



# SOCIETY FOR INDUSTRIAL ARCHEOLOGY

## NEWSLETTER

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## IA IN MAINE FROM BIDDEFORD TO BATH

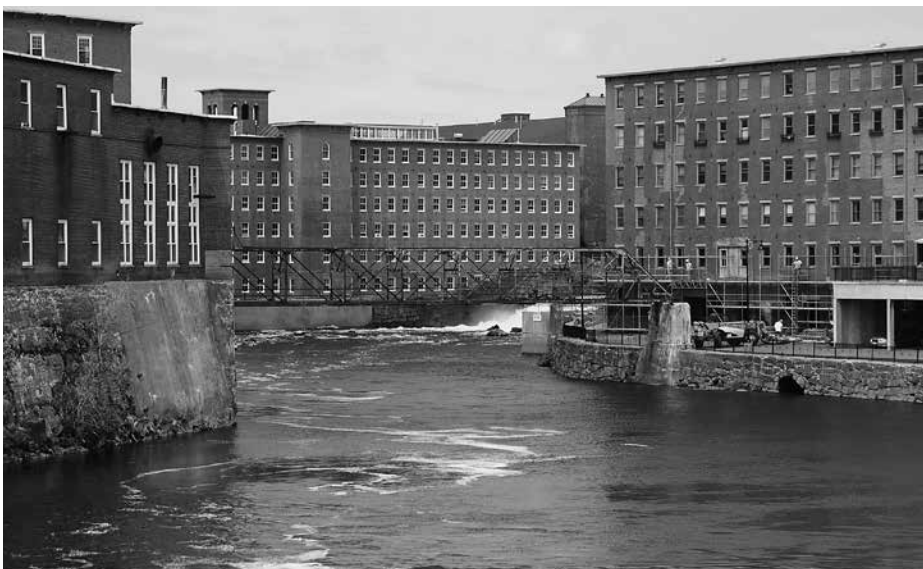
**F**rom May 15 to 18, 189 SIA members gathered in Portland, Maine, for the Society's **43rd Annual Conference**. The conference headquarters was the Holiday Inn by the Bay at the edge of the city's Old Port waterfront where members explored chandleries, fish docks, and lobster pounds. In the distance, break-bulk and container piers offered a lively panorama of active shipping. This was a preview for a conference where shipbuilding, shipping, fishing, and other industries that rely on the sea would be a major theme. Other themes included a trio of traditional Maine industries—textiles, shoes, and wood products. The conference schedule followed a typical SIA pattern of optional Thursday pre-conference tours, Friday process tours, Saturday business meeting and presentations (including tracks on “Made in Maine” and on “Maine’s Salt Water Mills”), a Saturday evening banquet aboard a cruise ship, and optional post-conference Sunday tours.

SIAN's volunteer correspondents provided the following tour reports and photographs.

*Thursday Tour 1—Downtown and Lighthouse Tour.* Early arrivals took a (rubber-tired) trolley tour of Portland and South Portland narrated by tour guide/driver and Portland native John “JJ” Jenkins. Portland, Maine's largest city, has a population of 65,000; South Portland, 30,000, is located across Portland Harbor. JJ explained that Portland's importance as a shipping center derives from its location: it is 300 miles closer to Europe than Boston, and is the northernmost, ice-free port in the U.S. It is also served by railways to the north and south. The trolley cruised the length of Commercial St. with Portland's active commercial docks on one side, opposite rows of warehouses, which have been adapted for retail uses.

Further along the waterfront the trolley passed the right of way of the **Maine Narrow Gauge RR** (2-ft. gauge) that

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James Bouchard

*Mills on either side of the Saco River.*

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mostly carried lumber for shipbuilding and export. A small section of the railway is operated as a museum (see Friday Tour 3). The trolley went around the eastern headland of the peninsula, with a view of some of the 300 or more Casco Bay islands (called the Calendar Islands because there is one for every day of the year)—and a glimpse of the famous **B&M baked-bean factory**. The trolley then went inland through the Munjoy Hill neighborhood, a traditional immigrant neighborhood, which is beginning to gentrify. **The 1807 Portland Observatory** rises 88 ft. above the ridge with an observation platform and telescopes 222 ft. above sea level. The shingle-clad, octagonal, wooden tower was built as an “early warning” system to alert owners when their ships were approaching port; on a clear day visibility is 40 miles.

After going through attractive 19th and early 20th century residential neighborhoods north and west of downtown, the trolley crossed the bridge to South Portland. JJ said that this city has a shipbuilding history as well, and constructed numerous Liberty ships during WWII. The final stop on the tour was the **Portland Head Lighthouse** on Cape Elizabeth.

The *SIA Newsletter* is published quarterly by the Society for Industrial Archeology. It is sent to SIA members, who also receive the Society's journal, *IA*, published biannually. The SIA through its publications, conferences, tours, and projects encourages the study, interpretation, and preservation of historically significant industrial sites, structures, artifacts, and technology. By providing a forum for the discussion and exchange of information, the Society advances an awareness and appreciation of the value of preserving our industrial heritage. Annual membership: individual \$50; couple \$55; full-time student \$20; institutional \$50; contributing \$100; sustaining \$150; corporate \$500. For members outside of North America, add \$10 surface-mailing fee. Send check or money order payable in U.S. funds to the Society for Industrial Archeology to SIA-HQ, Dept. of Social Sciences, Michigan Technological University, 1400 Townsend Drive, Houghton, MI 49931-1295; (906) 487-1889; e-mail: [SIA@mtu.edu](mailto:SIA@mtu.edu); Website: [www.sia-web.org](http://www.sia-web.org).

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The *SIA Newsletter* welcomes material and correspondence from members, especially in the form of copy already digested and written! The usefulness and timeliness of the newsletter depends on you, the reader, as an important source of information and opinion.

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It was built in 1791, and reputedly is the most photographed lighthouse in the U.S. (certainly many SIA members on the tour took photos). The lighthouse is located on the grounds of the former Fort Williams (1872/1962), now a park, and as the trolley drove through there were views of the three coastal artillery gun emplacements and other stone and concrete military structures.

*Thursday Tour 2—Cruise to Historic Island Fortresses.* Portland has had a system of harbor defenses since colonial times, and Thursday's pre-conference tour of fortresses in Casco Bay provided close-up encounters with three of them. Captain Hal Cushing ably piloted our group of 34 by motorboat and historian Joel Eastman led the tours on shore. Our first stop was **Fort Gorges** (pronounced “gorgeous”) on Hog Island Ledge, where we used a ladder to climb the sea wall. Named after Sir Ferdinando Gorges, the colonial proprietor of Maine, the fort was designed by Col. Reuben Staples Smart. It is similar in size and construction to Fort Sumter, but built of granite instead of brick. It was begun in 1858 and completed as the Civil War ended, by which time modern weaponry had made the fort obsolete. Its original armament consisted of thirty-four 10-inch Rodman guns mounted in the fort's casemates. Today only a single Parrott rifle remains—a 10-inch, 300-pounder (the weight of the projectile)—one of the largest surviving examples of Civil War era artillery. In 1897, the Army built a mine storehouse on the parade ground, and during the Spanish-American War the Portland shipping channels were protected by mines controlled from Fort Gorges. The fort was declared surplus in 1946 and acquired by the City of Portland in 1960.

**Fort Scammell**, named after Alexander Scammell, adjutant general of the Continental Army during the Revolutionary War, was built on House Island in 1808. It was one of three federal forts that defended Portland Harbor during the War of 1812. The semicircular brick fortress mounted eleven 24- and 32-pound cannon with a range of one mile. By 1840, the walls of the fort had been extended to allow the mounting of more and larger cannon, and by 1850, Fort Scammell was fully enclosed, making it less vul-



Pat Madone

*SIA on the parade ground inside Fort Gorges.*



*Bath Iron Works from the Carlton Bridge.*



*The Carlton and Sagadahoc Bridges.*

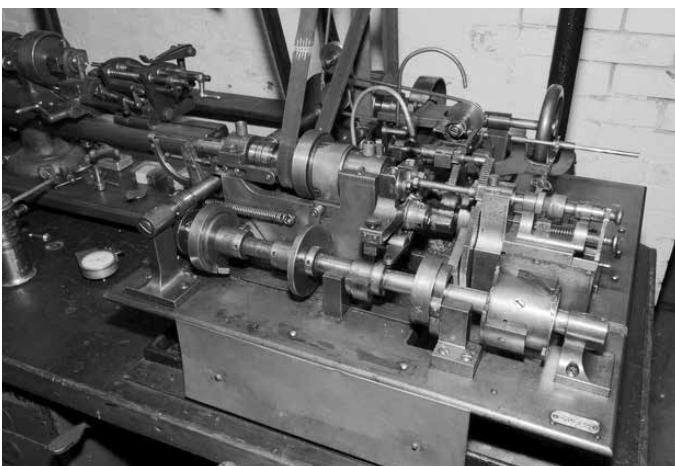
nerable to naval attack or the landing of enemy troops. The fort was manned during the Civil War, following which it was enlarged with granite bastions and a large gunpowder magazine (through which we inched our way in almost complete darkness) needed for the 15-inch Rodman guns. At least four of these were in place during the Spanish-American War. From 1907 to 1937, House Island was the site of an immigration quarantine station, remnants of which are still visible.

Our final stop was Cushing Island, where, in 1894, the federal government acquired land for the construction of **Fort Levett**, a harbor defense fort named after the 17th-century English explorer Cpt. Christopher Levett. Between 1903 and 1946, the Army constructed six batteries to host a variety of guns, together with an array of handsome brick buildings to accommodate a company of men. These included an administration building, hospital, barracks, officers' quarters, and stable, many of which still stand. Fort Levett was garrisoned when the U.S. entered WWI and again during WWII when two concrete, multistory fire

control stations were built to direct the fire of Battery Foote (completed in 1921 and modernized in 1942) and other long-range batteries in the harbor. By 1949, technological advances had made coast artillery obsolete, and in 1958 the Cushing Island Assn. acquired Fort Levett. Today, the fort's remains peacefully co-exist with a colony of upscale summer homes. (Thanks to our guide, Joel W. Eastman, for his excellent tour handout, on which this account is based.)

*Thursday Tour 3—Maine Maritime Museum.* Bath, on the coast northeast of Portland, has long been a major American shipbuilding center. In 1919, up to a dozen shipyards were building wooden ships along the Long Reach, a stretch of the lower Kennebec River four miles long and a half-mile wide. The museum occupies the site of the former **Percy & Small Shipyard**, which operated from 1897 until 1920. It specialized in schooners (rigged fore-and-aft), which were well suited for the coastal cargo trade because they could sail closer to the wind than square-rigged vessels. A schooner also required only a crew of about 15 instead of 50-60 to operate.

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*Waltham-Van der Woerd Automatic Screw-Making Machine for making watch screws from brass, steel, or gold wire.*



*In awe of George Collard's extensive collection of historic machine tools, soon to become a museum.*



Several of the former shipyard buildings, including the mould loft, carpentry shop, and the paint and treenails shop, still exist, and most are open to visitors. On what was the main building way, a sculpture of steel ribs indicates the dimensions of the *Wyoming*, the largest schooner built in the yard. At 329.5-ft. long, 50-ft. wide, and 30-ft. high, it would be a respectable-sized ship even now. The keel of the *Wyoming* was laid in 1907, and the ship served in coastal and war transport until 1924, when it was lost in a nor'easter.

Thursday's activities wrapped up with a reception at the conference hotel. Earle G. Shuttleworth, Maine's State Historian and State Historic Preservation Officer, gave an engaging presentation on the history of Maine manufacturing.

**Friday Tour 1—Bath.** The tour's first stop was **Lowell Brothers boatyard**, also known as Even Keel Marine Specialties, Inc., in Yarmouth. This small, family-owned operation has been in business at this location since 1961, and is believed to be one of only four family-owned boat builders left on the Maine coast. Jamie Lowell said his family goes back six generations as boat builders in Maine and Nova Scotia. He claims his grandfather, William Frost, built the first boat designed specifically for lobster fishing, and their principal line of business still is lobster boats. The facilities include a ship house in which boats up to 50-ft. long can be built and a large yard where boats up to 80 ft. can be built and where the large male and female fiberglass molds are stored. Their smallest standard mold is 22 ft., and they also offer 38 and 43 footers, as well as custom sizes. Depending on orders, the yard employs two to nine workers. One thing the yard can't do is launch their boats into the Cousins River due to a long-running dispute with the Town of Yarmouth over wetlands. Finished boats are taken by trailer to another launch site.

Arrival at the next stop, **Custom Composite Technologies, Inc.**, was delayed due to a bus malfunction that left



Steve Muller

**Owner Steve Hassett points to a photo showing a composite structure supplied by Custom Composite Technologies, Inc.**

the group stranded in a high school parking lot before a substitute bus arrived. The group was greeted at the factory in Bath by CCTI owner Steve Hassett. The nine-employee plant works a 4-day, 10-hour week, and unfortunately there was no activity during our Friday tour. Hassett said he started CCTI in 1999 after spending 15 years in the custom boat-building world where he worked on high-end racing boats and became familiar with high-performance composite materials such as carbon fiber and Kevlar. He emphasized that composite materials can be engineered to provide the exact strength needed for a part. The firm supplied composite components for the *Oracle* team in the most recent America's

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Steve Muller

**Woodworking machinery at the Percy & Small Shipyard display, Maine Maritime Museum, Bath.**



Pat Malone

**SIA at Battery Foote of Fort Levett, Cushing Island.**



# John T. 'Jet' Lowe

## 2014 General Tools Award Recipient

*The following citation was read at the SIA's Annual Business Meeting in Portland on May 17, 2014, by Richard K. Anderson, Jr., Chair of the General Tools Award Committee.*

Often just ahead of salvage crews, the nominee has visually preserved, in context, hundreds of significant industrial sites for the Historical American Engineering Record (HAER). His work is often the sole remaining image of what once was, and now is made available to all through the Library of Congress. For over thirty years, he has photographed the monumental and the mundane of America's industrial past and present, always with an eye to revealing an object's function, construction, and utility—its very reason for being.

At the beginning of his career in 1978, he brought an aesthetic vision to industrial archeology that was molded by degrees in art history and fine art photography. (He subsequently added an M.S. in Industrial Archeology from Michigan Tech.) His IA photographs record an industrial place or artifact informed by his knowledge of history and technology. But the completed archival print is likely to be equally successful as a work of art. He has had several gallery shows, and the National Trust for Historic Preservation published a book of his early work, *Industrial Eye*, in 1986.

Historic industrial spaces are seldom easy to photograph. Our nominee—whose name you may have guessed by now!—has adapted many skills of the photographer's craft to the extremes of light, volume, and perspective found in the industrial world. But beyond his technical sophistication, he brings to each image an uncompromising search for relevant engineering detail and the ideal point-of-view for the camera. A five-by-seven inch camera, tripod, and lens case are big and bulky, but our nominee's body of work reveals his willingness to haul them to the top of a suspension bridge or cram them inside a machine to "get it right." He also has perfected using large-view cameras for aerial photography where vibration can inhibit sharpness.

