



SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

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RUIN AND RESTORATION

The Fates of Two Historic Auto Plants in Detroit

A little after 10 p.m. on June 20, a fire engulfed the historic Studebaker plant (1906-1911) in Detroit's Milwaukee Junction Historic Industrial District some three miles north of the Detroit River. The western two-thirds of this sprawling brick factory has been abandoned and badly-deteriorated for decades, but the eastern third was occupied by the Piquette Market, a wholesale grocery store, and a wide variety of warehouses. High winds and timber floors, posts, and beams quickly turned this into a five-alarm fire that brought 150 Detroit firefighters to the scene. Only smoldering rubble and isolated walls remained by morning. Another Detroit industrial landmark is lost through "demolition by fire."

The Studebaker plant was the most impressive, if not the most significant, automotive building in the Milwaukee Junction district, an industrial area that developed at the junction of the Detroit & Milwaukee Railroad and two other lines. Milwaukee Junction was the "cradle of the Detroit auto industry," the home of Studebaker, Ford, Anderson Electric, Cadillac, Fisher Body, Wilson Body, Murray Body, and numerous parts and components suppli-

ers. While most of Detroit's large auto plants have been demolished in recent decades (Dodge Main, Lincoln, Cadillac, much of the Ford Rouge plant, and all of the historic Chrysler plants), much has survived in Milwaukee Junction. The Studebaker plant was the centerpiece of a collection of factories stretching along Piquette Ave., the core of the district.

The Wayne Automobile Company (1904) built the first section of this building in 1906. Three Detroit automotive pioneers, Barney F. Everett, William E. Metzger, and Walter E. Flanders, took over Wayne Automobile in 1908 and established the Everett-Metzger-Flanders Company and produced the EMF car. Critics claimed that EMF stood for "every mechanical fault" or "every mechanic's friend." EMF expanded the Wayne Automobile building into a large three-story brick factory complex that extended 677 ft. along the length of Piquette Ave. The Studebaker Corporation acquired EMF in 1910 and added a fourth floor to the building in 1911, creating a factory with two million sq. ft. of workspace. Studebaker assembled all of its automobiles at this plant from 1910 to 1928, when it shifted manufacturing to South Bend, Indiana, the firm's original

(continued on page 2)



Studebaker plant, Piquette Ave. facade, prior to the fire (left), aftermath (right).

Charles K. Hyde

home base. The company briefly produced the Rockne automobile in the Detroit plant in 1931 and 1932.

This complex was vacant for the rest of the 1930s. From around 1940 into the 1960s, Chrysler leased the western two-thirds of the factory to use as a parts warehouse. The IRS and the Detroit Public Library used the space for storage through the late 1960s, but it has been vacant since. The State of Michigan owned the eastern third of the building by 1940 and it served as the armory for the 182nd Field Artillery until the mid-1960s, when the state sold the property. This section has been continuously occupied by a variety of businesses including the Piquette Market.

The block immediately east of the Studebaker plant contains the historic Ford Motor Company Piquette Avenue Plant (1904), where Ford designed the celebrated Model T and produced the first 12,000. The building was spared any damage because of the heroic work of volunteers involved in preserving this factory. Three men spent the night on the roof of the Ford Piquette plant and used fire extinguishers to put out flaming embers that floated onto the roof. One of Detroit's rare historic preservation successes, the Ford Piquette plant barely escaped the wrecking ball a few years ago. A British entrepreneur purchased the building in 1989, but by the late 1990s plans were to demolish it and build a modern warehouse.

A group of historians and preservationists who were members of the Henry Ford Heritage Association launched the Piquette Plant Preservation Project in May 1998, and acquired an option to buy the building. This group estab-

lished the nonprofit Model T Automotive Heritage Complex, Inc. ("T-Plex") in April 2000 and then exercised its purchase option. With the first floor occupied by a uniform supply company, T-Plex volunteers have cleaned up the second and third floors and installed historical exhibits there. In early October 2004, the Ford Piquette plant hosted a two-day birthday party and open house celebrating its first 100 years. The Piquette plant is listed on the National Register of Historic places and is under consideration for National Historic Landmark status. T-Plex has received two substantial grants which will support (in 2005) a detailed IA study of the building by Richard K. Anderson, Jr. [SIA] and an extensive restoration of the facade, which is showing a few wrinkles at its advanced age. More fundraising and a lot more work lie ahead, but the survival of this significant building seems assured. This year's SIA Fall Tour includes a banquet at the T-Plex.

Charles K. Hyde



Studebaker plant fire, June 20, 2005.



Ford Piquette plant (T-Plex).

Charles K. Hyde

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 \$35; couple \$40; full-time student \$20; institutional \$50; contributing \$75; sustaining \$125; 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; Web site: 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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Motown Review VI: Detroit's IA in 2005

Editor's Note: Charles K. Hyde [SIA], professor at Wayne State University, has provided periodic updates on Detroit's IA for many years. This installment serves as a preface to the SIA's 2005 Fall Tour, Detroit, Sept. 29-Oct. 2.

This is the 25th anniversary of the SIA Detroit meeting of 1980 and fully half of the IA sites featured in the booklet prepared for that conference, *Detroit: An Industrial History Guide*, are either lost or badly deteriorating. Much has happened since I last reported from Detroit in 1999 (SIAN, Summer 1999), and not all that I will report is bad news, but I will nevertheless lead with the negative news.

First, the outright demolitions. The Detroit Edison Company demolished the **Lincoln Motor Car Company** (NHL) complex (Albert Kahn architect, 1917-1939) in early 2003. A year later, in suburban Plymouth, a developer demolished an 1882 brick factory complex which served as the factory of the **Daisy Manufacturing Company** (Daisy Air Rifles) from 1886 until 1958. The greatest losses have been at the historic **Ford Motor Company River Rouge plant** (NHL), which is undergoing a major redevelopment by the automaker. In 2004, Ford demolished the oldest Albert Kahn-designed building at this site, the **Eagle Boat building** (1918), AKA Building B and Dearborn Assembly,

and the **Glass Plant** (1924), also a notable Kahn design. The landmark **Rouge Power House** (1925) was the site of a disastrous explosion in February 1999 resulting in the deaths of six workers. Ford was in the process of replacing the old power house at the time of the explosion and is currently demolishing the building. The eight landmark stacks are already gone.

