FRIENDS OF THE OFFICE OF STATE ARCHAEOLOGY, INC.

Member Newsletter

Fall 2010

Special points of interest:

- *Bon Voyage* to June Cooke
- A Rare Event: Oil City Dam Revealed!
- In Memoriam: John J. Spaulding
- FOSA website: http://www.fosa-ct.org

President's Letter

The good news from FOSA is that we have a membership of over 200, the highest number we've ever had. Also, monetary donations have been extremely generous this year. Your enthusiasm, interest and support are most welcome. A big "Thank You" to all of you for your continued support.

As is true of most nonprofit organizations, we always have a need for volunteers. The chairmen of the Outreach Committee would love some volunteer help not only with manning the exhibit tables at various events, but also with developing the exhibit itself. They put in many hours creating and setting up exhibits that promote archaeology. The length of time that you give is entirely up to you. You would not only be helping FOSA, you could enjoy the event itself. The more people involved with FOSA activities, the stronger we are as an organization.

Because UConn cut back on the number of work-study students this year, FOSA donated money for the museum to hire a student for five hours a week for this semester. The student works at Horsebarn Hill doing a variety of necessary tasks, including filing and entering books, magazines and journals into the library catalog and then shelving them. Together with Nick, we're developing creative ideas for gaining additional space for the library collections.

Looking into the future, the budget woes at UConn will continue into next year at least with even more expense-driven cuts expected. The results of this on the OSA will no doubt mean a greater need for your continued support and commitment.

Come out and enjoy the various events this fall and our Annual Meeting, January 29, 2011! Visit our website www.fosa-ct.org for more details.

Cynthia Redman, President

News from the Office of State Archaeology

From the 1850s to the late-1880s, a lone figure dressed in a patchy leather outfit trekked a circular path from the Hudson River in New York to the Connecticut River. Month after month, year after year, many times so punctual in his schedule that his appearance in a community was predicted to within a couple of hours. The Old Leatherman, as he has become known, walked a 365-mile circuit, living in caves along the way, tending small gardens, and approaching homes he knew would leave food without requiring the need to enter into conversation with anyone. He never spoke, but, like the post office, "neither rain, sleet nor snow, kept him from his appointed rounds."

The Old Leatherman died in a cave near Ossining, New York, near the Hudson River. He was buried in a pauper's grave in Sparta Cemetery, unmarked at the time except for a "pipe" someone put into the ground. His leather outfit was removed from him during the

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Inside this issue:

What's New on the FOSA Website

Recently, we've completed the conversion of all FOSA Newsletters to digitized (PDF) format, and have loaded them onto our web site. This will *not* mean an end to our sending out printed Newsletters to members; rather, it will mean that you'll now be able to access all of the FOSA Newsletters online from our FOSA web site, regardless of when they were first prepared.

We've also begun compiling a series of reprints of articles from the newsletters. The intent of these reprints is to present items of general interest and not to reproduce entire newsletters. Thus, reoccurring columns such as those of the President and the State Archaeologist aren't included; while articles, such as those involving Native American tribe research, results of selected excavations, Carbon-14 results, and the *Turtle* project are. By allowing users to access the articles from a common listing, as opposed to searching through each Newsletter individually, it's hoped that they can be made more easily accessible. While currently restricted to FOSA Newsletter articles, we anticipate incorporating articles from other sources at a later time.

Lastly, FOSA members Mandy Ranslow and Sharon Clapp have collaborated on the development of a new "FOSA-CT" Facebook page. By clicking the "**See Us on Facebook**" link on our web site's home page, anyone can access this Facebook page, even those not registered in Facebook.

Jim Hall

Below Ground

It's hard to generalize, of course, but the dig season this year has been unusual. We were disappointed by the delay in the Leatherman project, and the cancellation of planned work at the Zagray property in Colchester. However, we successfully completed day-long sessions in Norwich and Windsor.

The CSMNH Archaeology Field School was extremely successful this year. It was conducted at the Capt. Francis House in Wethersfield, CT. Thanks to all for the hard work and sustained assistance throughout the week. The recovered material must now be catalogued and many are looking forward to a summary presentation of the project.

A major portion of this season has been devoted to the Dave Cooke Collection. Large quantities of artifacts, with impressive documentation, have been organized, catalogued, and packaged. In addition, many sites have been compared to another collection assembled by Andy Kowalski. Over 50 sites, representing about one-third of the material, have been completed covering four states to date. A summary paper, tentatively titled "The Golden Age of Avocational Collecting in Connecticut; 1955-2005" has consumed much of the free time available due to delayed/cancelled digs.

There will still be opportunities to participate in various field projects this Fall. For example, preliminary schedules for September and October include Veterans Cemetery in Windsor and Ferry Road in Glastonbury. I will be announcing plans as early as I can via email. If you would like to be notified, I can be reached at BGreene316@aol.com. In addition, my phones are 860-721-0053 or 860-748-2749 (cell).

Bruce Greene

News from the Office of State Archaeology

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autopsy and would eventually go on exhibit throughout the area, finally, being destroyed during a fire on Coney Island where it was on display.

Last year, the Ossining Historical Society, owners of Sparta Cemetery, requested assistance from our office to archaeologically remove the remains of the Old Leatherman from his anonymous grave to a more prominent plot in the sanctified area of the cemetery. Many people come to the cemetery to visit the Leatherman's grave and are disappointed by what they find. The historical society feels that they have not done right by the man and want to rebury him with a monument telling his interesting story. In addition, the location of the paupers' section is very close to a heavily traveled road and vehicular traffic has become a safety issue.

We are currently waiting for a court order from the state of New York to proceed with the removal and reburial. We are hoping to have an opportunity to conduct forensic investigations, including DNA analysis, to learn more about this intriguing person. Along with the historical society, we are working closely with Leatherman historian Dan DeLuca, who has recently published a wonderful and informative book on him.