As digital photography has crowded out the silver halide technology of the last 175 years, the candidate has worked with the Library of Congress to test digital processes to determine if they meet the longevity demands of archival preservation. He has been an enthusiastic advocate for large-format photography and lends cheerful support to those who want to learn the trade.

His contribution to industrial archeology combines an understanding of the importance of a visual record with artistic appreciation and technical competence. Thousands of his photographs comprise a permanent record for those who want to understand our industrial past. You can see them for yourself in his book, on his



Sarah Wolf

**Jet Lowe, 2014 SIA General Tools Award Recipient.**

website, Jetography, or on the HAER portion of the Library of Congress website.

With great pleasure, we present the 2014 General Tools Award to John T. "Jet" Lowe, IA photographer extraordinaire!

*The General Tools Award was established in 1992 through the generosity of Gerald Weinstein [SIA], chairman emeritus of the board of General Tools & Instruments, LLC of New York City, and the Abraham and Lillian Rosenberg Foundation. The Rosenbergs founded General Hardware, the predecessor to General Tools. The award consists of an engraved sculpture ("The Plumb Bob") and a cash prize.*

*The recipient of the award is determined by the members of the General Tools Award committee, appointed by the President of the SIA, who serve three-year overlapping terms. Richard Anderson, Jr., the 2014 chair of the committee, is completing his third and final year of service, to be followed by Helena Wright. Duncan Hay served as the third committee member this year.*

*The General Tools Award is the highest honor that the SIA can bestow. The award recognizes individuals who have given sustained, distinguished service to the cause of industrial archeology. Criteria for selection are as follows: (1) the recipient must have given noteworthy, beyond-the-call-of duty service, over an extended period of time, to the cause of industrial archeology; (2) the type of service for which the recipient is recognized is unspecified, but must be for other than academic publication; (3) it is desirable but not required that the recipient be, or previously have been, a member of the SIA; (4) the award may be made only to living individuals. ■*



Cup race, and is also working on parts for the new Zumwalt-class destroyers being built at Bath Iron Works. CCTI also makes tooling such as mandrels and molds for other composite manufacturers, and it has a regular production run of lightweight stocks for hunting rifles.

At the **Maine Maritime Museum** in Bath, John Heppel, a docent who is retired from both the U.S. Navy and **Bath Iron Works (BIW)**, reviewed the history of BIW over lunch. (Due to safety and security issues it was not possible to tour BIW.) American shipbuilding started near Bath in 1607 when members of an unsuccessful colony at Popham built a ship to sail back to England. BIW itself was founded in 1826 and consolidated with several other firms after the Civil War to become the principal builder of iron ships in a region still dominated by builders of wooden ships. BIW is now a subsidiary of defense contractor General Dynamics.

BIW built its first military ship in 1892. During WWII it launched a Liberty ship in only 17 days. For some time the yard has built only military ships, and to date it has delivered 266 to the U.S. Navy. The yard currently is building five Burke- and two larger Zumwalt-class guided-missile destroyers. It is also bidding to build cutters for the U.S. Coast Guard. The yard has 6,000 employees and is looking to expand the work force by ten percent. Besides the ship assembly facility at Bath, it has factories in Brunswick and Hardings for subassemblies. Hassett also showed a BIW video detailing the construction and commissioning of the Burke-class destroyer *USS John Chafee*. He said the first Zumwalt-class destroyer was commissioned in April. Each of these ships costs \$3 billion.

After docents led tours of the Main Maritime Museum's carpentry shop, paint and treenail building (see Thursday Tour 3), the group reassembled for a presentation by historian Bud Warren on **tide mills** in Maine. The strong tides of the Gulf of Maine and a coastline with many inlets made Maine the "Tide Mill Capital of America." Warren has documented 223 tide mill sites in Maine, starting with the first, built at York in 1634. In a tide mill, the rising tide



Richard K. Anderson, Jr.

*Inspecting the mash tanks at Geary's Brewery.*

flows through a gate into an impoundment pond. The gate is closed at high tide. As the tide recedes, a head is created and water from the pond powers a waterwheel. Although a tide mill seems like an excellent renewable energy proposition, Warren also discussed downsides such as pond sedimentation, and, for current proposals to tap tidal power for electrical generation, potential damage to fish stocks.

The final stop for the day was in Bath at a spot on the Kennebec River that offered views of BIW as well as the **Carlton Lift Bridge** of 1927. The Carlton bridge is a double-deck structure: the lower deck is for the railroad and the upper deck is for motor vehicles. (Maine was able to persuade the railroad to share the cost of construction.) It is a steel truss bridge with a vertical lift section in the middle. The bridge replaced ferry service, but with only one lane in each direction it became a traffic bottleneck as vehicle use increased.



Richard K. Anderson, Jr.

*Portland Yacht Services inside the foundry at the Portland Company complex.*



*Bob Stewart and Nanci Batchelor (right) prepare for a ride on the Maine Narrow Gauge RR in Portland.*

# T. Arron Kotlensky—2014 Vogel Prize Recipient

The 2014 Vogel Prize is awarded to T. Arron Kotlensky for his paper “From Forest and Mine to Foundry and Cannons: An Archeological Study of the Blast Furnace at the West Point Foundry,” published in *IA*, Vol. 35, Nos. 1&2, pp. 49-72.

This paper was one of several that grew out of collaboration between Michigan Technological University and The Scenic Hudson Land Trust to investigate the site of the West Point Foundry on the Hudson River. The papers were published in a double issue of *IA* devoted entirely to the West Point Foundry.

Arron’s paper examines how West Point Foundry attempted backward integration by adding a charcoal blast furnace to the firm’s Cold Spring, N.Y., casting and machining complex. This was an unusual move as most ante-bellum American foundries bought their pig iron from independent blast furnace operators.

The paper marshals evidence gathered from excavations, maps, business records, technical publications, newspapers, artistic depictions, and modern spectrographic and photo micrographic analysis to paint a picture of the blast furnace’s construction, operation, and demise.

Excavations revealed how West Point Foundry sited the new furnace and its blowing engine to take best advantage of the terrain and to incorporate the furnace into the existing waterpower system that drove the foundry machinery. Metallurgical analysis of surviving pigs of iron demonstrates that the West Point furnace produced grey iron of suitable quality for foundry use.

But business records and other documentary sources reveal that technological success did not translate into economic success. High costs for ore and charcoal, plus the growing supply of iron from more efficient anthracite-fueled hot-blast furnaces resulted in the West Point furnace’s closure after 17 years of operation.

Arron’s paper is industrial archeology at its best, using a broad array of tools and sources to reconstruct an impor-



T. Arron Kotlensky (right) receives the Vogel Prize foundry pattern and plaque from Committee Chair Robert Casey.

tant period in one of ante-bellum America’s most significant industrial enterprises.

Robert Casey, Chair  
Vogel Prize Committee

Each year the SIA recognizes outstanding scholarship in the field of industrial archeology with the Robert M. Vogel Prize. Named for SIA co-founding and distinguished member Robert Vogel, the award honors the author of an outstanding article to appear in the journal *IA* within the past three years. The prize consists of a cash award and a wooden foundry pattern bearing a plaque engraved with the recipient’s name. Articles selected must have a clearly stated thesis and well-constructed narrative. Analysis of material culture and high-quality illustration that support the thesis and conclusion are also important measures of scholarship worthy of the prize. Selection is made by the Vogel Prize Committee consisting of five members appointed by the president, who serve five-year terms. ■

Maine eventually approved the construction of a bypass highway bridge, the **Sagadahoc Bridge** (Bath is in Sagadahoc County), sufficiently elevated to avoid the need for a lift section. This bridge, a precast-concrete-segment design just under a mile in length, was completed in August 2000.

*Friday Tour 2—Biddeford.* The Biddeford process tour began by visiting the 1.1 million square-foot **Pepperell Mill** about 18 miles southwest of Portland. Standing today as a sprawling mix of multi-story red-brick buildings straddling the Saco River, Pepperell Manufacturing produced textiles here from 1840 through 2009. With growing demand for its products, the Pepperell complex expanded to occupy both sides of the Saco and became the largest mill in Maine before the Civil War. Pepperell’s owners profited in cotton

textiles through WWII, but the transition to synthetic fabrics was made by the 1960s—with Vellux blanketing in particular—allowing the mill to operate profitably until very recently. Pepperell Manufacturing merged with Georgia’s West Point Manufacturing Co. in 1965 to become West-point-Pepperell.

The new owners of the Pepperell Mill Campus are working to repurpose the complex into a mix of residential, commercial, and specialty craft shops, with promise for growth in the years to come (such as an upscale hotel). COO Scott Joslin gave an introduction to the complex and future plans before turning the tour over to Don Guillereault, a retired manager of the mill, and Peter Lamontagne, a former employee and past president of the textile workers’ union. To-

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John Reap

*Biddeford's Lincoln Mill was built in 1853. The central stair was topped with a bell, later replaced by a Howard clock in 1896. The tower was decapitated in 2007, much to the shock of local residents. George Collard has purchased and stabilized the clock shell and repurchased the mechanism with plans to restore it.*



Andy Baugnet

*Harbor Fish Market front entrance, 9 Customs House Wharf, Portland.*



John Reap

*The stone "lagoon chamber" that distributed water to turbines deep within the Pepperell Mill in Biddeford. The tailrace arches are to the right.*

gether, they showed how various buildings fit together in the textile-making processes.

Building by building, Don and Pete guided tour attendees through the complex, relating tales of their shared time at the Pepperell as well as stories handed down to them from earlier generations of mill workers. They took the time to showcase the deepest interior of the mill complex, where tour attendees could see the vast power canal basins carved out of bedrock that house the mills' horizontal water turbines, now unfortunately missing. Attendees also had a preview of George Collard's machine tool museum housed in a former cotton storehouse (see Sunday Tours 3 and 4). Some also paid brief visits to Banded Horn Brewery and the Saco River Dyehouse, new manufacturers that are utilizing portions of the vast Pepperell complex.

Tour attendees broke for lunch at The Run of the Mill, a close-by restaurant and brew pub located in a former mill in Saco. Following lunch, the next stop was **Precision Manufacturing Solutions, Inc.**, a Biddeford-based maker of high-precision parts for applications in the aerospace, semiconductor, defense, optical, and medical industries. Occupying a modern, single-story, 30,000-sq.-ft. building that contrasts sharply with the rambling Pepperell complex, Precision specializes in using a suite of CNC (computer numerical control) machine tools in its production of alloy parts designed to meet extremely tight tolerances (some to 50 millionths of an inch). Very complicated finished parts can be completely manufactured in under ten minutes from a single blank on CNC systems programmed to choose from over 150 tools in the completion of a single piece.

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## Minutes of the 43rd Annual Business Meeting

*Call to Order.* President Duncan Hay called the Annual Business Meeting to order at 12:30 p.m. on May 17, 2014, in the Holiday Inn By the Bay at 88 State St. in Portland, Maine.

*President's Report.* Noting that this was SIA's 43rd Annual Meeting and third event in Maine, President Hay recognized members who had attended the 1982 Fall Tour and the 1984 TICCIH tour. He then recognized Pat Malone as the only member to have attended every annual meeting since the first one in New York (April 1972) and then followed by thanking and welcoming first-time attendees. He observed that the Portland conference was atypical in that nobody on the organizing committee actually lived in Maine. After thanking Events Coordinator Ron Petrie, conference registrar Mary Starbuck, and Office Manager Don Durfee, President Hay remarked how pleased he was to see Don back after his absence from several meetings. He believes that Don is "the embodiment of SIA headquarters" and recognized his contributions maintaining the membership roll, coordinating event registration, distributing the newsletter, and many other critical aspects of the organization.

President Hay thanked the Manufacturers Association of Maine for suggesting tours sites and for making introductions to our hosts. He thanked John Mayer at Maine Historical Society, who also knew "a lot of people," including Maine historian Earle G. Shettleworth, Jr., the speaker at the opening reception. He thanked David Dunning and David Coughlin of the Northern New England Chapter, and Dennis Holland who pulled together to help plan this event remotely. He thanked Bob Stewart for curating the 4th Annual SIA Film Festival, and the hosts of tour sites who let 50 complete strangers walk through their plants, as this is what makes SIA special. In closing, he thanked Presentations Committee members Justin M. Spivey, Kitty Henderson, Maryellen Russo, and Erin Timms for assembling paper sessions that spoke to and built on each other.

*Secretary's Report.* Secretary Justin M. Spivey stated that minutes of the previous year's Annual Business Meeting were published in *SIAN* Vol. 42, No. 3 (Summer 2013). He asked for amendments or corrections; none were forthcoming. President Hay called for a motion to approve the 2013 Annual Business Meeting minutes as published. Bob Casey so moved, Fred Quivik seconded the motion, and it passed unanimously.

*Treasurer's Report.* Treasurer Nanci K. Batchelor read her report: SIA is classified as tax-exempt under the IRS Code 501(c)(3) as an educational organization and we file a Form 990 tax return yearly. The Society maintains its books and records on a cash basis, and maintains a calendar year for tax and reporting purposes. The following report is for the year that ended December 31, 2013.

We began 2013 with a total fund balance of \$229,293. Cash receipts for the year totaled \$105,725. The majority of our annual income comes from membership dues. In 2013, the total dues received were \$67,880. The remaining balance is comprised of interest income, contributions to both the general and restricted funds, publication sales, and excess proceeds from tours and conferences. We also recognized the balance of the grant from the Kaplan Fund in 2013.

Total expenses for the year were \$86,897. The production costs of our publications, the newsletter and the journal, combined for a total of \$25,380; \$37,813 went toward labor; postage was \$2,330; insurance, prizes, awards, and scholarships were \$4,398; and the preservation grants program awarded \$14,000 in grants. Office overhead and a few miscellaneous items made up the rest of the balance.

The SIA closed 2013 with excess revenues over expenses of \$18,829. This was expected, as we did not produce two or more issues of the journal as we are required to do, so those funds will be held over. The total fund balance was \$248,769, of which \$35,331 is in restricted funds.

Through March 2014, the Society has had a total of \$16,996 in cash receipts and has spent \$17,545.

*Headquarters Report.* Executive Secretary Pat Martin reported that things seem to be going well, and he is not hearing any complaints, but SIA needs more members. He said, "Talk to your friends, and memberships make good Christmas gifts." He encouraged members to look at the recently revamped SIA website, where there are some hidden treasures, and to join TICCIH, which will increase North American clout in the worldwide preservation of industrial heritage.

President Hay noted that SIA currently has 1,323 total members, of which 118 are institutions and the remainder are individuals, couples, and student, contributing, and sustaining members. He also recognized General Tools as SIA's one corporate member, adding that we should have more of those.

