



Society for Industrial Archeology · New England Chapters

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President's Report, SNEC

Thirty enthusiastic SNEC members and friends took part in the chapter's spring icebreaker program at Dillon Boiler Services in Fitchburg, MA, on March 26th. The program was arranged by chapter member Howard Gorin. Our host at Dillon Boiler was John O'Malley, joined by an enthusiastic crew of Dillon boilermakers! Participants were able to inspect Howard Gorin's steamroller, in the Dillon shop for replacement of its boiler tube sheet. The Dillon folks set up a demonstration of hot riveting and caulking, which they repeated several times during the course of the morning, with hands-on help from some of the braver audience participants. Dillon Boiler has been around for many years and continues to undertake an interesting array of work, hopefully the subject of a future newsletter article. Howard's roller is a 12-ton, 1921, horizontal-boiler Buffalo Springfield, built in Springfield, Ohio, and originally owned by the town of Manchester (now Manchester-by-the-Sea), Massachusetts. Howard threatens to involve the Chapter in future aspects of his on-going restoration.

The SNEC again co-sponsored with the NNEC a field recording weekend at the Richmond Furnace site in Richmond, MA, on the weekend of May 14-15. Vic Rolando led the recording effort. Bill Edwards and the folks in Richmond had been busy working on the site since last year's event. The focus of the recording this year was the nearby Klondike Mine.

In June, the chapter is planning to visit the Byfield Snuff Mills in Newbury, MA. The chapter undertook a recording project at these mills in 1981, and we are hoping that our return will help stimulate some local interest in their preservation and awareness of their significance. See Dave Mountain's call for help in this Newsletter.

At the risk of sounding like a broken record, the SNEC still needs members to come forward to serve as officers and to take responsibility for organizing programs! We need your help to keep the chapter active!

Michael Steinitz
Somerville, MA

President's Report, NNEC

The Northern New England Chapter of the SIA had a very successful year in 1993. On February 6, the sixth annual Conference on New England Industrial Archeology was held jointly with the Southern New England Chapter, which hosted it, in the Boott Cotton Mills Museum, which is part of the Lowell, Massachusetts, National Historic Park. The sponsorship alternates between the chapters. The weather was frigid (as it usually is), but the papers were stimulating as always, and attendees had an opportunity to tour parts of the restored mill.

The Spring Meeting and Tour was held

at Newport, New Hampshire, on May 8. Members and guests toured the Dorr Woolen Mill; one of three operating woolen mills in the state, it traces its origins to 1867, although there were corn and sawmills there in the eighteenth century. A number of other old mill sites were also visited.

Memorial Day Weekend has become a traditional time for NNEC field activity (out of the armchairs, so to speak). This past year the subject of clearing and archeological survey was the Pump Mill at Canterbury Shaker Village, in Canterbury, New Hampshire. The tail-race was exposed and other work done under the supervision of member David Starbuck.

The NNEC hosted the 1993 SIA Fall Study Tour at Concord, New Hampshire, from Thursday, September 30, through Saturday, October 2, with an optional trip to Canterbury Shaker Village on Sunday. On Friday, the tour travelled along the Contoocook River, visiting mill sites including Historic Harrisville and taking several process tours. On Saturday, the tour visited the 1888 Concord gasholder; Newport, NH; the recently-restored Cornish-Windsor covered bridge; and the American Precision Museum in Windsor, Vermont. There were about ninety participants; the weather was beautiful and a good time was had by all. Dennis Howe was largely responsible for the very efficient organization of the tour.

On October 30, the NNEC had its own fall tour, cosponsored by the Sheldon Museum; sixty-eight attended. The subject was the marble industry in Middlebury and very knowledgeable talks were given by Don Burns and Greg Pahl, followed by a box lunch and tour of sites in and near this beautiful town.

NNEC members are concentrated in Vermont and New Hampshire, with others from Maine, Massachusetts and New York State. Officers for 1993-94 are:

Woodard D. Openo, President
Richard Borges, First Vice President
Kate Donahue, Second Vice President
Krista Butterfield, Secretary
Victor Rolando, Treasurer

Woodard Openo
Somersworth, NH

Call For Papers Historic Ironmaking Conference September 30, October 1 and 2, 1994

The Orange County (New York) Historical Society is sponsoring an Historic Ironmaking Conference to be held at the Clove Furnace Historic Site, Arden, N.Y. (18 miles south of Newburgh, N.Y.). Papers addressing any aspect of historic ironmaking or any particular site — furnace, forge, mine, etc. — are sought. Submissions from both professionals and non-professionals are encouraged.

Presentations should not exceed 20 minutes in length; a Kodak slide projector and screen will be provided; presenters are urged to use illustrative material. Abstracts must be received by July 1, 1994 for consideration and program listing.

Please send abstracts to: Edward J. Lenik
c/o Sheffield Archaeological
Consultants, P.O. Box 437, 24 High
Street Butler, NJ 07405-0437. Phone:
(201) 492-8525 (days)

Call for Help The Byfield Snuff Mills

The Byfield Snuff Company Mills are located along the Parker River in the Byfield section of Newbury, MA. The Byfield Snuff Company is still owned by the Pearson family, direct descendants of John Pearson (1616-1693) who settled in Rowley in 1643 where he established

a fulling mill on the Mill River. John Pearson's son, Benjamin (1658-1731), and his descendants carried on the milling business up to the last grinding of snuff in 1986.

The three mills of the Byfield Snuff Company were listed by HAER in 1976. One of the mills, built as a sawmill, ca. 1860, and later also used to grind snuff, is now a private residence. The largest of the mills, Mill #2 (also known as Pearson's Mill), was built around 1830 as a sawmill and was converted to snuff production in 1860. Snuff was ground here until 1986, and all the machinery is still in place and apparently in working order. The present owner, Benjamin Pearson XI, states, however, that the turbines need attention due to corrosion. Mill #2 and associated buildings are currently for sale along with 2000' of river frontage. This mill complex consists of five buildings: the wooden mill building (50' x 54'), a reinforced concrete tobacco storehouse (44' x 110'), a reinforced concrete snuff-flour storehouse (42' x 80'), a packing and office building (55' x 26') and a small machine shop (44' x 11').

