Since the mid-18th century Warren Brook in Alstead, N.H. has powered mills. In early days a half-dozen mills stood along the stream flowing out of Lake Warren, grinding grain, sawing lumber, carding wool, fulling cloth, and grinding potatoes for starch. In the late 1800s these mills pressed cider, sawed boards, shingle, and lath, and manufactured rakes, chair stock, moldings, and pail and knife handles. These industries gathered around them the small settlement known as Mill Hollow, typical of many similar New England hamlets, with a church, school, store, and tavern within a mile or two of the mills.

In the early 20th century, steam-powered sawmills were hauled into the forest, replacing the old water-powered sawmills. Alstead's population declined from its height of 1,694 in 1810 to fewer than half that number by 1900, and the old Warren Brook mills ground to a halt. Massachusetts architect Hartley Dennett settled in Alstead a decade later, determined to escape the pace of life in Boston, which he called the Hellpot. He bought and dismantled a dilapidated sawmill owned by the Messer family that stood in Mill Hollow on the foundation stones of the town's first gristmill, built in 1767.

He saved the building's northwest wall, hand-hewn beams, and windows, and salvaged machinery from other Alstead mills that had fallen into disuse. With his brother, Vaughan Dennett, he covered the upstream face of the ancient stone dam with reinforced concrete, marking in its top surface the date: 1919. Vaughan and Hartley Dennett had founded the Aberthaw construction company in 1893, pioneering a new type of concrete formulated for the harsh extremes of New England weather.

Hartley Dennett used the waterpower in his mill to run the machinery in his woodworking shop, producing paneling, (continued on page 2)
moldings, and other accessories for the houses he built or remodeled in the Colonial Revival style he favored. Neighbors shared use of a threshing machine in the mill and sawed firewood with a huge circular saw that stood in the millyard. Dennett and his wife Margaret gathered a rural community and summer residents who discussed progressive philosophy, politics, and economics upstairs around the fireplace in the mill's community room. Square dancing, music, a summer camp, and craftspeople also used the space. At his death in 1936, the mill passed to Dennett's stepson, Heman Chase, a surveyor and engineer who ran it for the next 50 years.

Now known as Chase's Mill, it is just one of a handful of water-powered woodworking mills left in New Hampshire. The non-profit Mill Hollow Heritage Association (MHHA) purchased the building in 2016 and began an extensive rehabilitation, funded by two major grants from New Hampshire's Land and Community Heritage Investment Program, several private foundations, and numerous other donors.

From the beginning, the all-volunteer organization committed to restoring the mill's waterpower as well as the building. First, the group was dedicated to preserving the knowledge and technology that created Mill Hollow. Second, MHHA is working to connect that knowledge to today's need for a carbon-free, sustainable energy source. The advantage of hydropower at the scale used in Chase's Mill is that its source, its mechanics, and its potential are all visible to visitors and workers alike.

Today, the two turbines Hartley Dennett purchased over a century ago are back in operation after being rebuilt by A & L Machining of Williamstown, Vt. and Jay Boeri of Hartland, Vt., who also built the new penstock.

Letters between Dennett and Heman Chase document the purchase of a used 24-in. Wetmore turbine. According to a USGS publication titled *Turbine and Waterwheel Tests and Power Tables* (1906) these turbines were "made by Sullivan Machine Company, Claremont, NH. This turbine has [an] outside register gate. The buckets are large and the guide chutes few in number. The buckets are curved axially and radially, but do not protrude beyond the lower rim band of the runner."

With a runner whose diameter measures 21 in., the 1906 USGS publication gives a horsepower of 17.41 at 260 rpms, (continued on page 4)
SIA Lehigh Valley Conference
Postponed to 2021 Due to Coronavirus

On March 28, 2020, the SIA board voted to postpone the Lehigh Valley Annual Conference until June 2–6, 2021 due to the coronavirus pandemic. At the beginning of March, this action seemed nearly incomprehensible. The local planning committee, SIA officers, and the conferences and tours coordinator had been working for nearly 18 months to organize tours, hotels, entertainment, papers, and food. But as you all know, things changed very fast for all of us and by the middle of March it was clear to everyone that we would have to postpone. While the committee considered alternate 2020 dates, we felt it would be best to reschedule the entire Lehigh Valley conference for Spring 2021.

This decision was unanimous among the SIA board and planning team and the local planning committee. Not only did public health needs drive this decision, but there was concern that people would be reluctant to travel so soon after the presumptive reopening. Further, we learned that while Pennsylvania will begin reopening the state on May 8, before each of the six subregions of the state can reopen it must demonstrate a clear reduction in COVID-19 cases over a 14-day period, then there will be a 14-day partial reopening phase with limitations on public gatherings and business openings with social distancing likely continuing through the summer.

So, given the high number of cases in and around Bethlehem, it is unlikely that we would be able to even hold the conference at the end of May.