After leading the traditional standing roll call of local chapters, President Hay reported that about 10 percent of the membership is at the Annual Meeting. He thanked SIA's officers, directors, Executive Secretary, editors, and headquarters staff members who work behind the scenes to make our events a success.

President Hay expressed his gratitude to Michigan Tech for hosting SIA's headquarters for the past 15 years, which has been a highly successful arrangement. He is pleased to report that Pat Martin and Steve Walton are working to renew the hosting agreement so that SIA can stay in its home on the Upper Peninsula.

*IA Journal.* President Hay introduced IA journal editor Fred Quivik. Fred thanked book review editor Carol Poh

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The last stop was **Yale Cordage** in Saco. Founded at Yarmouth in 1950 by Sherman Yale, the company gained a foothold in the rope-making industry with its early focus on the use of nylon in the manufacture of lines for lobster fishing. Since then, Yale Cordage, under the leadership of Tom Yale, a son of the company's founder, and Skip Yale, his cousin, has greatly diversified production, making cordage for use in marine pleasurecraft, electrical power utilities, heavy-lift slings, arborist rope, shark-bite-resistant oceanographic tethers (for use with hurricane/typhoon buoys), and specialized security applications (such as vehicular gates for use at embassies). Yale even manufactured a specialized sling to suspend equipment in the Sudbury Neutrino Observatory, a neutrino detection experiment located 6,800 ft. underground in Sudbury, Ont. Yale's Saco facility (the company also operates a facility in Salisbury, N.C.) produces cordage using computer-controlled braiding machines. Our visit concluded with a tour of the testing lab where Yale evaluates its products—intentionally overloading a length of rope to gauge how many thousands of pounds it can sustain before breaking. With a warning from Yale's lab manager to cover their ears, attendees watched and listened from behind a protective barrier as lengths of overloaded rope broke with gunshot-like bangs, the broken ends snapping away in opposite directions under high velocity.

*Friday Tour 3—Portland.* This tour of industries in and around Maine's largest city began with **Barber Foods**, a plant that processes a variety of chicken and beef products for many well-known processed-food distributors. The company was founded in 1955 by Gus Barber, who butchered meat and sold it to grocers from his truck. Today, it is a huge facility producing such items as chicken nuggets and hamburger patties, as well as other products. SIA's tour focused on stuffed chicken breasts. Frozen blocks of skinned parts are robotically sliced into single-serving size, and sent through as pockets, which are quickly shaped by hand along the huge assembly line. Frozen blocks of filling material are then added to the breast material (varieties include broccoli

and cheese, cordon bleu, and asparagus and cheese). Again the mixture is sent along an assembly line to ensure proper shape and size by hand. The mixture is then breaded and very lightly cooked, just enough to hold its shape for shipping. The consumer must cook the final product in an oven.

Next on the itinerary was the **Portland Company**, a 19th-century foundry and machine shop that once built engines, boilers, locomotives, and equipment for Maine's shipbuilding, railroad, sawmill, and papermaking industries. The sprawling brick complex now houses several smaller, mostly marine-related businesses, as well as the **Maine Narrow Gauge Railroad Co. & Museum**. After riding 1.5 miles along Casco Bay on the historic train, we visited the museum and **Portland Yacht Services**, which employs some 50-60 people engaged in the repair and servicing of small craft. Visitors were able to roam freely through the facilities and speak to the various skilled workers there. Some were delighted to discover a blacksmith working away at a forge (see story elsewhere in this issue).

After a delicious lunch at the Saltwater Grille in South Portland with a beautiful view of the bay and the ocean, the tour proceeded to the **Nichols Portland Division of Parker Hannifin**, a manufacturer of fuel-pump components. William Nichols founded the company in 1930, and the present 200,000-sq.-ft. Portland facility dates to 1968. This plant produces the Gerator (Generated Radius Rotor) for auto and motorcycle transmission use. We were able to see and handle an assortment of gears for this purpose.

Next came **Geary's Brewery** and the **New England Distillery**, a stroll across the street from each other. Initial fears that there would not be time for sampling in either place were soon allayed. Production Manager Stephen Spear was a cheerful and charismatic guide at Geary's, and immediately provided a generous serving of cold summer ale. Geary's also produces IPA and winter and autumn ales. Nearly all of the beer produced here is bottled rather than canned, and visitors were able to observe various stages of the process (the beer is fermented for seven days). The New England Distill-

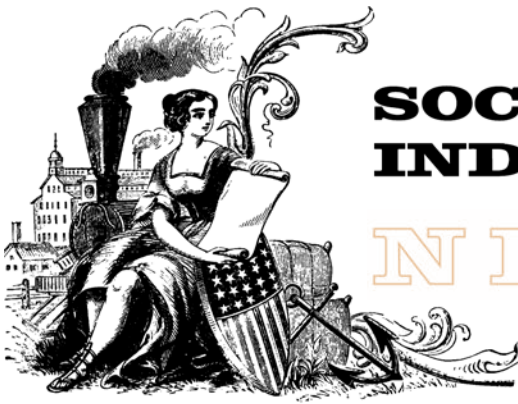
(continued on page 17)



*View of Portland's Fore River from the conference hotel.*



*Portland's working waterfront.*



# SOCIETY FOR INDUSTRIAL ARCHEOLOGY

## NEWSLETTER

### PUBLICATIONS OF INTEREST

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COMPILED BY

Mary Habstritt, New York, N.Y., Justin M. Spivey, East Windsor, N.J., and Patrick Harshbarger, SIAN editor, Wilmington, Del.

#### GENERAL INTEREST

- ◆ Jeff L. Brown. **Into Darkness: The Red Hill Underground Fuel Storage Facility.** *CE* (May 2014), pp. 46-49. Still in use, the U.S. Navy's fuel storage facility in the hills above Pearl Harbor consists of 20 underground tanks constructed between 1940 and 1943. Morrison-Knudsen project manager George L. Youmans and ALCOA engineer James P. Growdon changed the design from horizontal tunnels to vertical cylindrical caverns in order to expedite construction.
- ◆ Monica Davies and Timothy Williams. **Blight Cleanup Will Cost a Bankrupt Detroit \$850 Million, Study Finds.** *NYT* (May 27, 2014). Based partly on a block-by-block survey, a study by Detroit's Blight Removal Task Force asserts that 40,000 buildings or parts of buildings should be demolished in order for the city to "remake" itself.
- ◆ Emory L. Kemp [SIA]. **Essays on the History of Transportation and Technology.** W.Va. Univ. Pr., 2014. 432 pp., illus. \$49.99. Within these 12 essays, Kemp describes and analyzes 19th-c. improvements in building materials such as iron, steel, and cement; roads and bridges, especially the evolution of the suspension bridge; canals and navigable rivers, including the Ohio and its tributaries; and water supply systems.
- ◆ Bruce D. Snider. **In Good Company: Company Towns Across the U.S.** *Preservation* (July 1, 2014). A "coast-to-coast" tour of preserved company towns features Pullman, Chicago, Ill.; Hershey, Pa.; Steinway, Queens, N.Y.; and Scotia, Calif. Also, Beck Schlikerman. **Legislators Push to Make Pullman a National Park.** *Chicago Sun-Times* (Jan. 24, 2014). Congressmen introduce a bill to designate Pullman National Historical Park with a focus on labor and civil rights history.
- ◆ **TICCIH Bulletin No. 63** (1st quarter, 2014) includes Stephen Hughes, *Jointly Activating the Dublin Principles—a Lost Opportunity* (comment on the lack of action following TICCIH/ICOMOS joint acceptance of industrial heritage as part of the global cultural heritage); and Miriam Kelly, *Following Function—Rebirth of the Brooklyn Army Terminal, New York* (re-use is anchoring a rebirth of the waterfront).
- ◆ **No. 64** includes Guido Vanderhulst, *The Former Godin Stove Factories in Laeken-Brussels: How a Major Heritage Site Ended Up in the Scrapyard*; David Worth, *Cape Town's Grain Elevator to Become the Zeitz Museum of Contemporary Art* (South African elevator, built in 1924, see [www.scoop.it/t/grain-elevators](http://www.scoop.it/t/grain-elevators)); and Miriam Kelly, *Silo City: A Laboratory for Arts and Industry in Buffalo* (efforts to preserve the architecture of the Great Lakes grain trade). *TICCIH Bulletins* include a roundup of news from

industrial heritage museums, sites, and conferences worldwide. Info: [www.ticcih.org](http://www.ticcih.org).

#### ARMS & MUNITIONS

- ◆ David Edgerton. **Britain's War Machine: Weapons, Resources, and Experts in the Second World War.** Oxford Univ. Pr., 2011. 445 pp. \$34.95. Describes how Britain drew upon its worldwide empire to access global supplies and command huge flows of food and equipment, not to mention being able to draw on highly talented scientists from British universities. Rev.: *T&C*, Vol. 54 (Jan. 2013), pp. 211-12.
- ◆ Thomas B. Rentschler. **"Woefully Deficient in Cavalry Arms," Ohio-Made Carbines in the Civil War.** *Timeline*, Vol. 31, No. 1 (Jan./Mar. 2014), pp. 44-49. The firm of Gwyn & Campbell of Hamilton manufactured just over 9,300 carbines.

#### TOOLS & MACHINE TOOLS

- ◆ Michael Emery and Irwin Richman. **Living Crafts, Historic Tools: The Craftspeople & Collections of the Landis Valley Museum.** Astragal Pr., 2013. 160 pp., illus. \$29.99. Describes the behind-the-scenes work that goes into preserving and using period tools to demonstrate handcrafts at the Pennsylvania Historical & Museum Commission's site near Lancaster. Includes examples from the museum's vast collection of tools, many of "Pennsylvania Dutch" origin.
- ◆ David Robert Weible. **Learning by Design, A Baltimore Machine Shop Turned School Unlocks Students Creative Potential.** *Preservation* (Spring 2014), pp. 32-39. The former Crown Cork & Seal Co. shop has been adaptively re-used as a school of design for public high school students. Mostly about overcoming the political and financial challenges to rehabilitation.

#### GLASS & GLASSMAKING

- ◆ Marco Beretta. **The Alchemy of Glass: Counterfeit, Imitation, and Transmutation in Ancient Glassmaking.** Science History Pub., 2009. 198 pp. \$59.95. Glassmaking in ancient Egypt, Mesopotamia, and Greece is explored from the perspective of alchemy. Many alchemists believed that if glassmakers could mold objects that were imitations of materials that occurred in nature, it must be possible to create natural materials through transmutation; for example, to turn lead into gold. Rev.: *T&C* (Oct. 2011), pp. 813-14.
- ◆ Irene Plagianos. **Bottles from 19th Century German Beer Garden Found at Bowery Hotel Site.** *DNAinfo New York*



(May 1, 2014); *www.DNAinfo.com*, search on “bottles.” A treasure trove of hundreds of 19th-century liquor bottles, plates, and mugs—many largely intact—have been recently uncovered at an archeological investigation of the Atlantic Garden, a German beer garden that opened around 1860. Chrysalis Archaeology is overseeing the excavation.

## BRIDGES

- ◆ Richard Sanders Allen. **Journal of a Trip to the Laurentians in 1949.** Archives of the National Society for the Preservation of Covered Bridges, Inc. (Westminster, Vt.), 2013. 24 pp., illus. This booklet, in English and translated into French, reproduces Allen’s journal and photographs from an exploration of covered bridges in the Laurentian Mountains of Quebec. Allen published a series of popular books on the history of covered bridges in the 1950s and 1960s and was a leading figure in the preservation of covered bridges.
- ◆ Jeff L. Brown. **Chicago Style: The Cortland Street Drawbridge.** CE (May 2014), pp. 42-45. Following a period of swing-bridge construction in the late 19th century, the city of Chicago experimented with various movable-bridge technologies before settling on a fixed-trunnion bascule bridge design based on London’s Tower Bridge. Developed by city engineers John L. Ericson and Thomas G. Pihlfeldt, the design soon became known as the “Chicago type” of bascule bridge.
- ◆ **Covered Bridge Topics**, Vol. 71, No. 2 (Spring 2013) includes *An Historical Tour of Albert County, New Brunswick* (photo essay of covered bridges). Avail: \$20/yr. with membership in National Society for the Preservation of Covered Bridges, *www.coveredbridgesociety.org*.
- ◆ Richard J. Garlipp, Jr. **New Jersey’s Covered Bridges.** Arcadia, 2014. 128 pp., illus. \$21.99. History of 45 covered bridges that once dotted the Garden State. Today only one historic covered bridge survives in New Jersey.
- ◆ Christopher Gray. **Beauty on the Comeback Trail, The High Bridge Has Had Its Ups and Downs since Its Completion in 1848.** NYT (Apr. 28, 2013). The Harlem River crossing was built to carry New York City’s Croton Aqueduct in 1848, but this article focuses mainly on a decision made in the 1920s to demolish the stone-arch river piers and the ensuing preservation battle, one of the city’s earliest. The bridge is currently undergoing a rehabilitation project that will reopen its pedestrian deck.
- ◆ Frank Griggs, Jr. **Trenton Bridge: First Bridge Across the Delaware River.** *Structure* (Mar. 2014), pp. 34-36. Theodore Burr’s design for the Trenton crossing of the Delaware, opened in 1806, utilized five lines of tied laminated timber arches in each of five spans. The roadway was suspended from the arches by wrought iron loop chains, similar to those used in James Finley’s suspension bridges.
- ◆ Frank Griggs, Jr. **The Colossus of the Schuylkill River.** *Structure* (June 2014), pp. 32-34. Lewis Wernwag’s unprecedented span, a 340-ft. trussed arch bridge at the falls of the Schuylkill in Philadelphia, included laminated timber ribs 1 ft. wide and up to 4 ft. deep. It was completed over just eight months in 1813, burned in 1838, and was replaced by Charles Ellet’s suspension bridge on the same site in 1842.
- ◆ David Hill. **Retrofitting Under Way on San Diego’s Cabrillo Bridge.** CE (Mar. 2014), pp. 28-30. The bridge was constructed in 1915, as part of the Panama-Pacific Exposition in San Diego’s Balboa Park. A seismic retrofit will include new prestressing steel and the “locking” of expansion joints to limit transverse displacement in an earthquake.
- ◆ Dave Hogle. **History Uncovered.** CE (May 2014), pp. 62-65. Spanning Chiques Creek in Lancaster County, Pa., Siegrist’s Mill Covered Bridge (built 1885) was knocked from its supports by flooding during Tropical Storm Lee in 2011. The bridge was recently reconstructed with new abutments, but only about 15 percent of the original members were reused.
- ◆ Jim Talbot. **Long Life for Longfellow.** MSC (June 2014), pp. 50-52. Spanning the Charles River between Boston and Cambridge, the Longfellow Bridge was completed in 1906 and carries rail, road, and pedestrian traffic. An ongoing rehabilitation project will use new rivets for historic accuracy.
- ◆ Joseph Wasielewski, Bradley Nicoll, and Shaun St. Hilaire. **Accelerated Preservation.** CE (June 2014), pp. 66-71, 81. Spanning the Merrimack River between Haverhill and West Newbury, Mass., the Rocks Village Bridge is comprised of a wide variety of truss types from three different periods (the oldest, in 1883, by Boston Bridge Works). Although the structure was recently rehabilitated, with extensive replacement of the floor system and pivot mechanism, the swing span is still operated by hand.