Most of us have forgotten the names of politicians, prominent businessmen, and other important leaders of the late 19th century, but many remember the "Leatherman." We will keep FOSA members updated on this project.

Nicholas Bellantoni, PhD
State Archaeologist

FOSA's Farewell to June Cooke

In 1987, June Cooke was the primary "mover-and-shaker" in having a legislative bill passed, establishing the Office of State Archaeology. Realizing the need, in 1997 June and Dave Cooke went on to found the Friends of the Office of State Archaeology.

This past May, a farewell reception was held at the Wood Memorial Library in South Windsor in honor of June Cooke. Family, friends and FOSA members gathered to reminisce over good times and wish June the best.

A fond farewell from many friends. *Photo by Ken Beatrice.*

Throughout the event there were tables filled with refreshments and delicious goodies to enjoy. On behalf of FOSA, Dr. Nick Bellantoni presented June with a Certificate of Honor in appreciation of her "generous contributions of time and energy to preserving Connecticut's archaeological heritage." Nick regaled the guests with a narrative of June's immeasurable accomplishments as well as anecdotes of events from the past. To remember her FOSA friends, she was presented a Silver Trowel charm and necklace. A good time was had by all.

June Cooke and Nick Bellantoni. *Photo by John Spaulding.*

June is now looking forward to exploring archaeological sites around her new home in Sun City, Arizona. We all wish June the best in her new home and future endeavors.

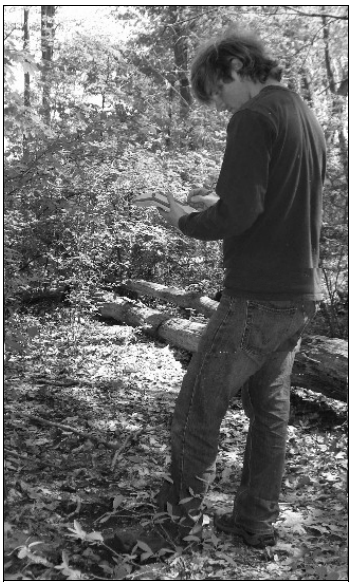
Bonnie Beatrice

Mashantucket Update

The Mashantucket Pequot Museum & Research Center continues its endeavors in the "Battlefields of the Pequot War" Project, funded by the National Park Service American Battlefield Protection Program. A new website was launched sharing information, photos and a blog (http://pequotwar.org), and the Museum was awarded a planning grant from the American Battlefield Protection Program to study Saybrook Fort in Old Saybrook. At Fort Saybrook more than a dozen discrete battles, ambushes, and actions took place as part of the Pequot War, and this project will identify areas for future archaeological testing, develop a preservation advocacy partnership, and educate the public about this important event in American history.

This summer, university students from across the country participated in the University of Connecticut's Battlefield Archaeology Field School and worked alongside archaeologists from the Museum in Mystic, where metal detection and archaeology continued. During the field season, volunteers from the Yankee Territory Coinshooters assisted in metal detection and the recovery of over a dozen confirmed Pequot War era battlefield artifacts found at both Porter's Rocks, where English and Native troops camped the night before the battle at Mystic Fort, and at Pequot Hill, the site of Mystic Fort. Archaeologists have been utilizing new GIS/GPS technology to plot battlefield artifacts uncovered. Documentation research still continues to uncover information about veterans, narratives and authors of the Pequot War.

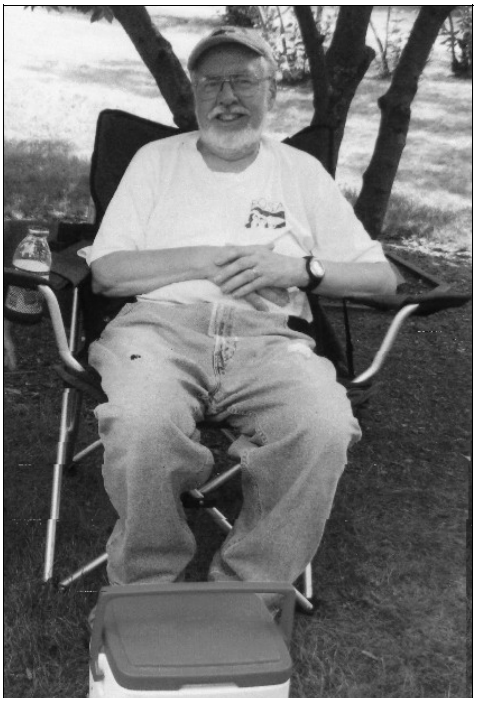
Plans for fall and winter 2010-11 include continuing battlefield archaeology at Pequot Hill and research and planning into Saybrook Fort. For more information about the project, please visit http://pequotwar.org. To contact the project, please call (860) 396-6868 or Dr. Kevin McBride at kmcbride@mptn.org.



A Museum archaeologist on a survey.

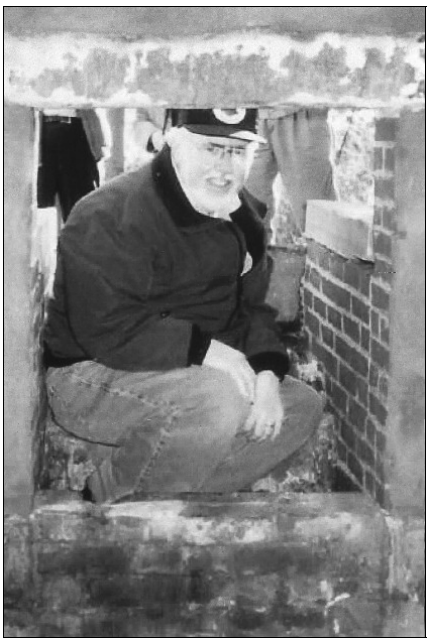
John J. Spaulding (1936-2010)

We met John Spaulding in August of 2000, when we were contacted by the town of East Hartford about the collapsed bricks of a supposedly empty vault at Center Cemetery. Turned out the vault was not empty. When town workers went in to assess the damage, they were startled to see skeletal remains and coffins of 16 individuals. At that time, John was the archivist for Center Cemetery and had done extensive research into the families buried there since the early 1700s. Together we worked to compare the cemetery records with the skeletal analysis of the remains and concluded that the "empty vault" was, in fact, the Pitkin Family Tomb.