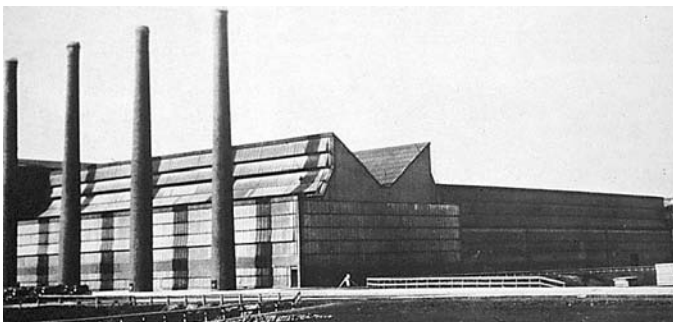
Other significant landmarks are simply abandoned and crumbling. The **Michigan Central RR Station** (Warren & Wetmore architects, 1913), closed since 1986, continues to deteriorate. The City of Detroit announced vague plans in January 2004 to reuse this landmark as a new headquarters for the Detroit Police Department, but nothing has happened since. Similarly, city-owned **Tiger Stadium** (NR, 1912, 1923, 1936), abandoned in 1999, remains unused.

This correspondent had last reported that the City of Detroit had taken control of the historic **Packard Motor Car Co.** factory complex (Albert Kahn architect, 1903-1930s) in 1997 because of property tax arrears. The manager of the complex (Dominic Cristini) disputed these claims and barricaded himself inside the plant, but the city expelled all of his rent-paying tenants. The City of Detroit began demolishing the plant in January 1999, but a court soon ordered a temporary stop to this action. In October

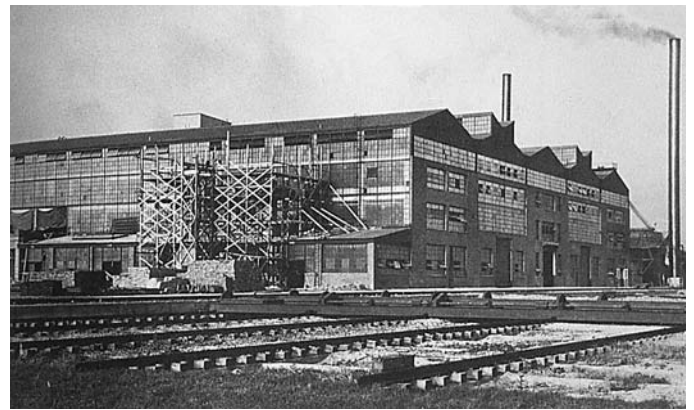
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Lincoln Motor Car Company complex (1917-1939, demolished 2003).



Glass Plant (1924, demolished 2004), Ford River Rouge plant.



Eagle Boat Building (1918, demolished 2004), Ford River Rouge plant.



Packard factory complex (1903-1930s, partially demolished 1999)

All photos courtesy of Albert Kahn, Inc.

2000, the court determined that Cristini had in fact paid his property taxes and ordered the city to return the property to him. The loss of his tenants has made it virtually impossible for the owner to perform any maintenance on the complex, which is badly deteriorating.

There is, however, good news to report. American Axle & Manufacturing bought the aging **Chevrolet Forge and Axle plant** (1920s) in Hamtramck (surrounded by Detroit) from General Motors in 1994 and has refurbished the sprawling factory complex. American Axle is committed to remaining in the Detroit area and has built a new corporate headquarters next to the plant. **DaimlerChrysler** sold its **McGraw Avenue Glass plant** (1917-1941) to a developer who will convert the complex into a modern warehouse facility.



General Motors Laboratories Building (1928, 1936).

In 2000, General Motors sold the General Motors

Building (NHL, 1923), a Kahn design encasing 1.2 million sq. ft. of office space, to a developer who then rehabilitated the building. The State of Michigan occupied the building in 2002 under a long-term lease and moved most Detroit-area state offices into the structure, now called **Cadillac Place** after Detroit's founder. The giant automaker also sold the adjacent **General Motors Laboratories Building** (Kahn, 1928, 1936) in 2004 to a California-based developer who will convert the building into a mixture of loft apartments and commercial space.

The Historic American Engineering Record (HAER) has played an important role in identifying Detroit's IA in recent years. In the summer of 2002, working with the **Automotive National Heritage Area** (ANHA) and the City of Detroit, HAER carried out two important projects in Detroit. One HAER team recorded the historic **Dry Dock Engine Works** (1892-1919) on Detroit's riverfront and another conducted an in-depth inventory of historic industrial buildings and sites in a large area known as the **Near East Riverfront**. The following summer (2003), HAER supported a team of two students who inventoried industrial properties in Detroit's **Milwaukee Junction Industrial District**. One result of the inventory was a driving tour brochure, a project supported by HAER, ANHA, and the Detroit Historical Museum. Some good news to report!

Charles K. Hyde

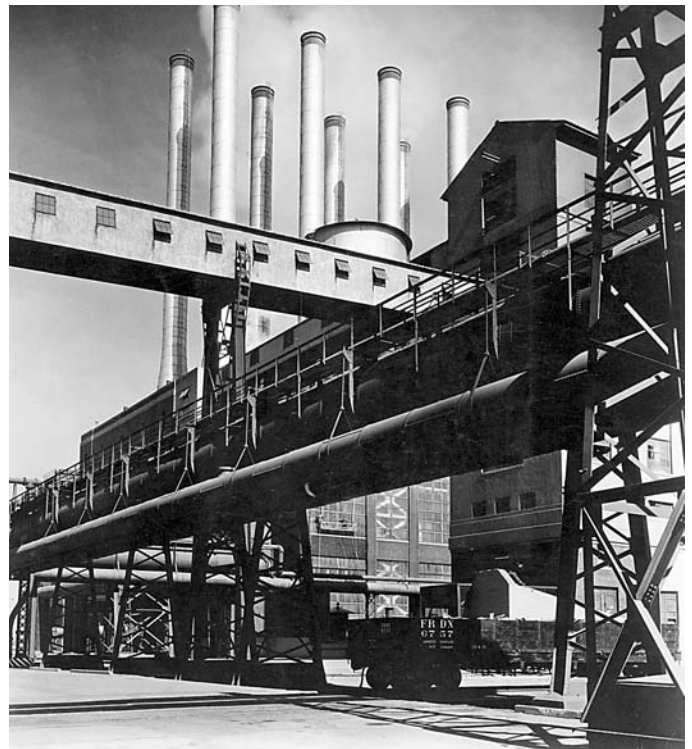
Note: An excellent Web site that examines Detroit's industrial ruins, "The Fabulous Ruins of Detroit," can be found at www.detroityes.com/home.



General Motors Building (1923, rehabilitated 2000-01), now called Cadillac Place.



DeSoto Press Shop (1936).



Rouge Power House (1925, demolished 1999-2005).