## BUILDINGS & STRUCTURES

- ◆ Jorgen G. Cleemann. **Metal Roofing in New York City to 1850.** CHSA Newsletter, No. 26 (Jan. 2014), pp. 2-4. Sheet-metal roofs—tinplate in particular—became common in the city during the early 19th century.
- ◆ Miles Lewis. **Iron Lighthouses.** CH, Vol. 27 (2012), pp. 23-64. Traces the evolution of cast-iron lighthouses in the late 18th to early 19th century with a wonderful array of images showing idiosyncratic designs from an era before standardization.
- ◆ Maris Mändel and Oliver Orro. **The Marvellous Reinforced Concrete Shells of Tallinn Seaplane Hangars in the Context of Early Concrete Architecture in Estonia.** CH, Vol. 27 (2012), pp. 65-86. A hangar design built by the Danish firm of Christiani and Nielson in 1916-17 for the armed forces of Imperial Russia consists of three spherical domes, each spanning 36.4m and just 80mm thick. The shells have survived and the building has recently been restored for use as a museum in the port of Tallinn.
- ◆ Kiel Moe. **Insulating North America.** CH, Vol. 27 (2012), pp. 87-106. The history of controlling heat transfer through building envelopes from the early 19th century to the present is explored. Manufacturers of insulating materials encouraged builders to focus solely upon thermal resistance of walls and windows.
- ◆ Gwendolyn Purdom. **State of the Fairs.** *Preservation* (Fall 2013), pp. 26-33. A sampling of efforts across the U.S. to preserve structures associated with World’s Fairs, focusing on the New York State Pavilion (1964-65, Flushing Meadows, N.Y.)
- ◆ John H. White, Jr. **“Capacious, Elevated, and Permanent” Cincinnati’s First Skyscraper.** *Timeline* (Oct./Dec. 2013), pp. 48-53. Brief illustrated history of The Steam Mill, a 9-story, 110-ft.-tall masonry building constructed on the Ohio River waterfront in 1814. William Green, the designer and builder, was a stonemason who had also worked with Oliver Evans, the pioneer steam-engine builder, in Philadelphia. A flourmill was the building’s primary tenant, but there were also spaces reserved for cotton, wool, fulling, and linseed-oil operations.

## MINES & MINING

- ◆ Dana Martin Batory. **The History & Geology of the Leesville, Ohio Stone Quarries.** Crawford County (Ohio) Park District,

2014. 195 pp., illus., maps. \$25 ppd. Besides explaining the geology of the once famous Berea Grit sandstone deposit, the work details the histories of the quarries, tracing development from their beginnings in 1829 to their demise in 1912. At one time, the Leesville Stone Co. was a million-dollar-a-year business employing 200. The book also explains the quarrying and processing methods and describes the various architectural products that were sold not only throughout Ohio but out-of-state, traveling as far as Prescott, Ariz. The author made use of several rare records and photographs housed at the Crestline Historical Society's Shunk Museum. Available from Lowe-Volk Nature Park, 2401 SR 598, Crestline, OH 44827; 419-683-9000.

- ◆ Brian Frehner. **Finding Oil: The Nature of Petroleum Geology, 1859-1920.** Univ. of Neb. Pr., 2011. 232 pp. \$50. Prospecting for oil as it developed from guesswork based on practical experience to a science dominated by college-educated geologists. Rev.: *T&C*, Vol. 54 (Jan. 2013), pp. 202-3.
- ◆ Dan Joling. **Noting Tech Needs, Mining Companies Seek Graphite.** *Huffington Post On-line* (Feb. 27, 2014). The growth in electric cars has set off a boom in exploratory graphite mining, particularly in Alaska. Graphite is a critical component of an electric car's rechargeable battery. Also, Dan Joling. **Graphite Mining Surges: Deposit North of Nome Called "World Class"**. *Anchorage Daily News* (Mar. 3, 2014).
- ◆ Matthew A. Kierstead [SIA]. **From Copperas to Cleanup: The History of Vermont's Elizabeth Copper Mine.** Milestone Heritage Consulting, Marlboro, N.Y., 2014. 62. pp., illus. \$15 ppd. in the U.S. The Elizabeth Mine (tour site, 2010 Fall Tour, Montpelier, Vt.) in South Strafford operated from 1809 to 1958 and produced 50,000 tons of copper. It was the largest copper mine in New England and hosted developments in the American chemical and copper industries. It was the site of a large 1809-1882 "copperas" (iron sulfate) factory incorporating an ingenious gravity-fed heap-leaching process. Multiple smelting campaigns included pioneering 1830s experiments with hot blast and anthracite fuel. Operations were modernized for WWII production, and the Elizabeth was briefly one of the top 20 copper producers in the U.S. before it closed in 1958. Runoff from the dramatic, abandoned, mine

landscape contributed acid and metals to the Connecticut River watershed for over 40 years. The U.S. Environmental Protection Agency designated the mine one of the largest Superfund sites in New England in 2001, and cleanup was completed in 2013. This EPA-sponsored "popular report" presents the story of 150 years of industrial activity at the Elizabeth Mine and how the EPA and its project partners documented and reclaimed its legacy on the landscape. Copies available from the author at [www.milestoneheritage.com](http://www.milestoneheritage.com).

- ◆ Damian Nance [SIA] and Kenneth Brown. **A Complete Guide to the Engine Houses of West Cornwall.** Black Dwarf Lightmoor, Witney, U.K. 184 pp., illus. £18. During the 19th century, Cornwall produced most of the world's copper and tin, as well as substantial quantities of lead, silver, arsenic, tungsten, zinc, iron, and uranium. What made this unparalleled productivity possible was the development, pioneered by Cornishman Richard Trevithick, of the Cornish beam engine, a reciprocating steam engine capable of driving pumps that could keep the ever-deepening mines free of water. Although few of these great engines survive, many of the buildings in which they were once housed remain, forming characteristic features of the Cornish landscape. This illustrated guide makes use of contemporary and archival photographs supplemented with brief descriptions of the engines the buildings once contained, simple interpretations of some of their key features, and short histories of the mines of which they were part.
- ◆ Bonnie E. Stewart. **No. 9: The 1968 Farmington Mine Disaster.** W.Va. Univ. Pr., 2012. \$27.99. This disaster, at a Consolidated Coal Co. mine in Farmington, W.Va., involved gross negligence when a disabled safety alarm prevented miners from being alerted that a ventilation fan was not removing explosive methane gas from the mine. The book describes conditions working underground and the legal struggles of the miners' widows to gain justice and reform coal mine-safety legislation.

## WATER TRANSPORT

- ◆ Robert Behre. **Case Made for Site of Planter's Remains.** *Charleston (S.C.) Post & Courier* (May 12, 2014). Underwater archeologists believe they have identified the wreck of the CSS *Planter*, a transport steamer famously stolen in 1862 by an enslaved pilot who sailed her past Fort Sumter wearing the captain's hat. The steamboat was handed over to the Union navy, which then symbolically used it to ferry dignitaries to Fort Sumter to mark the end of the Civil War in 1865. The 149-ft. steamer ran aground off Cape Romain in 1876. (See also, NOAA, Maritime Heritage Series: Number 1, *The Search for Planter*).
- ◆ Jeff L. Brown. **Between Two Oceans: The Panama Canal.** *CE* (July-Aug. 2014), pp. 42-45. While referring to David McCullough's *The Path Between the Seas* for further reading, this capsule history of the canal's construction provides an interesting breakdown of excavation quantities and expenditures between the French and American efforts.
- ◆ Colin Campbell. **Fireboat Alki Sale Finalized to Skagit County Business Owners.** *Seattle Times* (Sept. 9, 2013). The 86-year-old fireboat was auctioned off for \$25,000. The new owners have pledged to bring out the vessel for festivals and parades.
- ◆ Robert Gudmestad. **Steamboats and the Rise of the Cotton Kingdom.** La. State Univ. Pr., 2011. 280 pp. \$42.50. The story of steamboats on the Mississippi River network in the

## CONTRIBUTORS TO THIS ISSUE

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*With Thanks.*

- antebellum South covering their construction, trade, and social functions. Rev.: *T&C*, Vol. 54 (Jan. 2013), pp. 190-91.
- ◆ John Hurdle. **Keeping a Historic Ship Afloat.** *NYT* (July 15, 2014). Update on the status of the SS *United States*, the luxury ocean liner, launched in 1952, which has been docked in Philadelphia since 1996. The current owner, the SS United States Conservancy, is running out of funds and seeking a developer who might re-use the steamship as a hotel, museum, shopping mall, conference center, or some combination of the above. The ship could be only months away from being broken up if talks with developers fail.
  - ◆ Jay Landers. **New York City's Gowanus Canal to Benefit from Upgrades to Flushing Tunnel.** *CE* (July-Aug. 2014), pp. 25-27. A recent \$190 million repair campaign by the city's Department of Environmental Protection restored the Gowanus Canal's 12-ft.-diameter, 1.2-mi.-long flushing tunnel to operation, including new redundant pumps. In order to reduce combined sewer overflows, a new force main sewer was constructed within the existing tunnel, which dates to 1911.
  - ◆ Mike Riley. **The NYS Barge Canal During World War I.** *The New York History Blog* (Mar. 5, 2014), [www.newyorkhistoryblog.org](http://www.newyorkhistoryblog.org). Circumstances underlying the "federalization" of the canal, which opened in 1918 after New York had spent almost \$150 million only to find that shippers were unprepared to make use of it due to a lack of serviceable boats and business. The federal government threatened but never actually took over operation of the canal during the war; it did take over the movement of freight for a single year.
  - ◆ Bo Petersen. **Life Aboard Folly Beach Dredge Has Its Challenges, Perks.** *Charleston (S.C.) Post & Courier* (Mar. 16, 2014). Lengthy news piece catalogues the tedium of working on a modern dredge, the *Alaska*, 3 miles off shore and pumping sand for beach renourishment. The crew works 12-hr. shifts, bunks in converted shipping containers, and copes with a constant drone of pumps and slurry.
  - ◆ Allen Sachse. **Tales from the Towpaths.** *Living Landscape Observer* (June 1, 2014); [www.livinglandscapeobserver.net](http://www.livinglandscapeobserver.net). Part of a series on the 30th anniversary of the National Park Service's National Heritage Area program, this article looks at the 1,000 miles of canal that have been preserved.
  - ◆ Martha Waggoner. **Hatteras Lighthouse Foundation Stones Threatened.** *Charlotte (N.C.) Observer* (Jan. 26, 2014). When the Cape Hatteras Lighthouse was moved 15 years ago due to erosion, the massive foundation stones were left to mark the original location. Subsequently, the stones were carved with the names of the 83 light keepers who served over two centuries. The National Park Service, which oversees the site, is in favor of allowing nature's forces to cover and uncover the stones with sand and sea, periodically checking that the stones remain in a circular formation. Local preservation groups favor a more aggressive approach of moving the stones to a protected location far from shore.
- through its various incarnations beginning with the charter of 1866 to its present status as a tourist railway.
- ◆ David W. Dunlap. **Behind Subway's Phantom Hotel Entrance, Neither Arias Nor Opulence Linger.** *NYT* (July 16, 2014). The Knickerbocker Hotel, built in 1906, had its own private entrance to the IRT. Closed off since 1920, the connecting corridor retains many original architectural details.
  - ◆ Jim Gaines. **Time Running Out on Deal Macon Made for Train Restoration.** *Macon (Ga.) Telegraph* (Mar. 12, 2014). Central of Georgia Locomotive #509, a Baldwin 2-8-0 of 1906, is threatened with neglect despite an agreement with a scenic railway to restore it to operation and an offer from a museum to store it in its Savannah roundhouse.
  - ◆ David Gwyn, ed. **Early Railways 5.** The Railways & Canal Historical Society (U.K.), 2014; [www.earlyrailways.org.uk](http://www.earlyrailways.org.uk). £55. Proceedings of the Fifth International Early Railways Conference held at Caernarfon, Wales in 2012. Includes 21 peer-reviewed papers, mostly on topics associated with British railways, but also several papers on early Australian railways and other topics of general interest.
  - ◆ Elrond Lawrence. **Daybreak at Alray, Removing Santa Fe's Cajon Pass Tunnels.** *NRHS Bulletin*, Vol. 77 (Fall 2012), pp. 4-21. Photo essay, time lapse-like, documents the removal of two 1913 concrete tunnels between San Bernardino and Summit, Calif. Striking views of modern-day freights passing through partially demolished tunnel portals and walls.
  - ◆ Jeff Moore and Joel Jensen. **The Virginia & Truckee Railroad.** *NRHS Bulletin*, Vol. 77 (Fall 2012), pp. 22-39. History of the Nevada mining railroad with an extended discussion of the factors in its late-20th-c. revival as a tourist line.
  - ◆ **NRHS News** (Aug. 2013) includes Elrond Lawrence, *NRHS Program Helps Raise Funds, Awareness for Rare Lion Gardiner* (restoration of rare steel heavyweight dining car, built in 1914 for use on the New York Central's *Twentieth Century Limited*); *Newly Mastered Link Steam Locomotive Recordings Released* (a new audio CD of recordings of Norfolk & Western steam locomotives from 1956-60 is available from the O. Winston Link Museum); Ken Durrua, *Members Trace History of Raritan River RR* (field work identifies abandoned right-of-way of an industrial railroad established in 1888 to carry sand from a quarry to the Pennsylvania RR in Sayreville, N.J.); and Alex Mayes, *Historic Electric Freight Hauler Toils in Iowa* (the Iowa Traction RR in Mason City is the last common-carrier freight-hauling railroad that uses electric engines, including a Baldwin-Westinghouse, steeple-cab locomotive built in 1920).
  - ◆ Frank Rowsome, Jr. **The Birth of Electric Traction: The Extraordinary Life of Inventor Frank Julian Sprague.** IEEE History Center Press, 2014. 386 pp., illus. \$17.95. Sprague has often been called the inventor of public transportation. In addition to his developments in electric traction, Sprague made enormous contributions in the areas of control and safety, without which mass transit would not be possible. Sprague developed automatic signal and brake controls, and an auxiliary train control to take charge if the driver made a mistake. He was active in the planning and construction of New York City's subway system, and in the electrification of Grand Central Terminal. This biography gives not only a detailed view of Sprague as a person, but also his approach to design and problem solving.
  - ◆ Lewis H. Siegelbaum, ed. **The Socialist Car: Automobility in the Eastern Bloc.** Cornell Univ. Pr., 2011. 242 pp. \$65. Automobiles are a lens through which various authors view

## RAILROADS

- ◆ Jeff L. Brown. **End of the Line: The Overseas Railway.** *CE* (June 2014), pp. 46-49. Spending his Standard Oil fortune, Henry M. Flagler built the Key West Extension of the Florida East Coast Ry. and its numerous unprecedentedly long bridges over open water between 1905 and 1912; the railroad ceased operations only 23 years later after being damaged by a hurricane.
- ◆ Dale W. Diacont. **The Tenacious Tweetsie.** *NRHS Bulletin*, Vol. 78 (Summer 2013). History of the East Tennessee & Western North Carolina RR, better known as the Tweetsie,



Communist Party politics, urban planning, and economics; for example, how socialist cities were planned around automobiles, even if the populace could not afford to own cars. Rev.: *T&C*, Vol. 54 (Jan. 2013), pp. 213-4.