The oldest of the mills, Mill #1 (also known as the Larkin-Morrill Mill), began grinding snuff in 1804 and was the subject of a SNEC-SIA recording session in 1981 and the subject of a newsletter article by Betsy Woodman in 1982. At that time the building was for sale, but in 1990 the mill, with 2.7 acres, was purchased by the Town of Newbury. The building is not being maintained and has been suffering from increased vandalism due to its isolated location. All of the windows have been broken, in some cases window sash have been shattered, and the roof is beginning to leak. Most of the building frame appears sound, but several joists on the ground floor have given way due to decay.

Betsy Woodman's article reported that a sawmill was in operation on the site during the 18th century. The present building appears to have been modified on several occasions as well as having been

damaged by fire at some time in its history. I have been unable to determine, based on my two brief visits, whether the current structure is of 18th century origin or whether materials from an earlier building were reused in its construction. On a recent visit to the mill, I observed two cases where beams had been obviously reused. I also noted two sets of 18th century window sash: one set was in place, the other set stored in the loft. The machinery and storage bins described in Betsy Woodman's article are still in place, but are deteriorating due to vandalism and increasing exposure to the weather.

A group of Byfield residents have become increasingly concerned about the future of the two, currently unused, mills. The Larkin- Morrill Mill is clearly at great risk, and the financial resources available to the Town of Newbury Historical Commission are limited. The future of Mill #2 and its equipment is uncertain since the mill complex is for sale. The owners would like to see the building preserved but are looking for the sale of the mill to provide them with retirement income. Suggestions and offers of assistance would be greatly appreciated.

Dave Mountain
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Byfield, MA 01922
(508) 462-5148
Internet: dcm@bu.edu

Byfield Snuff Mills Postscript: SNEC Alert

As this is being written we are arranging a Saturday morning mid-June trip to Newbury to inspect both mill complexes. With luck we will be able to lunch afterwards at the Lowell Boat Shop in Amesbury on the Merrimack. Expect to see a flyer on this soon!

Michael Steinitz
Somerville, MA

Request

I would like to suggest that officers, the number to be decided upon, of the four Northeast SIA groups, Evans, Roebling, SNEC and NNEC, be put on each other's mailing lists. This would enable members in the Northeast, by checking with an officer, to be aware of what activities were going on or ongoing. The distance from Evans to NNEC is not so great that a weekend trip could immerse an active soul in an interesting project.

Jack Yerkes
Tariffville, CT

New Hampshire Iron Works Franconia, New Hampshire

An interpretive center for the 1805 Franconia blast furnace was opened May 29 at a town park across the Gale River from the privately-owned "stone stack." Dr. James Garvin, N.H. State Architectural Historian, was the keynote speaker. The blast furnace is the only one remaining in New Hampshire, and is unusual in its octagonal shape. The site is on Rt. 18 near Rt. 117.

The center has been developed by the Franconia Area Heritage Council for the town, as an interim means of recognition of the town's most significant artifact. Outdoor explanatory panels are planned, and a scale model is being built for display in the building.

The Heritage Council has been striving to acquire the furnace. State and national officials are supportive of the goal, but the means remain elusive.

Although the site does not qualify for a national park, the National Park Service is encouraging the State to complete an application, drafted in 1989 by Dr. Duncan Wilkie, for listing on the National Register of Historic Places.

The owners agreed in January to cooper-

ate in the application by specifying how much land could be included. They intend to limit the site to about one-half acre. Their principal interest is in selling their entire four acres with house and furnace for about \$200,000, and obtaining an appraisal of the furnace site that would qualify them for a gift tax credit. The owners will not sell the furnace site until the house is sold.

The owners have agreed to having the trees removed from the top of the furnace next spring, the cost to be shared by them and the Council. Root growth and frost expansion have caused a few stones to fall off.

Public ownership would make possible archeological and industrial research on ironmaking in the 1800s and the conversion to hot blast method. Later, guided visits could be offered for school children and tourists. Eventual reconstruction of the shed and entire iron works would be possible.

Julie Friedman
Franconia, N.H.

Grants Received

The crystal Lake Falls Historical Association, Barton, Vermont, recently won a Preservation Services Grant of \$1000 from the National Trust for Historic Preservation. The seed grant funds will be used in the "Brick Kingdom" - the future Crystal Lake Falls Historical Park - for a conservation assessment and "specs" for the 3 brick Wessell, Nickel and Gross Piano Action factory buildings on the site, looking towards stabilizing them as the nucleus of a future historical park

In announcing the Grant, National Trust President Richard Hoe said, "With these start-up dollars, Barton, Vermont joins the hundreds of other communities across the country actively insuring that America's architectural and cultural her-

itage is preserved."

The program for dispensing small grants for local projects is administered by the National Trust's Preservation Services Fund (PSF), which holds three competitive funding rounds annually. Grants ranging from \$500 to \$5000 are awarded to nonprofit groups and public agencies and must be matched at least dollar for dollar with public or private funds. The National Trust for Historic Preservation is a nonprofit membership organization chartered by Congress to encourage public participation in all aspects of historic preservation.

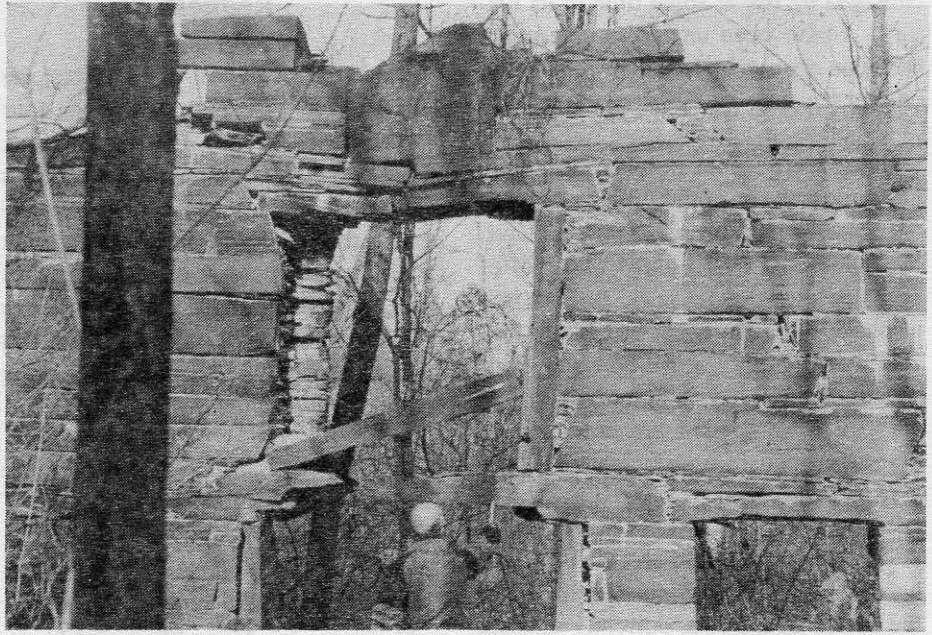
On October 25, 1993, CLFHA received a grant of \$2500 from the Ellis L. Phillips Foundation to add to the National Trust funding for a conservation assessment of the Mill Hill - "Brick Kingdom" factory buildings, which will happen in the summer of 1994. Tom Visser of UVM's Historic Preservation Program and Jan Lewandoski of Restoration and Traditional Building will work on the project.

