pro-Cite is flexible. It would not be necessary to input all the ICAP code numbers to view this entry in the database. If a researcher had a record of the document for which he was searching and wanted to learn where the original was stored, he could perform a search using select terms such as the date or author's names. What the ICAP codes do is allow a researcher who wants as much information as possible about, say, the exterior columns to input the appropriate code numbers and receive a complete list of all the documents concerning that particular feature. Selecting from a list of more than 400 codes, ICAP may be used to access information on everything from roadways to the heating and air conditioning ventilation system. Some of the less obvious categories in ICAP that do not directly relate to the memorials or their immediate surroundings include boat docks, public utilities, and campgrounds.

The Jefferson Memorial. Photo courtesy National Park Service.

The current Pro-Cite database covered by ICAP has more than 8,000 entries, roughly divided between the Jefferson and Lincoln memorials. The database has been in the making for more than two years and catalogs documents from several repositories, including the National Archives, the Library of Congress, the Museum Archeological Regional Storage (MARS), the Harpers Ferry Center's Office of Library, Archives, and Graphics Research, the headquar-

Lincoln Memorial. Photo by Bill Clark, NPS.

ters for National Capital Parks-Central, the Office of Land Use Coordination of the National Capital Region, the Fine Arts Commission, and Wesleyan University in Middletown, CT, where some of Henry Bacon's papers and renderings are stored. Rules for examining documents vary from one repository to another, so anyone interested in doing research should contact each facility directly.

Pro-Cite has been used by architects and engineers to access information for reports documenting the problems at the memorials. By providing a record of what has gone before, Pro-Cite allows the user to ascertain as nearly as possible the builder's original intent. Although no decision has been made concerning the preservation of the memorials' marble surface, other projects are currently underway. One involves repairing the terrace at the Lincoln Memorial and the stylobate mall at the Jefferson Memorial. At the Lincoln, all the dirt on the terrace deck—some two to three feet—has been removed and the concrete slab waterproofed and repaired. Likewise at the Jefferson, repairs have been made to the stylobate mall, involving the installation of new sheet piling, the placement of a storm drain line, and the removal of sick trees and shrubs or those not corresponding to the original landscaping plan. In this latter case, landscape architects using original documentation from the 1940s concluded that the plantings were intended to complement vistas of the memorial, not obscure it as later occurred when additional landscaping was done.

As the work proceeds in other areas, Pro-Cite will provide a link with the past, permitting preservationists to gain access to a wealth of information quickly and easily. In so doing, it will be as close as one is likely to come to re-entering the minds of Henry Bacon and John Russell Pope to understand what they hoped to express in their work honoring two of this country's greatest leaders.

While the casual observer would probably not notice the cracks in individual stones or spalls in the steps of the memorials, such little problems can become big problems if allowed to go unaddressed. The volutes are a case in point. To ensure this does not happen and that the memorials remain the dramatic symbols of the nation's birth and unity they were intended to be, preservation and maintenance policies will be established that by drawing upon the past will ensure their continued presence along the banks of the Potomac River until far in the future.

Note

[1] The Inventory and Condition Assessment Program (ICAP) is a computerized methodology for inventorying, assessing condition, identifying maintenance and major deficiencies, providing corrective work procedures, and developing estimated costs for correction of the identified feature deficiencies of all types of historic, prehistoric, and non-historic assets. The program's methodology and computer program have been designed to support the national park system's Maintenance Management program as well as other programs.

J. Steven Moore is a park ranger with National Capital Parks-Central in Washington, DC. He recently completed a detail assignment with the NPS Denver Service Center-Eastern Team in Falls Church, VA. The Denver Service Center is coordinating the restoration work on the Lincoln and Jefferson memorials, and Mr. Moore gathered the data for the Pro-Cite database described in this article.

Pro-Cite is a commercially available bibliographic software package. The National Park Service has joined the growing ranks of other federal agencies that use Pro-Cite, including the Library of Congress, the Smithsonian Institution, the National Institute of Standards and Technology, and the National Archives and Records Administration, to mention a few. Within the NPS, Pro-Cite has been adopted as its recommended standard of the NPS Library Program and is or will be the software base for several other NPS programs dealing with bibliographic material. An advantage of Pro-Cite, as Mr. Moore points out, is that it is custom tailored for a wide range of bibliographic material and journalistic styles. Users only need to select the Pro-Cite standard formats and/or styles that are useful to them. What makes Pro-Cite particularly interesting is that it combines powerful searching capabilities with a variable length database management system. The application described in this article illustrates the considerable flexibility of Pro-Cite in handling seemingly disparate information for useful purposes.

—Randall J. Biallas

Tile Roofs of Alfred, NY

Susan Tunick

At first glance, the town of Alfred resembles other rural settlements located in the Southern Tier of New York State. It is tucked into a secluded section of the Allegheny foothills, offers beautiful hillside vistas and includes traditional village centers similar to those in many nearby towns. But a second look at Alfred reveals a community different from its neighbors, for it is filled with terra-cotta tile roofs.

In all, more than 100 structures bear these distinctive orange-red roofs. They are powerful reminders of the terra-cotta tile industry that thrived in Alfred from 1889 to 1909. Two companies, the Alfred Clay Company and the Celadon Terra Cotta Company (which evolved into the renowned Ludowici-Celadon Company, still operating in Ohio today) transformed high-quality local raw materials into a wide variety of clay roofing tiles. Clay tiles are one of the most ornamental and distinctive roofing materials, offering a great range of shapes, colors, patterns, and textures. The unique aesthetic qualities of a clay tile roof help to make it a prominent feature in many historic structures.

These durable and fire-resistant tiles were also especially popular for roofing in the surrounding Alfred region, where village residents and farmers from outlying areas transported "factory seconds" to cover their buildings. A wide variety of residential and commercial structures were roofed or re-roofed with tile. Early-19th-century houses, churches, outbuildings, libraries, campus buildings, and even the few nearly extinct barns, carried rich patterns of the red tile.

The Conosera tile roof and ornamental finial were added to this 1830s commercial structure at 44 North Main Street in the late 1880s. Photo by Jay Barcley.

Alfred residents have long cherished their historic connection to the clay industry and have been actively involved in preserving the physical evidence of their past. In 1985, they successfully obtained a listing on the National Register of Historic Places for the sizable Alfred Village Historic District as well as for four individual landmark buildings. More recently, the Friends of Terra Cotta, the Alfred Historical Society, and the Baker's Bridge Association, have worked with residents on a Roof Tile Project which included a publication, *Tile Roofs of Alfred*, and a series of related activities.

Although tiles can last for centuries, the life span of a terra-cotta tile roof is estimated to be about 100 years. Since most of the Alfred roofs are reaching this venerable age, part of this Roof Tile Project included a survey of the existing historic roofs. All the roofs were documented with photographs, conditions reports, and written histories. A clear awareness of a roof's condition is the first step toward helping to preserve it. In today's world, where architectural conformity is the rule rather than the exception, it is hoped that Alfred will be able to retain its terra cotta architectural heritage for future generations to enjoy. It was with this goal in mind that *Tile Roofs of Alfred* was prepared and published. This booklet provides historical background on Alfred's terra cotta roof tile industry, an illustrated walking tour of Alfred, and information on roof tile manufacturing and installation.

A wagon load of roof tile packed in straw passing the Celadon Terra Cotta Company business office. Built in 1892, the building served as a catalog of the decorative tiles the company produced. Known today as the Terra Cotta Building, it was moved in 1974 to its current location on Main Street. Photo courtesy Alfred Historical Society.

Susan Tunick is the president of the Friends of Terra Cotta, a national preservation organization, as well as an artist working in ceramic mosaics.

To order *Tile Roofs of Alfred*, send a check payable to FOTC for $7.00 (includes postage) to Friends of Terra Cotta, c/o Tunick, 771 West End Avenue, 10E, New York, NY 10025; 212-932-1750.

Orphans of the Storm

The Preservation of Architectural Plasters in Earthen Ruins

Frank G. Matero
Angelyn Bass

The pilot plaster conservation project taking place at Fort Union National Monument, Watrous, NM, and Fort Davis National Historic Site, Fort Davis, TX, symbolizes an expanding role for the architectural conservator. The Division of Conservation, Southwest Regional Office of the National Park Service, and the Architectural Conservation Laboratory of The University of Pennsylvania have cooperatively implemented two successful summer field school programs. The following article gives the details of the program. In an earlier issue of CRM *(Vol. 16, No. 10), Southwest Region Director John Cook gave an overview of the cooperative agreement with The University of Pennsylvania.*

—Jake Barrow

The preservation and management of ruins and associated archeological features are complex issues, especially for the diverse number of historic and prehistoric sites in the American southwest, and in particular for those under the care of the National Park Service. Because of the exposed and fragile nature of most ruined structures, contemporary preservation standards demand the best documentation possible and maximum protection of original or historical material. For sites open to the public, this must often be accomplished while interpreting the remains in a manner which is readily comprehensible to the visitor. This is a difficult problem for any structure in a ruined state and in particular for those fragile materials and elements such as adobe and finish plasters which, if present at all, are often fragmentary and subject to rapid deterioration.

Fig.1. Fort Union National Monument. Watrous, New Mexico, 1992.

Despite earlier practices of complete or selective removal of surviving plasters and decorative finishes from ruins and archeological sites for protection and display off-site, preservation and interpretation in place is ideologically the preferred solution, even if backfilling is the only option. *In situ* preservation of architectural plasters insures future contextual studies of the intact resource and allows visitors the opportunity to both understand and enjoy the ruin as a once complete structure. Surviving plasters with their finishes often enhance these sites by defining interior and exterior space, related architectural elements, and even room use, clarifying what might otherwise be an incomprehensible jumble of fragmented remains.

As a follow-up to research needs expressed previously in 1990 at the Sixth International Conference on the Conservation of Earthen Architecture in Las Cruces, New Mexico, the Architectural Conservation Laboratory of the University of Pennsylvania with the support of the Gaia Project [CRATerre (Grenoble) and ICCROM (Rome)] has begun a multi-phased research program on the characterization, performance, and conservation of traditional surface finishes (i.e., plain and decorated plaster and stucco) employed on earthen architecture. This research has included a survey of the existing literature on the subject, an assessment of analytical techniques best-suited for the characterization of plasters and stuccoes, the development of standard physical, mechanical, and chemical tests for these materials and systems, and the design and evaluation of conservation treatments. Treatment studies have focused on two major problems associated with these materials: consolidation and reattachment.