MILWAUKEE

Review of 2005 Annual Conference

Milwaukee-area industries past and present were featured at the SIA Annual Conference, attended by about 225 SIA members, June 2-5. The conference hotel was the 1928 Hilton Milwaukee Center, formerly known as the Schroeder Hotel, a grand Art Deco-style building in the city's downtown. From there, attendees fanned out across the city and its hinterlands on a diversity of tours, complemented on Saturday by the Society's annual paper session, business meeting, and banquet.

Pre-conference activities on Thursday included a tour of Kohler and a brewery tour (see p. 7) while Patrick Harshbarger and Mary McCahon [both SIA] of Lichtenstein Consulting Engineers led an all-day, continuing-education seminar on historic bridges. The opening reception was held at the **Milwaukee School of Engineering** in buildings that were once part of the Blatz brewery. Food was served in the student lounge decorated with artwork from the school's Eckhart G. Grohmann *Man at Work* Collection, a fascinating assemblage of paintings depicting workers and workplaces. John Gurda, a historian who specializes in Wisconsin history, gave a slide-illustrated overview of Milwaukee's history and its ethnic neighborhoods that grew around important industries such as tanning, brewing, meatpacking, and machining.

Friday offered attendees a choice of five tours. SIAN volunteer 'correspondents' Dan Bonenberger, Jeff Darbee, Perry Green, Larry Mishkar, Elizabeth Norris, Vance Packard, Bonnie Smith, Gerry Weinstein, and David Wohlwill reported and photographed the highlights of the various tours and sites, as listed below.

Kohler, a family-owned company for more than 130 years, is in the town of Kohler, about an hour's drive north of Milwaukee. Now a major tourist destination with museum, design studio, resort hotel, and golf course, the town originally was laid out and built in the 1910s and 1920s based on Walter Kohler's vision for a model workers' village based on German precedents. Conference attendees had two opportunities to tour Kohler: an all-day tour on Thursday or a half-day tour on Friday. Process tours covered the production of ceramics from clay slurry to the finished

product; enameled sinks and tubs from cast iron, from molding to their final porcelain-enamel coating; and fixtures from brass ingots, tubing, and rods to unscratchable, highly polished faucets and other fixtures. The SIA groups saw plenty of pours, skilled workers, high-tech and low-tech ceramic applications, and firings and steamy plants, sometimes shutdown on hot summer days for safety. The staging area with 11 miles of internal overhead conveyors gives some idea of the size of the plant. The Thursday tour also saw the Design Center showcasing Kohler products, had lunch at the American Club, originally built as a workers' dormitory, and drove through the planned community.

Allen Edmonds Shoe is one of the last two remaining U.S. manufacturers of men's shoes. The privately held company makes high-end, calfskin shoes and employs Hispanic workers from Milwaukee who are bused to the plant in Port Washington from Milwaukee (30 miles) four days per week. The CEO said that the choice of Hispanics was based on their dexterity in working with leather, many of them coming from areas of Mexico where leatherwork is common and taught at a young age. Our tour did not include working machines, since it was the workers' day off, but managers guided us through the process of cutting and sewing uppers, as well as corking, 360-degree welting, and soling. How do they economically make 122 styles in over 160 sizes with a workforce of 70? Generic uppers—many of the uppers can be used for up to six sizes.

Tour participants observed the manufacturing of lawn mowers, garden tractors, snow blowers, and attachments at **Simplicity** in Port Washington. The plant employs about 500, most of whom work a station on one of six assembly lines. One of the few integrated production facilities in the industry, Simplicity prides itself in making all of the components except engines. We saw the process from start to finish—laser cutting and dye stamping of the steel with hydraulic presses up to 1,000 tons; machining; welding; and painting (electrostatic powder coating) by robots and humans. Fourteen garden tractors roll off the lines every hour, and most go to 3,500 independent dealers where they

(continued on page 7)



Making a fine, calf-skin, men's dress shoe at Allen Edmonds.



The lawn-tractor assembly line at Simplicity.

Vance Packard



Lance Metz

2005 General Tools Award Recipient

At the Annual Business Meeting in Milwaukee, Committee chair Pat Malone announced that Lance Metz was the 2005 recipient of the General Tools Award. Lance may be the most avid IA enthusiast of all time. He is a tireless preservationist and a compulsive collector of artifacts, illustrations, and documentary records. However, preservation and collection are not the only ways in which he has protected the record of past industries; he has also contributed significantly to industrial documentation through oral history, photography, archival research, and public interpretation in various media—from exhibits to films, television productions, symposia, festivals, lectures, books, and articles.

Lance has been the Historian of what is now the National Canal Museum for over twenty years, stuffing its storage shelves with artifacts and filling its archives to bursting—creating an invaluable record of industries along the

canals of the Lehigh Valley and beyond. Whenever he has discovered an important collection, he has found a way to acquire it—as he did with the Crane Iron Works collection, a treasury of ledger books that document the first anthracite-fired iron works.

Nothing that threatens our industrial heritage escapes his attention. For instance, he recognized that the last remnants of Pennsylvania's silk industry were rapidly disappearing. Organizing a team effort to document every mill structure still standing, he raised funds to photograph the mills, collect oral histories, and interpret the history of silk manufacturing. He even produced a documentary film on this industry.

He has given his heart and soul to the effort to save "The Steel." As he told the *Philadelphia Inquirer*, "You cannot touch the history of the 20th century without touching the history of Bethlehem Steel." He planted the seed and con-

(continued on page 20)

Frederic L. Quivik—2005 Vogel Prize Winner

Each year the SIA recognizes outstanding scholarship within the field of industrial archeology with its Robert M. Vogel Prize. The award honors the author of the best article to appear in the Society's journal, *IA*, within the past three years. Articles under consideration have a clearly stated thesis, a well-constructed narrative, and an understandable conclusion. The analysis of material culture plays an important role in articles considered for the prize, as does the use of high-quality illustrations. The prize consists of a cash award and a wooden foundry pattern and plaque engraved with the recipient's name.

At the 2005 Annual Business Meeting in Milwaukee, this year's award was presented by Greg Galer, on behalf of Larry Gross, this year's Vogel Prize Committee Chair, to Frederic L. Quivik for his article *Landscapes as Industrial Artifacts: Lessons from Environmental History*, published in *IA* Vol. 26, No. 2 (2000), pp. 55-64.