For further information contact Robin Tenny, Crystal Lake Falls Historic Park Chairperson, (802) 525-3583.

Robin Tenny
Barton, VT



Remains of some of the extensive waterpower systems that powered the slate-working mills



David Starbuck gingerly probing a critical stone in the from wall of the large, main slate-processing mill. "1868" is engraved on the face of the large slate block

Recording Session Considered at Vermont Slate Site

Representatives of Castleton State College and Vermont Forest and Parks met at West Castleton, Vermont, on December 9, 1993 to determine the feasibility of holding a recording session there the summer of 1995. Bill Jordan, Joe Taparauskas, and Ennis Duling of Castleton State College, and Russell Reay of Vermont Department of Forest,

Parks and Recreation, met with David Starbuck and Vic Rolando for a 2-hour walk-over inspection of the site and remains of the West Castleton Railroad and Slate Company, most of which today is within the boundary of the Bomoseen State Park, about 15 miles west of Rutland.

The main quarry for this operation was at Cedar Point, on the west side of Lake Bomoseen, and considered to be the northern terminus of the great slate belt of western Vermont. It might also have been the first slate quarry worked in this belt per the 1899-1900 report of the state geologist. The belt proceeds southward on both sides of the lake through Poultney, Wells, Pawlet, and Rupert, then angles southwestward into New York State to points farther south. The 1869 Beers map of West Castleton shows two stone mills measuring 265 by 64 feet and 60 by 40 feet that processed the stone, blacksmith shops, tenements, a powder house, school house, saw mill, and a wharf at the lake. In 1900 the Cedar Point quarry reported a 127-foot-thick seam of purple slate overlain by 50 feet of green slate.

Slate quarries opened in this area about 1850 and closed in 1929. When the new mill was constructed about 1868, it was the largest slate-finishing mill in the county. Marbleized slate, introduced from Europe, was a mainstay of the business. The marbleizing process was in the hands of very few people and was considered a company secret - done only at night when most workers were home. After the mill burned in 1870, it was rebuilt on a smaller scale and in 1878 became the Lake Shore Slate Company. A new 20- by 60-foot mill was powered by a 24-foot diameter overshot wheel that ran seven circular saws, a band saw, jig saw, five planners, two rubbing beds, and a jointer. At this time the community consisted of 50 houses, and the quarry was 100 feet deep.

Remains inspected were stone wall foundations of the 265 foot slate-working mill, an extensive waterpower system, numbers of workers' housing sites, a small abandoned cemetery, and many unidentified industrial foundations and features. Except for a few concrete features, most foundation walls were made of stacked layers of slate.

As presently envisioned, recording will be done for credit by Castleton State College students with consultant help from Starbuck and Rolando. Funding will be provided by Castleton State College, State Forest and Parks, and hopefully the Division for Historic Preservation. No subsurface excavating is anticipated. Volunteer recording will be considered.

(Note: Historical data is from Shelley Hight's manuscript, "Slate Industry at Bomoseen State Park," n.d., Vermont Division for Historic Preservation.)

Vic Rolando
Manchester Ctr., VT

Up in Smoke?

New England members of the SIA should be aware of growing concerns in

many quarters over the possible disappearance of one of the most characteristic features of New England's industrial landscape: the smokestack. I have before me a letter from the Lowell Historic Preservation Commission to Historic Massachusetts, Inc. (HMI), a state-wide, non-profit historic preservation advocacy group. The letter requests that the smokestacks of the city of Lowell be placed on HMI's Endangered Properties List. The letter is accompanied by an article from the *Lowell Sun*, May 9, 1993, which notes that of the dozens of smokestacks that once defined the city's skyline, only eight of these historic structures remain. No longer functioning, and therefore more subject to the freeze-thaw cycle of New England's winters, the region's smokestacks are rapidly deteriorating and disappearing. Restoration costs for a single tall stack are quoted in the six-figure range, with demolition costs of course quite lower. In Lowell, discussion has focused on the 260-foot Wannalancit Mill stack, but others here are also threatened. All the historic preservation groups in Lowell are agreed that the towering landmarks help define the visual image of this industrial city. Yet even in Lowell, site of a National Historic Park dedicated to the history of industry in this place, finding funds to save these structures will be a challenge. What of the many others slowly crumbling throughout the region? Preemptive demolition of deteriorating stacks seems increasingly a part of the redevelopment process for historic industrial complexes. The removal of two stacks from the East Boston Steam Pumping Station and the proposed removal of the stack at the Chestnut Hill Pumping Station are two recent cases in the Boston area. If the regional economy turns around enough so that factory rehabs start up again in earnest, we can expect to see many more stacks tumbling down. Whether or not one regards them as the "threatened redwoods" of the industrial era (as the *Sun* notes), or as rightfully obsolete pollution devices that once fouled the air and besooted and acidified the landscape, New England's

surviving stacks remain as powerful icons of our industrial past. SIA members should keep their local preservation groups on the alert on this issue!