Despite the widespread observation and reporting of the detachment and loss of historic plasters on earthen walls, almost no research on reattachment methods has been published. As a consequence, our research in this area has focused on grouting as an appropriate technique for consideration and on the design and performance evaluation of various grout formulations for the reattachment and reintegration of surface finishes on earthen supports. In addition to this program of laboratory testing and evaluation, a field component was designed and implemented in conjunction with the Southwest Regional Office of the National Park Service as part of a three year, four park program directed toward research, design, and implementation of a strategy to preserve and conserve historic and prehistoric plasters in ruined sites.

In response to this initiative and a preliminary condition assessment by the National Park Service in 1990, two of the region's sites, Fort Union National Monument in northeastern New Mexico (figure 1) and Fort Davis National Historic Site in southwestern Texas (figure 2) were identified in 1991 as possible locations for study and treatment testing by the University of Pennsylvania.

*(**Matero**—continued on page 22)*

*(**Matero**—continued from page 21)*

In order to facilitate this endeavor, a five-year cooperative agreement was signed by the University and the National Park Service in early 1992. Project coordinators for the Southwest Regional Office are Jake Barrow, supervisory exhibit specialist, and Barbara Zook, historical architect. Project director for the University of Pennsylvania is Frank G. Matero, Associate Professor of Architecture and Director, Architectural Conservation Laboratory.

Fig.2. Fort Davis National Historic Site, Texas, 1992. National Park Service photo.

The following project summaries for the two model sites offer a methodology for the documentation, stabilization and interpretation of architectural plasters at earthen ruins.

Fort Union National Monument

Fort Union National Monument is located 100 miles northeast of Santa Fe along the historic Santa Fe Trail in Mora County, NM. Three forts have existed on this site: the first built of logs in 1851; the second, an earthen star-shaped field fortification built in 1861; and the third and present adobe and stone ruins dating from 1863. The third installation was the largest military post in the southwest, requiring six years (1863-1869) to complete, and was eventually abandoned in 1891. The ruins of the last or third Fort Union are the most intact and now constitute the largest adobe ruin in North America. The remains of all three forts plus sections of the Santa Fe Trail form the basis of the National Park Service interpretation since the establishment of the park in 1954.

The ruined structures of the third Fort Union are a fitting record of the military's failed attempts to build and maintain serviceable structures in the southwest frontier. This was largely due to a number of factors including the introduction of incompatible building materials used in combination with existing building traditions, poor construction practices such as the making of adobe during freezing weather, reliance on untrained soldier labor, and little understanding or commitment to building maintenance.

Extensive building records and early photographs clearly outline the military's intentions, practices, and justifications in the construction of the third fort and depot. Although none of the third fort's wooden structures survive today, it is clear from the documents and archeological evidence that the majority of the buildings were of masonry construction: adobe walls on sandstone foundations with brick fireboxes and chimney stacks and exterior cornice copings (figure 3). With the exception of a few buildings which possessed steeply pitched wood shingle roofs most adobe structure roofs were nearly flat and of concrete covered with tin-coated iron plates. As a general rule most of the exteriors and interiors of the adobe buildings were originally plastered or stuccoed and often painted (figures 4 & 5).

Despite the widespread use of stucco and plaster at Fort Union, photographs of the 1870s and 80s indicate that much of the exterior stucco had fallen off by that time. This condition was exacerbated by the fact that the repair work was neglected by troops who were not regularly available to execute the work and who lacked the technical expertise, as well as the Army's unwillingness to appropriate sufficient funds for annual maintenance. By February of 1891, 28 years after its erection, the third Fort Union was declared "totally unfit for habitation" and abandoned.

Beginning with the establishment of the park in 1954 and the congressional mandate "...to identify and then stabilize and preserve the outline or form of selected ruins and structures..." experimental testing of new chemical treatments and the eventual use of a wide variety of conservation approaches occurred at Fort Union and other sites in the Southwest Region. These included: unit replacement with soil-cement adobes and structural stabilization with tension wires and steel plates (1956), lime and cement fills and plaster edgings and spraying of aqueous silicone water repellents on the plaster and adobe surfaces (c.1964-mid 1970s), application of epoxy consolidants (1963-64), and resin coatings and polymer-modified mud mortars (1966-67).

Current preservation work at Fort Union has discontinued these practices and instead has addressed the preservation of the adobe ruins through a continuous program of cyclical maintenance involving traditional adobe capping and mudding. The introduction of this more modest preservation program of traditional materials and techniques by the park and regional office in recent years can be attributed to the lack of information and follow-up assessment of many of the past experimental treatments used and, in some cases, their resulting failure and damage to historic materials. Similar observations nationwide of the failure of unproven technologies applied to historic build-

Fig.3. Officers' Quarters, Fort Union, c. 1875.

Fig.4. Quartermaster Storehouse loading yard, c. 1866. Note plastering in progress on the right wall.

Fig.5. Mechanics' Corral, interior, 1866. Note fresh exterior plaster up to the brick cornice.

ings and monuments understandably have resulted in a more cautious approach to the use of new treatments today.

Fort Davis Historical Site

Fort Davis National Historic Site is situated in the Davis Mountains of southwestern Texas in Jeff Davis County. The site consists of the remains of two separate forts constructed between 1854 and 1891. The ruins of the second fort are the most intact and the focus of the National Park Service interpretation since the establishment of the park in 1961.

A range of building material combinations can be observed at Fort Davis each with their own proclivity to failure. All ruined structures are masonry, the majority being a local red and tan rhyolite quarried 1 1/2 miles from the post. Some adobe brick buildings also exist. These were originally stuccoed, and appear to have been scored and painted to simulate the other stone residences. References were found in the various Annual Inspection Reports of 1886 of painting the exterior of the buildings with a "wash of 12 barrels Paris white and 1/2 barrel dry vermillion." This undoubtedly refers to the pink colored limewash which was applied to the stucco and can still be observed on the fragments of exterior stucco under the front verandas.

Interior wall plasters and their decorative painted finishes survive to a great degree despite their vulnerability to the weather. Interior plasters are of multiple coats, often with thick preparatory base (scratch) and intermediate (brown) coats for surface leveling followed by a thin white finish coat. Large portions of interior woodwork survive in many of the structures. Paints and decorative schemes typical of the late 19th-century are evident in nearly all of the buildings, especially in the officers' houses. The high quality, subtle distinction, and excellent survival of these finishes strongly argue for their conservation. In addition, historic graffiti covers many of the walls.

Since 1962, the National Park Service's preservation approach has been to expose and stabilize the foundations of buildings with no above-grade walls; to stabilize ruins too deteriorated for re-roofing, and to completely and partially restore those buildings with substantial remains, generally defined as structures retaining at least 70% of their original walls. Subsequently, new historically-accurate roofs were constructed over many of the buildings.

The Plaster Conservation Program

In 1990 a conditions survey of plasters at both sites conducted by the Southwest Regional Office revealed active and widespread deterioration and loss since the stabilization efforts of the early 1960s. This information together with the promising results of a modest pilot treatment program undertaken at Fort Union by the University and regional office in June 1991 led to the development and implementation of a conservation program the following year. It was the intention of this program to provide documentation and emergency conservation treatment for the lime plasters at both sites, as well as to provide field training for National Park Service staff and graduate students.

Treatment areas at each site were designated by the National Park Service and selected according to their inclusion of representative materials and conditions, as well as to their accessibility. At Fort Union, the south end of the Mechanics' Corral (HS-36) was chosen because of the predominance of surviving plaster in that sector and the recognition by the park of the very sensitive and fragile condition present. At Fort Davis, a typical adobe quarters in Officers' Row (HB-12)—protected by the earlier installation of a wood frame and shingle roof—was selected because of the number of similar structures on site and its representative painted plaster and woodwork retaining a high degree of integrity.

The conservation program designed for both sites included the following phases in the designated work areas:

I. Documentation

Documentation of the plasters and their previous maintenance and preservation was prepared for each area using archival documents and site reports and photographs. Extant surface materials, i.e., paints and plasters, and verification of their existing conditions were recorded on specially prepared survey forms and graphically documented on photo copies of the 1990 rectified pho-

*(**Matero**—continued on page 24)*

(Matero—continued from page 23)

tographs. 35 mm and/or 4" x 5" polaroid black and white and/or color photographs were taken before, during, and after treatment.

II. Emergency stabilization/consolidation

Emergency stabilization of fragile plasters and paints was conducted to secure all detached plaster and flaking and powdering paint in danger of damage and loss prior to grouting and edging. Where necessary these temporary stabilization measures were left in place until full treatment the following year. All fragments found buried or on the surface of the ground were reburied in clean sand adjacent to the wall nearest their found location. Emergency edging and adobe repairs were coordinated with park personnel in areas requiring plaster stabilization.

III. Plaster reattachment, cleaning, and replacement of previous repairs

A complete program of plaster reattachment, compensation and replacement of previous repairs, and cleaning was designed and executed based on materials and techniques tested during the 1991 Pilot Conservation Program and subsequent laboratory testing of various grout mixes from 1992-93. This involved injection grouting for reattachment, mortar fills for cracks, losses and edge detachment, and aqueous cleaning methods.

Treatment Descriptions

Temporary Stabilization: In cases where plaster or painted finishes were unstable, temporary facings were applied before removal of previous repairs and grouting. Depending on the size and weight of the detached plaster fragment, the facing material selected was either Japanese tissue paper or, for larger heavier pieces, cotton gauze strips tied to wooden stakes inserted into the adobe. The facings were secured by brushing on a 10% solution of polyvinyl alcohol in water. After grouting the facings were removed with water.

Consolidation: At Fort Davis, the interior distemper paints proved to be sensitive to water and light abrasion. Since the removal of soiling and the implementation of the plaster stabilization treatments all required some potential wetting of the surface, consolidation of the paint was necessary as a pre-treatment to grouting. As the first step to prevent additional deterioration of the paint, 3 applications of a 3-5% solution of Acryloid B-72 in toluene and xylene (1:1) were brushed onto the surface through a layer of Japanese tissue paper. The solution was brushed on first in the horizontal direction and then in the vertical direction. This treatment consolidated the powdering paint without causing any change in surface texture or sheen and allowed grouting and mechanical cleaning of surface debris to proceed without danger of staining or disrupting the finishes. Field and laboratory assessment of the treatment was conducted using modern standards for evaluation of chalking.