Fred sets the stage with a careful review of the shifting emphasis of scholarship. Environmentalism has brought an interest in environmental history and scholars have begun to develop a history of industry and the natural as well as the built environment. Just as industrial archeology has broadened its scope from recording structures and processes, to industrial complexes, to the human environments of workers, managers, and owners, Fred adds the larger biological landscape. He carries the field out the factory's back door to see where the waste products go, and who ends up dealing with them. This approach enables him to reveal, explore, and contextualize competing visions of Western development. Using the physical evidence of the built and biological landscape (albeit in this case built of slag and filled with toxic tailings), court cases, and the testimony of parties as disparate as ranchers,

smelters, and forest rangers, Fred describes divergent contemporary views of a single landscape. Slag walls and a channelized creek shift from an oddity to a toxic waste containment area. He moves on to imagine improved interpretation not only of the National Park Service's Butte site, but also its Grant Kohrs Ranch—interpretation which becomes more intricate and complex, but also understandable, meaningful, and ultimately more interesting and revealing. Fred takes us beyond tales of confrontation with the natural elements to a battle "to determine whose vision of the environment would prevail."

Fred presents a clear and well-argued thesis that involves a broad new field and engages a wide audience. He goes beyond process and product to treat issues in a sweeping environmental context, extending his use of the site and of industrial archeology, to engage an important local and national debate. His approach provides us with a new way to begin to integrate the "brownfields" aspect of industrial heritage into our more traditional focus on production technology and infrastructure, thereby avoiding a perhaps unwitting blind spot in our assessment of industry's impact on the world at large.

Fred also answers superbly the critical "So what?" question, a benchmark for all journal submissions that separates the merely antiquarian from the truly scholarly and analytical. Fred's work should encourage future writers to aim similarly to answer the larger questions that their findings raise. With *Landscapes as Industrial Artifacts* Fred clearly demonstrates the value of environmental analysis to our work.

Greg Galer

Breweries, Breweries, Breweries

No visit to Milwaukee would be complete without breweries and beer. The Thursday afternoon tour was led by Susan Appel, historian of brewery architecture. The tour began with a brief stop at the **Cpt. Frederick Pabst Mansion**, the last of many grand houses that used to line Milwaukee Ave. Adjacent to the 1889 mansion is the **Pabst Pavilion** from the 1893 Columbian Exposition, converted to a chapel in the mid-20th century after the Archdiocese of Milwaukee acquired the property.

We proceeded two miles west, making our way into **Miller Valley**, home of the city's last major brewery. Here along State Street stand 76 buildings on 82 acres including a modern reproduction of the c.1850 Plank Road Brewery facade, meant to portray the place that Frederick Miller bought from the sons of Jacob Best in 1855. Our "hardhat" tour included the brew house with its picturesque lauter tuns and brew kettles, the packaging and keg line, filtration and utilities along with the Miller Valley Brewery (pilot plant), and one of the old caves that was used to store lager in the 19th c. In addition, the group sampled Lite and High Life. It was quite refreshing.

Next we headed back east on Highland Avenue toward the vast **Pabst Brewery complex**, passing homes of two Pabst sons on the north side of the avenue. Driving into the Pabst site at 8th and Juneau, we were struck by the scale of the property,



David Wohlhuil

Kettles at the Pabst brew house.

which, when compared to Miller, had many more 19th-c. buildings and fewer modern intrusions. Our tour guide, Jim Haertel, explained the redevelopment plans that unfortunately include tearing down all but 10 of the 28 buildings. After sampling from a variety of the Pabst products now brewed by Miller (Pabst, Jacob Best, Schlitz, etc.), which were good, we got back on the bus and headed north past smaller former breweries including the **E. L. Husting Brewery** (Vliet and 5th) and the **Obermann Brewery** (Cherry and 5th). Along the way, we also saw the Water St. Brewery, a modern micro-brewer and the former **Blatz Brewing Co.**

On our way to the **Lakefront Brewery**, we passed through Schlitz Park seeing the adaptive reuse of the old bottling building, the 1890 brew house, and the former Schlitz Stables, now United Way offices. Lakefront

is a microbrewery (no more than 15,000 barrels a year).

Den we gotta sample some gutt biers. An' the guy that showed us aroun' was a real hoot. He took us into the back an' showed us where an' how dey make da bier usin' da 1516 German Purity Law. I tink dat der primary fermentation tanks were painted liek da 3 stooges! We drank some more bier and den we wen' back to da hotel an' da reception. Lets hear it for da brewers!

Dan Bonenberger

MILWAUKEE (continued from page 5)

are sold under the names of Simplicity and Snapper with engines by Kohler, Briggs & Stratton (Simplicity's new parent company), Honda, and others.

Decommissioned in 1903, the **Port Washington Light Station** is owned by the city and being restored by the Port Washington Historical Society. The current 1860 building with integrated house and tower is built of cream-city brick with a light 132-ft. above Lake Michigan. Recent restoration includes the participation of the Grand Duchy of Luxembourg. Yes, around 2000, in recognition of the many immigrants from Luxembourg who settled in this area in the mid-19th c., and in gratitude for the liberation of Luxembourg during WWII, the tower and light were reconstructed in Luxembourg and ceremoniously brought to Port Washington for installation.

Just down the bluff from the light station is the **Port Washington Power Plant**. We saw the demolition of the former coal-fired plant, built in the 1930s, juxtaposed against the construction of the new natural gas-fired plant, just going online. The reuse of the site made sense: the transmission lines were in place; Lake Michigan was there for cooling water for the steam cycle and to chill air for the

combustion turbines; and the local community was accustomed to having a major power plant in their midst.

North of Milwaukee is the small town of Saukville, home of **Charter Steel**. Still headed by a member of the founding Mellows family, the company produces a wide range of steel wire and rod in diameters between 7/32 in. and 1-3/8 in. We learned that the difference between 'wire' and 'rod' varies in the industry. At Charter, a rod is finished in the roll mill, while wire is drawn through a die. Charter's raw material is scrap steel, which is melted in electric-arc furnaces. The molten steel's composition is adjusted by means of additives such as manganese and then is transferred by ladle to the continuous caster. It puts out billets that are cut into pieces weighing 4,400 lbs. One by one, the billets enter the roll mill, a long series of waist-high roll stands that gradually shape and lengthen the billets into the desired diameter and cross section. The end of the process is a winding machine that coils the finished product, resulting in a long row of steel coils that glow a dull red and fade to gray as they cool. Charter has about 600 employees and produces 700,000 tons of finished products yearly that end up in items as diverse as guitar and piano strings, automobile oil dipsticks, and Flexible Flyer sled runners.

(continued on page 9)

MINUTES OF THE 2005 ANNUAL BUSINESS MEETING

June 4, 2005

President Christopher Andreae opened the meeting in the Monarch Ballroom of the Hilton-Milwaukee City Center Hotel.

Secretary's Report: Secretary Richard Anderson announced that the minutes of the 2004 Annual Meeting had been published in the *SIAN* (Fall 2004) and asked if there were any additions or corrections. There being none, the Secretary's report was accepted by motion and unanimous vote.