As we know, the pandemic has affected all sectors of the economy, so most organizations were able and even eager to adapt to our new schedule. Courtney Murtaugh, SIA conferences and tours coordinator, successfully rebooked the Hotel Bethlehem for June 2–6, 2021 at no additional costs or fees and included a clause that would allow us to void the contract for a global health crisis. The three sponsoring museums, the Anthracite Heritage Museum, the National Museum of Industrial History, and the National Canal Museum were each easily able to alter schedules for venues, and all of the heritage and museum stops on the tours could easily be rescheduled. Many of our process tour sites are large, long-established companies and should weather the crisis without too much disruption. Some, as the SIA has seen too often, however, may not. We will have to wait until we get a bit further along in the recovery to see if any of our sites will not be able to host us.

So what are you doing in June 2021? It will be the 50th anniversary of the founding of the SIA and we look forward to seeing you in the cradle of American industrialization. Come along and tour the active Anthracite coal mines, slate quarries, and cement plants that defined their industries and are still operating after centuries. Come see remarkable heritage projects that transformed former steel plants and mining towns into active educational spaces. Come ride the last mule-driven canal boat in the country and visit preserved quarries, blast furnaces, and bridges. Come see some of eastern Pennsylvania’s heavy industries and high-tech laboratories. We’ll be waiting for you!

Sincerely, the Lehigh 2021 SIA Planning Committee: Bode Morin, Kara Mohsinger, Mike Piersa, Daphne Mayer, Martha Capwell-Fox, Nicholas Zmijewski, Ann Bartholomew, Bob Bilhemier, Mark Connar, Patrick Harshbarger, Ed Hoy, Bill Inderrieden, Jim Kenner, Jerry Lennon, Jet Lowe, Don Young, John McConnell, Brian Schmult, Kevin Mock, Trevor Shellhammer, Kris Thompson, Christopher Marston, Courtney Murtaugh, Saul Tannenbaum, David Simmons, Pennsylvania Historical and Museum Commission, the National Museum of Industrial History, the Delaware and Lehigh National Heritage Corridor, and the Industrial Archives & Library.
rated for a 16-ft. head. MHHA millwright Bob Brown has recorded 382 rpms, operating the Wetmore turbine just below top speed. Dennett and Chase’s water-powered lathe and planer stand in the mill’s workshop just where they were decades ago.

The smaller turbine at Chase’s Mill is a 9-in. scroll-case Tyler wheel, likewise made in Claremont. At 493 rpms, it generates a modest 2.42 horsepower. Today, Chase’s Mill has installed an alternator to generate 12-V DC power from this smaller turbine. MHHA plans to use the small-scale hydro-electric system to light the lower level of the mill.

A new steel penstock with a 20-in. diameter carries water to both turbines. The smaller arm of the penstock is equipped with a nozzle fitted to a garden hose that can direct water to smaller demonstrations such as a scale model Pelton wheel.

Upstairs in Chase’s Mill, visitors will see scale models of an up-and-down sawmill used in countless small New England mills through the 1700s and early 1800s, when such mills were gradually replaced by turbine-powered circular saws. Heman Chase also built an accurately scaled model of a grist mill powered by an overshot wheel. MHHA plans exhibits to illustrate the development of waterpower through the past two and one-half centuries: undershot or flutter wheel, overshot and breast wheels, tub wheel, Pelton wheel, and turbines of various designs. Calculating the efficiency of these devices will stimulate and enrich STEM education as MHHA expands its outreach to local schools, children’s groups, and learners of all ages.

When the pandemic passes and Chase’s Mill can open fully, the workshop on the ground floor will offer woodworking classes, following the tradition of Heman Chase, who invited local children into his mill on Saturday mornings to tinker, play, and create. MHHA is acquiring a shallow pond area where children can launch handmade wooden rafts or experiment with model water wheels. A nature trail behind the mill will lead visitors along a path where the foundations of 19th-century mills can still be seen. Indoors, above the workshop, the community room will again host events including music, poetry, and story-telling.

To learn more about Chase’s Mill and its programs, visit the MHHA’s website at www.millhollowheritageassociation.org or its Facebook page: https://www.facebook.com/ChasesMillinMillHollow/.

Helen Frink
Launched in 1888 at William Cramp & Sons’ Philadelphia shipyard, USS Vesuvius was a test bed for a pneumatic mechanism for projecting explosive charges. The author’s photograph of Vesuvius (a flea market find) may be significant in that it was not found among photographs readily available on the internet, structures in the background reveal the photograph’s exact location, and subsequent conversion of the ship approximates the date of the photograph.

An Act of Congress authorizing the 246-ft.-long, 26-ft.-beam ship was approved in 1886. The contract was awarded to the Pneumatic Dynamite Gun Co. of New York City, which subcontracted the hull and other machinery to Cramp. The keel was laid in 1887, and the ship was commissioned in 1890.

Cramp in 1902 praised the ship, stating that she performed well during “extremely heavy weather” off Cape Hatteras in 1893, suffering “no injury more serious than the loss of a boat or two and some shaking-up of her deck-house.” Others disagreed, complaining that Vesuvius rolled terribly, the steering engine was underpowered, and the twin screws were so closely spaced that they couldn’t turn the vessel under certain circumstances.