Glossary of Technical Terminology

brown coat: The second or intermediate coat in three coat plaster work, usually intended to bring out the wall surface to its full ground thickness.

capping: Term used in the c. 1960 stabilization work at Fort Union to identify the lime and sand mortar fills placed along the broken edges of the plaster fragments.

compensation General term to denote any conservation treatment designed to improve visual and structural unity, e.g., tinted mortar fills in areas of loss in the plaster.

consolidation: A conservation treatment involving the application of a deep-penetrating liquid designed to restore cohesive strength to friable or powdering materials such as plasters, adobe, or paint.

edging: Term used in the 1992 conservation work to denote the various mortar fills installed to replace the earlier "capping."

facing: The temporary stabilization of fragile or damaged plasters or finishes using Japanese tissue paper, synthetic textiles, or cotton gauze in combination with reversible adhesives such as polyvinyl alcohol (PVOH), methacrylates, or gelatin. Usually applied as a preliminary treatment prior to other conservation work.

finish coat: The third or last coat in plaster work, usually very thin (1/16"-1/8") and fine in texture.

grouting: A conservation treatment involving the injection of fluid mortars or adhesives into blind or partially concealed voids to readhere and/or fill detached layers and re-establish structural continuity.

mudding: The application of a thin slurry coat of clay or mud on adobe as a sacrificial protective layer.

plaster: A combination of lime and/or cement binders, aggregates and water that forms a plastic mass which when applied to a surface adheres to it and subsequently sets or hardens to produce a protective and decorative surface. For the purpose of this report, and as sometimes used in the historical documents for Fort Union, the term denotes any interior single or multi-coat render of varying composition and not necessarily containing plaster of Paris (gypsum).

rendering: General term for any plaster or stucco as well as the act of laying the material on a surface.

rough coat, rough casting: The historical term used to describe the exterior stuccoes at Fort Union. As described in Joseph Gwilt's Encyclopedia of Architecture (1867), it denotes an inexpensive exterior stucco of three layers consisting of washed gravel, lime and water in which the last coat is thrown onto the wall and brushed out with the same to give a uniform texture and color.

scratch coat: In three coat plastering, the first or base coat, generally applied as a leveling coat and to prepare the surface for subsequent layers. This coat is often cross-raked lightly to present a roughened surface for a mechanical bond with the second or "brown coat."

stucco: According to Gwilt, a term indefinitely applied to any rendered composition employing lime ("calcareous cements") and often reserved for interior molded and cast work, sometimes resembling marble. For the purpose of this report and as used in the historical documents for both sites, the term denotes any exterior rendering used for protection and/or decoration.

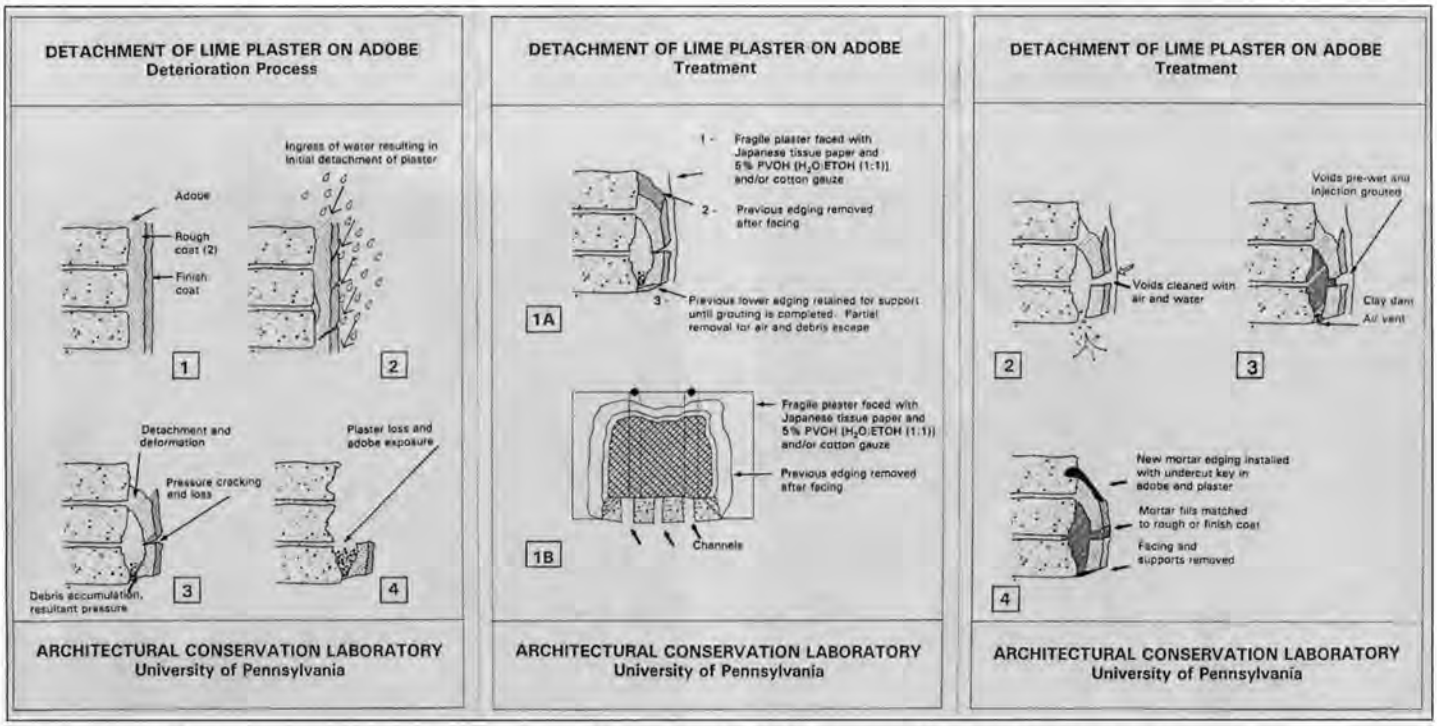


Fig.6. Detachment of lime plaster on adobe: deterioration process and treatment employed at Fort Union and Fort Davis during NPS study.

Grouting: Grouting is the injection of fluid mortars or adhesives to fill unwanted voids and readhere detached materials. Since grouting methods allow relatively deep penetration of the grout into inaccessible discontinuous areas, grouting is recommended to reestablish structural adhesion between plaster layers and/or their substrate, or to restore exfoliating masonry. Grouting mortars should be mechanically and chemically compatible with the plaster and masonry support material, reestablish structural adhesion between the plaster layers and substrate, and allow the passage of water vapor.

At Fort Union and Fort Davis many of the plasters had been previously edged with a lime-sand or cement mortar, all keyed with iron nails (figure 7). These edgings were cracked and unsightly due to their wide and irregular installation and were removed by hand with small chisels and mallets. This allowed access to the voids between the plaster and the adobe substrate for grouting. Debris, loose adobe and organic matter were removed from the open and blind voids with compressed air, brushes, and small tools.

The location of blind voids was determined by percussive sounding by hand and with small wooden mallets and recorded on the surface with non-staining white chalk. The majority of blind voids were located along existing cracks or holes. These were used as ports where possible. For blind voids with no access, small holes were drilled using a hand drill and 1/8"-1/4" masonry bits.

All voids were flushed and wet with water in order to reduce premature drying of the grout through suction into the adobe and plaster, to clean out the voids, and to rehydrate any remaining loose clay for reattachment. Additionally, the plaster surface was sprayed with water to retard drying. Openings along the edges, areas of surface loss, and cracks were temporarily damned with clay or cotton and sticks were inserted at intervals along the damming for air release holes during grouting. These areas were then prewet with a 5-10% aqueous acrylic emulsion to increase the flow and adhesion of the grout to the existing adobe and plaster and to provide a measure of compatibility between the adobe, grout, and plaster. Based on field and laboratory tests, a light-weight, low shrinkage compatible grout composed of (all parts by volume): 4 parts Riverton hydrated hydraulic lime, 3.8 parts Z-Lite ceramic microspheres (G3500), 1 part fine silica banding sand and 0.4 parts (or 10 % of the lime binder) acrylic emulsion with a defoaming agent was selected (El Rey Superior 200).

Potable water was added to the dry mix and blended for 3 minutes in a high velocity mixer (15,000 RPM) producing a grout with a viscosity of 46.58 sec/500 ml (Marsh Flow Cone) or the consistency of heavy cream (approximately 1 part water to 2 parts solids) . The grout was then injected into the ports through a 12 and 14 gauge steel cannula-tipped syringe always working from the bottom to the top. Excess grout was immediately removed from the surface and the grouted area protected from heavy rains and/or direct sunlight for at least the first 24 hours with polyethylene sheeting.

Compensation (edging and filling): (figures 6-4, 7 & 8) Abrupt edges at delamination points, surface holes, and cracks are all invitations for water penetration and its consequential array of conservation problems. While reconstruction of missing plaster was not the primary goal, completing deteriorated, or lost architectural details such as drip edges and contiguous surfaces essential to the proper shedding of water and structural infill in fragile isolated areas was considered necessary for the long-term durability of the plaster fragments.

Edging and fills were formulated to be physically and mechanically compatible and similar in texture and color (using suitable aggregates, lime-proof pigments or earth). They were formulated to be distinguishable from original

(Matero—continued on page 26)

(*Matero—continued from page 25*)

fabric yet provide visual continuity and legibility to the fragment in context. At Fort Union edging and surface fills were formulated to match the underlying rough

Fig. 7. Mechanics Corral (HS 36), Room 23, Fort Union. Plaster fragment before recent conservation. Note unsightly and failed previous edging.

coats. At Fort Davis both finish and rough coats were matched depending on the level of loss.

At Fort Union and Fort Davis edging of the plasters and filling of the cracks and holes were undertaken after the initial set of the grout, approximately 48 hours. All edgings were composed of lime putty or hydraulic lime and local aggregates selected for color and texture matching. In all cases the dry components were well mixed and the water stirred in until the mix was well blended. After the edging and fills were allowed sufficient time for an initial set, approximately 24 hours, the repairs were shaved down to the desired depth and texture and the surfaces were brush-stippled with 10% acetic acid to dissolve lime laitence and reveal the aggregate. Exterior edgings at Fort Union were partially capped with mud to protect the adobe wall-edging junction.

Surface Cleaning: After the grouting and edging and fills had set, facings were removed by wetting the tissue or gauze and carefully peeling them off the surface. Any residue of the 10% polyvinyl alcohol adhesive was also removed by brush with water. The plaster surfaces and adjacent adobe were examined for any grouting, edging/fill or acrylic residue. These were carefully removed with brushes and dental picks. A final cleaning of surface dirt and biological growth was accomplished by brushing the entire surface with 5% acetic acid followed by a thorough water rinse.