Treasurer's Report: Treasurer Nanci Batchelor reported that the SIA is classified as tax-exempt under the IRS Code 501(c)3 as an educational organization. We file a Form 990 tax return yearly. The Society maintains its books and records on a cash basis and maintains a calendar year. The report that follows is an accounting of the year that ended Dec. 31, 2004.

We began 2004 with a total fund balance of \$245,480. Cash receipts for the year totaled \$99,436. The majority of our annual income comes from the various membership dues categories. In 2004 the total dues received were \$72,635. The balance of \$26,801 was comprised of interest income (\$1,534), publication sales (\$1,394), receipts of excess funds from tours and conferences (\$17,400), and finally contributions, both general and restricted (\$3,408). Total expenses for the year were \$94,608. The production costs of our major publications combined for a total of \$28,106. The balance of \$66,502 was spent on a combination of labor (\$35,049), postage (\$3,650), insurance and legal fees (\$1,223), prizes and awards (\$1,300), a contribution of \$10,000 to the Dept. of Social Sciences at Michigan Technological University (MTU), and a few miscellaneous items. The SIA closed 2004 with excess revenues over expenses of \$4,828 and a total fund balance of \$251,962, of which \$25,699 is in restricted funds and \$28,000 is reserved for preservation grants. To date in 2005, the SIA has had a total of \$30,124 in cash receipts and has expended \$52,944. The treasurer's report was passed by motion and unanimous vote.

Board Report: President Andreae thanked the departing board members, Susan Appel, Perry Green, and Bode Morin, for their service. He brought to the meeting's attention the new SIA preservation grants program. Last year, four grants were made; this year, six. The grants were for a maximum of \$3,000 and covered a wide range of activities. Three student scholarships were awarded this year. In our ongoing effort to introduce people to the concepts of industrial archeology, we had 28 people attend the bridge course given at this conference. He asked that anyone with suggestions for further educational activities get in touch with the board. In general, the SIA has three offerings: the annual conferences, fall tours, and special study tours. In addition we have our publications, the *SIAN* edited by Patrick Harshbarger and the *IA Journal* edited by Pat Martin.

Local Chapters: President Andreae recognized the SIA's numerous individual chapters, and he strongly encouraged each

one of the members present to join one or create one, and investigate local IA. As is the tradition at annual meetings, he then called on members of each chapter to stand for recognition.

Membership: President Andreae commented that he had two ideas to emphasize to the members present. First, "ask not what your Society can do for you, but ask what you can do for your Society." The SIA consists of volunteers, and they pull together to make the Society work. The Society is as strong as its members make it. Out of 1,800 members, only two or three hundred come to annual meetings. If you are approached about an executive position, please consider the request seriously. Secondly, try to enlist younger people with an interest in IA to join us.

Headquarters Report: Pat Martin commented that almost no one has complaints about the Web site or headquarters operations thanks to administrative assistant Don Durfee and his attention to membership and registration. Regarding the *Journal*, it is being caught up. There are two new issues out, and there will be at least one more by the year's end.

Tours and Conferences: President Andreae introduced Mary Habstritt, who received a standing ovation for her work in putting together the Milwaukee conference. She thanked the membership and the many conference volunteers. The Detroit fall tour is scheduled for Sept. 29-Oct. 2. A special study tour is headed for Bologna, Italy, Nov. 20-27. The 2006 Annual Conference will be in St Louis, and the 2007 conference is tentatively scheduled for Seattle. The 2006 Fall Tour will be in Youngstown, OH, and study tours are being considered for northern England in 2006 and Switzerland in 2007.

Awards: Greg Galer presented the Vogel Prize for the outstanding article to appear in the last three years of the *IA Journal* to Fred Quivik. Pat Malone presented the General Tools Award for Distinguished Service to Industrial Archeology to Lance Metz (see articles in this issue). President Andreae invited Michael Hunt, the chair of the History & Heritage Committee of the American Society of Mechanical Engineers, to present a special award. On behalf of the ASME, Michael presented Robert Vogel with a citation and achievement award for long and meritorious service to the History & Heritage Committee.

Elections Justin Spivey, chair of the Nominations Committee, thanked Martha Meyer, Jet Lowe, and Vance Packard for their assistance as committee members. Elected to the Board of Directors were Jay McCauley, William McNiece, and Kevin Pegram. Elected to the Nominations Committee was Cydney Millstein.

Upon motion and unanimous vote, the meeting was adjourned.

Respectfully submitted,
Richard K. Anderson, Jr.
Secretary

Hot metal was also on display at two foundries. **Motor Castings** makes motor blocks and a variety of other products at a plant in the Milwaukee suburb of West Allis. Tour participants witnessed automated coring, green-sand molding, and casting (as many as three separate pours were within view at one point!). One participant described it as a “full-contact foundry experience” with few barriers to seeing, feeling, hearing, breathing, smelling, and even tasting (not by choice) the processes of working with molten iron. In contrast to Motor Castings, which had the flavor of an older plant with an all-male workforce, the foundry at **Metal Technologies**, also in West Allis, is in a modern facility employing a large number of women in all of its departments. Metal Technologies places an emphasis on quality control and precision casting with several automated inspection machines.

Cream City Ribbon in downtown Milwaukee is one of only three producers of cotton ribbon in the world. Unlike woven or plastic tape ribbons, Cream City’s ribbon is made of cotton yarns that are laid parallel and then bound together by glue. This is accomplished on a series of machines made in Germany in the 1920s. The yarns come from spools mounted on racks with various colors of yarn enabling production of any combination of colors. The yarns are laid closely side by side through a channel and then run through an adhesive bath that binds them together. When it dries, the adhesive has a smooth, hard surface but is clear so the yarns’ color comes through. Drying occurs on large take-up reels at the end of each machine, aided by heat lamps. Once dry, the finished ribbon comes off the reel and into a fiber drum, which is then moved to the spooling station. Here empty spools are mounted on a powered shaft, but a worker must tape the end of a ribbon to each spool and then must tape or wrap each finished spool once the proper length has been wound. Owned by architectural historian and art restorer Lorette Russenberger since 1988, Cream City Ribbon occupies part of the former Hustung brewery.

SIA conference participants bought up summer sausage and other delicacies at **Fred Usinger, Inc.** sausagemakers (or Wurstmackers in German). While a tour of the production plant was not possible, the store was fascinating. Dating from the late-19th c. and little altered, it featured a tile floor, marble counters, and large glass display cases containing a bewildering array of meat products. Original painted murals ornament the upper walls and depict little German elves gleefully slaughtering and processing hogs into meats and sausages. Munching on samples such as cranberry or garlic beef sausage, our group listened as Debra Usinger, a fourth-generation member of the founding family, told the story of the company since its establishment in the 1870s.