The ship’s innovative armament consisted of three 15-in.-diam., 55-ft.-long tubes, which were fixed in place and diagonally penetrated the deck from below. Secrecy led to at least one erroneous report that the firing process entailed the explosion of powder in one tube, the consequent creation of compressed air in the second tube, and transfer of that pressure to the third tube, from which the projectile was discharged. However, official reports state that each tube was an independent direct-fire unit, the projectiles being driven by compressed air held in pressure tanks located below deck.

The pneumatic system was promoted by its manufacturer as safer than conventional propellant (silk bags containing powder) because it subjected the explosive charge to less mechanical shock upon firing, thereby reducing the potential for premature explosion. The charges were as large as 500 lbs., composed of desensitized blasting gelatin.

Disadvantages of the weapon were its short range (maximum 1.5 miles, regulated by adjusting the quantity of compressed air) and the non-adjustable position of the tubes (the entire ship had to be turned in order to bring the guns to bear on a target). The advantages were that Vesuvius could strike unseen and unheard. Unlike a conventional gun, the pneumatic gun made no flash when fired, and far less sound. When Vesuvius bombarded Santiago, Cuba, under the cover of darkness during the Spanish-American War in 1898, the sudden and unexplained explosions reportedly caused great consternation among the Spanish forces.

The author’s photograph is enclosed in a black wooden frame 22 in. by 18 in., behind glass that contains a few elongate bubbles, with a stamped plate that reads U.S.S. VESUVIUS. Examination of the photograph with respect to

Bernstein’s photograph of USS Vesuvius.
two other sources identifies the exact location. Objects in storage on the open ground, a one-story building, and two dwellings are visible in the background. The author’s library includes a book (title page absent) that contains a photograph on which the same objects and building are visible. The caption identifies the location as the League Island Navy Yard, Philadelphia. The U.S. Engineer Office survey of 1942 depicts eight dwellings along the Delaware River waterfront at the navy yard. Despite some minor changes, the two dwellings in question are clearly identifiable on Google Earth street-level photographs as 1201 and 1203 Admiral Peary Way (Boulevard). The marginal wharf where Vesuvius is moored on the photograph was later improved with a ferry slip.

Removal of her pneumatic tubes for the conversion of Vesuvius to a torpedo-testing boat at the Boston Navy Yard in 1904–1905 allows for the photograph to be approximately dated. Because her pneumatic guns are still in place, the photo was taken in, or prior to, 1904.

After her service at the Naval Torpedo Station in Newport, R.I., ended in 1907, Vesuvius remained there as a station ship into 1921. She was sold for scrap to J. Lipsitz and Co. of Chelsea, Mass., in 1922.

A second dynamite cruiser was authorized by Congress in 1889, contingent on the Secretary of the Navy’s satisfaction with the first. It was never built. As noted by Cramp in 1902, “the pneumatic system as applied in her did not prove popular with the leading influences of the navy.” The Vesuvius-class warship with pneumatic deck guns was demoted to the pages of industrial and naval history.

Michael Bernstein

Yard of the William Cramp & Sons Ship & Engine Building Co., 1892. The conical object is Atlas, the floating derrick (built 1892).

Close up of tubes for pneumatic guns on the USS Vesuvius.

Insights From the SIA Membership Marketing Survey

The SIA Board and Membership Committee set out in 2018 to learn more about our members’ views, in part to help develop appropriate planning strategies. As part of that effort, the SIA approached the American Marketing Assn. at Michigan Tech (AMA) for assistance creating a survey to research SIA membership growth. It will come as no surprise to long-time members that learning about the society from a friend or colleague is the most effective way to recruit new members. Declining membership, however, tells us that we need additional strategies.

Acting on the committee’s recommendations, the Board authorized Jun Min, Professor of Marketing, and marketing student Sam Weckler, to complete a two-part survey of SIA members and non-members. SIA HQ had first conducted a survey of 280 members in 2018. Min’s and Weckler’s follow-up, completed in late 2019, surveyed both SIA members (334 responses) and potential members (40 responses). Committee members met with Min in January to review the report’s findings and recommendations.

Consistent with the reality that less than 30% of members attend the annual meeting or the fall tour, the survey indicated that members value the SIA Newsletter the most, followed by the IA Journal. Min noted that these publications represent the value we offer our members. The task then becomes building on them for growth.

We can grow the society from both our strengths and from our weaknesses. We can look for ways to enhance SIAN and IA. We can address weaknesses in our programs and our membership demographics. Min pointed out that the survey indicated issues with the fall tour. While intended to go to locations the annual meeting can’t, this doesn’t mean we should avoid opportunities to enhance the fall tour for the benefit of more members. The same can be said for the annual meeting. For example, we might post narrated slide presentations or videos to the Internet. Improvements to these programs might also help to bring in members of a wider variety of ages and backgrounds.