Conclusions

The ability to develop an effective preservation strategy that is conservative yet responsive to the varied contexts of different sites, while acknowledging the fragile nature of earth and plaster in the context of a ruin is no easy task. Past and current preservation practices at such sites include replacement, encapsulation with nonhistoric veneers, protective shelters and backfilling, and remedial conservation treatments including capping, grouting and consolidation. Their selection, however, must be based on careful consideration of the significance of the site,

Fig. 8. Mechanics Corral (HS 36), Room 23, Fort Union. Plaster fragment after recent conservation. Note new edging flashed into adobe wall.

environmental and human factors, maintenance, cost, and treatment predictability. The above conservation program for plasters in earthen ruins offers new possibilities for *in situ* stabilization and interpretation of these important elements for both historic and prehistoric sites. With additional research, similar programs could be established in the hopes of offering practical solutions to the stabilization and re-interpretation of a much neglected component of architectural and archeological sites.

Frank G. Matero is a professor at the University of Pennsylvania.

Angelyn Bass is a conservator/preservation specialist with the Southwest Regional Office of the National Park Service.

The National Register Looks Toward the Future

Antoinette J. Lee

More than 60 people attended the two-day National Register of Historic Places Workshop, March 17-18, in Washington, DC. They included members of the National Register staff, staff of State Historic Preservation Offices (SHPOs), members of State Historic Preservation Review Boards, and representatives from local government historic preservation programs. Sponsored by the National Register, National Park Service, and the National Conference of State Historic Preservation Officers, the group convened to explore experiences in using the National Register, streamlining the National Register nomination process, applying technology to expand accessibility to the National Register, and evaluating certain property types.

The discussion generally followed the sequence of recommendations on the National Register program found in the recently completed report, "National Performance Review of the Historic Preservation Fund Partnerships." For the National Register of Historic Places program area, the Historic Preservation Performance Review Committee of the National Park System Advisory Board recommended that the Historic Preservation Fund Partnerships should:

- *Redirect NPS, state, and local resources to develop an array of educational products and initiatives using National Register documentation and other sources.*
- *Redirect the resources of NPS and SHPOs toward building the capability of federal, state, and local governments, and the public to prepare nominations to the National Register.*
- *Simplify and shorten the processes and requirements at the state and federal levels for nominating properties to the National Register.*
- *Become a full participant in the "information highway" of the future by making accessible to a wide range of current and potential users the substantial quantity of historic resources information residing with public agencies and private organizations.*
- *Determine how qualified government entities can be granted authority to list properties in the National Register. If necessary, pursue amendments to the law to accomplish this objective.*

Using the National Register in educational activities was the first topic of discussion. The National Register's Teaching with Historic Places has already been the subject of several *CRM* articles.[1] The group discussed the benefits of using National Register documentation to prepare lesson plans and other instructional materials for students.

Chere Jiusto of the Montana SHPO discussed the state's interpretive sign program where metal signs are awarded to owners of National Register properties. These signs are supported with the state's "bed tax" and the state's tourism department uses the signs in promoting visitation in the State. In addition, owners of National Register properties in Montana are recognized at preservation awards ceremonies, which are attended by the Governor, who distributes certificates of recognition, and which coincide with meetings of the state legislature. The state legislature funds a preservation program for tribal places. Text for highway interpretive signs on important American Indian properties and specialized workshops are products of the program. In addition, American Indian interns in the state office prepare National Register nominations.

States have developed a variety of methods for disseminating information in National Register nominations after the properties are listed. The Montana SHPO works to get the information into articles, books, teaching materials, and the statewide educational bulletin board. Copies of National Register nomination documentation are routinely provided to historical societies and libraries prior to the State Historic Preservation Review Board meeting on the nomination. Workshop participants cited examples of books, publications, and other media vehicles that resulted from National Register nominations, including county-wide surveys, a catalogue of African American resources, press releases on recently-listed properties, tourism books, and guides to highway markers. The annual Preservation Week and Archeology Week provide opportunities to highlight National Register properties. Staff with the Virginia SHPO combs through real estate advertisements and sends National Register reports to real estate agents. Alaska transcribes oral histories used in National Register research and distributes this material to libraries. The Preservation Alliance of Virginia sponsors regular meetings of owners of National Register properties.

Several states use National Register multiple property documentation as the basis for technical publications. For example, the Pennsylvania Historical and Museum Commission recently published *The Whiskey Rebellion: Southwestern Pennsylvania's Frontier People Test the American Constitution* by Jerry A. Clouse (1994), which includes a historic context statement and a guide to the associated sites and remaining buildings. Publications like these provide an opportunity for nomination preparers to receive author credit in the technical publication as well as in the nomination documentation.

Public participation in the National Register process and in preparing National Register nominations is essential to a strong mix of National Register constituents. In some states, such as Ohio, the overwhelming majority of National Register nominations are prepared by members of the public, either interested individuals or from local historical groups.

Elisabeth Potter of the Oregon SHPO described her experience with providing guidance, communication, and reinforcement to non-professionals in preparing National Register nominations. This approach is important in a largely rural state where one National Register staff person in the state office oversees the preparation of between 75 and 100 nominations each year. The statewide special tax assessment program, which was available from 1975 to 1993, generated some of this high volume of nominations. Non-professionals prepare nearly one-third of all nominations, making a user-friendly system for the one-time user of the nomination process a

(Lee—continued on page 28)

(Lee—continued from page 27)

prerequisite. While the nomination preparer provides the description of the property and the narrative statement of significance, Potter prepares the maps and provides the synopsis of the property's significance, which is used in the slide presentation to the State Historic Preservation Review Board meeting. In her experience, Potter has noted that the most difficult part of the nomination form for most non-professionals is to evaluate the property in a broad historic context. In some cases, she matches non-professionals with students and interns from area universities and colleges, who can prepare these contexts as part of their academic work.

James W. Steely, Deputy SHPO of Texas, described a National Register nomination as a collection of facts that establish a property's worth for listing in the National Register. To encourage better public understanding of the requirements of the National Register process and the nomination itself, the Texas SHPO has issued policy statements on 1) the process for nominating properties and 2) the process for evaluating and documenting the integrity of properties. It also has outlined minimum requirements for Sections 7 and 8 in order to encourage complete succinct and brief nominations. At some time in the near future, technology can further simplify National Register nominations. For example, scanning and manipulating the images of historic Sanborn maps can help substitute visuals for written narratives.

Devising ways of increasing private and public participation in the National Register program were discussed. The Texas ISTEA (Intermodal Surface Transportation Efficiency Act of 1991) program will require that sponsors of funded projects with National Register-eligible properties list them within 24 months. This example underscores the desirability of SHPOs working with federal agencies to emphasize the value of listing properties in the National Register and to urge federal agencies to nominate properties in response to the mandate of Section 110 of the National Historic Preservation Act. Public agencies involved with environmental compliance work observe that listing of a historic property in the National Register is not an end in itself, but the effects continue well afterward as listing provides access to an expanding set of incentives, grants, and protective measures at all levels of government and serves as a planning and educational tool. It was suggested that programmatic memoranda of agreements under Advisory Council on Historic Preservation procedures include provisions for nominations.

State Historic Preservation Review Boards play a key role in the effort to simplify and shorten the National Register processes and requirements. Review boards should approve nominations that meet minimum National Park Service requirements. They also need to find creative ways to streamline requirements without sacrificing the worth of information in National Register nominations. The National Park Service can assist in this effort by disseminating information on how boards are used or administered throughout the country. Some review boards meet in Certified Local Government locations in order to share experiences with the National Register program.

The connection between the National Register and local planning should be made clearer, according to Bernard Callan of the National Alliance of Preservation Commissions. He urged the National Park Service and SHPOs to be more proactive in educating Certified Local Governments about the National Register by delivering information and training to the local level. National Register status affects how local governments plan for listed properties, even if they are not locally designated, because of the financial incentives and protective measures that accompany listing.

Working with universities and colleges on National Register nominations serves both preservation and education efforts because nominations are prepared at low cost and because the students gain experience in undertaking historical research and completing a nomination form. Claudette Stager of the Tennessee SHPO described her office's cooperation with the Center for Historic Preservation at Middle Tennessee State University. Local chambers of commerce provide matching grants to MTSU to cover students' travel, photography, and incidental expenses. Robin Bodo of the Delaware SHPO cited the benefits of working with the University of Delaware's Center for Historic Architecture and Engineering: high quality work, academic resources, up-to-date historic contexts, public outreach, and public participation. University of Delaware professor David L. Ames spoke of the mutual commitment of SHPOs and universities to local resources and the cultural landscape as topics of academic inquiry and as universities as sources of technical assistance on preservation matters.

In the area of technology, the workshop participants discussed efforts to convert paper records on survey, inventory, and compliance information into computerized databases to facilitate public access to cultural resource information. Wilson Martin, Deputy SHPO of Utah, urged that the National Register investigate the use of interactive computer technology to facilitate the preparation of National Register nominations. The participants attended demonstrations of the National Park Service's Integrated Preservation Software and its Cultural Resources GIS Facility. These tools assist with the collection, computerization, and accessibility of cultural resources data; with the production of a variety of products from a single data collection effort; and with providing precise locational information in order to better visualize and plan for cultural resources. These tools also allow for links with other computerized databases, such as U.S. Census data, and allow for relationships between cultural and other kinds of resources to be studied.

A discussion of unusual and/or challenging property types, such as those of the recent past and common property types, concluded the workshop. Paul Williams of the U.S. Air Force Legacy Program provided an illustrated talk on Cold War properties. They include camps that provided training for POW status in the USSR, Minuteman silos, nuclear reactors, temporary housing, and bunkers. Paul Diebold of the Indiana SHPO covered the statewide survey of historic aircraft that was facilitated by the database maintained by the state for its tax on aircraft.[2] This topic was timely because a new National Register Bulletin is being prepared on evaluating and nominating historic aircraft and related facilities to the National Register. David Ames of the University of

Delaware traced the evolution of the American suburb back to the early-19th century, described the metropolitan phenomenon as uniquely American, and portrayed the nation as in a post-suburban era.

John H. Sprinkle, Jr. of Louis Berger & Associates and former acting archeologist for the National Register spoke about the eligibility of archeological properties under Criteria A, B, and C as well as D, and stated that the nomination of archeological properties did not require extensive excavation. Barbara Powers and John Rau of the Ohio SHPO spoke of the ubiquitous neighborhoods of workers' housing in Ohio that date from the state's economic boom between the end of the Civil War and the Great Depression. Although commonplace properties, these enclaves could be identified and evaluated within the context of ethnic history and urban vernacular house types.