In west suburban Waukesha (Waw’-ka’shaw), **Cooper Power Systems’ Badger Drive Facility** produces voltage regulators and transformers for the electric power industry. Its products help to transmit, control, and distribute electricity between generating plants and end users. The company cuts, bends, punches, and fabricates coiled sheet steel into various housings and equipment cases. Then the appropriate wiring, insulators, transformers, and regulating equipment is installed. One of the most interesting pieces of fabricating equipment was a computer-controlled punch press that used turret-mounted dies to punch holes of various sizes into the flattened sheet steel used in equipment housings. The press could even cut L-shaped slots by means of a square cutting die. With dangerous PCBs long out of use, Cooper now uses a special soybean oil as coolant in its transformers. It was odd indeed to watch skilled workers install complex electrical components in transformer housings and then see the same components submerged in a clear liquid.

The Steaming South tour led by Ken Cope, a local consulting engineer, started out with a visit to the **Jones Island Sewage Treatment Plant**. Tour assistant, Gerry Weinstein [SIA], explained the activated sludge process that had its first American trial there. Actually very little of the original plant is left but, as someone once said, “When you have smelled one sewage treatment plant, you have smelled them all.” Some members of the tour got to see the fertilizer production

(continued on page 10)



Jeff Darbee

A melt shop crew member monitors a batch of steel scrap heated to working temperature in Charter Steel’s electric arc furnace.



Jeff Darbee

At Cream City Ribbon, SIA members study the intricacies of making unwoven cotton ribbon on German machinery from the 1920s.



Gerry Weinstein

Ruins of the Milwaukee Solway Coke plant.



Larry Mishkar

The historic bridge workshop participants inspect the c. 1902 swing bridge carrying the former Milwaukee Road main line (now Burlington Northern/Amtrak) over the Menomonee River.

MILWAUKEE *(continued from page 9)*

facility, the first of its kind in the nation. The resulting Milorganite (Milwaukee Organic Nitrogen) is available in local hardware and garden stores.

The next stop was **Falk**, one of the pioneers of helical herringbone speed changing gears in the U.S.; mouths were agape at the site of 40-ft.-diam. ore crushing and cement mill gears being machined. After an exploration of the ruins of the **Milwaukee Solvay Coke** plant, the group toured **Milwaukee Cylinder**, producer of those un-heralded air and hydraulic actuators that make just about everything happen in factories and machinery that isn't motor operated. Reeking with the fumes of sewage, cutting oil and coke tailings, the group finished up with a sylvan change of pace at **Trimborn Farm**, now a county park, where a large lime-burning operation was begun in 1847. Guides interpreted the house, barn, stable, and kilns.

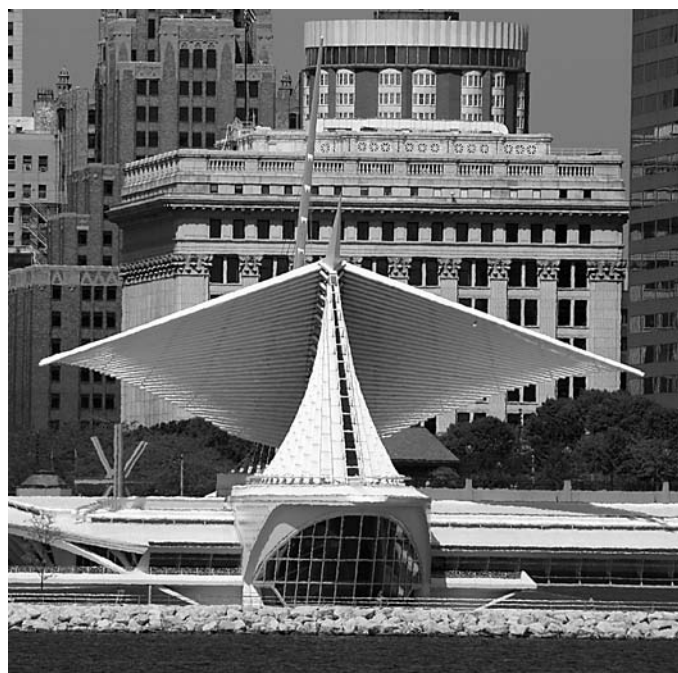
SIA bridge enthusiasts spent Friday on an extensive tour of historic and modern bridges spanning the Menomonee and Milwaukee rivers in downtown Milwaukee. Featured were the city's movable bridges including the **1924 State Street Bascule Bridge**, the city's oldest remaining Milwaukee-type bascule. This bridge type, which was developed here in 1904, is characterized by movable leaves of built-up plate girders that pivot on simple trunnions riding in massive bearings. Also of interest were the city's several, hydraulically operated, vertical-lift bridges dating from the 1960s; the so-called "marsupial" Holton Street bridge, a high-level viaduct that is currently being retrofitted with a suspended pedestrian walkway below its deck; and a series of picturesque arch bridges dating from 1893 to 1905 in Milwaukee's Lake Park. The bridge tour ended at the **Milwaukee Art Museum's Quadracci Pavilion and Reiman Pedestrian Bridge**, an architectural tour-de-force designed by Santiago Calatrava and opened in 2001. The cable-stay pedestrian bridge with its angled tower and 27 cables has quickly become a symbol for the city, appearing on logos and tourist brochures everywhere. The museum also offered a special tour on Sunday that included a demonstration of the pavilion's Burke Brise Soleil, a 110-ton movable, wing-like sunscreen that can be raised and lowered to control light and temperature in the pavilion's glass-enclosed reception hall.

The Saturday evening banquet, featuring German-style cuisine, was held at the former **West Allis Works** of Allis-Chalmers. West Allis Works was the largest steam engine production facility in the U.S. when it opened in 1902. The 160-acre complex also made steam turbines, farm and construction machinery, wheel and crawler tractors, hydro turbines, transformers, circuit breakers, metal-clad switchgear, pumps, and military equipment (during the wars). Allis-Chalmers declared bankruptcy in the mid-1980s, and since then much effort has been given to trying to redevelop and adaptively re-use the buildings. The banquet was held in a former erecting shop that has been successfully redeveloped as office space by our host Richard Carlson, a former Siemens executive (Siemens purchased the Allis-Chalmers turbine-generator business in 1991).

Earlier as part of one of the Friday tours, the mayor of West Allis and other dignitaries had met the SIA to discuss the challenges and successes of redeveloping industrial spaces. The group also toured the **West Allis Historical Society** to learn more about the community's history and see the artifacts and graphics on display in the museum.