John Spaulding at the Welles Shipman Ward House site, Glastonbury. *Photo by Ken Beatrice.*

At the Pitkin Tomb, John started to take photographs of our field work. Each new day during the project, John would show us a booklet he put together of printed photos taken the previous day. Every day he updated the photo book and included newspaper articles, historical research, genealogical information, etc. When we finished the project, the photo book was a wonderful documentation of our work.



… at the Huntington Tomb, Norwichtown. *Photo by Ken Beatrice.*

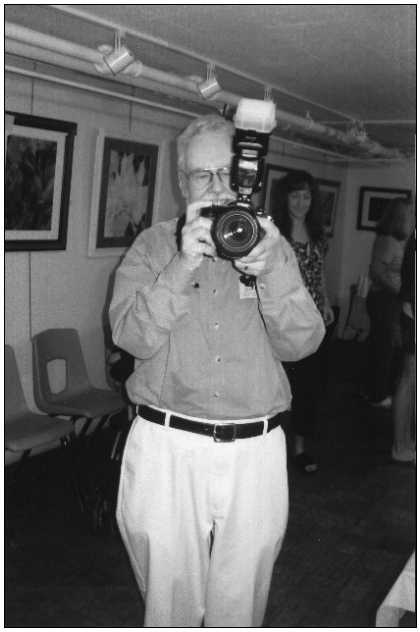
Like Rick said at the end of the film *Casablanca*, it was "the beginning of a beautiful friendship."

John Spaulding immediately joined FOSA, which had just formed through the efforts of June Cooke. John soon became a valued volunteer. He showed up to almost every field project we had and immediately became our "official" photographer. Our office library has a set of over 40 bound binders and CDs of John's photographs and research on each of the projects we worked on between 2000 and 2010. It is a truly remarkable archive. Every book is a "photo essay," not only of the technical aspects of the excavations, but of photographic portraits of all the field volunteers. Many of the photographs are suitable for framing.

John gave tirelessly to FOSA and our our office, both in terms of his time and expertise, as well as in financial support. His expertise as a professional engineer served us well in the field. His suggestions on field techniques and resolving excavation issues were always helpful. John was a relatively quiet man. We would hardy even notice him as he took his pictures (most were not posed for) and went about his work. However, when we had an issue to discuss, he always provided sound advice. His work at the Annual Meetings, setsetting up the technical media equipment for our speakers, photographing and taping the event, and documenting each of the presentations, also serves as an archive of the organization.

On a personal level, we have lost a truly great friend. John is missed deeply and every time we go into the field it is strange not to have him with us. His dedication and commitment to our work will live on in the thousands of photographs he took for us. Years from now, when we review the work of our office and FOSA, John's books will be the main source of information. And, every time we look at those photographs, or give a presentation, we will be thinking of him.

Nicholas Bellantoni, PhD
State Archaeologist



… at June Cooke's farewell reception. *Photo by Bonnie Beatrice.*

Connecticut State Museum of Natural History & Connecticut Archaeology Center's 2010 Archaeology Field School for Kids

Since 2004, the CSMNH and CAC have offered a kids' archaeology field school module as part of the Kids Are Scientists Too program. Students participated in the ongoing excavation of the Farwell House (78-184) located on the campus of the University of Connecticut in Storrs, CT.

Metal object in unit wall at the Farwell House. *Photo by Cheri Collins.*

The Farwell House was built around 1735 and was occupied by members of the Farwell family until 1908. UConn acquired the house in 1911 and approved the house to be burned as part of a fire training exercise in 1976. Public outrage at the house's destruction led to an initiative to preserve the house foundation for future archaeological research.

For two weeks this summer, students excavated three 1x1 meter units in what was the front yard of the house. Students were instructed in archaeological methods, and were the primary excavators on the site. Many artifacts were uncovered, including nails, window glass, ceramic sherds, copper wire, and burned pieces of wood. Most of the artifacts appear to date to the burning of the house, however,

Students working at a screen at the Farwell House. *Photo by Cheri Collins.*

some of the ceramic sherds date to a period when the house was occupied.

Currently, analysis of the artifacts is underway, and a report will be submitted to the State Historic Preservation Office. The Farwell House site has the potential to yield a great deal of archaeological information, and continues to be a venue for teaching and inspiring future archaeologists.

Mandy Ranslow

Welcome New Members (since April 1, 2010)

Anna Bishop, New Canaan
Cruger Dunn-Flanagan, West Hartford
Todd and Louise Gould, Madison
Jess Hamilton, West Hartford
Todd Kmetz, Stafford Springs
Patricia Laudano, Westbrook
Alanna Ocampo, New Britain

C. Thomas Paul, Madison
Will Sikorski, Norwich
Suzanne Swanson & Herb Jenkins, Enfield
Lynn Sweet-Dobrow, Wethersfield
Donna Vickers, Cromwell
Lisa Vickers, Cromwell
Emily Zambrello, Wethersfield

It's almost time to renew your membership! Memberships are renewable annually in January. Single $25.00, Family $35.00. Make your check payable to ***Friends of the Office of State Archaeology, Inc.***, P.O. Box 380845, East Hartford, CT 06138-0845. Thank you for your support!