Michael Steintz
Somerville, MA

Canals Update

The activities of the Blackstone River Valley Heritage Corridor Commission continue to focus public interest on the Blackstone Canal, which served as a transportation link between Worcester and Providence between 1828 and 1848. Many segments of the canal survive. I have in front of me a draft National Register of Historic Places nomination for the entire length of the Canal in Massachusetts, prepared by SNEC member Virginia Fitch of the Public Archaeology Laboratory, Inc. The Rhode Island length of the has already been listed on the National Register. Possible impacts on the Worcester and Millbury sections of the canal by the proposed Route 146 improvement project have recently been a significant concern. A new group has been formed to promote the preservation of the Blackstone Canal. The Blackstone Canal Conservancy can be contacted c/o Richard Kleber, Blackstone River Valley National Heritage Corridor, One Depot Square, Woonsocket, RI 02895. Membership is \$7 for students, \$10 for individuals, \$15 for families, and \$25 for organizations.

I also have in front of me the spring issue of *Towpath Topics*, the newsletter of the Middlesex Canal Association, P.O. Box 333, Billerica, MA 01821. The Association sponsors spring and fall walking tours of canal segments, and other events linked to the history of the canal.

Michael Steintz
Somerville, MA

Norwalk, CT, Switch Tower

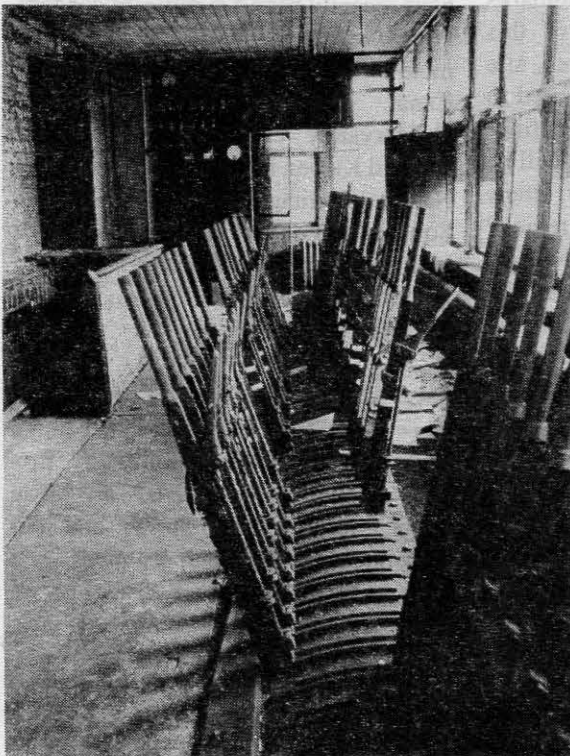
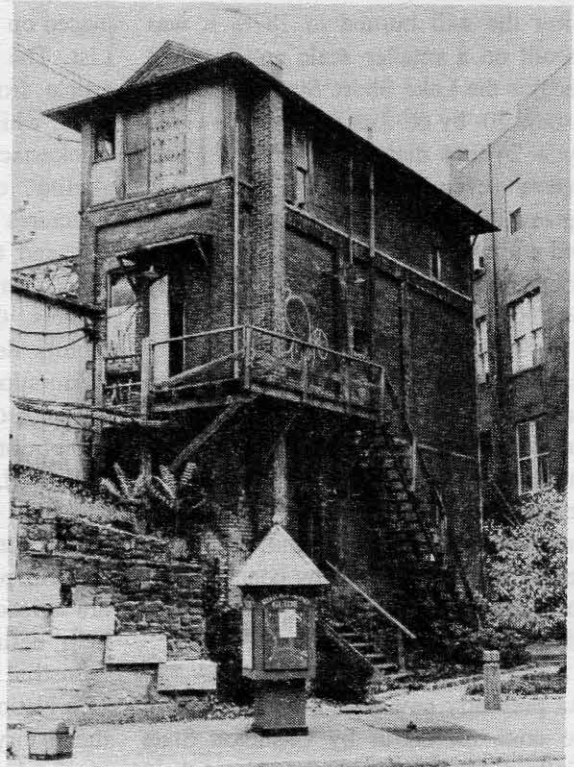
The Switch Tower Building located on Washington Street in Norwalk Connecticut's Historic District has been approved for rehabilitation funding under the Transportation Enhancement Program. The Tower Building houses the remains of Interlocking Station Number 44 which controlled the switching of tracks for the intersecting Danbury branch of the Penn Central Railroad.

The Tower was constructed in 1896 by Penn Central's predecessor, the New York, New Haven & Hartford Railroad, to replace an earlier switching station and was utilized until its decommissioning in 1984. During the late nineteenth and early twentieth centuries there were a number of innovations in switching mechanisms culminating in four different designed types of machine, each of which featured centralized control of switching and failsafe systems to prevent collisions. One of these machines, the comparatively rare Johnson Interlocking

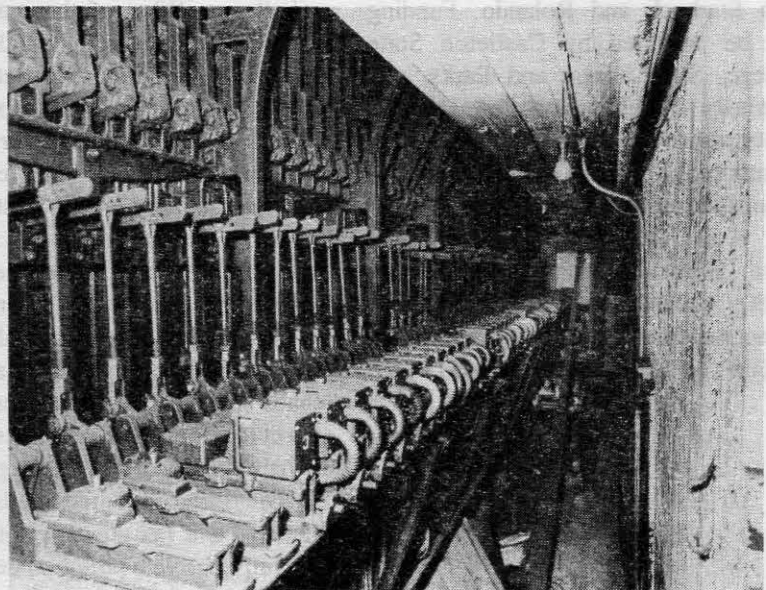
Machine, was installed in the switch tower in 1919 because its particular layout best fit the multi-story station's limited and narrow floor space. The Johnson machine typically consists of one long row of vertically arranged levers of such height that two stories were needed to accommodate them.