The survey of non-members gives insights about where and how to seek new members. Min and Weckler contacted about 3,000 publicly available email addresses associated with academic history programs, museums related to industrial history and mining, and former SIA members, of which only 40 responded. Among these respondents, the society is perceived as professional, preserving history, and a place to learn something new. SIA should leverage these perceived strengths across all communications with both existing and non-members. Besides reaching out to those non-members who wanted more information about SIA, we should raise the visibility of our preservation efforts and emphasize both our professional and our learning opportunities. Based on the responses from non-members, the best places to do this are YouTube and Instagram, and other platforms popular with younger members.

One final insight from the study is that SIA members become very loyal after ten years. Bottom line: SIA must manage its image to increase and maintain members. We need to increase our awareness that newer members (less than ten years) have different needs from older members (more than ten years).

Members can contribute to these initiatives in any number of ways: interact frequently with SIA’s social media, or volunteer with the Social Media committee. Contributions to the Eric DeLony Industrial Heritage Preservation Grant Fund will allow the society to support more projects and therefore increase our visibility. We can also raise our preservation image by supporting at-risk IA sites. For example, by passing motions of support at the annual business meeting and cross-posting with their social media efforts. But we need you to tell us about them—and we need you to tell them about the SIA. Most importantly, the study reinforced what we all know: nothing is more powerful in attracting new long-term members than a friend or colleague’s introduction.

Mark Brown, Christopher Marston, and Suzanne Wray
Richard Sanders Allen Collection
Now Accessible at Burden Iron Works Museum

The Hudson Mohawk Industrial Gateway’s Burden Iron Works Museum in Troy, N.Y., has recently completed cataloging a large collection of material donated by noted engineering historian Richard Sanders Allen (1917–2008). Allen was world-renowned for his research into the iron and steel industries, early aviation, and especially the history of American covered bridges. The Gateway’s portion of the collection is eclectic and wide ranging, but its major theme is the history of iron and steel, in the U.S. and internationally. The collection’s strength is its coverage of the history of the iron and steel industries in the Eastern U.S., particularly New York, Connecticut, Massachusetts, New Jersey, and Pennsylvania, but it also includes material on virtually every state that had an industry, as well as Canada, the U.K., and Europe. Another small focus of the collection is bridges, especially covered bridges; Allen was known as the “father of covered bridged history.” The bulk of his collection of covered bridge photos and research was donated to the National Society for the Preservation of Covered Bridges.

The Gateway’s Allen collection consists of 47 boxes of material, including books, pamphlets, research notes, and correspondence. Sanders also collected material on the aviation industry and was the author of books on Northrup and Lockheed. This material was donated to the Empire State Aerosciences Museum in Glenville, N.Y. Given the nature of the Sanders collection, it will likely be necessary for researchers wishing to access it to schedule an appointment to visit the Burden Iron Works Museum, although the Gateway is prepared to make copies of a limited amount of material. A Finding Aid is available through the Gateway’s website, www.hudsonmohawkgateway.org. For additional information and inquiries, please contact info@hudsonmohawkgateway.org.

Steve Muller

While most museums remain closed at press time, or are only slowly reopening, here is a selection of online IA to enjoy from home.

SIA Launches IA Online: A Series of Talks on IA Topics. Join the SIA via Zoom for a series of curated talks by expert presenters with Q&A and discussion. Subjects include manufacturing, extractive industries, bridges, mechanical engineering, power generation, railways, and other topics of IA interests. Visit the SIA web site to see upcoming IA Online sessions: https://www.sia-web.org/ia-online-a-series-of-talks-on-ia-topics/. Current SIA members will receive email invitations in advance of the sessions. View the presentations from past sessions on the SIA’s new Youtube Channel: https://www.youtube.com/channel/UCX5PT7jpbIDqUHQJ-M-51LjBlg. If you are interested in being a presenter in the IA Online series, contact Daniel at SIA Headquarters (sia@siahq.org).

The Atomic Heritage Foundation website https://www.atomicheritage.org/tours hosts online videos, tours, and other resources on the sites in the Manhattan Project National Historical Park. Thematic videos and photos are also offered, such as environmental impacts, innovations, espionage, and others.

Down the Old Potomac On the C&O Canal; A Thomas Edison Film (1917) (www.youtube.com, search on Down the Old Potomac) is a black & white film about the Chesapeake & Ohio Canal (1831–1924) when it was operational, with water, locks, gates, towpath, and boats. The C&O Canal was used to transport goods from Cumberland, Md. to Washington D.C., but was ruined by flooding and abandoned.

Explore the Ford Piquette Avenue Plant in 3D and virtual reality: https://my.matterport.com/. Take a walk through the plant, view floor plans, and see it from a different angle in dollhouse view, or experience the plant in virtual reality if you have VR equipment.

The Mining History Association website https://www.mininghistoryassociation.org/VirtualMiningTours.htm offers a starting page for a variety of virtual mine tours, with links to photo galleries from many of the MHA’s previous tours and events. Features mines, mining towns, and additional resources.