A Rare Event for the Industrial Archaeologist

In the fall of 2009, an announcement in the newspaper of planned maintenance to the existing Rainbow Hydroelectric Plant Dam on the Farmington River in Windsor, CT was

Photo 1: Oil City Dam and powerhouse remains, 1976. *Photo by Richard Daley Photography Inc.*

news I had been waiting to hear for many years. This activity would lower the Reservoir that the dam impounds dramatically, and to my knowledge would reveal a scene that hasn't occurred since 1976.

When the present 60-foot-high Rainbow Hydroelectric Dam was built in 1925, the large reservoir it created submerged the older Oil City Hydroelectric Dam, built in the 1890s, a quarter of a mile further upstream. But with the existing dam's normal water level dramatically lowered for maintenance, the submerged remains of the Oil City Dam and hydroelectric complex could be viewed again and compared to photos taken in 1976 by Richard Daley Photography, Inc.

Photo 2: Oil City Dam remains, 1976. *Photo by Richard Daley Photography Inc.*

During the month of September 2009 the water receded. The remains of the very early dam and the hydroelectric equipment used to generate and transmit electric power 11 miles to Hartford were exposed. In those pioneering years of electric power use, this plant also served as a laboratory, experimenting with different electrical frequencies and phase generation.

All of the following photos were taken from the Northwest Park (NWP) side of the Reservoir. Even with the Reservoir filled to capacity, the tops of the stone abutments on each side of the reservoir, seen in the accompanying photos, are always visible. The 1890 dam's timber and trap rock that impounded the water, and its powerhouse remains below the dam, are normally submerged. Both photos 1 and 2 (taken in 1976) are a view of the Oil City remains from the bottom of the dam looking upstream on the Farmington River. They were also taken when the existing downstream Rainbow Reservoir's water was lowered for maintenance.

A very similar view of photo 1 is in photo 3, which I took in September 2009. Comparing the photos of 1976 to

Photo 3: Powerhouse remains looking upstream, 2009. *Photo by Jim Trocchi.*

2009 reveals that the remains have deteriorated. In photo 3 there is a noticeable difference: what appears to be a roof or floor above the powerhouse's turbine/generator assembly has collapsed to some degree. Also, to the right of the powerhouse and stone abutment, some of the dam's timbers seen in photo 1 are not seen in photo 3.

In 2009 (photo 4, taken slightly upstream from the dam's abutment) we can see that the logs and trap rock that made up the dam between the abutments on the banks, and impounded the water, is still holding up well after 34 years. The submerged logs are over 120 years old and well preserved. The trap rock may be from the abundant basalt quarries on nearby Metacomet ridge.

I took many photos of the submerged remains but

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A Rare Event for the Industrial Archaeologist

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probably the two photos I think most interesting, and perhaps photographed for the first time ever, are photos 5 and 6. Photo 5 shows a sliding wood input gate in the arched cavern at the bottom of the impounded NWP side's stone abutment. When this input gate was opened it allowed water to flow in the penstock and turn the turbine/generator seen in photo 6. A penstock is simply a conduit to channel water. With a 27-foot head of water, one can imagine the tremendous and efficient hydraulic force that went through the input gate to feed that turbine. It was a remarkable engineering accomplishment in its day.

The reader may have wondered why the hydroelectric plant was named Oil City. In today's green revolution, this partnership of words in the dam's title may seem like an oxymoron. But prior to the dam's construction, the area where it was to be built was referred to as Oil City. It got its name because it is said that a confidence man from Pennsylvania came to the area in the later part of the 19th century, bored a hole in a rock and filled it with a few barrels of oil, and told

Photo 4: Construction remains of dam, viewed from the impounded side, 2009. *Photo by Jim Trocchi.*

everyone that oil was discovered in the area. To raise money for the venture he sold stock to those who believed his scheme. He left town before his scam was exposed. Hence, the area became known as Oil City.

Searching the Historical Hartford Courant Newspaper database on iCONN brought up a couple of interesting articles about the old dam. An April 12, 1890 article entitled "A Great New Project" announced the building of the electric power plant. It was to include a 27-foot high dam to provide power to Hartford, over copper wires, to light streets and power motors in factories there at great savings in cost. The plant was to produce 2,000 horsepower a day.

A second article that I found interesting was entitled "Power Plant Burned," and dated September 7, 1897. The

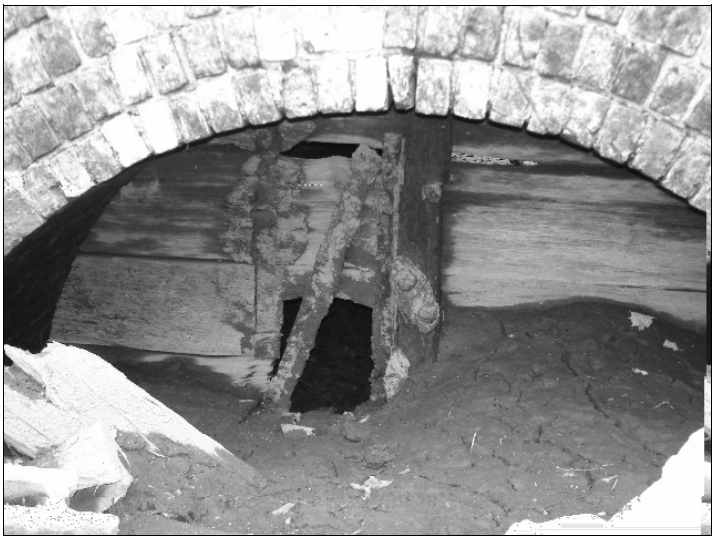

Photo 5: Closeup of input gate that feeds powerhouse penstock on impounded side of Northwest Park abutment, 2009. *Photo by Jim Trocchi.*

fire broke out at 2:30 in the morning because of a short circuit. The powerhouse burnt to the ground and, of course, Hartford's downtown experienced a power outage—though only for 15 minutes because the Hartford Electric Light's steam-powered Pearl Street plant was brought back online to provide the needed power until the hydro plant was rebuilt. It also states that if additional power was needed because of the outage, there were big storage batteries at the rear of the *Courant*.