Lisa Raflo of the Georgia SHPO described the statewide survey of hundreds of bridges designed according to standardized designs. The state's department of transportation contracted with the SHPO to conduct this work. The development of historic contexts and property type analysis served as useful vehicles for evaluating which bridges appeared to be eligible for the National Register and for developing a management plan for addressing all historic bridges.

Betsy Friedburg of the Massachusetts SHPO described the office's recent experience with reexamining the rural cultural landscape in and around the town of Hadley. A better understanding of the relationship between buildings, the town plans, and the agricultural lands led to the expansion of historic district boundaries and definition of new districts. The effort to encompass the cultural context for the buildings occurred in the boom period of the late 1980s and generated community concern about expanded National Register boundaries. Ultimately, the new boundaries were successfully defended and they now provide an adequate context for interpreting the area's rural enclaves.

At the workshop's conclusion, the participants committed themselves to following up on many of the ideas expressed during the meeting. All noted that the National Register process did not terminate with the listing of properties, but continued long afterward as communities and citizens use National Register listing and registration documentation to achieve broad preservation goals.

Notes

1 Beth M. Boland, "Our Past/Ourselves: Teaching with Historic Places," In *CRM: Using the National Register of Historic Places*, edited by Antoinette J. Lee and Tanya M. Velt, 33-34, Washington, DC: U.S. Department of the Interior, National Park Service, 1994. See also Beth M. Boland, "Where Did History Happen?" In *CRM: Teaching With Historic Places*, edited by Beth M. Boland, 1+, Washington, DC: U.S. Department of the Interior, National Park Service, 1993.

2 Paul C. Diebold, "Aircraft as Cultural Resources: The Indiana Approach," in *CRM* 16 (1993):1, 3-5, 7.

Antoinette J. Lee is a historian with the National Register of Historic Places, Interagency Resources Division, National Park Service.

Teaching with Historic Places

Lesson Plans Available

The National Park Service's National Register of Historic Places and the National Trust for Historic Preservation have developed an exciting new program, Teaching with Historic Places, which offers classroom-ready lesson plans. These lesson plans:

- use properties listed in the National Register of Historic Places
- link the dramatic story of the place to larger themes in history, social studies, and other subjects
- encourage basic and critical thinking skills
- include activities guiding students to their own community's history
- can be adapted for use by different grade levels.

Lesson plans on diverse topics such as westward expansion and World War II are available from the Preservation Press for $5.95 per lesson plan plus shipping and handling (orders of five or more lesson plans are discounted 20%).

For a free *Teaching with Historic Places* brochure and an order form describing available lesson plans, please write to:

The Preservation Press
National Trust for Historic Preservation
1785 Massachusetts Avenue, N.W.
Washington, D.C. 20036

or call, toll free: (800) 766-6847

National Preservation Technology and Training Board Members Appointed

Secretary of the Interior Bruce Babbitt has appointed 12 new members of the recently established National Preservation Technology and Training Board. The first meeting of the board was held April 11-14, 1994, in Natchitoches, Louisiana (watch for a report on this meeting in a future *CRM*).

The newly created Board will provide leadership, policy advice, and professional oversight to the National Center for Preservation Technology and Training located at Northwestern State University of Louisiana in Natchitoches. A unit of the National Park Service, the center was created by the 1992 Amendments to the National Historic Preservation Act to coordinate and promote preservation research, distribute information, and provide training in preservation skills and technologies. Other responsibilities of the board include advising the Secretary on priorities and the allocation of grants among the activities of the center and submitting an annual report to the President and Congress. This fiscal year, Congress has appropriated $1 million for center operations.

The board consists of the Secretary and 12 appointees. Board members were selected on the basis of outstanding qualifications in the fields of archeology, architecture, conservation, curation, engineering, history, historic preservation, landscape architecture, planning, and preservation education. The 12 appointees are:

Dr. Neville Agnew, Special Projects Director, Getty Conservation Institute, Santa Monica, CA;

Mr. Nicholas Gianopolis, P.E., Chairman, Keast and Hood, Philadelphia, PA;

Dr. Jon Gibson, Professor of Anthropology and Director, Center for Archeological Studies, University of Southwestern Louisiana, Lafayette, LA;

Dr. Alferdteen B. Harrison, Director, Margaret Walker Alexander National Research Center and Professor of History at Jackson State University, Jackson, MS;

Dr. James Huhta, Director, Middle Tennessee State University Center for Historic Preservation and Professor of History, Murfreesboro, TN;

Dr. W. James Judge, Professor of Archeology, Fort Lewis College, Durango, CO;

Dr. Elizabeth A. Lyon, Chief, Office of Historic Preservation, Parks and Historic Sites Division, State of Georgia and State Historic Preservation Officer, Atlanta, GA;

Mr. Robert Z. Melnick, ASLA, Professor and Head, Department of Landscape Architecture, University of Oregon, Eugene, OR;

Mr. Blair F. Reeves, FAIA, Professor Emeritus of Architecture, University of Florida, Gainesville, FL;

Ms. Carolyn L. Rose, Senior Research Conservator, National Museum of Natural History, Smithsonian Institution, Washington, DC;

Mr. Frank E. Sanchis, III, Vice President, Stewardship of Historic Properties, National Trust for Historic Preservation, Washington, DC; and

Dr. Patty Jo Watson, Professor of Anthropology and Department Chair, Washington University, St. Louis, MO.

For further information concerning the National Center and the Advisory Board, contact E. Blaine Cliver, Acting Executive Director, National Center for Preservation Technology and Training, National Park Service, P.O. Box 37127, Washington, DC 20013-7127, or phone 202-343-9573.

What's Happening in NPS Museum Documentation

The National Catalog/ANCS News is a newsletter produced by the National Park Service, Curatorial Services Division, Washington Office. It has been issued annually since 1991. The newsletter provides current information on documenting NPS museum collections. Each issue contains updates on cataloging procedures, technical information on the Automated National Catalog System (ANCS), and information on the use of cataloging data for interpretation and research. Information on recent committee meetings and training that pertain to museum documentation is also included. Past issues have covered contract cataloging, use of the Geographical Information System (GIS), and the status of the NPS cataloging program. Articles are written by field, regional, and Washington Office staff and cover all the disciplines held in National Park Service museum collections: Archeology, Archival and Manuscript Collections, Ethnology, History, Biology, Geology, and Paleontology. The next edition will be issued in August 1994.

—Kandace J. Muller
Museum Technician
Curatorial Services Division

Update

Our last issue of *CRM* went to press before the announcement of the 1994 Richard Morris Hunt Fellow (see "Richard Morris Hunt Fellowship," by Randall J. Biallas, Vol. 17, No. 3, p. 14). H. Ruth Todd, AIA, was selected as the 1994 Fellow and will begin a six-month work-study program in France in June. Ms. Todd has spent a large part of her career working with historic main streets. She has been active in developing and interpreting design guidelines for historic districts in South Carolina and California, and has played a pivotal role in disaster mitigation efforts for historic structures following Hurricane Hugo and the Humboldt County, CA, Earthquake. Todd has encouraged cost-effective adaption of computers in preservation education and practice and has made significant contributions to heritage conservation in rural communities and urban centers.

Washington Report

Capitol Contact

Bruce Craig

With the convening of the second session of the 103rd Congress, significant changes in the national park system could be in store if three bills, all introduced by Congressman Bruce Vento, Chairman of the House National Parks, Forests, and Public Lands subcommittee, are enacted.

On November 24, 1993, Vento introduced a series of bills that collectively would make what he characterized as "needed changes and improvements to the natural, cultural, and recreational programs of the National Park Service." Three bills constitute the core of Vento's "National Park Service Reform Initiative": a new areas studies bill, a National Parks and Landmarks Conservation Act, and legislation establishing an American Heritage Partnership Program.

New Areas Study

Congressman Vento and several conservation groups have been critical of the existing mechanism for designating new national park areas. Due to political and fiscal realities over the years, and in the absence of any initiatives coming from the National Park Service, Congress has often directed the Service to complete numerous studies of specific areas. Some, but not all, new area studies have been initiated through specific authorizing legislation or through appropriations earmarks. Studies often take several years to complete, yet members of Congress have all too often been disappointed in the range of quality of the studies. For Vento, "the political considerations" interjected into some studies was most irritating. Universally, Congress has complained that NPS studies come to Capitol Hill without any "preferred" recommendation to guide Congressional decision making. Vento's legislation seeks to change all that.

If enacted, Vento's bill (H.R. 3709) would require that all new area studies be authorized by Congress through an authorizations process. Each year the NPS would submit to Congress a list of new area studies it would like to undertake. Congress would then have to enact legislation directing the NPS to conduct specific studies. Then the Service would have a maximum of three years to complete the studies. The Service would apply the currently established criteria that relate to national significance, suitability, and feasibility, and make a judgment as to the area's fitness for inclusion in the national park system. If the area fails to meet established standards, Vento's bill would require the report to clearly state this finding.

National Parks and Landmarks Conservation Act

Since the debacle at the Manassas National Battlefield Park which led to the legislative taking of over 600 acres of land near the battlefield threatened by a suburban shopping mall, conservation groups and Congress have focused attention on a generic "heritage protection" problem. Several different versions of "park protection" bills were drafted by various parties over the years, with the most recent version being co-authored by the National Trust for Historic Preservation and the National Parks and Conservation Association. Vento has now taken several drafts of these park and heritage protection bills and has crafted his own version of heritage protection legislation—H.R. 3710. His bill seeks to enhance protection for the 367 units of the national park system, over 2,000 National Historic Landmarks, and 580 National Natural Landmarks.

Vento's bill recognizes that parks and landmarks are embedded in their larger ecosystems and in their societal contexts. It recognizes that parks and landmarks are threatened by both external and internal forces—not just uncontrolled or adverse development, but by conflicting federal and state land management policies as well. Vento's bill seeks to encourage cooperative efforts to prevent another Manassas-type land protection crisis and provides emergency tools for those times when a crisis cannot be prevented.

The proposed legislation seeks to address five key objectives. First, to avoid having the position of NPS Director continue to be a possible "political pincushion," it requires that the Director be a qualified "professional," who would be appointed by the President subject to Senate confirmation. Second, Vento's bill directs the NPS to maintain a dynamic research and data gathering program, one that specifically focuses on the condition of parks and landmarks. Third, it establishes a series of cooperative mechanisms between parks, landmark owners, and surrounding communities so that they can become true partners in protection efforts. Fourth, the bill contains tools crafted to handle emergency threats as they arise. And fifth, the legislation requires federal consistency in actions so that both state and federal governmental actions do not damage or harm national parks and landmarks.