The conference wound down on Sunday morning with a brunch cruise aboard the **Iroquois**, a passenger ferry built in 1922 by the Defoe Boat & Motor Works. She served all over the Great Lakes region, including Detroit, the Apostle Islands, and the Mackinac Islands, before heading to Milwaukee to become a tour boat in 1963. Several hours were spent on the water exploring the harbor including the breakwater, lighthouses, port, ferry terminal, and movable bridges. An architectural walking tour, led by faculty from the University of Wisconsin-Milwaukee School of Architecture and Urban Planning, rounded out Sunday afternoon. The focus was Milwaukee's splendid mid-19th to mid-20th-c. commercial architecture, including the 1860-61 **Iron Block**, a prime example of cast-iron construction with segmental, ornate facade.

The Milwaukee Annual Conference was organized by Mary Habstritt, SIA events coordinator. She was assisted by volunteers Susan Appel, Eric Bonow, Rudy Borchert, James Bouchard, Dick Carlson, Ken Cope, Jim Dast, Tom Fehring, Bob Frame, Tom Garver, Katy Holmer, John Kopmeier, Nellie Lannin, Larry Mishkar, Bode Morin, Bob Newbery, Amy Squitieri, Erin Timms, Alicia Valentino, Ralph Wehlitz, and Gerry Weinstein. We also appreciate the support we received from Milwaukee School of Engineering, Marquette University College of Engineering, Whitnall Summit, City of West Allis, and Visit Milwaukee. The SIA thanks one and all for a splendid conference.



Vance Packard

The Milwaukee Art Museum Quadracci Pavilion spreads its wings (Burke Brise Soleil) during the SIA's harbor cruise.



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PUBLICATIONS OF INTEREST

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Mary Habstritt, New York, NY; and Patrick Harshbarger, SIAN editor.

GENERAL INTEREST

- ◆ Elspeth H. Brown. **The Corporate Eye: Photography and the Rationalization of American Commercial Culture, 1884-1929.** Johns Hopkins Univ. Pr., c.2004. Photography as a technology used to improve industrial efficiency. Discusses the work of Frederick W. Taylor, Eadweard Muybridge, Frank Gilbreth, and Lewis Hine.
- ◆ Robert Carr. **Industrial Archaeology in Belfast.** *IA News* 133 (Summer 2005), pp. 12-13. IA sites to visit in Belfast, Ireland.
- ◆ **Echoes of Forgotten Places.** Scribble Media (www.scribblemedia.com/echoes.html), 2005. \$20. A DVD about "urban exploration, industrial archeology and the aesthetics of decay." Digital footage of abandoned factories, decommissioned powerplants, etc., set to music. Includes footage from 1936 film *Steel: A Symphony of Industry*.
- ◆ Lawrence A. Peskin. **Manufacturing Revolution: The Intellectual Origins of Early American Industry.** Johns Hopkins Univ. Pr., 2004. Examines the words and deeds of individual Americans who made things in their own shops, met in small groups to promote industrialization, and strove for economic independence in the 18th c.
- ◆ Frederic Schwarz. **They're Still There—Again.** *I&T* (Summer 2005), pp. 10-11. Updates on efforts to preserve Chicago's Hulett unloaders (*SIAN*, Summer-Fall 2002) and the Knight Foundry, Sutter Creek, CA (*SIAN*, Winter 2005).
- ◆ Frank Towers. **The Urban South and the Coming of the Civil War.** Univ. of VA Press, 2004. 285 pp. \$45. New Orleans, Baltimore, and St. Louis had economies and politics more like those of Northern cities. The existence of manufacturers, large working classes and their influence in city politics provided Southern secessionists with concrete examples of the dangers presented by the connection with the North.

IRON & STEEL

- ◆ David Andrews. **Rebirthing Bethlehem: A Steel City Seeks New Life.** *Common Ground* (Summer 2005), pp. 32-45. Reviews ups and downs of preserving the Bethlehem Steel works (tour site—2002 Fall Tour, Lehigh Valley; *SIAN* Winter 2005).
- ◆ Ann Belser. **Allegheny County Okays Carrie Furnace Purchase.** *Pittsburgh Post-Gazette* (June 13, 2005). And, **Second Chance for Carrie Furnace Site.** (June 14, 2005). Plans to redevelop a 137-acre former steel plant in Rankin and Swissvale outside Pittsburgh. In addition to waterfront condos and shops, the blast furnaces would become part of a steel heritage center.
- ◆ **Foundry Notes** (Lindsay Publications, Box 538, Bradley, IL 60901; (815) 935-5353; www.lindsaybks.com), 2005. 64 pp. \$7.95. Selection of reprinted articles from *Machinery Magazine* (c.1915-1925) explore various aspects of foundries. Includes restoring old foundry sand to usable condition; molding engine blocks at Henry Wallwork & Co. foundry in England; pattern making for webbed and flanged wheels; centrifugal casting; plans for a 1925 induction heating furnace.
- ◆ John B. Lovis. **The Blast Furnaces of Sparrows Point: 100 Years of Iron-making on Chesapeake Bay.** Canal History & Technology Pr. (610-559-6617), 2005. 118 pp., photos, maps, glossary. \$15.95. Plant and company town built near Baltimore, MD, in the 1880s by the Pennsylvania Steel Co. and purchased by Bethlehem Steel in 1916. Evolution of blast furnace practice from hand filling with wheelbarrows to the modern conveyor system. Author was an engineer at the plant from 1956 to 1963. Operations during the 1950s are described in detail.
- ◆ Gene Rector. **Last Air Force Blacksmith Retires from RAFB.** *Macon (GA) Telegraph* (Apr. 9, 2005; www.macontelegraph.com). Blacksmith Bob Herndon repaired aircraft parts for more than 50 yrs. at Robbins Air Force Base. His skills are no longer required.

WATER TRANSPORT

- ◆ David R. Barker. **W. P. Snyder Jr. Timeline** (July-Sept. 2005), pp. 26-29. Contemporary and historic photo album of the 1918 *W. P. Snyder Jr.*, the steam-powered, paddlewheel towboat moored adjacent to the Ohio River Museum in Marietta, OH. The vessel was built for the Carnegie Steel Co. by James Rees & Co. and used primarily to bring barges from coal mines in the upper Monongahela River Valley to the steel works at Clairton, PA. Avail.: Ohio Historical Society, 1982 Velma Ave., Columbus, OH 43211-2497.
- ◆ Bill Bleyer. **Blueprints for the Future.** *Newsday* (May 1, 2005). Developer is planning a center to interpret the Brooklyn Navy Yard's history (tour site—2003 Annual Conference) and preserve more than 33,000 documents and architectural drawings left at the site.
- ◆ **Covered Refrigerator Barges.** *Transfer* No. 42, Jan.-June 2005, pp. 32-36. Commentary on, and reproductions of, drawings and photos from HAER recording of the Shooters Island, NY, ship graveyard from Nov. 1984 to Jan. 1985.
- ◆ Mary Otto. **C&O Canal River Center Surges Back to Life.** *Washington Post* (May 22, 2005). Restoration of the 1830 tender's house at Lock 8 in Cabin John, MD.