NASA Research Centers. NASA offers online visitors the chance to take virtual tours of the organization’s research centers, where aeronautic technology is developed and tested. The online tour of Langley Research Center (https://oh.larc.nasa.gov/oh/) in Hampton, Va. covers 16 locations, including the Flight Research Hangar and the Katherine Johnson Computational Research Facility. The virtual tour of the Glenn Research Center (https://www.nasa.gov/glenn-virtualtours) in Ohio takes visitors inside facilities such as the Supersonic Wind Tunnel, where high speed flight is researched, and the Zero Gravity Research Facility.

The National Museum of Industrial History (Bethlehem, Pa.) offers a virtual museum (http://www.nmih.org/virtualmuseum/) during its coronavirus shut-down. Highlights include a virtual museum tour and online lectures (presented live on

(continued on page 14)
Hazard in a Rustbelt City: Integrating GIS, Archaeology, and Spatial History. Urban Science Vol. 3, No. 3 (2019) 83. https://doi.org/10.3390/urbanosci030083. Combines the historical spatial data infrastructure (HSDI) concept with archaeological predictive modeling to demonstrate a GIS-based landscape model for identifying the persistence of historically-generated industrial hazards in postindustrial cities. Draws on both historical and modern spatial data to project the presence of persistent historical hazards across a city. This approach provides closer cooperation among fields of archeology, heritage, urban redevelopment, and environmental sustainability.

Textiles


Water Transport

- Daniel Hubbell. Morgan Line Brought Numerous Innovations In Cargo Handling. Waterways Journal Weekly (Apr. 23, 2018). https://www.waterwayjournal.net/2018/04/23/morgan-line-brought-numerous-innovations-in-cargo-handling/. The New Orleans-based (Charles) Morgan Steamship Co. was established 1855, and was leased in 1883 by the Southern Pacific RR Co., which eventually purchased the line. The Morgan line served Galveston and Houston, and east coast ports as far north as Boston. The article summarizes systematized rail-to-water materials handling improvements at the New York City and Algiers-New Orleans terminals. Operations ceased shortly after the beginning of WWII, when the company's ships were purchased by the U.S. government.

Railroads


**Brian McMahon. James J. Hill and the Minnesota Transfer. Ramsey County [St. Paul, MN] History (Fall 2019), pp. 19–29. Describes the creation of an association of railroads to build a joint livestock facility in the Midway area of the Twin Cities. It grew into a wildly successful cooperative freight railway that attracted industry to build near its transfer facilities.

**James A. Stolpestad. Great Northern Iron: James J. Hill’s 109-year Mining Trust. Ramsey County [St. Paul, MN] Historical Society, 2020. 348 pp., illus., maps. $60. Avail: https://www.greatnorthernironbook.com/. Great Northern Iron Ore Properties was formed in 1906 to acquire, manage, and lease 67,000 acres on the Mesabi Range. It accounted for 15% of the iron ore and taconite shipped from Minnesota and distributed $500 million in dividends to stockholders in the Great Northern Ry.

**The Streamliner (Union Pacific Historical Society) Vol. 34, No. 1 (Winter 2020) includes James L. Ehrenberger and Marc A. Entze, Union Pacific’s Last Steam Rotaries: Lima-Hamilton 075 and 076 (rotary snow plows); James L. Ehrenberger and Marc A. Entze, 075 Opens the Yellowstone Branch: The 1956 Spring Campaign; James L. Ehrenberger and Marc A. Entze, 900076: The Last Steam Rotary; Rob Leachman, Camas Prairie Log Car Study (first-person account of a 1974 expedition to determine log-car needs of lumber mills on the Camas Prairie RR, jointly owned by UP and the Burlington Northern RR).

**Charity Vogel. The Angola Horror: The 1867 Train Wreck That Shocked the Nation and Transformed American Railroads. Cornell Univ. Pr., 2018. New edition of history first published in 2013 of the derailment of a New York Express train of the Buffalo & Erie RR on the bridge over Big Sister Creek near Angola, N.Y. on the banks of Lake Erie. The disaster included two cars falling to the creek below and one of these catching fire, resulting in 50 casualties and dozens more injured.

**Automobiles & Highways


**Buildings & Structures

**Addie Broyles. Out of a Former Cheese Factory, The Momentary Fuels a Modernist Turn in Bentonville. Metropolis (Apr. 8, 2020). https://www.metropolismag.com/architecture/cultural-architecture/the-momentary-arkansas/. A 63,000-sq.-ft. decommissioned Kraft cheese factory was adapted by Crystal Bridges Museum of American Art into the Momentary, a satellite space dedicated to contemporary American art. The former Bentonville (Ark.) factory first opened in 1913 as a flour mill and was shuttered in 2013. Article includes a photo gallery.

**Aili McConnon. Detroit’s Revival Is Anchored in Its Train Station. NYT (Jan. 21, 2020). Ford Motor Co. is transforming Detroit’s long-vacant Michigan Central Station (seen on the 2005 SIA Fall Tour) as well as an adjacent book depository, brass factory, and hosiery factory into a 1.2 million-sq.-ft. transportation innovation district.