At the conclusion of the Rainbow Dam's repairs, the great watershed of the Farmington River soon refilled the Reservoir, and now only the Oil City stone abutments are visible. With the remains submerged again they should be reasonably preserved. Perhaps in years to come the Reservoir's impounded water will be again drained and the thrill

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Photo 6: Penstock feeding into powerhouse as viewed from the Northwest Park abutment, 2009. *Photo by Jim Trocchi.*

The Marine Railways of Southeast Connecticut

Marine railways were a critical component of Connecticut's maritime economy from ca. 1825-1970, providing cost-effective repair facilities for all sizes of vessels. The state's under-documented, overlooked marine railways—all of which were built on tidal waters—are a vanishing resource, with few in operation and many demolished. The great majority of these facilities were in the southeast part of the state, especially between the Thames and Pawcatuck drainages. To begin planning for possible protection of these resources and to enhance public education, Raber Associates conducted a survey in this region between 2003 and 2006 to identify remaining marine railways and evaluate their historical significance. By placing these resources in the context of the history of marine engineering, regional economy, and local development, the survey was intended to enhance public sensitivity to historic waterfront resources along Long Island Sound and its waterways, as well as to develop recommendations for possible resource protection measures including creating State Archaeological Preserves and nominating properties to the National Register of Historic Places. This article summarizes the historic context of marine railway history in the study area.

The survey, funded by the Connecticut Department of Environmental Protection's Office of Long Island Sound Programs, addressed all marine railways built in Connecticut for commercial purposes between the lower Connecticut River (from about Chester downstream) and the Rhode Island border. There have also been a number of very small "family" marine railways built to handle private recreational vessels on private property. To work within funding limits and minimize site access issues, this survey did not address the "family railways." At various times, the study region probably had at least two-thirds of all commercial marine railways built in the state, many of which were known in at least summary fashion to members of the team assembled for this study. There is less information compiled on other Connecticut marine railways, which have included sites in New Haven, Milford, Bridgeport, Norwalk, Greenwich, and Portland. Focusing the study on the southeast part of the state increased the research value of limited grant funds. Companion or continuing studies of Connecticut's other marine railways, which may require relatively limited initial research, can be prepared in the future.

Prior to the advent of travel lifts in the 1960s, there were several ways to move a vessel from a floating position to a dry one for bottom repairs or storage. The most ancient involved floating or hauling a vessel onto a beach and careening or heaving it on its side, a laborious operation which required reversing the process to re-float the vessel. In different forms, drydocks allowing for repairs of upright vessels supported by keel and bilge blocks appeared as early as the 3rd century B.C. in Egypt, and became common in England by the late 15th century. Steam powered pumps made drydocks more common by the late 18th century, but in their stationary or excavated form they represented a very large investment. By the early 18th century, floating drydocks first appeared in England and Russia as converted ships' hulls designed to receive floating vessels and lift them for repairs. A century later, special-purpose floating drydock

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A Rare Event

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of seeing the remains between the abutments will once again be a treasured event for industrial archaeologists.

Rainbow Reservoir can be reached by a short hike in Windsor's Northwest Park or by boat from a state boat launch in the Rainbow section of town.

Jim Trocchi

References:

Roth, Matthew. *An Inventory of Historic Engineering and Industrial Sites.* Society of Industrial Archaeology, Houghton, MI, 1981.

Windsor Historical Society Newsletter. January 1995, volume 13 no. 1.

Thank You for Your Donations (since April 1, 2010)

FOSA General Fund

Anne & Gabriel Choquette, Naples, FL
(in memory of John Spaulding)

Fred Warner, Barkhamsted

Radiocarbon Dating Fund

Cece Saunders, Historical Perspectives, Inc., Westport

Marine Railways

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structures consisting of flat-bottomed pontoons with high side walls were being patented; the earliest American patent is dated at ca. 1816. Water-tight compartments in the side walls, filled or emptied by steam pumps, served to lower or raise the structure. A sectional floating drydock was first patented in the United States in 1837.

A marine railway consists of an incline—typically with timber foundations—extending from a point on shore above high tide to a point offshore well below low tide, parallel sets of metal rails on the incline supporting a roller-borne cradle or carriage on which a vessel can be supported with blocks, levers, or shores (braces), and a mechanical system for moving the carriage up and down the incline. Marine railways had many advantages over drydocks, providing drier, better-lit, and better-ventilated working surfaces at approximately the same elevation as the adjacent shipyard or boatyard. Compared to stationary drydocks, marine railways were much less costly to build, used less fuel than drydock pumps, were faster to operate, and did not require a particularly wide tidal range to float a vessel in or out of the dock. Floating drydocks were likely more expensive to build than larger marine railways, and required waters which were both relatively calm and wide enough not to interfere with navigation channels.

In Connecticut's southeast coastal region, tidal range is generally about 2.5-4 feet, and many of the waterways are narrow and exposed to unsettled weather conditions. These conditions may explain why the vessel construction and repair industry in this region, particularly in the lower Thames and Mystic rivers, made extensive use of marine railways beginning in the 1820s, including what were probably some of the earliest such mechanisms used in the United States. Marine railways have most typically been used for repair and, in the 20th century, vessel storage, but at some small sites with limited waterfront there are also examples of boat or ship construction on marine railway cradles.

For approximately a century following their appearance in southeast Connecticut—until the end of large wood vessel construction ca. 1920—the use and geographic distribution of marine railways were closely related to regional patterns in maritime commercial history. From the mid-17th century English settlement of the lower Connecticut River Valley and the coastal areas to the east until the early 19th century, the economies of the river and coastal towns were focused on fishing, oystering, shipbuilding, and active participation in the West Indies trade. Shipyards serving these activities were concentrated on the Connecticut River below Middletown, in New London and Norwich on the Thames River, and at Noank near the mouth of the Mystic River. The West Indies trade was diminished and largely eliminated by international politics, war, embargo, and depression ca. 1807-1815, but shipbuilding in the study area was sustained through the mid-1860s by expanded fishing, whaling, coastal traffic, and vessel demands of the New York City-based cotton trade.