American Heritage Partnership Program

The final bill Vento introduced is his version of the controversial American Heritage Partnership Program (H.R. 3707). The bill joins a number of others that are targeted to address the needs of areas that are considered "nationally important" (as contrasted to areas that are "nationally significant") or areas that otherwise would not meet the stiff criteria for inclusion as units of the national park system. In concept, most park professionals agree that these American Heritage Areas would best be managed in a true partnership between federal, state, local government, and private entities.

Vento's bill seeks to address one central concern that holds back enactment of other heritage area proposals currently pending before Congress—budgetary realities. While other bills generally fail to specify how and where the money will come from for the program, Vento's bill establishes the American Heritage Area Partnership Program within the Department of the Interior and would fund it through the existing Historic Preservation Fund (HPF). The key to Vento's plan are the spending caps: $300,000 for planning and $3 million for capital improvements.

If you would like a copy of any of the bills discussed above, drop me a note at National Parks and Conservation Association (NPCA), 1776 Massachusetts Avenue, NW, Suite #200, Washington, DC 20036.

"Capitol Contact" Author Leaves NPCA

As many of you are aware, since August 1987 when NPCA created this column for *CRM*, I have authored "Capitol Contact." This will be my final installment of "Capitol Contact." I will be leaving NPCA and beginning May 1, 1994, will become the new Executive Director for the Conference of National Park Cooperating Associations. The editor of *CRM* will announce a new author for this column.

The editor of CRM *wishes to thank Bruce Craig for his timely reporting in this column. "Capitol Contact" has been one of our more popular features and we are grateful to Bruce for keeping it going for so many years. We wish Bruce well in his new position, and we hope to continue to give our readers the same quality of information that he provided.*

NPS Thematic Framework Revised

In 1990, P.L. 101-628 directed the National Park Service (NPS) to revise the National Historic Landmarks (NHL) thematic framework to reflect current scholarship and research in United States history, archeology, and architecture. Congress directed that the full diversity of American history and prehistory be represented, and required that the task be done in coordination with major scholarly and professional organizations in relevant fields.

A working group of scholars from diverse academic fields was assembled in keeping with statutory direction. Sponsored by the Organization of American Historians and the National Coordinating Committee for the Promotion of History and supported by the American Historical Association, the working group prepared a report entitled *Revision of the National Park Service's Thematic Framework.*

*(**Report**—continued on page 32)*

(Report—continued from page 31)

The proposed thematic outline is a dramatic departure from *History and Prehistory in the National Park System* and the *National Historic Landmarks Program* or "yellow book." The proposed framework provides an exciting and fresh perspective for looking at historic sites and rethinking interpretive programs. It requires the NPS to revisit much of its approach to history in research, interpretation, management, and planning.

The proposed framework is the beginning and not the end of the process of rethinking history's role in the NPS. The next task will be to develop means for incorporating the proposed outline into NPS programs and initiatives.

For further information, write to the Chief Historian, National Park Service, P.O. Box 37127, Washington, DC 20013-7127.

Heritage Partnership Initiative Advances

The move to establish a system of national heritage areas has taken several steps forward in recent weeks.

On March 13-15, over 350 people came to Washington for a national conference on heritage areas. This "Rally for America's Real Places," sponsored by the National Coalition for Heritage Areas, provided a forum for discussion of two comprehensive bills pending in Congress [Rep. Bruce Vento's H.R. 3707 and Rep. Maurice Hinchey's H.R. 2416 (see Capitol Contact, this issue).]

Bonnie Cohen, the Assistant Secretary of the Interior for Planning, Management, and Budget, announced to a plenary session that Secretary of the Interior Bruce Babbitt has sent an Administration proposal to the Office of Management and Budget to be prepared for submission to Congress.

At the time of this writing, National Park Service Director Roger Kennedy was preparing to testify on the Vento and Hinchey bills, as well as the Service's Heritage Partnerships initiative, before the House Subcommittee on National Parks, Forests, and Public Lands, at a March 22 hearing.

—Alan J. Turnbull

Viewpoint

Aircraft As Cultural Resources: A Long-Neglected Subject

Dear Editor:

Paul Diebold's article "Aircraft As Cultural Resources—The Indiana Approach" (*CRM* Vol. 16, No. 10) is welcome recognition of a long neglected subject. His observation that "...the preservation community has had very little contact with the aviation community" is sadly true, especially in light of his understatement that "[t]he Smithsonian's Air and Space Museum is among the nation's most visited museums..." (NASM is the world's most heavily attended museum, full stop). Unfortunately, the Indiana Approach to evaluating aircraft as cultural resources is, in aviation parlance, a "missed approach" which fails to adequately weigh the historical integrity of the objects under consideration and so leaves Indiana's genuinely historic aviation properties lost in the fog.

Indiana chose to regard "airworthy status" as a positive factor in evaluating potentially historic aircraft in the hope that "airworthy planes would be better maintained." But maintenance means something very different to an airplane mechanic than it does to a conservator. Typically, and necessarily for safety reasons, airworthy aircraft of historic type have been stripped to their barest frames and utterly rebuilt with new materials. Indeed, the more extensive the rebuild, the more desirable the aircraft is to the flying community. However, the *Secretary of the Standards for Historic Vessel Preservation Projects*, which deal with precisely this issue from a nautical perspective, stipulate that, "Optimum integrity is preserved by retention of as much original fabric as possible" and sets standards for rehabilitation ("...returning a vessel to a state of utility...") which are literally impossible to comply with when applied to aircraft. Most of the dopes and paints originally used on historic types are now illegal (for health and environmental reasons), while correct rivets, tires, wiring, hoses, glass, etc., are simply not available. Looking for historic properties among the ranks of operational aircraft is analogous to searching for authentic Civil War artifacts at battle re-enactments. If there are any there it's because of either bad judgment or oversight.

This is not a new problem. With ships, trains, carriages and cars, there has always been a tremendous temptation to pretend that an object of old design is, in fact, old. There is a powerful and understandable desire to make it go, to keep it working, and so create the illusion that we can keep the past alive. Tall ship regattas, steam railroads, coaching competitions, and vintage automobile rallies and races all bear witness to our hunger to see, hear, smell and feel the way it must have been. Airshows featuring World War II air battles are merely the latest, and perhaps the most extreme, manifestations of this willing suspension of disbelief. Like turn-of-the-century Wild West shows, they use made-over cultural icons (termed "warbirds") to mythologize the recent past. The effect is so seductive that even a trained preservationist like Mr. Diebold can write a sentence like, "[T]housands flock to airshows to witness the thrill of authentic historic aircraft in operation."

This failure to distinguish between conserved artifact and constructed artifice is sadly prevalent not only at the airport but in the museum. Only recently has the Smithsonian's National Air & Space Museum abandoned an official policy whereby examples of historic types were routinely rebuilt and often altered to represent the aircraft the curators wished they had instead of the ones they really had. This "How shall we paint this one?" attitude is still the rule at most air museums. Rare indeed is the aviation historical collection served by a conservator. Instead, teams of volunteer aircraft mechanics staff "restoration shops" whose task it is to repair or rebuild accessioned airplanes into attractive and "authentic" displays. In June of 1992 the director of the United States Air Force Museum, addressing an international conference of air museum representatives, described the bulk of the USAFM collection as "stage props." Such admissions of how little aviation historic preservation is actually taking place are rare. More commonly, those who protest the sacrifice of historical integrity on the altar of marketability are dismissed as "purists."

The "World War II bomber" which the Indiana Division of Historic Preservation and Archeology nominated to the National Register is a case in point. This airplane, Army serial number 44-83690, is a B-17G-95-DL built by the Douglas Aircraft Company at Long Beach, CA in 1945. Arriving too late to participate in World War II, the aircraft was used in missile and nuclear test programs before being retired and eventually joining the USAFM collection in 1961. As an artifact of the Cold War—an obsolete type used to test new weapons systems—the aircraft had considerable historic significance. However, in recent years volunteers at Grissom AFB, Indiana, undertook to "restore" the airplane to a configuration judged to be more desirable as an exhibit. Today the airplane masquerades as "Miss Liberty Belle," a B-17G-10-BO serial number 42-31255 built by Boeing in 1943 which served with the 305th Bomb Group in England. The process of dismantling the airplane's identity involved the removal of the unique features which comprised its historical integrity and their replacement with guns, turrets, and markings intended to recreate the appearance of another aircraft. The Secretary's Standards are quite specific regarding this type of management: "Conversion of one historic vessel to represent another historic vessel, even if of the same class or type, is not acceptable treatment."

The aircraft was accepted for the Register because it was seen as "a good

representative of this now rare type." There are roughly 50 B-17s in existence, some more original and some less original than 44-8360. Should they all be on the Register? Maybe all old-style planes, cars, carriages, boats, and trains should be on the National Register. Or maybe there needs to be more thought given to the subject.

Richard E. Gillespie
Executive Director
The International Group for
Historic Aircraft Recovery (TIGHAR)

A Response

The following remarks are from a letter by Paul Diebold in response to Richard Gillespie's letter to the editor, printed above.

Dear Rick:

I agree with several of your points, but find myself at odds with you on others. Overall, I believe that you have confused the application of the *Secretary's Standards* with the criteria for eligibility for the National Register of Historic Places. In other words, simply because work which does not comply with the *Standards* has been undertaken on an historic property, this fact does not automatically render that property ineligible for the National Register.

An 1870s covered bridge makes a good analogy. These heavy timber structures were built to carry people safely over waterways. A bridge might be repaired a number of times in the course of the past 120 years. The siding, which is intended to protect the heavy timbers and deck, might have been replaced several times, as may have been the roof. The builder knew that these items were "disposable"—it's part of the design. Perhaps 80% of the heavy timber structure might date back to the 1870s. Various pieces had to be replaced over the years. The repair crews turned loose on that bridge in the past 120 years did not have the *Standards* in mind when they were working on the bridge. They had safety and cost in mind. We are left with a structure having a 1960s roof system, decking and siding from the 1950s, and a mostly 1870s frame. Yet, the significant aspect of the bridge—its truss work and overall appearance—remain intact. Does the bridge have enough integrity to qualify for the National Register? If it doesn't, then there isn't an eligible covered bridge in the state of Indiana. Last time I checked, there are about 30 such bridges listed on the Register in Indiana of the 70-80 existing. In fact, applying your intermingling of the *Standards* and the National Register criteria would mean that a home which has replacement windows or a new asphalt shingle roof cannot qualify for the National Register. This would essentially disqualify every National Register property in Indiana. Again, while our office does not endorse projects which do not conform with the *Standards*, such work does not categorically render ineligible a particular property.