Interlocking Station Number 44 may be the last remaining switch station from the New York, New Haven & Hartford Railroad's major period of expansion in the 1890's.

The Norwalk, CT, Switch Tower Building.



Levers of the Johnson Interlocking Machine in the Norwalk, CT, Switch tower Building.



The interlocking mechanisms of the Johnson Machine located on the floor below the levers.

The Logging Industry in the Little River Valley, Bethlehem, New Hampshire, 1893-1927

by Todd H. Harrel,
with Dr. Katherine Donahue and
Robert Robles

Abstract

The Plymouth State College Heritage Studies Program was funded by the United States Forest Service to undertake historical research on a logging railroad which operated from 1893-1900. Incorporated as the Little River Railroad, it connected with the Concord & Montreal Railroad (later known as the Boston & Maine) in Twin Mountain, NH, and ran south six miles along the Little River into what is now the White Mountain National Forest. Along the old railroad grade there are areas where railroad and logging activities are still evident. The purpose of this project was to document the visible surface finds and prepare the information for public education, and to promote a better understanding of the Little River Railroad and generally the logging railroad industry in NH. The description of the logging railroad activities was complicated by extensive subsequent logging. This paper attempts to sort out temporal variations in the logging of the Little River Valley through the diagnostic properties of the cultural data found.

The content of this paper is focused on the completed research on the Little River Railroad Site in the town of Bethlehem, NH, located in the White Mountain National Forest. The paper is divided into two segments. The first is a brief description of the history of the Little River Railroad and later logging operations in the Little River Valley. The second part will describe the cultural data found during the fieldwork and the interpretations made from those findings.

The Little River Railroad History

Logging has played an important role throughout the history of New Hampshire, from the colonial mast trades to the current industries involved with the utilization of the forests within the state. The colonists took advantage of the timber closest to the seacoast and gradually worked their way inland. However, by the middle of the nineteenth century most of the north country woods (north from Plymouth, NH) had not been touched. The decision of the New Hampshire Central Court in 1867 to dispose of all of its remaining wild lands started an expansive logging episode of the north country that would last from 1870 to 1940 (Belcher 1980).

There were two timber owners and operators during this time period that had the largest impact in terms of sheer size of operations and bargaining power on the forest resources. J.E. Henry and his sons built and maintained more miles of logging railroad and hauled out more timber than anyone during this Period. The second, George Van Dyke, organized and ran the largest logging river drives ever to travel down New Hampshire rivers (Belcher 1980). These two men had many business dealings with each other. One dealing of noted importance resulted in one of the two logging railroad operations in which George Van Dyke ever took part.

As mentioned before, Van Dyke was mainly a river driver on the Connecticut. At the height of his operations (1886-1909) he was the President of the Connecticut Valley Lumber Co. which lumbered up and down the Connecticut River valley and many of its tributaries.

J.E. Henry had set up most of his operations focusing on the Zealand Valley Railroad in the town of Carroll, NH, in 1884. In 1891 he incorporated the Little River Railroad to exploit the land he owned in the Little River Valley immediately to the west of Zealand. However, by the time he wanted to start on this

new venture, he was involved in moving his operations to Lincoln, NH, to start lumbering the vast Pemigewasset Wilderness. Henry sold the land and the corporation to Van Dyke for \$55,000 in 1892. This price included the use of the storage space and the saw mills at Zealand.

Van Dyke contracted with the Concord & Montreal Railroad for the rental of six miles of track and all other railroading supplies. He also drew up a contract with them so he could run his timber over the four miles of track which connected the Zealand mills to the junction of the Little River Railroad. According to George E. Cummings, the superintendent of the Boston & Maine Railroad (previously Concord & Montreal). Van Dyke had thoroughly cleared the Little River Valley, and the operation was through by 1900. The track material was pulled up in 1909 by the Boston & Maine since Van Dyke never pulled it up for them.

With the exception of a few areas, the railroad grade can still be followed. Otherwise, there is little evidence of the former Little River Railroad. The land is now part of the White Mountain National Forest. The trees have grown back, and there is a recreational hiking trail that follows along most of the old railroad grade (the grade continues south once the trail turns west to ascend North Twin Mtn.). At the beginning of the trail the Forest Service has placed what is called a Recreational Opportunity Guide (ROG). It describes the trail, provides cautionary notes, and gives a brief description of the natural and social history which includes information about the Little River Railroad. The National Forest has recognized the site as a valuable cultural resource and hopes to develop a better understanding of it. The forest Service drew up an agreement with the Institute for New Hampshire Studies to conduct research on the Little River Railroad. The goals of the project were to promote an understanding of the logging railroad history on New

Hampshire and to "undertake historical and archeological investigations along the six mile linear cultural resource known as the Little River Railroad."

Within the contract provisions the Institute for New Hampshire Studies agreed to undertake research and fieldwork as part of student involvement in the Heritage Studies Program at Plymouth State College and to provide an educational opportunity for the undergraduate archeology students at the college. The research was to include review of primary and secondary sources, including land records, historic maps, photographs, and the use of oral histories. The purposes of the archeological component were to locate, record, photograph, and map the sites and artifacts associated with the railroad. Systematic artifact collection was not part of the project.

The information gathered was to be used for an in depth ROG to describe the cultural resource in greater detail to the public, to prepare an illustrated historical narrative for use in booklet form, adaptable for eventual publication to a wide audience, and to make recommendations for interpretive material along the designated trail.

Subsequent Logging in the Valley

As the research on this project continued, interesting problems arose that set limitations on the goals of the defined project, which focused on the Little River Railroad operated by George Van Dyke. Land records and personal accounts (Wynn 1993) provided the information that there have been other logging activities in the area post-dating the railroad.

Van Dyke and the Connecticut River Lumber Co. sold the land and timber rights in 1910. It changed hands a few times before 1912 when Charles Pratt bought it. Hilda Wynn (1993) stated that her father was an acquaintance of Pratt and that her father worked for him doing

a considerable amount of logging in the Little River Valley, using the old railroad grade as a tote road to haul out the lumber. Land records indicate that Pratt owned the same land as Van Dyke from 1912-1927 and was utilizing the timber for pulpwood. Pulpwood could have been the only thing that Pratt was cutting in the area. If Van Dyke cleared the valley of all timber by 1900, that would be the only type of timber large enough to cut. One possibility could be that Pratt was cutting old growth timber from the upper fringes of the valley where Van Dyke did not reach, but the extent of the famed 1903 Zealand Valley fires supposedly spilled into the Little River Valley as well (Belcher, 1980).