- ◆ **Tourist Railroads & Railway Museums**, No. 16 (Spring 2014) includes Aaron Isaacs, *ATRRM in the Hudson Valley* (review of meeting held at the Trolley Museum of New York, Kingston); Ernie Hunt and Dan Howard, *The Catskill Mountain Fight On* (financial and operational struggles of Catskill Mt. RR in Kingston); Jim Porterfield, *About Your Visitors (the 2014 Variety)* (the importance of travel-site and visitor reviews on websites like TripAdvisor.com); Aaron Isaacs, *Side Trips* (reviews of the RR Museum of New England (Waterbury, Conn.), Danbury (Conn.) RR Museum, Saratoga & North Creek (Saratoga, N.Y.), and Cooperstown & Charlotte Valley (N.Y.)); Jim Lanigan, *The "Virtual National Collection" Project* (project to assemble and present on-line carefully selected Canadian locomotives and rolling stock); Aaron Isaacs, *The Role of Miniature Railroads*, plus a round-up of news from historic railroads and museums around North America.

## AUTOMOBILES & HIGHWAYS

- ◆ Michael A. Banks. **Crosley Goes to War and Plans for Peacetime**. *Timeline*, Vol. 30, No. 2 (Apr./June 2013), pp. 38-51. Cincinnati industrialist Powel Crosley, Jr. introduced "The Crosley," a small car with a 2-cylinder engine, in 1939. During WWII, the versatile company shifted to making gun turrets for aircraft, military motorcycles and reconnaissance cars, amphibious vehicles, and proximity fuses.
- ◆ Brita Brenna, Mari Hvattum, Beate Elvebakk, and Janike Kampevold Larsen, eds. **Routes, Roads and Landscapes**. Ashgate, 2011. \$124.95. Series of essays explores the cultural meaning of transportation and landscape. The first section, "Moving through Landscape," discusses pictorial and textual representations in Europe during the 18th c., while the second section deals with 19th- and 20th-century transportation systems as icons for progress and modernity. The third section, "Landscapes and Mobility," deals mainly with Norwegian tourist routes and how the government shapes and constrains the experience of traveling through nature by use of views, platforms, and even toilets. Rev.: *T&C*, Vol. 54 (Jan. 2013), pp. 186-8.
- ◆ John A. Heitmann and Rebecca H. Morales. **Stealing Cars: Technology and Society from the Model T to the Gran Torino**. Johns Hopkins Univ. Pr., 2014. 232 pp., illus. \$29.95. As early as 1910, Americans recognized that cars were easy to steal and, once stolen, hard to find, especially since cars looked much alike. Model styles and colors eventually changed, but so did the means of making a stolen car disappear. Though changing license plates and serial numbers remain basic procedure, thieves have created highly sophisticated networks to disassemble stolen vehicles, distribute the parts, and ship the altered cars out of the country.

## AERONAUTICS & AEROSPACE

- ◆ Edgar Durbin [SIA]. **Navigation, Guidance, and Control of a Saturn Rocket and Its Predecessors (Parts 1 and 2)**. *Quest, The History of Spaceflight Quarterly*, Vol. 21, No. 1 (2014), pp. 48-61 and Vol. 21, No. 2 (2014), pp. 34-44. This two-part article describes the evolution of systems for navigation,

guidance, and control of rockets designed by the group headed by Wernher von Braun. Part 1 covers the V-2 and Redstone rockets. Part 2 covers Jupiter, Pershing I, and Saturn.

- ◆ Dawn Hinshaw. **Planned Redevelopment of Landmark Airplane Hangar at Hamilton-Owens Doesn't Fly ... For Now**. *Columbia (S.C.) State* (July 16, 2014). A deal with developers to restore a steel-frame hangar, built in 1929, at Columbia's airport has fallen through due to lack of funding. Engineers consider the hangar to be in good structural condition although the envelope requires work.

## POWER GENERATION

- ◆ Jonathan Prynn. **Lots Road Power Station Gets New Life in £1bn Flats and Shops Project**. *London Evening Standard* (Sept. 25, 2013). The Lots Road Station was built in 1904 to provide power to the London Underground. Decommissioned in 2002, it will become the centerpiece of a housing redevelopment along the Thames.
- ◆ **Windmillers' Gazette**, Vol. 32 No. 2 (Spring 2013) includes T. Lindsay Baker, *Product History of the Double Power Mill Company of Appleton, Wis.* (singular wind machines, consisting of two wheels, one in front of the other that spun in opposite directions); T. Lindsay Baker, *Windmills and Mine Pumping* (the use of windmills to pump water from mines); and Christopher Gillis, *Sea Breezes to Salt* (windmills used to pump brine for salt making). Avail.: P.O. Box 507, Rio Vista, TX 76093; quarterly, \$20/yr. Back issues \$5.

## MISC. INDUSTRIES

- ◆ Carol Boram-Hays. **Balancing Art and Science: Arthur E. Baggs**. *Timeline*, Vol. 30, No. 2 (Apr./June 2013), pp. 2-15. Examines the life of Baggs (1886-1947), who successfully established the Marblehead Pottery (c. 1904-1912) in Mass., and went on to become head of the Division of Ceramic Art at Ohio State University, where he was known for his work on studying methods to improve American dinnerware.
- ◆ David Slade. **North Charleston Plans to Board Up Garco Mill Building While Planning Arts Center**. *Charleston (S.C.) Post & Courier* (Feb. 21, 2014). Former General Asbestos & Rubber Co. mill will be preserved. The two-story, 120,000-sq.-ft. brick mill was built in 1901 to supply asbestos to the Charleston Naval Shipyard. Reportedly, it was the largest asbestos mill under one roof.

## AGRICULTURE & FOOD PRODUCTS

- ◆ Ben Benton. **Owners Eye 30th Anniversary with Historic Falls Mill**. *Chattanooga (Tenn.) Times Free Press* (June 18, 2014). The gristmill in Belvidere, Tenn., built in 1873, boasts a 32-ft.-dia., cast-iron waterwheel, one of the largest and oldest operating wheels in the U.S. Owners purchased the mill in 1984 and have successfully developed it as a commercial operation, historical attraction, bed-and-breakfast, and home. Also see the gristmill's website, [www.fallsmill.com](http://www.fallsmill.com).
- ◆ Terry Dickson. **Pre-Civil War Rice Mill Ruins Again Visible at Hofwyl-Broadfield Historic Site, Thanks to Volunteers**. *Georgia Times Union* (Feb. 28, 2014). Tabby foundation and brick chimney are visible for the first time in years at rice plantation near Brunswick, Ga. See also Georgia State Parks website, [www.gastateparks.org](http://www.gastateparks.org)
- ◆ Michael Felberbaum. **1866 Beer Cellars in Virginia Nominated as Historic Site**. *The Virginian-Pilot* (Dec. 31,

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# DETOUR PAYS OFF ON PORTLAND TOUR

Sam Smith is a master blacksmith with a shop on Portland's gentrifying waterfront. I met him after I broke away from my SIA tour visit to Portland's Maine Narrow Gauge RR Museum to photograph some urban landscapes. On my return to the museum I detoured to a side of the old Portland Company building where I met Smith in his shop, The Portland Forge. It is Maine's last working urban blacksmith shop, and its days may be numbered because of redevelopment first conceived in a 1991 master plan.

A New Jersey native who learned the craft as a teenage apprentice at Allaire Village, Smith moved to Maine and opened his own business at age 19. He studied history at the University of Maine's Machias campus before withdrawing when the campus suspended its history major in 2010. He opened his Portland business two years ago in a blacksmith shop that dates to the 1840s. The shop is built hard against the 30-ft.-high, stone seawall that formed Portland's edge prior to the 1850s.

Smith fabricates ornamental and functional items from recycled bicycle chains, cable, and other objects. "I can make anything out of iron or steel that you can imagine," Smith said in a phone interview one week after the SIA meeting. Tools in various states of completion are scattered throughout the shop, and the blacksmith uses a cart he salvaged from an Etheridge Foundry dumpster as a display table of sorts. That foundry, Smith explains to visitors, produced many of the manhole covers seen in Portland's historic brick and stone streets.

Smith's market is all custom work. "People come in with an idea and a dream or plans for an exact thing," he said. "Sometimes engineers or architects will come with an already drawn up plan saying they need this."

The shop includes several historic anvils produced by 19th-century blacksmith Peter Wright in Sheffield, England. Smith uses a side-tuyere forge fueled by coal and charcoal, depending on the job. Split wood for kindling and winter heating fuel is stacked against the shop's exterior.

Over the years, Smith has mined about a ton of Katahdin iron from Ore Mountain in Piscataquis County. "I smelt that. I have a pile at my shop up north and I have a small amount here in my shop in Portland," he said.

Visitors to Smith's shop won't find a blowtorch or any modern technology. It's a holdover from his days apprenticing in a living history environment. "I still reinforce the tenets of living history and I apply it to my everyday profession," Smith explained, "by only using 19th-century techniques in my iron work and those tools associated with those eras." He trains apprentices using the historical methods and his shop is a popular stop for school groups. And, Smith says, the Maine Blacksmith's Guild meets there.

Smith rents his shop in a district that is becoming increasingly gentrified. The property recently has been acquired by developers and he fears that condominiums will replace his shop as redevelopment creeps along the waterfront from the Old Port district where the SIA meeting was held. The waterfront area where The Portland Forge is located is not



*Alley leading to The Portland Forge. The Portland Company building is to the right.*



*One of Smith's Sheffield anvils.*



*The blacksmith shop's interior includes several Sheffield anvils, a wood-burning stove, and a salvaged Etheridge Foundry cart used as a display table.*

*David S. Roenstem, all photos*



within one of the city's local historic districts. "I have sought those designations. Unfortunately, you can't go very far unless the current landowner's willing to go with you," Smith explained.

Portland's master plan for its commercial waterfront is heavy on mixed-use redevelopment, transit, and pedestrian connectivity. Permitted uses in the zone include craft shops with onsite production. Smith fears that a blacksmith shop located beneath high-end condominiums might be considered a nuisance. "How many people want a blacksmith shop in their basement? Maybe me or you," Smith said with a chuckle.

"Ultimately the shop is in limbo and I've had some talks with the owners saying that they want to keep it as an artistic studio," Smith said. However, "They never came out and said yes, we're going to keep it as a traditional blacksmith shop."

David S. Rotenstein



**Sam Smith tells SIAers Mary Habstritt and Bierce Riley about his shop. He's holding an axe head that he made in one hand and his other hand is on the cart he salvaged from Portland's Etheridge Foundry.**

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## IA IN MAINE (continued from page 10)

ery has been in business more than 150 years, and produces premium rye whiskey, rum, and gin for distribution in New England and New York State. Though the visitors did not have a chance to witness the process, it was carefully described and they were able to sample the end results. Everyone left in a happy mood.

**Sunday Tour 1—Longfellow House and Museum. Wadsworth-Longfellow House** was the boyhood home of Henry Wadsworth Longfellow, America's most widely read 19th-century poet. The first brick dwelling in Portland, it was built by the poet's grandfather, General Peleg Wadsworth, in 1785-1786. The building survived a fire in 1815; a third story was added after the fire, and young Henry moved up to that floor. The second of eight children, Longfellow grew up in a large and close family. Numerous letters by family members survive, and describe in great detail everyday activity in various parts of the house, even regarding where different persons sat in the parlor. Thus it is very easy to paint a vivid picture of life in the Longfellow home. The poet moved away in 1822 to attend Bowdoin College, which led to his becoming a professor of modern languages there. He later became a translator, and, ultimately, a world-renowned poet. Henry's widowed sister, Anne Longfellow Pierce, lived here until her death in 1901, having bequeathed the home to the Maine Historical Society. All furnishings except the replica draperies and rugs are original and were in the house while the family lived there.

**Sunday Tour 2—Walking Tour of Downtown Portland.** This tour began with a visit to the Wadsworth-Longfellow House (see Sunday Tour 1) and then continued with an architectural walking tour. What is now downtown Portland was settled by Europeans in 1632, but the settlement was repeatedly destroyed by war and fire. The city lost many of its older buildings to an 1866 fire that started near the water-

front. Strict ordinances prohibiting wooden construction were passed, and today wooden buildings are hard to find. The current waterfront sits on fill that was used to extend the city into Casco Bay and create prime commercial land. One street had four old bank buildings visible within one block, so the city's economy was clearly booming. More recently, Portland has passed through a period of rediscovery and renovation as a tourist center and commercial hub, leading to the rehabilitation of many buildings that had been allowed to decline.

**Sunday Tours 3 & 4—George's Basement.** George Collord graciously opened his home to SIA members for fascinating tours of his basement (and whole home) and an intimate review of a comprehensive collection of machinery, tooling, and artifacts from the **Waltham (Mass.) Watch Co.** By 1893 Waltham employed 3,000 employees and was manufacturing the greatest variety of watches in the U.S. Between 1850 and 1957, the company made over 40-million high-quality watches.

George was born and grew up in New England and in 1981 started working in a 19th-century job shop where he developed a passion for acquiring period machinery and fine antique watches. One of the items showcased was a working automatic, screw-making machine invented by Charles Van der Woerd in 1871. This machine famously attracted crowds during the Philadelphia Centennial Exhibition of 1876. It produces a screw every seven seconds, and a worker operating up to ten machines would produce over 50,000 screws a day. Production prior to the machine was 1,500 per day with two workers. George acquired this machine in 1989 and believes this is the only one operational out of the 11 known remaining (including one in the Smithsonian). For a demonstration of the machine in operation, with narration, go to [youtube.com](https://www.youtube.com) and search on "Charles Van der Woerd." Henry Ford

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# DECONSTRUCTING C.A.P. TURNER'S FLAT SLAB BRIDGE No. 92297

The reconstruction and widening of I-35E in St. Paul, Minn., has provided a rare opportunity to document the deconstruction of an early flat-slab bridge designed by reinforced-concrete technology pioneer Claude Allen Porter (C.A.P.) Turner. Unusual for a historic bridge documentation project, historians worked alongside a demolition contractor to record the reinforcing system as it was exposed. Historic documentation shed more light on the work of the designer and also created a record available for future study.