**Michelle Young. A Terra Cotta Beauty Sits Alone Beneath the Queensboro Bridge. Untapped New York (Mar. 12, 2020). https://untappedcities.com. The 1892 office building of the New York Architectural Terra-Cotta Co. in the Long Island City neighborhood of New York City was a showpiece of the manufacturer’s product. A designated New York City Landmark, it is all that is left of the factory, which was demolished in 1974.

**Water Control & Reclamation


**Power Generation


**Windmills’ Gazette. Vol. 39, No. 1 (Winter 2020) includes Mike West, ‘Radio on a Farm Is Not a Luxury—It Is a Necessity!’: Parmak Wind Chargers; T. Lindsay Baker, How Windmills Moved from Factory to Farm; Francine McGuire-Popeck, A (continued on page 12)
The Newlin Grist Mill in Glen Mills, Pa. has been an operating waterpowered mill for most of the last three centuries. Built in 1704, it operated as a commercial business until 1941 and reopened as a museum following a restoration in 1960. Since 2013, the Nicholas Newlin Foundation has been documenting elements of the waterpower system as part of its Public Archaeology Program and during restoration activities. The purpose of the ongoing documentation is to better understand the evolution of water power on the site and to inform accurate restorations needed to maintain the system.

The mill’s spillway gate has deteriorated and has developed significant leaks and is the next project being considered for restoration. The remaining masonry is concrete-encapsulated stone construction hinting that evidence of earlier structures lies beneath. The Nicholas Newlin Foundation established a collaboration with West Chester University’s College of Sciences and Mathematics to conduct a study of the spillway gate. Under the direction of Heather Wholey, Chairperson of the Dept. of Anthropology and Sociology, five students excavated the western end of the spillway gate during February and March 2020.

The students investigated the slope in front of a low wall to the west of the gate with two test units. They were looking for evidence of other structures or earlier spillway configurations. They found no evidence of additional structures but did expose the gate’s wall and evidence that the low wall was a secondary overflow. As the soil was carefully troweled away from the wall’s face, a wooden plank was exposed that appears to be a plank or gate associated with the opening in the low wall. Beneath the plank were fragments of a mortar apron, probably installed to protect the base of the wall from erosion.

The race side of the gate wall was also exposed to further examine the masonry and identify any construction details. An apron was located in front of the opening in the low wall.

Students excavating apron upstream from low wall next to gate.

Spillway gate (millrace side) after being dewatered.

Spillway gate (downstream slope side) after being dewatered.

Investigating Newlin Grist Mill’s Waterpower System
SIA Grant Helps Restoration
**Newlin Grist Mill** (continued from page 11)

wall in what may have been a spillway or gate area. The exposed wall section showed multiple periods of construction. A trench is also being extended across the race at the gate to determine the configuration of the millrace.

More work remains to be done to investigate the east end of the gate and beneath the floor of the gate. An Eric De-

![Stone wall with wooden plank.](image)

Lony Industrial Heritage Preservation Grant from the SIA has funded equipment necessary for the field work and will convert the field notes into a set of drawings that will document and interpret the structure.

Tony Shahan

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**Publications of Interest** (continued from page 10)


**Misc. Industries**

- Ken Bartowski. *A Model Aircraft Armada*. New York Archives (Fall 2019), pp. 20–23. How high school shop students across the country were enlisted to build scale-model aircraft to train military and civilian personnel to identify threats during WWII. To speed production and meet federal quotas, various written guides and tool jigs were produced to assist the effort.

- Declassified Cold War Satellite Camera Returns Home to Rochester. [RochesterFirst.com](https://www.rochesterfirst.com/news/digital-exclusives/). A Cold War camera assembly that was part of the GAMBIT satellite system is now on display at the Rochester Museum and Science Center’s Strasenburg Planetarium. Between 1963 and 1967, Gambit-1 flew 38 missions and consistently returned high resolution photographs to Earth. The project was declassified in 2011.


**Abbreviations:**

- NYT = New York Times
- OMN = [Old Mill News](https://www.mnactec.com/ticcih), published by the Society for the Preservation of Old Mills (SPOOM)
- TICCIH = [The International Committee for the Conservation of the Industrial Heritage](www.mnactec.com/ticcih)
- Timeline = published by the Ohio Historical Society, $40/yr. Info: (614) 297-2315

Publications of Interest are compiled from books, articles, and digital media brought to our attention by you, the reader. SIA members are encouraged to send citations of new and recent books, articles, CDs, DVDs, etc., 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 Marni Blake Walter, Editor, SIA Newsletter, 11 Esty Rd., Westmoreland, NH 03467; sianeditor@siahq.org.
On May 2, 2020, we lost a longtime stalwart of the Society for Industrial Archeology, Lance Metz, due to the coronavirus. Born in Phillipsburg, Pennsylvania in 1947, Lance was a prolific historian, curator, and collector for the National Canal Museum, now a program of the Delaware and Lehigh National Heritage Corridor in Easton, Pa. For over three decades he was a staunch advocate for industrial archeology, collecting and preserving technological artifacts and documents, and publishing on a broad array of topics. Until a health crisis in 2013, Lance was an outsized presence and polymath at SIA conferences and tours; he served as a member of the SIA board from 1999 to 2002, chaired the fall tours of Easton (1988) and Lehigh Valley (2002), and won the SIA General Tools award in 2005. He also chaired the annual Canal History and Technology Symposium which ran for thirty years. His prodigious memory and vast knowledge could dominate any conversation on industry, mining, railroads, automobiles, canals, steelmaking, Roebling bridges, and even Formula 1 racing. He was also an avid personal collector of the Voyageurs and early fur trading in the Americas.