Pratt sold the land at lower elevations in the valley to the National Forest Service by 1915. He evidently logged the lower elevations first to exploit the larger growth. This was the case because Van Dyke probably cut at lower elevations first. Pratt lost the rest of his land by way of Sheriff's Deed in 1927 because he did not pay the taxes. By 1932 the Forest Service owned the rest of the land.

Therefore, the cultural materials found represent two and possibly more logging episodes. This fact makes the understanding of the Little River Railroad problematic. Most of what was found in the field cannot be conclusively related to the logging railroad. Most of the conclusions come from what is known to have not been associated with the logging railroad.

Defining the Little River Railroad Site

The fieldwork was conducted from the fall of 1992 through the summer of 1993 by the Heritage Studies Program Director, Dr. Katherine Donahue, Heritage Studies graduate Students Todd Harral and Robert Robles, and a number of undergraduate archeology students.

Twenty-six sites associated with logging

activity were located in the Little River valley. Most of the sites contain few objects and are located near the old grade. Both borrow pits and a rock outcrop which reveals blasting indicate construction efforts to establish the railroad grade. Bridge abutment remains are found at the known river crossings. Some rails have been located, but they appear to be out of behavioral context; they lie in the Little River or on the river embankments. This phenomenon is best explained not from the rails' purposeful disposal in these locations, but because high waters during wet seasons regularly wash out all but the most solidly constructed bridges. Local narrative asserts that washouts occur about every five years (Wynn 1993).

The sites described above are associated with the railroad, but this cannot be determined for the rest of the sites. Bridge abutments are visible but since the high spring waters often washed the bridges out, what is seen today could be abutments built for the later logging activities. This positively be the case if the 1903 fire reached any of the bridges. Spurs and tote roads have been identified but they cannot be exclusively assigned to the railroad. They may have been constructed during later logging activities. One site contains a large metal gearing system visible on the ground surface. The majority of the object is buried. Without excavations, it is now known if it is possibly a rail car or a pulley system for sluicing logs.

The cultural evidence found at the five logging camps known as sites 11, 15, 16, 20 and 25, with 14 possibly being a camp, provide information that can establish some differentiation between the logging episodes. The presence of certain diagnostic artifacts, combined with certain similar camp features can suggest which era the camp was occupied. Contracts between the logging railroad camps and the Pratt logging era camps are very evident.

Site 11 is located immediately off the old

grade. Many logging and camp related artifacts such as cant dogs, logging sled parts, an axe, a shovel, stove remains, a frying pan, buckets, and a mound of hay-wire are spread over the area with little recognition of a pattern. There is a large number of logging sled runners and barrel hoops located in a depression on the northern periphery of the site that represents a dump area. Likewise there is a cluster of various artifacts located on the other side of the grade which represents a dump. The only artifacts associated with railroad activity are 1 railroad spike, 1 rail, and 1 railroad plate. These three artifacts were the only artifacts associated with the railroad found at any of the camps. A noted visible feature is a pattern of large boulders located in a clearing that are laid in a fashion that may be the remnants of a building foundation. There is also a suspicious looking cleared, level area, but no visible cultural evidence is associated with it. A hearth made up of a cluster of fire-altered rock is located at one end of the possible foundation but its association with the camp is questionable. The hearth has been recently used. The camp remains are easily visible from the hiking trail, making the site's intactness unknown.

Site 14 shows a fair amount of activity but the number of cultural materials present does not equal what was found at the other camps. It is located along an old tote road that the hiking trail follows, but it is not on the railroad grade. Visible remains include a pile of sled runners and other sled parts, a pile of horseshoes, cant dogs, and a Prince Albert tobacco can, and a pile of 12 oz. food cans, some with two holes on either side on top of the can. This suggests that they held liquid such as condensed milk or cooking oil (Rock 1987). How this site was used is presently unclear, but it may have been a stabling area for the horses. The presence of the tobacco can suggest occupation after the railroad because Prince Albert tobacco was not available in the upright tin until 1908 (Rock 1987).

Site 15 is located immediately on the grade and contains eight distinct activity areas. Upon reviewing the cultural remains, it is concluded that there are two separate sections representing two different occupations. The southern section has six activity areas which include a blacksmithing area, numerous artifacts scattered across a level and cleared area where living quarters would have been, and two dump areas. There are numerous artifacts found in this section that represent logging and camp activity. However the only diagnostic artifact found was a glass bottle with a manufacture date of 1897. Two of the six activity areas in the northern section show recent human disturbance. This camp is a widely known meeting place for hunters, while many other people know its location. One of these activity areas is located directly in the grade. Present are two different wood stoves, a recent hearth, a bench constructed out of saplings, a grinding stone, two adze heads with tree branches as their handles, and other various artifacts. Each time the camp was visited during fieldwork, something was there that wasn't there before. This activity area has been fabricated and has no context related to the logging or railroading activities.

The southern section is located approximately 120 meters from the northern section. There are two visible activity areas. The first is a large amount of artifacts associated with camp life, including Prince Albert tobacco cans, bottle fragments, stoves, frying pans, bovine bones, and window glass. The second activity area is a can dump containing more tobacco cans and many 12 oz. food and liquid cans. The presence of Prince Albert tobacco cans reveals that this section was occupied after the logging railroad.

Site 16 is located on the segment of the hiking trail that ascends North Twin Mountain. The trail roughly follows along an old tote road that joins with the old grade just north of Site 15. Cultural materials are scattered around a small

level area in an otherwise very steep landscape. Artifacts found represent logging and camp activity, including, sled runners and associated sled parts, shovels, a barrel hoop, 2 separate food, liquid, and paint can piles. The paint can style-multiple friction closure, cylindrical dates to post-1906 (Rock 1987). Also found were a Prince Albert tobacco can, and a 6 oz. "Father John's Medicine" bottle with a manufacture date of 1911-1929 (Toulouse 1971). The bottle, the paint cans, and the tobacco can represent post-railroad occupation.