In the case of B-17G 44-83690, you seem to have problems calling the work done on the place a restoration. I did debate using the term restoration in this case, but after comparing terminology, restoration seemed the best preservation term to use. Restoration means roughly "to return an item to a previous appearance or state." A rehabilitation would mean that there was an attempt to return the place to a state of utility. Clearly, there was no attempt to make the aircraft operable. 44-83690 was built during WWII. Although it never saw combat, for the first five years of its existence, it was a fully armed B-17G aircraft, complete with turrets. It is not necessarily inaccurate, therefore, to return the plane to that appearance. I absolutely agree that the color scheme is a fantasy. Then again, I see many fine Craftsman homes in my neighborhood proudly displaying Victorian color schemes. Does that mean that they no longer contribute to the Irvington Historic District? I think not. Incidentally, a well versed WWII historian with the Park Service felt that the weapons testing role of 44-83690 was "unremarkable." I do not agree with his comment, but it does show that professionals can have equally valid but differing opinions....

Integrity standards are established in the nomination for the class of resource under consideration. These are "registration requirements." So while not every old car or plane can qualify for the National Register, those which meet the registration requirements established in the nomination form are eligible for listing. The nomination for 44-83690 closely adheres to this NPS evaluation process....

Concerning our survey program, while we did request information from owners of airworthy aircraft, we also collected data on unrestored planes as well. In fact, we found an "unrestored" WACO model 10, which is the oldest known plane in Indiana (1928). I meant to underscore the importance of inoperable aircraft by focusing on the B-17G.

Your comments about air shows and car rallies are mostly accurate; however, you generalize to an extreme point. For example, I know of a number of Dusenberg autos in Indiana which are operable. They were showroom demo models, and have been carefully stored in a heated facility. The majority of the body, chassis, major engine parts, and accessories are intact on these cars. In other words, as much as one can reasonably expect to be intact is in place. I do not see how you can assume that the planes which I researched lack integrity from a National Register point of view without having seen them yourself. My comment about airshows was intended to be a general introductory statement. Taken out of context in the manner of your letter, I can see your point. Since I was not specific, I could have been referring to a fly by of A-10s which participated in Desert Storm....

Paul C. Diebold
Architectural Historian
Indiana Department of
Natural Resources

Preservation Resources

Publications

America's Ancient Treasures, by Franklin Folsom and Mary Elting Folsom. 480 pp, cloth: ISBN 0-8263-1424-4, $37.50; paper: ISBN 0-8263-1450-3, $19.95.

A revised and expanded edition of a highly praised travel guide to U.S. and Canadian archeological sites and museums of prehistoric Indian life, the book describes all the archeological sites that have been prepared for public view in North America. It enables present-day visitors to discover the America of an earlier era—where the prehistoric Indians came from, how they clothed and fed themselves, and what they left as evidence of their art, religion, and daily life. Order from University of New Mexico Press, Order Department, 1720 Lomas Blvd., NE, Albuquerque, NM 87131-1591; Phone: 505-277-4810.

Historic Districts of America—The West, by Ralph W. Richardson. 1993, 311 pp, paperback, $27.00.

In a series of five books, this fourth regional volume presents architectural, historical, and tourist information on approximately 1,100 historic districts in 15 western states. Typical entries include name of district, date of origin or heyday, architectural/historical highlights, and available tours. Compiled from the files of the National Register of Historic Places and the author's personal travels, this reference guide is a unique addition to the libraries of both the history buff and the adventuresome traveler. For more information, write to Heritage Books, Inc., 1540-E Pointer Ridge Pl., Suite 301, Bowie, MD 20716.

Image as Artifact: The Historical Analysis of Film and Television, edited by John E. O'Connor. 356 pp, paperback, ISBN 0-89464-313-4, $29.50.

Using film and television in critical ways has become part of the fabric of society. John O'Connor presents a comprehensive survey of the types of methodological issues that must concern any historian addressing film or television as historical document or artifact.

*(**Resources**—continued on page 34)*

(Resources—continued from page 33)

A Practical Introduction to Videohistory, edited by Terri A. Schorzman. ISBN 0-89464-725-3, $28.50.

This book provides an introduction for historians to the use of video in research. It opens with an overview of the Smithsonian Videohistory Program, including its establishment as a formal pan-Smithsonian research program and its relationship with the Alfred P. Sloan Foundation. It also surveys written literature and similar projects, addresses videohistory as a methodology by exploring the application of videohistory in historical research (based on 22 Smithsonian projects), and provides an overview of technical and archival issues.

To order either of the above two books, write to Krieger Publishing Company, P.O. Box 95442, Melbourne, FL 32902-9542.

A new magazine, *Illinois History Teacher*, recently published by the Illinois Historic Preservation Agency, is for junior and senior high school teachers of Illinois history. It is designed to help them meet the state goals for teaching Illinois history and local history. One issue devoted to a single topic will appear each fall, and will be available to teachers at no cost. The 1994 theme is "Geography in History." For information about contributing to the magazine or being added to the mailing list, write Illinois Historic Preservation Agency, c/o Keith A. Sculle, Editor, Illinois History Teacher, 1 Old State Capitol Plaza, Springfield, IL 62701-1507.

Keepers Preservation Education Fund

The Keepers Preservation Education Fund (KPEF) was started in 1988 by the first Keeper of the National Register of Historic Places, Dr. William J. Murtaugh. It is intended to encourage education and excellence in preservation through activities which increase the knowledge of established and aspiring preservation professionals. It is a 501C3 not-for-profit corporation to which contributions are tax deductible to the extent allowed under federal law.

Since 1990, KPEF has made grants to individuals through such organizations as the Association for Preservation Technology, the Campbell House Museum, the National Conference of Preservation Educators, the National Trust for Historic Preservation, St. Louis Landmarks and the Society of Architectural Historians from applicants selected by the sponsoring organizations.

For more information, including eligibility and how to apply, write KPEF, 5 W. Luray, Alexandria, VA 22301, or call the managing trustee, Eugenio de Anzorena at 703-548-5488.

History of NPS Curation Published

Ralph Lewis (l.) presents a copy of his book to NPS Deputy Director, John Reynolds. Photo by Rosa M. Wilson, NPS.

The Curatorial Services Division, Washington, DC, has published *Museum Curatorship in the National Park Service 1904-1982*, by Ralph H. Lewis. Copies have been sent to each park and to the NPS centers and regional offices. The author served in the National Park Service from 1935-1971, holding positions as curator and historian. He retired as chief, Branch of Museum Operations, Harpers Ferry Center, in 1971. He is also the author of the popular NPS publication *Manual for Museums*. Mr. Lewis continues a lifetime of service to the NPS as a volunteer with the Curatorial Services Division. In 1991 he received the NPS 75th Anniversary Volunteer Service Award. Look for a review of his new publication in a future *CRM*.

A Monumental Series

Osmund Overby

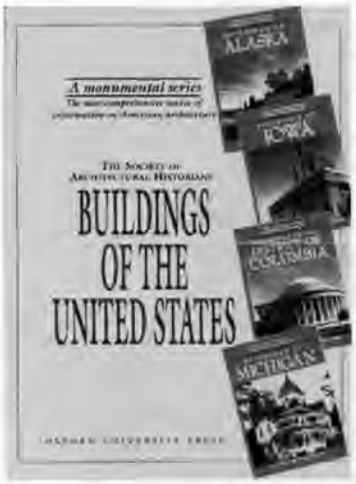
Buildings of the United States is a major new series of books on American architecture, produced under the auspices of the Society of Architectural Historians. Planned for 58 volumes and organized on a state-by-state basis, the series serves as a resource for scholarship in architectural history, teaching, preservation, history, and urban planning. At the same time, it addresses itself to a general public interested in its architectural surroundings.

Oxford University Press (American Division) is the publisher of Buildings of the United States. Four volumes have been published so far. *Buildings of Michigan* by Kathryn B. Eckert was the first to appear, in November of 1992. Following that, *Buildings of Iowa* by David Gebhard and Gerald Mansheim appeared in the Spring of 1993. *Buildings of the District of Columbia* by Pamela Scott and Antoinette J. Lee and *Buildings of Alaska* by Alison K. Hoagland followed in the summer of 1993. *Buildings of Colorado* by Thomas J. Noel will be published later in 1994 and William H. Jordy's *Buildings of Rhode Island* will follow shortly after that. Eight other volumes are in active preparation and about a dozen more in the planning stage. Oxford University Press has agreed to keep all books in print, and will begin issuing paperback editions before too long.

Heretofore, the United States was the only major country of the Western world that had not produced a publication project dealing with its architectural heritage on a national scale. Compact in size and standard in format, each volume of the series is designed for use both as a reference book and a guidebook, with maps and photographs accompanying many of the individual entries. In overall concept, Buildings of the United States is to a degree modeled on and inspired by The Buildings of England, the series of 46 volumes conceived and carried out on a county-by-county basis by the eminent English architectural historian Nikolaus Pevsner, first published between 1951 and 1974. It was Pevsner himself who—years ago, but again and again—urged his American colleagues in the Society of Architectural Historians to do the same for this country. In method and approach, of course, that challenge was to be as different from Buildings of England as American architecture is different from English.

Now with over 25 years of National Register nominations and preservation surveys to draw on, Buildings of the United States is conceivable in ways not possible earlier. There are now specialists on the architecture of individual states, and an effort is being made to find the most qualified authors for each state. Along with such high-style building types as houses, churches, state houses, and the-

aters, utilitarian and vernacular building types ranging from factories and bridges to barns and gas stations are included. The primary objective of each volume is to record, analyze, and evaluate the architecture of the state. In developing the narrative, those special conditions that shaped the state, together with the building types necessary to meet those conditions, are identified and discussed. Although the great national and international masters of American architecture receive proper attention, especially in those volumes for the states in which they did their greatest work, outstanding local architects, as well as the buildings of skilled but often anonymous carpenter-builders, are brought prominently into the picture. Each volume will thus be a detailed and precise portrait of the architecture of the state that it represents. At the same time, however, all of these local issues are examined as they relate to the architectural developments in the country at large. When completed, therefore, the series will be a comprehensive history of the architecture of the United States. In addition to the published books, planning is underway for a unified electronic database to the whole project to facilitate revisions and to assure the widest accessibility to scholars in the future.