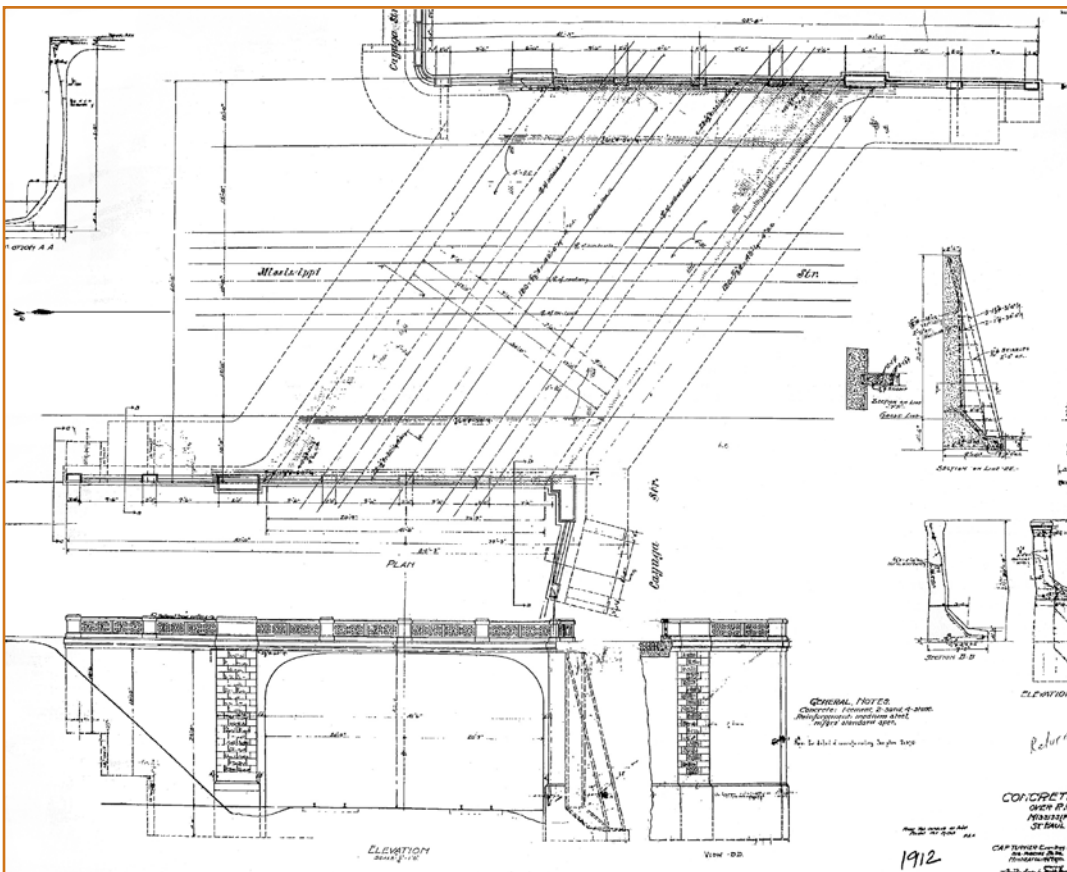
Bridge No. 92297 was a monolithic, single-span, reinforced-concrete flat-slab deck with vertical abutments supported on reinforced-concrete strip footings, constructed in 1912. It was oriented on a 35-degree skew, measured 49 ft. in total length, and had a clear span of 41 ft. with a 60-ft.-wide deck. Without any background about its history, the bridge would have appeared unremarkable. However, research on the bridge revealed that it was an innovative design for its time.

Turner, a Minneapolis-based structural engineer and a pioneer in the development of the reinforced-concrete flat slab, designed Bridge No. 92297. Turner is generally, but with some debate, credited with the development of the reinforced-concrete flat-slab floor system. His proprietary system, called the "Mushroom System," can be identified

by its pattern of four-way slab reinforcement and distinctive flared column capitals. The system was first used in Minneapolis in 1906, but was ultimately exported and implemented nationally and globally.

In addition to implementing his system in buildings, Turner designed several reinforced-concrete flat-slab bridges, most as adaptations of his floor system. To date, all known flat-slab bridges in the Twin Cities designed by Turner have been demolished. The bridge decks were often designed with four-way reinforcement similar to his floors, with longitudinal, transverse, and diagonal steel. But Turner's published examples of flat-slab bridges featured in engineering journals of the day did not bear much resemblance to Bridge No. 92297. However, Turner held a number of related patents for both floor systems and bridges, one of which bears a striking resemblance to Bridge No. 92297, particularly the configuration of the abutment reinforcement.

Bridge No. 92297 was commissioned by the Minneapolis, St. Paul and Sault Ste. Marie RR (Soo Line) to carry a local road over its line, and copies of construction drawings and plans dating to the erection of the overpass, as well as correspondence between the Soo Line and the city of Saint Paul engineers, revealed some insights into the bridge's design. Although the discovery of original drawings was fortuitous—and rare for a structure of this age—



Original construction drawing of plan and elevation for Bridge No. 92297.



Daniel R. Pratt, courtesy of Mimm. Historical Society Archives

**Bridge No. 92297 shortly before demolition.**

the copies were of poor quality and only partially legible. Of the six sheets in the set, one was stamped with “CAP Turner Consulting Engineer” in the title block, while the “Chief Engineers Office” of the railroad was stamped on the remaining sheets. The date of the sheet stamped with Turner’s firm was illegible, but several of the sheets stamped by the railroad engineers were clearly dated 1912. The correspondence between engineers indicates that plans were originally drawn for the bridge in 1908, and then revised in 1912 because the earlier plans did not meet the standards of a 1907 city ordinance. It was postulated that the drawing sheet stamped by Turner was part of the original 1908 set, and the remaining sheets were a revision of Turner’s design made by the railroad’s engineers.

Bridge No. 92297 was demolished in the summer of 2013 under the I-35E widening and reconstruction project sponsored by the Minnesota Department of Transportation (MnDOT) and the Federal Highway Administration (FHWA). Consultation under Section 106 of the National Historic Preservation Act resulted in a mitigation treatment of documenting the bridge. The team conducting the sequenced research, documentation, and demolition included Summit Envirosolutions (historic research by Andrew Schmidt and Andrea Kampinen), Daniel Pratt (photographer), MnDOT engineers, and the contractor. The documentation of the steel reinforcement and construction was provided by Preservation Design Works, a preservation consulting and planning firm in Minneapolis that specializes in the redevelopment of historic structures.

A phased demolition proposed by MnDOT engineers accommodated the documentation process. Reinforcement was revealed at the bridge deck, bridge-to-abutment connection, and the abutment walls. The location (plan and vertical profile) of steel reinforcement was generally congruent with the original construction drawings from 1912, with the exception of minor details and extra reinforcement along the fillet corner in the deck-to-abutment transition.

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**Careful demolition of the bridge revealed the reinforcement, facilitating its documentation in selected areas: a full-depth opening was made near the center of the bridge span (top); the slab edge was deconstructed at the connection of the deck to the abutment (center); and the abutment wall was chipped away.**

and previous journal editor Pat Martin, who arranged for the complete run of *IA* to be hosted on the JSTOR website. Sales of articles through the JSTOR website have brought in \$4,000 in revenue for SIA.

Fred reported that he has the final proofs for a double issue on *IA* in Montana and apologized that it has not yet been printed. After that will be two single issues, one of which is almost ready to go; the articles for the other have been edited and are now being revised by their authors. Most of the articles are in hand for an upcoming theme issue on industrial waste, guest-edited by Carl Zimring, and Pat Malone recently started work on a theme issue about New Bedford, Mass.

*SIA Newsletter.* President Hay recognized Patrick Harshbarger's efforts in editing *SIAN*. Secretary Spivey then read a report on the editor's behalf: Since last year's business meeting, the *SIAN* has been published four times on its established quarterly schedule. The editor extends his warmest and heartfelt thanks to the many members who contribute to the newsletter by way of editorial assistance and a constant stream of information that flows across his desk. A special thanks is given to Arlene Collins and Don Durfee, who steadfastly handle printing and mailing of the newsletter from Michigan Tech, making the editor's job that much easier. If you haven't already, please consider writing an article for the newsletter about your *IA* activities or an *IA* site of interest to you. Feel free to contact the editor if you have an idea you'd like to discuss.

*Student Scholarships.* Secretary Spivey read a report on behalf of Student Scholarships Committee Chair Patrick Harshbarger: Each year the SIA awards travel scholarships to assist students with offsetting expenses associated with attending our conferences. The scholarships are open to full-time students or to emerging professionals with less than three years of experience. Applicants must demonstrate an interest in and commitment to the field of industrial archeology. Scholarships are funded through a dedicated account. This fund relies on annual contributions for replenishment, and members are encouraged to consider making a donation at the time that they receive their annual dues notice.

This year, through your generosity, the SIA was able to offer two \$600 scholarships.

John Arnold, a licensed architect, is currently enrolled in the Ph.D. program in Industrial Heritage and *IA* at Michigan Tech. At this year's conference, John is presenting a paper on documentation of the U.S. Customs House in Eagle, Alaska, using Building Information Modeling software.

Mark Dice is completing his M.S. in industrial archeology from Michigan Tech. He is currently making progress on a thesis on the role of digital documentation in the preservation of industrial heritage. At this year's conference, he is presenting a paper on digital documentation, seeking feedback on some of the arguments and case studies developed for his thesis.

*Industrial Heritage Preservation Grants (IHPG).* President

Hay introduced Committee Chair Jay McCauley, who reported that the IHPG Committee had reviewed six well-written applications and had a difficult time deciding which would be awarded grants. The committee, consisting of Jay McCauley, David Vago, and Duncan Hay, selected two recipients for grant funding this year. The Chamberlin Mill in northeastern Connecticut is receiving a grant to fund a documentation project. It is an amazingly intact sawmill with an over 200-year history of operations. Some will remember the mill from the 2011 SIA Fall Tour. The Lake States Ry. Historical Assn., a previous IHPG recipient, received another grant to continue to preserve railroad archival material and make it available on the Internet. Jay thanked all those who submitted applications and regretted that SIA cannot fund them all.

*Vogel Prize.* Committee Chair Bob Casey read the Vogel Prize citation recognizing T. Arron Kotlensky as this year's recipient (see article elsewhere in this issue).

*General Tools Award.* General Tools Award Committee Chair Richard K. Anderson, Jr. read the General Tools Award citation recognizing this year's recipient Jet Lowe (see article elsewhere in this issue).

After the citation had been read, President Hay announced a change in the sponsorship of the General Tools Award. He recognized that Gerry Weinstein has been a steadfast supporter of SIA, at first in the background but with increasingly visible advocacy for the organization. Gerry and his brother recently sold General Tools to a private equity firm, but the new owners are happy for SIA to continue using the company's name on the award, which will continue to be funded by the Abraham and Lillian Rosenberg Foundation. President Hay also noted that, thanks to Gerry's wife, Mary Habstritt, he was informed that Gerry's 65th birthday would be the following day. Conference attendees promptly joined in a spontaneous singing of "Happy Birthday" to Gerry.

*2014 Fall Tour Preview.* For a preview of the 2014 Fall Tour in Southern Indiana, Events Coordinator Ron Petrie introduced local committee chair Bill McNiece. Bill began with the important announcement that the tour dates are a little different than usual, Sun. through Wed., Oct. 5-8, 2014. The headquarters hotel will be the Clifty Inn at Clifty Falls State Park near Madison, Ind., where, according to Bill, "A couple extra bucks will get you a great view of the stacks on the power plant near the river."

The tour sites will be different than the previous Fall Tour in 1994, so everyone should be able to find something new worth seeing. Bill thanked other committee members, including John Stacier and Rhonda Deeg, and then reviewed various transportation options, nearly all of which involve flying and then driving to Madison.

Sunday evening's opening reception will be held at the historic Shrewsbury-Windle House. The following two days of bus tours will be the same, with sites alternating between Monday and Tuesday, so that everyone will get to see everything. Stops will include the Schroeder Saddletree Factory;



the Jefferson Proving Grounds; Royer Corporation, the world's largest manufacturer of beverage stirring devices; Cummins Engine's mid-range diesel engine plant; Seymour Manufacturing, which has been making hand tools in the same location since 1874; and Roseacre Farms, a large processor of eggs, which will require that attendees not own pet birds. Monday dinner will be on your own, while on Tuesday attendees will dine as a group at the Clifty Inn.

Optional Wednesday tours will include a bus tour visiting Lawrenceburg Distillery, both double- and triple-intersection Pratt truss bridges, and the Markland Locks and Dam on the Ohio River. Optional walking tours will cover the architecture of Columbus and Madison, Ind. Because of capacity limitations at some sites, there is a solid cap of 80 attendees, so Bill encouraged everyone to think about whether you want to attend now so that you'll be ready when registration opens.

*2015 Annual Conference Preview.* Events Coordinator Ron Petrie reported that the 44th Annual Conference will be held in Schenectady, N.Y., during the first weekend of June, and welcomed Simon Litten to the podium. [NB—Due to hotel issues beyond the SIA's control, alternate dates and nearby locations in Albany and Troy are currently under consideration.] Simon noted that planning this event has been a great opportunity for him to learn more about the region in which he lives, and he encouraged other SIA members who want to get a lot out of the organization to consider planning their own tours.

The local committee is looking to get into the Watervliet Arsenal, a robotics firm, a manufacturer of superconducting wire, and many other sites.

President Hay added that SIA will revisit some of the sites seen during the 1987 Annual Conference in Troy, N.Y., including the gasholder that is SIA's logo, but there will be a significant number of new attractions.

President Hay thanked Ron Petrie for his four years of service as Events Coordinator and announced that Ron would

retire from the position after the Portland conference, but stay involved to ensure a smooth transition to his successor.

*Nominations Committee.* President Hay thanked departing Board members Jay McCauley, Ingrid Wuebber, Scott Baxter, and David Vago for their service. He noted that while some of their efforts are highly visible to the membership, a significant amount takes place behind the scenes to keep the organization and its events running smoothly.

Nominations Committee Chair Tim Mancl thanked everyone who ran for election and expressed his genuine appreciation for their willingness to serve. He reported that the results were very close, which shows that the membership thought all candidates would serve with competence and dedication. He thanked fellow committee members Susan Appel and Lynn Rakos for getting the ballot together and into the hands of SIA members. He then announced the election results: for the Nominations Committee, Anna Lee Presley; for Director, Ron Petrie, Saul Tannenbaum, and Alicia Valentino; for Vice President, Maryellen Russo; and for President, Amanda Gronhovd.

Past President Duncan Hay handed off leadership to President Amanda Gronhovd. She said that she was honored to lead the organization and recalled the previous afternoon's tour of the Pepperell Mill in Biddeford, when she paused to realize how happy she was, and it was because she loved SIA and everyone in it. She appreciates the breadth and depth of knowledge among SIA members and their hard work on behalf of the organization. In closing, President Gronhovd asked the newly elected officers to meet with current Board members immediately after the last presentation session.