Site 20 is located on an old tote road that extends south from the end of the railroad grade into the uppermost section of the valley. Many artifacts associated with camp life were discovered at this camp, such as a food and liquid can pile, barrel hoops, and a kerosene lamp. A 30' by 34' rectangular earthen berm represents the foundation of the living quarters. Wooden beams, door handle hardware, and many other artifacts were found within and immediately around the foundation. The presence of Prince Albert tobacco cans and a large steel drum support that this camp was occupied after the logging railroad activity.

Site 25 is also located on an old tote road that connects with the railroad grade just north of Site 11. Individual artifacts are scattered about a wide area at this camp, but there are noticeable clusters of cultural material, including a blacksmith area, a sled runner pile, and two food and paint can dumps. Like the paint cans found at Site 16, their manufacture style dates post-1906. An earthen berm foundation just like what was seen at Site 20 was located. At one end of the foundation there is a depression which may represent a cold storage pit. At the same end there is a third can dump along with a "Home Atlantic" cooking stove. An additional feature discovered was a 1m x 3m depression that may suggest where the outhouse was located. The presence of numerous paint and Prince Albert tobacco cans, a 12 oz. bottle of "Father John's Medicine," and a machine mold-

blown bottle that dates post-1903 (Baugher-Perlin 1982) supports that this camp was occupied after the logging railroad.

To summarize, diagnostic artifacts found at Sites 14, 16, 20, 25 and the southern section of 15 all show evidence that they were occupied during logging operations that occurred after the logging railroad. These diagnostic artifacts include: Prince Albert tobacco cans (post-1908), paint cans with a manufacture style that was introduced in 1906, Father John's Medicine bottles (post-1911), a machine mold-blown bottle (post-1903), and a metal 55 gallon drum. Other possible diagnostic artifacts such as the can styles found in the can dumps and the stoves all date to before the railroad was established.

Once other characteristics of the post-railroad camps are compared, other similarities become evident. With the exception of the southern section of Site 15, all of the camps exhibiting post-railroad occupation are not located on the grade but on tote roads. Additionally, can dumps are found at every post-railroad occupied camp, while earthen berm foundations are found at two of them.

According to the surficial cultural data, the only camps that suggest to be related to the logging railroad activity are Site 11 and the northern section of Site 15. These claims can only be made by the discovery of three railroading artifacts found at Site 11 and the fact that they share none of the characteristics found at camps showing post-railroad occupation. There are no food, paint, or tobacco cans seen at either site. The rock foundation at Site 11 differs from the earthen berm foundations seen at two of the post-railroad camps. The area where the living quarters were located at Site 15 show no evidence of a foundation. The presence of the bottle dated of 1897 found at the northern section of Site 15 only represents its manufacture, not its deposition.

The conclusion made from the analysis

of the visible cultural data found is that very little information can be gathered about the Little River Railroad's activities. Evidence of the grade's construction, a few rails and other railroading pieces are the only definitive remnants. As stated earlier, Van Dyke rented all the railroading material from the Concord & Montreal Railroad. Even though he never picked up the rails, he probably would have returned most of the material to the renters. If he left any other reusable parts, they probably would have been picked up along with the rails in 1909.

Subsequent logging has muddled the picture in a number of ways. Definitive statements can be made according to what wasn't there during the logging railroad's activities, but what is problematic is determining what was there during that time. The grade, bridge abutments, spurs, and tote roads were all reused. It is quite possible that camp locations also may have been reused. If this is the case, then the cultural materials are either mixed or earlier is buried below the latter.

Subsurface testing at known camps and further artifact analysis could provide insight into the determination of site age, use, and origin; who was where and when. Subsurface testing could also yield a more complete idea of the cultural materials present. For instance, consider one of the dump areas at Site 15. It consists of mainly sled runners and other large objects. However, small objects are often not disposed of in this manner. They are randomly thrown or dropped without regard to designated trash areas. Also, smaller objects get buried quickly. Without subsurface testing, only the larger artifacts are being recorded.

Many site locations relative to the present day hiking trail also proves to be problematic. Many people know about the sites and the cultural materials often lose their context. Whether someone harmlessly picks around or takes an artifact home. This means less can be

learned about this site.

As a consequence, there is a problem with defining the extent of the Little River Railroad activity. It is concluded that the goals which were to be met at the conception of the project cannot be reached because of the presence of expansive subsequent logging activities. There has been too much activity in the area post-dating the Little River Railroad to make definitive conclusions about what was and was not associated with the railroad. Any information released for public education would have to be given in the format: "This cultural evidence may have been associated with the Little River Railroad." The authors recognize this site as a valuable cultural resource. Very little research has been done on 19th and 20th century logging railroads. Further research would provide a much more solid understanding about the logging history in this valley and ultimately logging railroads in New Hampshire.

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Article

"The Brick Kingdom": Crystal Lake Falls Historical Park

Barton's factory-mill site on the Crystal Lake outlet stream was in use from the time of Asa Kimball's grist mill of 1797 until 1952 when the Progressive Furniture Company, the last woodworking shop on the stream, shut down. The Barton mill site is unusual in that its factories and mills were built on these steep hills along the stream. Usually mills were built on flat ground with the water supply brought in by penstocks. Waterpower ran equipment here for about 150 years, with steam power introduced along the way in 1870 by the Heyward Company and coming into its own in the 1922 Wessel, Nickel and Gross piano action (piano inner parts) factory buildings (these are the brick buildings standing today — the Wood Drying Kiln, the woodworking Factory Building and the Boiler House). Wood shavings and waste wood traveled overhead via pipes and fans to the Boiler House, where they were burned to produce steam that rose back up hill through underground tunnels. Electricity for light and power had been brought to the Peerless Manufacturing Company in 1892.

Clustered around the five dams on the outlet stream at various times were sawmills, a fulling mill (thickening cloth by steam and pressure) and a carding mill (combing out wool yarn), and in the early 19th century a tannery, potash works, clover mill (for seed) and a woolen factory, all producing goods largely for local consumption. After the introduction of the railroad to Barton in 1858 a new industrialization resulted in larger factories, often owned out of state and selling products farther away — a mill that shipped lumber to

Massachusetts and a chair parts factory that shipped out to that same state for assembly. In 1876 John W. Murkland started his machine shop and foundry making sugar arches, iron plows, and stoves which were sent throughout New England. Peerless Manufacturing Company of New Hampshire —, an early employer of the area's young women — made ladies' cotton underwear here from 1892 - 1924. The Tower Brother's Grist Mill of 1896 still stands today as E. M. Brown's Feed Store below the third dam, its grist mill preserved intact and the turbine that worked it still in place in the stream below.