Lance had a significant impact on industrial history and heritage in eastern Pennsylvania. According to Martha Capwell Fox, current historian at the National Canal Museum, one of Lance’s most important contributions was understanding the “primacy of anthracite (over water power) in the U.S. industrial revolution, and then steering the museum into building a collection in that direction; not just focused on the canals themselves, but their key role in efficiently transporting [anthracite coal].” Ms. Capwell Fox noted in her remembrance of Lance published on the Canal Museum blog that “at a time when there were few repositories for industrial history, Lance collected—and saved from destruction—hundreds of documents, records, photographs, maps, and artifacts of the coal and canal companies, railroads, iron works, steel mills, foundries, bridge constructors, engineering and mechanical firms, and textile mills. He also collected and documented the stories of the people who founded, invented, worked in, and ran those industries.”

Lance was also keenly aware of the decline in Bethlehem Steel in the 1980s and worked to secure a HAER documentation project of Big Steel and developed a steel worker oral history project. In 1988, he led two major HAER inventories for which he wrote the histories: the Beth Forge Division of Bethlehem Steel Corporation (HAER PA-186,-A-C); and Bethlehem Steel, South Works (HAER PA-386, -A-F). He contributed to the PBS documentary “Bethlehem Steel: The Company that Built America,” consulted on the Sands Casino and Steel Stacks Project, and was an early proponent of establishment of both the Delaware and Lehigh National Heritage Corridor and the National Museum of Industrial History.

A prolific writer and editor (his WorldCat bibliography includes 133 entries), Lance was the editorial director of the Canal History & Technology Press, contributed to several books on Bethlehem Steel and canal history, as well as wrote on a variety of subjects from a biography of John A. Fritz, to histories of anthracite industry in the Lehigh Valley, the Central RR of New Jersey, and the Engineering Foundation, among others. A few of his notable publications include Canal History and Technical Proceedings XXII (ed., Easton, Pa.: Canal History and Technology Pr., 2003); introduction to Bethlehem Steel (Princeton, N.J.: Princeton Architectural Pr., 1999); The Steel: Photographs of the Bethlehem Steel Plant, 1989–1996 (with Joseph E. B. Elliott and Betsy Fahlman, Chicago: Columbia College Chicago Pr., 2012); and Bethlehem Steel in Bethlehem, Pennsylvania: A Photographic History (with Ann On page 14)
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M. Bartholomew, Donald Stuart Young, and John B. Lovis, Easton, Pa.: Canal History and Technology Pr., 2010). Lance Metz was an active member of several organizations besides the SIA, including the New Jersey and Pennsylvania Canal Societies, Jacobsburg Historical Society, Steel Workers Archives, and numerous other national and state historical groups.

John Reap fondly recounted an event during a tour of Belle Grove Cemetery (Annual Conference, Savannah, 1999): “Our guide took us over to one of the tombs and said something to the effect that ‘now, I wouldn’t expect y’all to know about General X, Confederate States Army . . .’ Lance seized the moment, erupting into a thirty-second synopsis of the general’s military career in his staccato east Penn patois. You could almost hear our guide’s jaw hit the ground, his thunder stolen by a Yankee, but it was he who had unknowingly proffered an implicit rhetorical challenge. I think most of the group took the tone of ‘now, I wouldn’t expect y’all,’ as Confederate-state condescension, excusing Lance’s breach of etiquette as a point for Team Blue.” Attendees at the Milwaukee Annual Conference (2005) will remember the roar of the SIA crowd upon Pat Malone’s retelling of this incident during his presentation of the General Tools Award to Lance.

Lance had a phenomenal memory, and above all, he was one of those characters whose contributions enriched the SIA experience, one who loomed larger than life because of his fervent, energetic approach to the value of history.

Lance is survived by his wife of 36 years, Susan Holman Metz, and brother Keith J. Metz and his wife Lynne of Harmony Township, N.J. Lance was proud of his nephews, Daniel K. Metz, Justin Holman, Jeremy Holman, Casey Holman, and Jason Holman. He is predeceased by his parents Earl R. Metz, a WWII veteran, and Betty Mae Housel Metz.

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Facebook during the shut-down and recorded for later viewing). One example is “Demise of the Martin Tower,” on Bethlehem Steel’s showpiece corporate headquarters building and office campus, completed in 1972 on a hillside overlooking the South Bethlehem steel mill. The tower’s cross-shaped floorplan was allegedly selected to maximize the number of corner offices, illustrating an internal culture that fetishized such indicators of status. Despite several attempts to repurpose it, the tower was imploded in May 2019.