*Adjournment.* President Gronhovd called for new business, and with none forthcoming, she adjourned the meeting at 1:30 p.m.

Respectfully submitted,  
Justin M. Spivey  
SIA Secretary



**2014 SIA Student Travel Scholarship Recipients: Mark Dice (right) and John Arnold.** Each year the SIA awards scholarships to help offset the costs of attending the Annual Conference. To help make future conferences affordable to students and introduce them to the programs and goals of the SIA, please consider making a donation to the Student Scholarship Fund by checking the box on your annual membership renewal.

## SITES & STRUCTURES

The Virginia Dept. of Historic Resources has named two sites of IA interest to the Virginia Landmarks Register and the National Register of Historic Places. The **Hermitage Road Warehouse Historic District** recognizes a cohesive group of early-to-mid-20th century warehouses representing some of Richmond's most prominent businesses including Export Leaf Tobacco (the purchasing arm of British American Tobacco), J. P. Taylor Co. (a subsidiary of Universal Leaf), Miller & Rhoads (a Virginia-based department store chain), and the A. H. Robins Co. (pharmaceuticals). The **Plains Mill** in Rockingham County is a merchant grain mill built by Dr. Solomon Hinkel and his son, Siram, in 1847-49. Many original features survive including Dutch doors and a massive husk frame. In the early 20th century, the mill was converted to the roller-milling process, and it preserves a wealth of specialized equipment from the period. Terra-cotta-block grain bins, a cinder-block feed mill, machine shop, and warehouse additions round out the mill's evolution.

The **Louise Cotton Mill** (Charlotte, N.C.) has been added to the National Register. Built in 1897 with an addition in 1901, the 2-story brick textile mill features a U-shaped plan with courtyard. It is believed to be one of Charlotte's oldest surviving buildings.—*Charlotte Observer* (Mar. 22, 2014)

**B&O Railroad Museum** (Baltimore, Md.—tour and reception site, 1995 SIA Annual Meeting) is restoring the decorative architectural woodwork elements on the clerestory and lantern of its National Historic Landmark “circular” (22-sided) car shop. Scaffolding will be erected in the first weeks of August 2014, and the work will be completed in approximately four months. The museum has also agreed to transfer ownership of **Chesapeake & Ohio Ry. Locomotive No. 1309** to the Western Maryland Scenic RR where the locomotive will be restored to operating condition for use in passenger operations. No. 1309 was built in 1949 and was the last domestic steam locomotive manufactured by the Baldwin Locomotive Works in Philadelphia. This powerful locomotive, known as a “Mallet” after Swiss engineer Anatole Mallet, combined an articulated frame with four “compounded” cylinders. Articulation allowed the 217-ton locomotive to navigate curves and the compound engine used the steam twice; first for the rear pair of high-pressure cylinders, and second for the pair of low-pressure front cylinders. No. 1309 worked out of the C&O's Peach Creek Terminal in Logan, W.Va., hauling coal. It was retired in 1956 and remained in storage until it was moved to Baltimore in 1972.—*B&O Museum Press Releases* (May 11 & July 14, 2014)

**Sun Products Corp.** has closed its nearly 90-year-old Baltimore manufacturing plant. The plant made fabric softener and liquid detergents under the brand names of All, Wisk, and Snuggle. Production has been moved to a facility

in Bowling Green, Ky. Sun cited the factory's age as one of the reasons for closing. The physical plant is spread over 49 acres beside I-95 near the port's Seagirt Terminal.—*The Baltimore Sun* (Feb. 11, 2014)

The **Round Island Lighthouse** (Pascagoula, Miss.) restoration project has won a special Heritage Award for Engineering Excellence from the Mississippi Heritage Trust. The lighthouse, constructed in 1859 on an island off the Gulf Coast, was toppled by shore erosion associated with Hurricane Katrina. A \$1.4-million project rescued the 220-ton masonry structure and re-erected it at the foot of the bridge carrying Route U.S. 90 over the Pascagoula River.—*Biloxi Sun Herald* (June 12, 2014)

The **Delta Queen**, docked in Chattanooga, Tenn. since 2008, appears to have found investors and lawmakers willing to support its continued use as a tourist cruise boat. She's been stuck at dock ever since Congress failed to pass a bill exempting her from a federal law that prevents her from transporting overnight passengers due to her wooden superstructure (considered a fire hazard). The exemption had been granted by many prior Congresses. Launched in 1927, the *Delta Queen* is the oldest paddle-wheel steamboat on the Mississippi River system. The investors are committed to getting her up and running. As of this writing, a bill has passed the House and is awaiting a vote in the Senate.—*Chattanooga Times* (June 15, 2014)

In May 2014, Amtrak's *Empire Builder* began regular service to the renovated **St. Paul (Minn.) Union Depot** (tour site—2013 SIA Annual Conference). This was the first regular passenger service to the depot since the Burlington Northern's *Afternoon Zephyr* from Chicago stopped on the evening of April 30, 1971, the day before Amtrak took over the majority of U.S. passenger rail service.—*Trains* (Apr. 2, 2014) ■

## MEMBER NEWS

**Nicholas Kocsis**, a long-time SIA member and frequent conference and tour attendee, passed away on March 31, 2014, age 75. Nick, who hailed from St. Catharines, Ont., was very passionate about his hobbies, which included not only industrial archeology but genealogy, wine, classical music, and technology. For many years Nick worked for Transport Canada in Engineering Services and the Federal Department of Communications as a project and measurement engineering technologist. He was responsible for overseeing communication installations at many of the airports in eastern Canada. Nick very generously named the SIA a beneficiary of his estate in the amount of \$500. His presence at SIA activities will be missed. ■

## Richmond Finds Re-use for Interurban Railway Buildings

Four of the structures associated with the interurban Richmond & Chesapeake Bay Ry. still stand in Richmond, Va. All have been adaptively reused. Frank Jay Gould, son of New York financier, Jay Gould, led the effort to incorporate the company in 1905. The line used 6,600v at 25 cycles per second instead of the customary 600v D.C. used by trolleys. The line became operational in 1907. It was planned to provide service to Tappahannock, but only the 14.6-mile segment between Richmond and Ashland was built. The R&CB declared bankruptcy in December 1917. It resumed operation in 1919 as the Richmond-Ashland Ry., converting to the cheaper-to-operate 600v D.C. It closed in 1938.

Electricity was provided by a power plant constructed in 1898 for the Virginia Passenger & Power Co. on Browns Island. The building featured a monumental design and classical architectural treatment with a tapered and faceted smokestack at its east end. The R&CB had its own equipment in the plant for sending the electricity to the company office 1.6 miles away. The plant was closed about 1980. It has been renovated to be available for use in events and is currently for sale or lease.

The R&CB office and passenger terminal still stands on the north side of West Broad St. a block west of Belvedere. The building held a high-tension switchboard to distribute the electricity to the line. After the railway closed, the terminal was used as a glass company office and workshop until early 2013 when it was purchased by Virginia Commonwealth University. The university's architects and contractors transformed the building to house a dance studio and a kinetic imaging studio for students to engage in video, animation, and sound-media production. The building will also be an art gallery.

The R&CB's West Broad St. passenger station was designed in 1907 by William C. Noland and Henry Baskervill, architects. The elegant Italian Renaissance/Beaux Arts structure was 67 ft. long across the front and 146 ft. deep with tracks entering the back of the



*The renovated car barn of the R&CB in Richmond, Va.*

building at the second floor levels. In addition to separate "white" and "colored" waiting rooms, a concourse, train platform, and ticket office at the second level within the main body of the station, storefronts were located in each wing at street level.

The railway's car barn on Brook Rd. a mile north of the company office is now the office for a construction company. It was the subject of an award-winning adaptive reuse project that resulted in a building that achieves net zero energy. Next to the building stand two ground-mount solar arrays with combined capacity of 6 kW, which produces more energy than the building consumes. The corrugated steel-clad building has a structural steel frame that supports a Fink-truss gable roof. The corrugated metal stops at the bottom of the trusses in the north and south gable ends creating large openings through which the cars were driven along rails that are still imbedded in the concrete floor. The main part of the building had a capacity for six cars. A second slightly higher gable roof crosses at the center of the building and extends beyond the sidewall on the east creating a T-shaped plan. The blacksmith and machine shops were located in the wing. A Vulcan hoist is located in this elevated area.

*Tyler Turpin*



## PUBLICATIONS OF INTEREST *(continued from page 15)*

- 2013). The site contains remnants of Richmond's James River Steam Brewery, established by David G. Yuengling, Jr., son of the found of the well-known Pottsville, Pa. brewery. The James River brewery closed in 1879, then burned in 1891, but four massive vaulted brick tunnels remain.
- ◆ **Gainesville Poultry Equipment Manufacturer Celebrates 70 Years.** *Access North Georgia* (June 17, 2014). Grover S. Harben founded the Gainesville Machine Co. in 1944. Over time, the company became focused on poultry processing equipment. It was acquired by Stork in 1975 but now is owned by Marel USA (bought in 2008). Includes a brief history and timeline.
  - ◆ **Old Mill News**, Vol. 41, No. 3 (Summer 2013) includes Celia Miles, *SPOOM Conference Review* (2013 conference, Jasper, Ind.); Jon and Carol Joyce, *Locke's Mill—Berryville, Clarke County, VA* (restoration project); and David Beaupre, *The Price of History* (history of Fall River (Ala.) Mill).
  - ◆ Maria Recio. **Southern Tobacco Barns Hold Allure for Preservationists.** *Charlotte (N.C.) Observer* (Jan. 29, 2014). Programs to save barns in southeastern states, including a \$100,000 grant from a Japanese tobacco company for barns in Virginia.
  - ◆ Josh Shaffer. **In Pittsboro and Beyond, Pining for Floors from Old Tobacco Barns.** *Raleigh (N.C.) News & Observer* (July 12, 2014). Baba Antique Wood Floors scavenges tobacco barns for highly sought heart pine and then mills and treats the wood for use in high-end architectural applications.
  - ◆ **Sour Sweet.** *The Economist* (May 17, 2014), p. 80. Artist Kara Walker's installation of a mammoth sphinx and other figures carved of sugar in the former Domino Sugar factory (tour site—2002 Annual Conference, Brooklyn, N.Y.) has been garnering international attention. The installation, which is temporary and literally melting away, tells an allegorical story of slavery and greed associated with the history of the sugar industry.
  - ◆ Deborah Jean Warner. **Sweet Stuff: An American History of Sweeteners from Sugar to Sucralose.** Rowman & Littlefield, 2011. 292 pp., \$29.95. Covers cane, beet, corn, molasses, honey, sorghum, and maple sugar production, as well as non-caloric saccharin, cyclamates, aspartame, and sucralose. Rev.: *T&C*, Vol. 54 (Jan. 2013), pp. 205-7.

## IRON & STEEL

- ◆ Tony Adams. **Columbus Foundry, Once Down and Out, Is Finding New Life through New Owner Auto-Parts Supplier Chassix.** *Columbus (Ga.) Ledger* (Feb. 2, 2014). Foundry, established in the mid-1960s, has revived its declining fortunes through a \$10 million investment and merger with Chassix, a Michigan-based auto-parts supplier. The 350,000-sq.-ft. facility is now considered state-of-the-art and employs 590 workers in its foundry and machine shop.
- ◆ Joseph E.B. Elliott [SIA]. **Photographing the Steel.** *NRHS Bulletin*, Vol. 78 (Summer 2013), pp. 5-25. Copiously illustrated article discusses Elliott's long-term project to document the Bethlehem (Pa.) Steel Plant from 1989 to 1995 (see *SIAN*, Fall 2012).

## TEXTILES

- ◆ Joe DePriest. **Mystery of Iconic 1908 Lincoln Child Labor Photo Solved.** *Charlotte (N.C.) Observer* (Jan. 19, 2014). The identity of the girl textile spinner in a famous Lewis Hine photo

may have been revealed. Historian Joe Manning, who has tracked down descendants of 350 people in Hine's photos, used census records and facial recognition software to match the girl's image with a later photo of an older woman named Lalar Blanton. See also, "Lewis Hine Project" on Manning's website, [www.morningsonmaplestreet.com](http://www.morningsonmaplestreet.com).

## ABBREVIATIONS:

CE	= <i>Civil Engineering</i> , published by the American Society of Civil Engineers
CH	= <i>Construction History</i> , Journal of the Construction History Society (U.K.)
CHSA	= Construction History Society of America
MSC	= <i>Modern Steel Construction</i> , published by the American Institute of Steel Construction
NYT	= <i>New York Times</i>
NRHS	= National Ry. Historical Society
T&C	= <i>Technology &amp; Culture</i> , published by the Society for the History of Technology
TICCIH	= <i>The International Committee for the Conservation of the Industrial Heritage</i> , <a href="http://www.mnactec.com/ticcih">www.mnactec.com/ticcih</a>
Timeline	= published by the Ohio Historical Society, \$40/yr. Info: (614) 297-2315

*Publications of Interest* is compiled from books and articles brought to our attention by you, the reader. SIA members are encouraged to send citations of new and recent books and articles, especially those in their own areas of interest and those obscure titles that may not be known to other SIA members. *Publications of Interest*, c/o SIA Newsletter, 305 Rodman Road, Wilmington, DE 19809; [phsianews@aol.com](mailto:phsianews@aol.com).

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## IA IN MAINE *(continued from page 17)*

visited Waltham Watch in the 1890s and may have been inspired by the factory's mechanical superintendent, D. H. Church, to develop his own assembly line.

Other artifacts in George's collection include steam engines, gauges, watches, reference material, manuals, and original drawings from several watch-tool builders, as well as the hour and minute hands used in the Howard clock above the Union Station in Portland (demolished 1961). The works of the clock itself is displayed in Portland's Congress Square. George is in the process of establishing a New England Industrial History Museum in Biddeford (see Friday Tour 2). It is planned to open in the not too distant future and will display his impressive collection of historic manufacturing and machine tools.

The SIA extends its thanks to the many companies and individuals who made the Portland tours possible.

*Contributions to the article by Richard K. Anderson, Jr., Andy Bagnat, Diana Bouchard, James Bouchard, Mark Dice, Brian Gill, Pat Malone, T. Arron Kotlensky, Steve Muller, Carol Poh, John Reap, and Joe Seely* ■

## BRIDGE No. 92297 *(continued from page 19)*

The skewed geometry of Bridge No. 92297 was not well-suited to Turner's patented four-way short-span bridge design. Rather, the two layers of slab reinforcement responded to the geometry of the road. Because of the geometry of the bridge span, the flat slab of Bridge No. 92297 more closely resembled a one-way structural system, rather than the four-way systems found in Turner's published designs.