Some Connecticut River ports with shallow water depths could not compete with demands for larger vessels, but ship construction at New London, Essex and Mystic-area yards flourished through the Civil War. Vessel repair, including some use of marine railways, gradually became an integral part of larger shipyard operations. Until ca. 1860, all but two of the marine railways built in the study area—a total of about thirteen—were found in New London, a center of whaling; short-lived facilities operated in Deep River ca. 1834-35 and Essex ca. 1855-81. Just before the Civil War, during which wooden shipbuilding peaked in Mystic, brothers John (1818-1876) and Robert (1825-1913) Palmer installed three marine railways at two of their three Noank yards, the first such facilities on the Mystic River. Thomas Wetmore also built a marine railway in Norwich ca. 1860.

After the Civil War, new ship construction in most parts of southeast Connecticut declined sharply until the early 20th century. Regional factors included the drop in whaling traffic and a lack of yards capable of building large iron vessels. High costs of labor and insurance, compared to British and Canadian yards, were also major problems confronting most American shipbuilders. During this period, many shipbuilders and marine contractors in the study region adapted by concentrating on ship repairs and outfitting, taking advantage of lower labor costs and a central location relative to New York or Boston. Approximately eighteen marine railways were built in the region ca. 1865-1900, though many operated for only short periods. By far the largest marine railway from this period was the 658-foot-long one built in 1879 by the Palmer brothers at the southernmost (lower) of their three yards in Noank, with a 265-foot-long cradle hauled with a 75-hp steam engine. This was one of the largest marine railways ever built in the United States, and allowed the firm to work on the biggest craft operating between New York and Boston.

The Palmers also diversified their business by specializing in construction of wooden carfloats, designed to tow loaded freight cars across the Port of New York between rail terminals. While carfloat construction did not require marine railways, the installation of boilers and engines in steamboats and other coastal vessels included regular use of such facilities. On Shaws Neck in New London, the Morgan Iron Works and its successor the New London Marine Iron Works used three older steam powered marine railways ca.

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Marine Railways

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1889-1891 to do this kind of work, replacing them with a larger one in 1894.

One small but increasingly bright spot amidst the diminished regional construction of large wooden vessels in the late 19th century was the advent of schooners built to haul coal for steam powered manufacturing, a demand which became more important for ship construction and repair work in the study region during the early 20th century. Demand for coal in New England's industrial ports, not readily accessible by rail from mid-Atlantic coal fields, stimulated marine shipping from coal terminals between Norfolk and New York by the 1870s. Towing of coal in canal-size barges sufficed in relatively sheltered coastal waters, but these could not handle the rigors of ocean travel beyond Narragansett Bay. Large multi-masted schooners, built mostly in Maine, dominated the long-distance coal trade until the late 1880s. Six were built in New London in the early 1890s, including several at the Crocker, Davidson, & Co. or Herbert J. Crocker yard on Shaws Neck, which at the time was equipped with four marine railways.

Beginning in the late 1880s, several types of schooner barges began to replace multi-masted schooners. A schooner barge was a towed cargo ship, usually with two to four short masts rigged fore-and-aft for steadying in heavy seas, towed by a large tugboat. One tug could tow four to six schooner barges, each of which required a crew of three to four men. Despite dangerous seagoing towing conditions, the economy of this shipping mode, compared with more traditional individual sailing ships, quickly ended most new schooner construction until World War I. Older ships were converted to schooner barges ca. 1890-1925 by eliminating top masts, removing bowsprits and jibbooms, and adding nearly-continuous main deck hatches, large towing bitts, and small steam engines for sail hoisting. Over 100 new schooner barges were also built ca. 1890-1900, with distinctive hull features. Most as-built or converted schooner barges were wooden; a few were steel.

The coal trade increased the construction of these craft and large tugboats in New London and Mystic during the first two decades of the 20th century, until the advent of steam-powered colliers and the demise of New England's

Robert Palmer & Son Lower Yard, Noank, view to west. 658-foot-long marine railway at left center. Undated view; automobiles suggest early 20th century. *Courtesy Mystic Seaport Museum.*

Marine Railways

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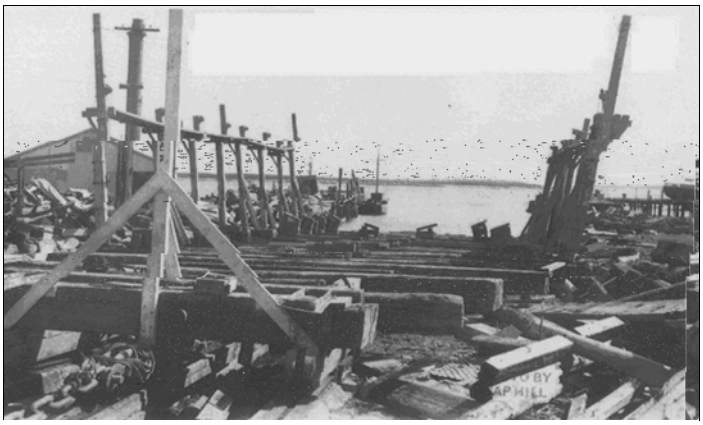

Cradle at Palmer Lower Yard, 1940. *Courtesy of Noank Historical Society.*

textile industry in the 1920s sharply reduced demand for schooners or schooner barges. Coal trade vessel repairs, and the brief windfall of military work generated during World War I, led to the most prominent new marine railways in the region in this period. Approximately ten marine railways were constructed for commercial purposes ca. 1900-1920 in New London, Groton, Noank, and Essex, with the largest being one rebuilt by the New London Marine Iron Works, the three built by the Thames Tow Boat Company in New London, and one built for the Electric Boat Company in Groton by Crandall Engineering Company. The latter four marine railways were the only examples in the region of what were sometimes called railway drydocks, developed by Crandall, which were distinguished by large cradles with horizontal bottoms as opposed to bottoms parallel with the incline of the tracks.