Toys: The Story of Toy Manufacturing in the Central Connecticut River Valley (https://hsccnh.org) is an exhibit originally on display this spring at the Historical Society of Cheshire County, Keene, N.H., which can now be viewed as an online publication (see link on website). The exhibit traces the history of toy manufacturing in the region and the place of toys in popular culture. The manufacturing history of local companies Wilkins Toy Co. (later Kingsbury Toy Co.), Whitney Brothers, Douglas Toy Co., and many others are featured. The exhibit was planned to later move to Brattleboro, Vt. and Peterborough, N.H. Check back for updated info.


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: sianeditor@siahq.org.

Call for Articles for IA

With the postponement of our annual conference, my usual ability to reach out to presenters whose paper would make a good article for IA has been short circuited. Instead, this call for articles invites would-be presenters and others to submit their papers to IA. Submissions may be based upon your presentation for this year’s conference or on those that have been given in past conferences, but any researchers working on interesting IA-related projects are encouraged to submit to the journal. Publication of your work does not preclude you presenting on the topic at a subsequent conference.

The full style guide and submission instructions can be found on the SIA website (www.sia-web.org), but it would be fine if you roughly model your draft on current IA articles. Articles are typically about 6,000 to 8,000 words, with about a dozen images, and use endnotes for citing sources. Articles outside the typical scope of IA can also be considered, and I would be happy to discuss a topic with potential contributors to think about how it might be framed for a journal article. For more info or to submit an article: sawalton@mtu.edu.

Steven Walton, IA Editor
The Barre (Vt.) Historical Society has reached a new milestone in preservation of the Socialist Labor Party Hall (banquet site, SIA Fall Tour 2010). The most recent project has been renovation of the bakery, located behind the hall. Built in 1913 to provide fresh bread for the Union Cooperative Store, the large, wood-fired, brick oven is once again producing fresh-from-the-oven sourdough, three days per week. The bakery is serving as a classroom and workshop for aspiring young bakers. The Socialist Labor Party Hall was built in 1900 by Italian immigrants, most of whom worked in nearby granite sheds and quarries. Today, the hall is a National Historic Landmark under the care of the Barre Historical Society. For info or to make a donation to the ongoing restoration activities: https://oldlaborhall.org.

The Schoharie Crossing Stabilization Project, an initiative of Montgomery County, N.Y. with support from the Preservation League, Erie Canalway National Heritage Corridor, Canal Society of NYS, and others, received $600,000 from the NYS Office of Parks, Recreation, and Historic Preservation League of NYS (Jan. 15, 2020) for site clean up to allow better public access to the falls. Meanwhile, the 80-year-old Willamette Falls Paper Co. plant is now up and running once again after being idled for two years.—Willamette Falls Heritage Foundation Newsletter (Spring/Summer 2019)

The Advisory Council on Historic Preservation (ACHP) offers free online distance learning opportunities to meet the needs of those working remotely during the coronavirus (COVID-19) pandemic. Seven free courses related to the Section 106 review process are available on ACHP’s eLearning portal, including a new 60-min. course, “What Now? Protecting Historic Properties in Disaster Recovery.” Info: https://www.achp.gov/training/elearning.

Call for Papers and Prototypes. TICCIH is accepting proposals for its Congress, Aug. 30–Sept. 4, 2021 in Montréal, Qué. The theme “Industrial Heritage Reloaded” is designed to encourage a redeployment of reflections and practices beyond classical “post-industrial” formulations. Subthemes range from the legacies of the Second Industrial Revolution to the future of working-class company towns to heritage-based sustainable development, deindustrialization to issues of urban preservation. Submission deadline: Aug. 30, 2020. For full call and conference info: https://patrimoine.uqam.ca/evenements/ticcih2021/

Cinecraft Productions Film Archive. The Hagley Museum & Library (Wilmington, Del.; tour site 1977 Annual Conference and 2004 Fall Tour) has acquired the film archive of Cinecraft. Founded in 1939, the Cleveland-based company was a leading commercial producer of industrial films. The collection bound for Hagley includes 1,700 projects from the 1940s into the 1970s. Prominent Cinecraft clients were DuPont, Hercules Powder, Standard Oil of Ohio, Firestone, Goodyear, Bethlehem Steel, Ohio Bell Telephone, General Electric, American Greetings, Carling Brewery, and Republic Steel. A selection of films will become available online in 2020. Info: www.hagley.org.—Hagley Magazine (Winter 2019)
CALENDAR

Please be advised to confirm all events and dates due to the coronavirus pandemic. All information was current, as best as could be determined, at the time of publication.

2020


Oct. (specific dates TBA): Association for Preservation Technology International (APT) and the National Trust for Canada Joint Conference, Hindsight 2020: Conservation, Disruption, and the Future of Heritage, previously to be held in Edmonton, Alb., has been changed to a virtual conference. Info: https://www.eventscribe.com/2020/APTTNT/.


2021