The following details of the reinforcement may be of interest to bridge historians and useful for considering dimensions within undocumented bridges of similar age. A lower layer of 5/8-in. nominal diameter deformed reinforcement was placed perpendicular to the abutment walls at approximately four inches on centers; a layer of smooth 5/8-in. nominal diameter reinforcement oriented parallel to the deck edge at approximately four inches on center was placed on top of the lower layer; approximately 1/16-in. diameter wire ties connected the bars of the two layers; the two layers were draped, with approximately a 12-inch drop from the abutment to the center of the 41-ft. clear span; pairs of 1-1/8 in.-diameter smooth bars at 5 ft.-6 in. on center provided support for the draped profile and were oriented parallel to the abutment walls.

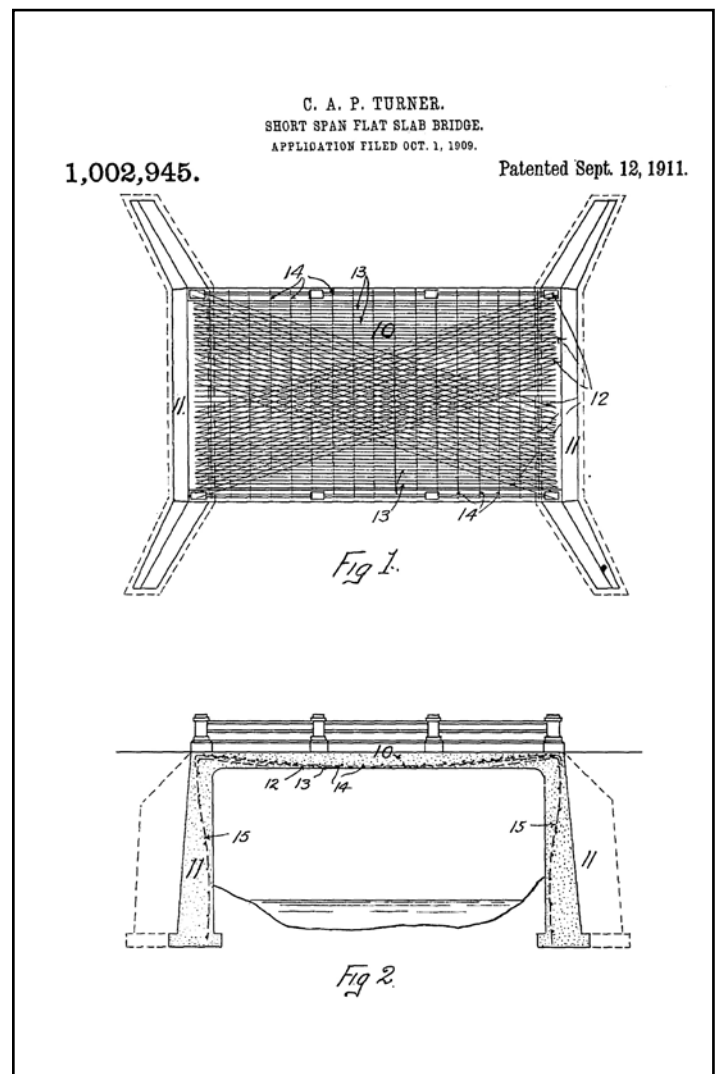
The profile of the slab and abutment reinforcement correlated well with the design illustrated in Turner's patent. Both layers of deck reinforcement hooked into and extended approximately 7 ft. into the abutment wall; the vertical abutment steel consisted of 1-in. nominal diameter deformed reinforcement at 24 in. on center; the vertical abutment steel followed an S-shaped profile from the deck slab to the back of the abutment wall curving to the exposed face of the abutment wall and ultimately terminating in the footing; the abutment steel profile was supported by 3/4 in. square horizontal bars; an additional layer of 5/8 in. nominal diameter deformed bars spaced approximately 4 in. on center followed the curvature of the filleted corner and extended about 6 feet into the deck slab. The fillet steel was neither shown in the patent drawing nor the original design documents.

Prior to the start of demolition, the condition of the bridge was also documented. As is often the case, graffiti covered most of the walls, and significant spalling and efflorescence were observed on the underside of the deck. However, despite decades of use, as well as exposure to deicing salts and weather, the measured vertical deflections of the slab were within the range of likely construction tolerances, and there was no appreciable long-term movement. The laudable performance of the bridge indicated that the early design was not only adequate for the streetcar loads at the time of construction, but also remained suited for the loading demands imposed by modern traffic. Because Bridge No. 92297's construc-

tion and condition were documented prior to demolition, engineers and scholars have the opportunity to continue learning from this historic structure.

Meghan Elliott

*This article is a condensed and edited version of one that appeared in the Jan. 2014 issue of STRUCTURE magazine, published by the National Council of Structural Engineers Associations (NCSEA), and is adapted with permission. The original article can be downloaded: <http://www.structuremag.org/Archives/2014-1/C-HistStructures-Salmon-Jan14.pdf>. ■*



**Excerpt of C.A.P. Turner's U.S. Patent #1,002,945: "Short-Span Flat-Slab Bridge," filed Oct. 1, 1909. Although the deck reinforcement of Bridge No. 92297 did not resemble the patent design, the profile of the deck, abutments, footings, as well as the abutment reinforcement, bear a striking resemblance.**

## MYSTERY OBJECTS

Can an SIA member identify the purpose of three instruments found in an attic of Boston's Metropolitan Waterworks Museum? They may relate to the Chestnut Hill High Service Pumping Station's first engines: two 1888 Holly Gaskill compounds and an 1894 Leavitt triple (see SIAN, Spring 2011).

All three objects are stored in long boxes with hinged lids. The instruments are built into the boxes and apparently designed for use in a vertical orientation. There are two types of objects, designated "X" and "Y". Type X is  $\pm 10$  ft. long; the two Type Y's are  $\pm 12$  ft. Down the middle of each instrument is a wood bar ( $\pm 1 \times 2$  in.) on a wood panel, screwed into the box.

Type X has square steel plates set in the wood bar, 6 in. on center. Alternate plates are numbered (perhaps for measuring distance in feet) while other plates have a small threaded hole for receiving an odd cupped-top knurled knob—too delicate for a hard stop. Type Y's have "engine-divided" tops, graduated for measuring feet in tenths and hundredths; no inserts; and a small bracket at upper end with tiny hole threaded with a string for a small spherical end weight.

With both Types X and Y, there are smooth, round steel tubes (perhaps rails?) placed parallel to the wood bars. Next

to the tubes are hooks and seats apparently for holding glass tubes. Type X has holes in the box ends, apparently for storing glass tubes. Type Y has fittings for glass tubes in the end of the wood box, which is scorched near the fittings.

If you can assist, please contact, Dennis De Witt, [dennis.dewitt@waterworksmuseum.org](mailto:dennis.dewitt@waterworksmuseum.org); (617) 566-3196 ■



*Top of Type Y instrument box showing string and spherical end weight, and steel tube at top.*



*Top of Type X instrument box, showing plate with number "3", small cupped knob, tubes, and hooks/seats for glass tubes (not shown).*

*Dennis De Witt, all photos*



*Type Y instrument box.*



## CHAPTER NEWS

**Oliver Evans** (Greater Philadelphia) gathered at the Fairmount Water Works to hear a presentation on the history of the Alan Wood Steel Co. by Michael A. Rabbitt on May 19. The illustrated presentation on the Conshohocken, Pa., steelmaker included many photographs and maps from Michael's personal collection. On June 23, Muriel Kirkpatrick was host to a behind-the-scenes tour of Temple University's Anthropology Lab. Muriel has managed the lab since the first collection arrived in 1964. Highlights of the tour were items from the Pennsylvania Commercial Museum including dioramas of Chinese agricultural practices and those of pottery-making processes at the Lenox factory.

**Roebling** (Greater N.Y.-N.J.). Chapter president Joe Macasek has been leading a series of tours of IA sites in northern N.J. On May 11, the chapter took a guided hike of the Morris Canal Inclined Plane at Ledgewood. On June 21, the featured sites were in the Upper Rockaway River area of Jefferson Township, N.J. Members hacked through the woods to find the remains of the Hopewell and Lower Longwood forges with the assistance of Bierce Riley. Tom Flagg and Gerry Weinstein led a guided walking tour of New York City's High Line (SIAN, Spring-Summer 2004) on June 7. Gianfranco Archimede organized a special guided bus tour of historic mills throughout Paterson, N.J., on June 14. This tour featured diverse industrial sectors and architecture, including locomotives, aeronautics, textiles, machine tools, and brewing. The chapter toured New York's Tribeca neighborhood and lighthouse tender *Lilac* on June 28. ■

**Support Your Local Chapter.** For info on a chapter near you or to start one, contact Ron Petrie, SIA Director, Local Chapter Chair (ron@siahq.org; 216-372-8623) or check out the local chapters section of the SIA website ([www.sia-web.org](http://www.sia-web.org)).

## IA ON THE WEB

**Fender Ovation Guitar Factory** ([www.canadianmanufacturing.com](http://www.canadianmanufacturing.com), search on "Fender Ovation"). Fender is closing its 47-year-old factory in Scottsdale, Ariz., that produced the Ovation line of guitars. This article on the closing features a 32-min. factory tour video.

**Harvesting Bananas** ([www.youtube.com](http://www.youtube.com), search on "Dole—Harvesting Bananas"). This 5-min. corporate video provides an inside look at bananas from harvesting at one of Dole's Costa Rica plantations to "a store near you."

**Sandy Hook Lighthouse** ([www.earthcam.com/usa/newjersey/sandyhook/](http://www.earthcam.com/usa/newjersey/sandyhook/)). Live views of the lighthouse and Fort Hancock at the entrance to New York harbor.

**Washington Monument Restoration** ([www.youtube.com/earthcam](http://www.youtube.com/earthcam), select Washington Monument Restoration). Time-lapse video, capturing thousands of images, documents the restoration process (scaffolding, cranes) following the Aug. 23, 2011 earthquake that damaged the monument and forced its closure.

*"IA on the Web" is compiled from sites brought to the editor's attention by members, who are encouraged to submit their IA Web finds: [phsianews@aol.com](mailto:phsianews@aol.com). ■*

## IA EXHIBITS

The **U.S. Navy Seabee Museum** in Port Hueneme, Calif., has opened two new galleries covering Seabee training and operations in honor of the 70th anniversary of the D-Day invasion of Normandy, June 6, 1944. The two galleries are called "From Civilian to Seabee: Seabee Training During World War II" and "Seabees in the Atlantic Theater in World War II." The first allows visitors to learn about the U.S. Navy's hastily established training camps on the East and West coasts. These camps trained tens of thousands of men, creating the construction battalions destined for advance bases overseas. In the transformation from civilian to Seabee, visitors learn about the weapons, technical training, and organization of the various Seabee units. In the second gallery, visitors can look through the massive bow doors of a Landing Ship, Tank (LST) onto a mural of Omaha Beach and watch combat footage of detachments of Seabees handling the vitally important offloading of men and materiel.—*Press Release (June 3, 2014)* ■

## NOTES & QUERIES

Hagley Museum & Library (Wilmington, Del.) has acquired records covering the first-generation of high-speed **Metroliner** trains between New York and Washington. The Metroliner project, launched in 1964-65, never reached the design speeds of 160 mph, but did entice passengers back to the rails and laid a foundation for high-speed service on Amtrak's Northeast Corridor. The records, a gift of Robert B. Watson, detail his work on the prototype cars and an account of how politics and untried technology led to exasperating results. In other news from Hagley, the museum's machine shop (tour site—2004 SIA Fall Tour) is now up and running on a restored Type A Hercules Turbine manufactured by the Holyoke Machine Co. In addition to providing power to the shop's lineshaft, the 43-hp turbine powers a generator for electric lighting.—*Hagley Magazine (Summer 2014)*. ■

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## CALENDAR

### 2014

**Sept. 26-28:** Ninth Biennial Preserving the Historic Road Conference, Savannah, Ga. Info: <http://historicroads.org>.

**Oct. 5-8:** SIA FALL TOUR, SOUTHEASTERN INDIANA. Info: [www.sia-web.org](http://www.sia-web.org). Note the Sun.-Wed. schedule to take advantage of process tours.

**Oct. 18:** ANNUAL GREAT FALLS SYMPOSIUM ON IA IN THE N.Y.-N.J. AREA. Info: [www.roblingsia.org](http://www.roblingsia.org).

**Oct. 23-24:** National Workshop on Large Landscape Conservation, Washington, D.C. Info: [www.largelandscapenetwork.org/2014-national-workshop/](http://www.largelandscapenetwork.org/2014-national-workshop/).

**Oct. 23-26:** Society for the Preservation of Old Mills Annual Conference, Rochester, Mich. Info: [www.spoom.org](http://www.spoom.org).

**Oct. 26-30:** Assn. for Preservation Technology International Annual Conference, Quebec City, Que. Info: [www.apiti.org](http://www.apiti.org).

**Oct. 27:** National Society for the Preservation of Covered Bridges Annual Meeting, Westminster, Mass. Info: [www.facebook.com/nspcb](http://www.facebook.com/nspcb).

**Oct. 30-31:** Green Capitalism? Exploring the Crossroads of Environmental and Business History, Wilmington, Del. Hagley Museum & Library. Info: [clockman@hagley.org](mailto:clockman@hagley.org).

**Nov. 4-8:** Assn. of Tourist Railroads & Railway Museums Annual Convention, Rusk, Texas. Info: [www.atrrm.org](http://www.atrrm.org).

**Nov. 6-9:** Society for the History of Technology Annual Meeting, Dearborn, Mich. Info: [www.historyoftechnology.org](http://www.historyoftechnology.org).

**Nov. 12-14:** Construction History Society of America, Biennial Meeting, Minneapolis, Minn. Info: [www.constructionhistorysociety.org](http://www.constructionhistorysociety.org).

**Nov. 10-14:** National Trust for Historic Preservation Annual Conference, Savannah, Ga. Info: [www.preservationnation.org](http://www.preservationnation.org).

### 2015

**Jan. 6-11:** Society for Historical Archaeology Annual Meeting, Seattle, Wash. Info: [www.sha.org](http://www.sha.org).

**Apr. 15-18:** National Council on Public History Conference, Nashville, Tenn. Info: [www.ncph.org](http://www.ncph.org).

**Apr. 15-19:** Society of Architectural Historians Annual Conference, Chicago, Ill. Info: [www.sah.org](http://www.sah.org).

**June:** SIA ANNUAL CONFERENCE, ALBANY/SCHENECTADY/TROY, N.Y. Exact dates in June to be announced pending confirmation of hotel arrangements. Info: [www.sia-web.org](http://www.sia-web.org).

**June 3-7:** 5th International Congress on Construction History, Chicago, Ill. Info: <http://5icch.org>.

**June 11-14:** Mining History Assn. Annual Conference, Virginia City and Comstock Lode, Nev. Info: [www.mininghistoryassociation.org](http://www.mininghistoryassociation.org).

**Sept. 6-11:** 16th International TICCIH Congress, Lille, France. Info: [www.ticcih.org](http://www.ticcih.org). ■