In addition to the three brick buildings remaining from Wessel, Nickel and Gross, and a large metal skylight from the Boiler House roof, there are the massive foundations of buildings constructed over and at the sides of the stream at the various dams. The large granite blocks that formed some of the dams are visible as one strolls through the park. Huge blowers that forced the wood shavings along the pipe from the factory building down to the Boiler House lie on the ground. A huge wooden pole teeters in the air above the Boiler House, and an old iron fire hydrant stands nearby, reminding of fire dangers.

Farther downstream the Barton "Chronicle" building stands on the granite foundations of the Murkland ironworks, and glories in the various large wooden gears and wheels from the machine shop that are in its back yard, along with the end of the penstock (the Murkland foundry did pipe in water from the stream).

In 1985 the Village of Barton hired the Fairbanks Hill Construction Company of St Johnsbury to do a feasibility study for a present day hydro-electric plant on the site, but the cost of electricity produced would have been prohibitively expensive and the plan was dropped, although site analysis (topography, climate, soil, circulation, hydrology, vegetation) were generated, and Rhode Island archeolo-

gist Richard Greenwood described the history and importance of the industrial site and designated many archeologically sensitive areas.

Darline Young from Glover (near Barton) wrote a detailed study of Barton's industries as a senior thesis for the University of Vermont in 1984 that has become the basis for much further research. She has created exhibits for the Pierce House and led tours of the "Brick Kingdom." In 1984 the Pierce House, former home of Barton Academy's Headmaster Cedric Pierce, was rescued from demolition by a group of concerned citizens and by the generosity of 'Prof' Pierce's widow, Julia Pierce, who donated \$5000 to save the house for use as a museum, and in the summer of 1987 it opened to the public as a Museum of Education and Industry in Barton. The Delahaye Fund, established by Ralph Delahaye Paine, bought the Pierce House property and the factory-mill site across the river, presenting it to the newly formed Crystal Lake Falls Historical Association, and then financed the Pierce House restoration! The story goes that Mr. Paine was standing on the West Street bridge (above the falls near the Crystal Lake outlet) with Avis Harper, President of Crystal Lakes Falls Historical Association, and they saw several rainbows sparkling at once over the stream. Mrs. Harper remarked that it would be a marvelous park for the Barton area, and subsequently Mr. Paine bought the property which was later turned over to the Crystal Lakes Falls Historical Association by the Delahaye Fund in 1987.

Over the years the various industries have produced a dump heap that is an archeological treasure trove, in addition to the various artifacts that are strewn around the site and also presumably lie below the ground. In the summer of 1987 Giovanna Peebles, State Archeologist of Vermont, visited the factory site and emphasized its importance for gleaning insight into the past. At her suggestion members backfilled a partic-

ularly rich area where random digging of old bottles, etcetera, had started. The Association also chained off access to the area until such time as the "Brick Kingdom" could be made safe for the public.

When the "Brick Kingdom" is far enough along to have visitors, it is well situated. Hillcrest and Monitor Manor, housing units for the elderly, are close enough on Water Street and Main Streets for their residents to drop by for a leisurely stroll. The Barton Academy, now an elementary and junior high school, is kitty corner across the street from the Pierce House on Water Street, and St. Paul's, a parochial elementary school, is at the top of the hill beyond E. M. Browns's (St Paul's steeple is visible up the hill from the "Brick Kingdom" dams, while the spire of the Barton United Church marks the bottom of the slope near where the outlet stream flows into the Barton River). The local high school, Lake Region, has students from Irasburg, Glover, Westmore, Albany, Brownington, Orleans and Barton. Their drama department is strong — outdoor performances could take place in a restored wood drying kiln. Crystal Lake, State Park is approximately 500 yards away, an easy walk to the factory-mill site. Tourists going north-south on I-91 will be five minutes away from the "Brick Kingdom" at the Barton--Crystal Lake turn off. Railroad buffs from St Johnsbury, who organize fall foliage tours, could, with a little imagination, take the train north to Barton again.

The "Brick Kingdom" Park will conserve the amazing natural beauty of the site — rushing water falling noisily in the spring, moving at a more languid pace in the summer, and in the fall, laden with red and gold and orange leaves. In the winter, although the park will be snowed under, the waterfalls freeze an ice fantasy onto the trees, etching them into a lace pulled in front of the red brick factory buildings set against the hills.

In the warmer months visitors will fol-

low paths leading through the site (a raised wood path might work well) signs and photographs will let the visitor compare past and present, as he follows a self guided tour or joins a group with a guide. Industrial artifacts will be found on the site with signs showing how they were used. For example, there are great fans that blew wood shavings to the boiler house along overhead pipes, and abandoned transformers from an electrified factory building. Other artifacts will tell their tale of wood, water and metal at the Pierce House, where picnickers (especially children) can sit on the piers next to the Museum, left from a building that was begun but never completed. Drawings and photographs of buildings will be there with a few bricks and metal remains for the children to touch. Eventually there will be benches in the "Brick Kingdom" - Crystal Lake Falls Historical Park for more comfortable sitting.

The remains of the Wessel, Nickel and Gross piano action factory buildings at "The Brick Kingdom" in Barton, VT. Photo by Robin Tenny.

In the Park the great timbers that held up the roofs will be labeled to tell the kind of tree they came from, and hopefully we can find and identify that species of tree in the rampant growth that now covers the site. The site calls forth wonder — nature so obviously intertwined with industry — the waterfalls and their power, trees that were burned for potash — we can show the kinds of trees. Living apples, birches and ash are all there. The ferns are seasonal, like the flow of the water, and the plant growth illustrates the ecology of the fast moving stream. The slag and the waste from the mills formed new layers of soil, eroded again by the stream that flows into the Barton River, but with scientific excavation its layers will tell us about the people who lived and worked there before. Continuity with the past will nurture faith and hope in the future.

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