The Thames Tow Boat Company, associated with the coal retailing firm of F. H. Chappell & Company, began operations in Norwich in 1865, and by the early 1880s became one of the earliest to engage in long-distance towing of schooners or schooner barges. Beginning in 1901, Thames Tow Boat constructed a large yard in northern New London for construction and repair of wooden ships and barges, including its own sea-going tugboats, with two steam powered railway drydocks. The proximity of this yard to that of Electric Boat, which opened its Groton facility in 1911 for submarine and other ship mechanical equipment, provided Thames Tow Boat with considerable World War I work in submarine repairs after Electric Boat began to build submarines for the U.S. Navy. Electric Boat built its railway drydock—among the first electric-powered marine railways in the region—ca.1915. Wartime shipping demands also sustained some of the older yards using marine railways, such as the lower Palmer yard used by Pendleton Brothers and the Groton Iron Works.

Shortly after the war, demand for new wooden ships declined permanently, and Thames Tow Boat shifted to an emphasis on yacht repairs, adding a third, electric-powered railway drydock to its yard in 1919 (Gratiot 1983). Beginning in the second decade of the 20th century, and accelerating after 1920, the introduction of marine diesel engines led to improved, widely-available designs for yachts, lobster boats, and other recreational and fishing craft including boats used to transport liquor during the era of Prohibition. Repair and storage of such craft at smaller yards appears to account for more than half of the marine railways built in the region ca. 1900-1920, and became the principal reason for construction and use of these facilities into the 1970s.

Until the 1930s, marine railway use remained associated primarily with yards which also built boats, yachts or—less frequently after World War I—ships. The oldest extant—though heavily rebuilt— marine railways, in the Noank section of Groton, were built by small shipyard operators ca. 1900-1910, as were several other contemporary but demolished marine railways at new or late-19th-century yards in Essex. The only marine railway in the survey region known to have been built in the 1920s, a recently-demolished one at the Franklin G. Post yard in Mystic, was part of a business prominent for its design and construction of wooden, gas-powered pleasure and commercial boats. The last operators of the lower Palmer yard, the Noank Shipyard, added three poorly-documented, now-demolished marine railways for yacht maintenance in the late 1920s or early 1930s, by which time little if any new construction was done at this large facility. During the early 1930s, several other yards specializing in wooden boat construction opened with marine railways, notably at the Persson and Brockway sites in Old Saybrook. At the end of this decade the Post yard—by then op-

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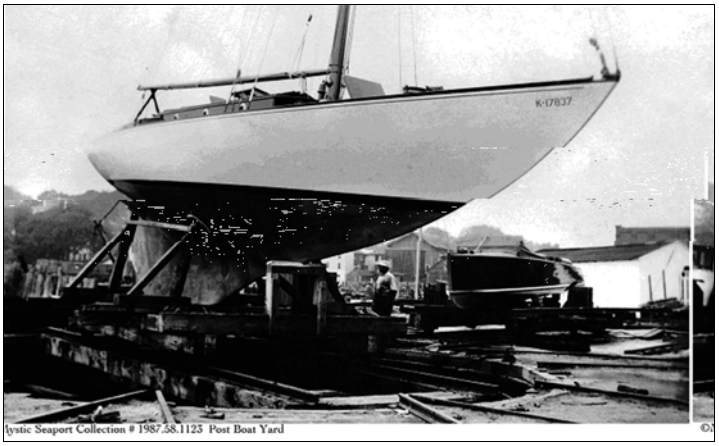

Undated view north of boat on turntable cradle at Franklin G. Post Yard. *Courtesy of Mystic Seaport Museum.*

Marine Railways

(Continued from page 11)

erating as Franklin G. Post & Son—greatly expanded its facility including the construction of a regionally-unique marine railway with a turntable allowing boat transfer to any one of five nearby sheds.

The Post, Persson and Brockway yards were among the last in the survey region to build wooden boats, and appear to have been the last yards of this type to install marine railways. Marine railway use began to shift dramatically in the 1930s, towards commercial and private facilities devoted only to boat storage and repair. Of the approximately twenty-six marine railways known to have been built in the survey region after 1930, all but the three noted above appear to have been built at such facilities, many of which were relatively small. The principal factors in this shift were a decline in boat construction during the Great Depression, and the relative ease with which experienced yard operators and mechanics could build small marine railways with automobile engines and rails salvaged from the region's disappearing trolley systems.

Virtually every extant example of a marine railway in the survey region, whether operating or moribund, appears to have rails from this source, suggesting an unintended consequence of the decline of trolley lines beginning in the 1930s. In some cases, such as the Silveira marine railway in Keeney Cove on the Niantic River, tugboat and lobster boat operators built or acquired marine railways principally for maintenance of their own vessels. More frequently, marine railways were the most prominent features at the increasing number of marinas, which had smaller footprints and facilities than the larger yards once used to build as well as repair or store vessels. Among the earliest of the surviving marina marine railways, and the most unusual operating one in the survey region, is the hauling facility built at Reynolds Garage & Marine, Inc., in 1932 on Hamburg Cove in Lyme, which features ten tracks used for tractor-hauled movement of boats on cradles from the marine railway to the marina's sheds.

Cradle with four movable bilge blocks and "fire fly" winch house, Mystic Seaport Museum.

Steel and timber cradle with fixed bilge blocks on shuttle car at head of marine railway, Reynolds Garage & Marine, Inc.