The series was long in the planning. Indeed, the idea was conceived by Turpin Bannister, the first president of the Society of Architectural Historians (1940-42). It was 30 years, however, before the Society had grown sufficiently in strength to consider such a project. Various proposals were considered in the 1970s. This led to the formation of a committee in the early 1980s which evolved into the editorial board which governs the project, first under the leadership of Adolf K. Placzek, editor-in-chief, and William H. Pierson, coeditor-in-chief. Representatives of the Historic American Buildings Survey, the Library of Congress, and the American Institute of Architects are members of the editorial board and have played key roles in shaping the project. In 1986, after several failed attempts, a substantial grant from the National Endowment for the Humanities enabled the project to get underway. Major grants have also come from the Pew Charitable Trusts and the Graham Foundation for Advanced Studies in the Fine Arts, and many smaller grants from state-based funding sources, as well as a second grant from the NEH.

Shortly before the first volume was published, the founding editors stepped aside and Osmund Overby was named editor-in-chief. For further information about the project, write to Osmund Overby, Department of Art History and Archaeology, University of Missouri, Columbia, MO 65211, or telephone him at 314-882-9530. For information about ordering books in the series, write to Oxford University Press, 200 Madison Avenue, New York, NY 10016, or telephone 1-800-451-7556.

On February 10, 1994, at a reception hosted by the Oxford University Press in Washington, DC, the first four volumes of the series on Buildings of the United States received the 1993 R.R. Hawkins Award for the Outstanding Professional Reference or Scholarly Work. Given by the American Association of Publishers, the award "from the publishers' point of view is the most coveted prize in scholarly publishing."

Osmund (Ozzie) Overby is a professor in the Department of Art History and Archaeology, University of Missouri. He has supervised HABS summer recording teams in Boston, MA (1968), Newport, RI (1969 and 1970), Knoxville, TN (1973), and St. Genevieve, MO (1985).

Bulletin Board

Interpreters' Workshop

The National Association for Interpretation (NAI) is sponsoring a National Interpreters' Workshop entitled "Images and Perceptions: Interpretation makes the difference," November 1-6, 1994, in Cleveland, OH.

For general information about the workshop, contact Tom Blodgett, NIW Chair, St. Joseph County Parks, 32132 SR 2, New Carlisle, IN 46552; 219-654-3155.

NAI is an organization of over 3,000 interpreters, park managers, teachers, curators, historians, and others in the interpretive field. Its goal is to foster excellence and support in the interpretive profession. Annually, NAI presents the National Interpreters' Workshop to provide training and networking opportunities. For membership information, contact NAI, P.O. Box 1892, Fort Collins, CO 80522; 303-491-2255.

Advisory Council Report

The Advisory Council on Historic Preservation describes its ongoing process of regulatory revision undertaken in response to the National Historic Preservation Amendments of 1992 in its newly released *Report to the President and Congress 1993*. The 1992 amendments mandated specific changes in the nation's protective process for historic properties, administered by the Council, and the report examines these in detail. It also summarizes other 1993 Council activities, including Section 106 program and project review, training and education, and litigation, with particular emphasis on Native American issues.

Single copies of the report may be obtained from the Council free of charge while supplies last. Write to the Office of Communications and Publications, 1100 Pennsylvania Avenue, NW, Suite 809, Washington, DC 20004.

Call for Papers

The 8th Conference on Research and Resource Management in Parks on Public Lands will be held April 17-21, 1995, in Portland, OR. Sponsored by **The George Wright Society,** the conference is entitled "Sustainable Society and Protected Areas: Challenges and Issues for the Perpetuation of Cultural and Natural Resources."

The 1995 George Wright Society Conference is dedicated to the exploration of sustainability as it relates to parks and other protected areas. Emphasis will be placed on the value of natural and cultural resources as the objects of sustainable management and as reference points for the larger society. The program will also include a variety of contributed papers and posters organized around topics of major interest in protected area management and research. Subjects may address any discipline involved with protected areas—from prehistoric archeology to marine zoology—or resource type. Papers are needed on research, interpretation, and management. Authors are requested to send abstracts of their proposed sessions, papers, and posters, not to exceed 150 words, by May 15, 1994. To submit an abstract, or for more information about the conference, contact The George Wright Society, P.O. Box 65, Hancock, MI 49930-0065; Phone: 906-487-9722, Fax: 906-487-9405.

The Center for Studies in Landscape Architecture at Dumbarton Oaks/Trustees for Harvard University will hold its 1995 symposium on the theme "Places of Commemoration, Search for Identity and Landscape Design." The symposium will be held at **Dumbarton Oaks** on May 19 and 20, 1995. Abstracts must be received by July 31, 1994. Those interested in presenting papers should submit an abstract of no more than two papers describing the scope of the work and its significance for

*(**Bulletin**—continued on page 36)*

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the symposium theme to: Director of Studies in Landscape Architecture, Dumbarton Oaks, 1703 32nd Street, NW, Washington, DC 20007; Phone: 202-342-3280.

The 35th Annual **Western History Association Conference** will be held October 11-14, 1995 in Denver, CO. The program committee welcomes proposals for sessions or individual papers on any aspect of the history of the North American West. Proposals should be sent by September 1, 1994, to the Committee chairs : Peter Iverson, Arizona State University, Department of History, Tempe, AZ 85287-2501; 602-965-5778, and Gail Nomura, University of Michigan, Department of History, Ann Arbor, MI 48109-1045; 313-764-6305. For more information on the Western History Association, contact the University of New Mexico, 1080 Mesa Vista Hall, Albuquerque, NM 87131-1181; Phone: 505-277-5234; fax: 505-277-6023.

The University of Hawaii at Manoa and the East-West Center invite proposals for papers at the First International Symposium on Asian Pacific Architecture: the East-West Encounter, to be held in **Honolulu, HI,** March 21-24, 1995. Proposals may address any aspect of architectural history or criticism that pertains to the encounter of western and eastern architectural traditions in Asia or the Pacific Basin. In addition to sessions on architectural history and criticism, separate sessions will be devoted to vernacular architecture and contemporary practice and issues in urban planning. Submit a 250-word abstract of the proposed topic by September 1, 1994. Send submissions to the Symposium Coordinator, School of Architecture, University of Hawaii at Manoa, Honolulu, HI 96822, For more information, call 808-9567225.

Classical Architecture Program

The **Institute for the Study of Classical Architecture** will offer its third annual summer program in classical design for architects, designers, preservationists, builders, scholars, and students in the design professions. The most concentrated course of study in classicism offered anywhere in the world, the Institute's summer program covers such topics as design, proportion, construction, literature, theory, rendering, and decoration. Interested applicants may obtain a program catalogue by writing: Institute for the Study of Classical Architecture, New York Academy of Art, 111 Franklin Street, New York, NY 10013; or they may fax a request to 914-758-1005, or call 212-570-7374. Application deadline is May 23, 1994.

The **1994 Chacmool Conference** will be held November 10-13, in Calgary, Alberta. The conference will focus on human travelers, and examine the cultural context (social, cosmological, political) within which they traveled, the "where," why," and "how" they traveled, and what traveled with them (ideas, technologies, diseases, artifacts, etc.). For more information, contact The 1994 Conference Committee, Department of Archaeology, University of Calgary, Calgary, Alberta Canada T2N 1N4; 403-220-7120.

Courses

The GAIA Project, in collaboration with the members of the Heritage Recording Training Management Committee—ICCROM, ICOMOS, Cite Collegiale, Universite de Montreal, CRATerre-EAG—is offering a hands-on training course provided by the Heritage Recording Services, Public Works Canada, Parks Canada, entitled, "Heritage Recording," in Grenoble, October 10-14, 1994. This course (partly in English, partly in French) is part of the activities of the GAIA project, an international program for the study of the preservation and restoration of earthen architecture.

Ecole D'Architecture de Grenoble announces the 7th CEAA-Terre (Certificat d'Etudes Approfondies en Architecture de Terre—Certificate of Advanced Studies on Earthen Architecture), a postgraduate course, to be taught in 1995. When the course is concluded, participants should be able to develop a scientific approach on earth construction in the framework of low-cost housing at the level of decision-making, production, design, and construction. The course language is French.

To receive a flyer on either of the above courses, write to CEAA-Terre, BP 2636, F38036 Grenoble Cedex 2, France.

Conservation Congress

The II International Congress on the Restoration of Architectural Heritage and Buildings will be held in Mar del Plata, Argentina from August 28 to September 4, 1994. The Congress presents an opportunity to establish links with professional counterparts from Latin America and the Caribbean, to exchange ideas, and to plant seeds for meaningful cooperative programs at the hemispheric level. To learn more about the Congress, contact Gustavo F. Araoz, AIA, 8616 Carlynn Drive, Bethesda, MD 20817; Phone and fax: 301-229-6506.

AIC Annual Meeting

The American Institute for Conservation of Historic and Artistic Works (AIC) will hold its 22nd annual meeting June 6-11, 1994, in Nashville, TN. More than 1,000 conservators, curators, art historians, artists, and historians from around the world will examine artist's intent as an issue in conservation. AIC is the national membership organization of conservation professionals dedicated to preserving the art and historic artifacts of our cultural heritage. For more information, including registration materials, contact AIC, 1717 K Street, NW, Suite 301, Washington, DC 20006; Phone: 202-452-9545; fax: 202452-9328.

RESTORATION 95

Because of the success of RESTORATION 93 (held in December), the organizers have announced that the show will become an annual exhibition and conference. The next RESTORATION in North America will be held February 26-28, 1995 in Boston. For more information on RESTORATION, contact Steve Schuyler at 617-9339055; fax: 617-933-8744.

Women's History Conference

The first national conference on "Reclaiming Women's History through Historic Preservation" will be held at Bryn Mawr (PA) College June 17-19, 1994. Registration deadline is May 2. Write to Womens Way/Preservation Conference, P.O. Box 53454, Philadelphia, PA 19105-3454.

Preserving the Recent Past

The National Park Service, the Illinois Historic Preservation Agency, the Historic Preservation Education Foundation, the Society for Commercial Archaeology, and the Association for Preservation Technology will sponsor a three-day program on the challenges of identifying, evaluating, documenting, maintaining and preserving properties from the 20th century. The conference will be national in scope and will be the first of its kind to address the philosophical and practical issues associated with the preservation of the recent past. Chicago was selected as the conference location for its diversity of 20th century resources.

To be held March 30–April 1, 1995, in the historic Palmer House hotel in downtown Chicago, the conference program will offer over 24 educational sessions and wide selection of 'Tours of the Recent Past' in and around Chicago. The $265 registration fee will cover all educational sessions, a conference workbook and a festive opening reception. Tours will be offered for an additional charge.

For more information or to request a copy of the final program announcement and registration material, call Tom Jester or Carol Gould 202-343-9578. Written inquiries should be directed to "Preserving the Recent Past" P.0. Box 77160, Washington, DC 20013-7160.

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