World War II brought increased repair and construction work to the region, and led to greater use and occasional expansion of individual marine railways, but apparently not to any construction of new marine railways. Thames Shipyard, Inc., the successor to Thames Tow Boat Company, repaired submarines and converted merchant ships for wartime purposes. Some of the seventy-four submarines built by Electric Boat were probably built using that yard's railway drydock. Essex Boat Works lengthened one of its marine railways in 1943 to repair naval vessels, and Franklin G. Post & Son built naval patrol and air rescue boats.

The immediate post-war era saw increases in recreational boat ownership and demands for marina services, with the introduction of non-traditional materials such as plywood, glue, and fiberglass. By the early 1950s, the use of boat trailers and privately-owned Jeeps made it possible for many boat owners to minimize or avoid the need to use marina-based marine railways, but maintenance of larger vessels appears to have increased demand for such facilities into the early 1960s. At least twenty marine railways were built in the survey region ca. 1945-1965, at the height of their use by marinas, with all but a still operable one at Mystic Seaport for commercial/private use. It was probably in this period that marine railways were most visible in the public eye, in part because marinas were more accessible to visitors than shipyards.

Some of the factors increasing post-war marine railway use at marinas also contributed to the decline of these de-

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Marine Railways

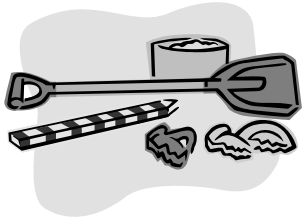
(Continued from page 12)

vices. Recreational boats that were lighter, and often smaller, than wooden yachts and sloops could be lifted from the water with construction cranes and double slings. The cranes could move boats away from the water for storage faster and far more easily than was the case at most marine railways. By the early 1960s, this concept had evolved into the travel lift, a rubber-tired gantry crane which sling-lifted boats from parallel finger piers and moved the boats around the boatyard. Within about a decade, the travel lift had replaced marine railway use in most places within the study region, leading to conversion of some sites to travel lift use and abandonment of other yards.

Insurance premiums and increasing labor costs also favored travel lifts, as did environmental regulations making retention of oil-soaked marine lift gas engines more difficult. Early travel lifts' disadvantages, including limits on liftable boat sizes and the potential to strain wooden yacht hulls, partly explain the retention of marine railways at a few sites in southeast Connecticut. For owners of small boatyard sites with functional marine railways serving their own vessels, there was also limited incentive to invest in the new technology. Of the five functioning marine railways in the study region as of 2006, discussed below, three are in this latter category. The other two operable sites are at Mystic Seaport, and at Reynolds Garage & Marine, Inc., a marina whose multi-directional boat handling matches that of many yards equipped with travel lifts.

Michael S. Raber
with participation of William N. Peterson,
Former Senior Curator at Mystic Seaport Museum, and
Thomas C. Law, Vice President, Docko, Inc.

Funding provided by the Long Island Sound Fund administered by the Connecticut Department of Environmental Protection (DEP), through the sale of Long Island license plates and contributions.



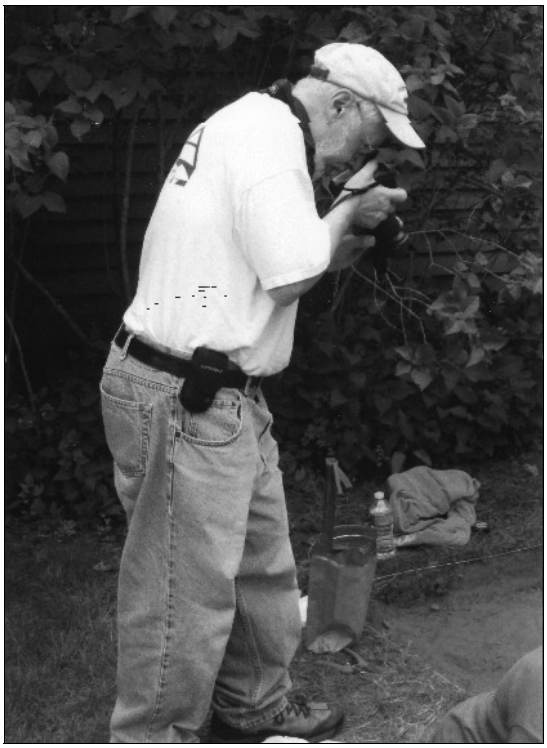
Meetings and Announcements

On the Trail of the State Archaeologist. Dr. Nicholas Bellantoni, State Archaeologist, presents lectures at locations throughout the state. His talks are always captivating and give a closer look into the unique archaeological heritage of Connecticut. For more information on a specific program, please contact the hosting organization.

Monday, November 1, 2010 – 6:30 pm: Derby Public Library, 313 Elizabeth Street, Derby. 203-736-1482. www.derbypubliclibrary.org

Monday, November 15, 2010 – 7 pm – 9 pm: Seymour Historical Society, Seymour Community Center, 20 Pine Street, Seymour. okeefe58@aol.com

Andersonville and Fort Pulaski: Archaeology at Two American Civil War Prisoner-of-War Sites in Georgia will be the topic of John Jameson's presentation at FOSA's Annual Meeting on **Saturday, January 29, 2011**. Mr. Jameson is Senior Archaeologist with the National Park Service and has excavated at both of these sites. Plan on attending this presentation which will be our kick-off to the 150th anniversary of the Civil War. There will be further information closer to the date of the meeting on our website www.fosa-ct.org.



John Spaulding at work at the Welles Shipman Ward House site. *Photo by Bonnie Beatrice.*

Visit the FOSA website, www.fosa-ct.org, for more information about archaeology and our organization, how FOSA members and volunteers provide support for the Office of State Archaeology, past FOSA newsletters, upcoming events, and links to related websites.

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We would like to hear from YOU! Please send your comments and ideas related to FOSA or the FOSA Newsletter to Mae Johnson at mpjohnson@snet.net.

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