- ◆ Michael Brian Schiffer. **The Electric Lighthouse in the Nineteenth Century: Aid to Navigation and Political Technology.** *T&C*, vol. 46, 2 (Apr. 2005), pp. 275-305. While lighthouses were the first commercial application of generator-powered, electric-arc lighting, beginning in the late 1850s, by the end of the century only 30 electric-arc lights had been installed out of thousands of lighthouses worldwide. Oil lamps were cheaper and easier to maintain, but those countries that did install electric-arc lighting, particularly England and France, did so, to a degree, out of a sense of national pride.
- ◆ David C. Switzer. **The Schooner *Lizzie Carr*: A Legacy of the Last Days of American Sail.** *The New Hampshire Archeologist*, vol. 43/44, no. 1 (2003/2004), pp. 93-106. Describes the excavation, recovery, and the museum exhibition of a section of the wooden hull of a lumber schooner wrecked on the New Hampshire coast in 1905. Avail: NH Archeological Society, Box 406, Concord, NH 03302-0406. \$20 ppd.
- ◆ Eric Tagliacozzo. **The Lit Archipelago: Coast Lighting and the Imperial Optic in Insular Southeast Asia, 1860-1910.** *T&C*, vol. 46, 2 (Apr. 2005), pp. 306-328. Gauges the contribution of lighthouses, beacons, and buoys to English and Dutch colonialism.

RAILROADS

- ◆ Anthony J. Bianculli. **Railroad History on American Postage Stamps.** Astragal Press (www.astragalpress.com), 2004. 280 pp. \$35. Almost 200 stamps depicting various facets of railroading.
- ◆ Don L. Hofsommer. **Minneapolis & the Railway Age.** Univ. of Minn. Pr., 2005. 480 pp., photos. \$31.50. Illustrated with more than 200 period photos and maps of the city and the tracks that crossed it from the 1860s to 1960s. Also, **The Hook & Eye: A History of the Iowa Central Railway.** Univ. of Minn. Pr., 2005. 160 pp., photos. \$27.50. Origins, growth, and eventual dismantling of a short line.
- ◆ **Iron Icon: The Railroad in American Art, Apr. 22-23, 2004. Proceedings of a Conference at the John W. Barriger III National Railroad Library.** Published as *Railroad Heritage* No. 14 (2005). Avail.: Center for Railroad Photography & Art, 1914 Monroe St., Box 259330, Madison, WI 53725; www.railphoto-art.org. Includes Betsy Fahlman [SIA], *The Engine as Art: The Railroad as Cultural Icon*; Carlos A. Schwantes, *The View from the Passenger Car Vestibule: Travelers Interact with the Passing Landscape*; Michael E. Zega, *The American Railroad Advertising Booklet, 1870-1950*; Suzanne L. Burris, *Vision of the West: The Burlington Northern & Santa Fe Railway Collection*; Alan Wallach, *Thomas Cole and the Railroad: Ungentle 'Maledictions'*; Kenneth W. Maddox, *The Train in the Pastoral Landscape*; Leo G. Mazow, *'And Picturesque It Everywhere': The Baltimore & Ohio's Artists' Excursion of 1858*; Ron C. Tyler, *The Most Picturesque and Wonderful Scenery: Illustrations from the Pacific Railroad Surveys*; John Gruber [SIA], *An Electrifying View of Chicago: Interurban Railway Posters*.
- ◆ John McCluskey [SIA]. **Idler and Reacher Car Pictorial.** *Transfer* No. 42, Jan.-June 2005, pp. 17-19. Discussion of car types in service by the New York area railroads for use with their floatbridges. Includes 12 photographs and a listing of other photos from the enthusiast literature.
- ◆ David C. Pearce [SIA] and Ralph A. Heiss. **18 Miles from Jersey City: The Lehigh Valley Railroad's Bronx Terminal at East 149th Street.** *Transfer* No. 42, Jan.-June 2005, pp. 7-

16+19. Extensively illustrated history of one of the four "landlocked" railroad yards in the Bronx.

- ◆ Phil Sims. **Rail-Marine in Mesopotamia.** *Transfer* No. 42, Jan.-June 2005, p. 20 +16. Brief review of the railroad-car ferry operations from 1908 to 1985 of the Entre Rios Railway on the Parana River in the area of Argentina known as Mesopotamia.
- ◆ David R. Starbuck [SIA]. **New Hampshire's Best-Loved Industrial Site: The Cog Railway on Mount Washington.** *The New Hampshire Archeologist*, vol. 43/44, no. 1 (2003/2004), pp. 107-118. Reviews the history of the steam-powered railway that has operated between the base of the mountain and its summit since 1866. Avail: NH Archeological Society, Box 406, Concord, NH 03302-0406. \$20 ppd.
- ◆ John H. White. **War of the Wires: A Curious Chapter in Street Railway History.** *T&C*, vol. 46, 2 (Apr. 2005), pp. 374-84. Why Cincinnati was one of the few major cities to adopt a double-wire transmission system for its electric railways.
- ◆ Scott Wisner. **Transfer Bridges at the Port of NY/NJ.** *Transfer* No. 42, Jan.-June 2005, pp. 3-5+19. Commentary and tabular review of the architectural types and locations of the railroad transfer bridges in the area that were still in operation post-WWII (42 installations). With bibliography on floatbridges including Thomas Flagg's [SIA] articles on floatbridge details from *Transfer*.

AIR TRANSPORT

- ◆ Janet R. Daly Bednarek. **The Flying Machine in the Garden: Parks and Airports, 1918-1938.** *T&C*, vol. 46, 2 (Apr. 2005), pp. 350-73. Story of the connection between the design of airports and parks in the 1920s and 1930s, which was influenced by the view that the airplane was a source of practical transport and mass entertainment.
- ◆ Mark Bernstein. **How the Airplane Learned to Fly.** *I&T* (Summer 2005), pp. 12-19. Recounts the Wright Bros. 1904-05 experiments at Huffman Prairie, outside Dayton, OH. They made 154 flights, ending with a journey of 24 miles in an aircraft they could launch, control, and land at will.
- ◆ Derek Brumhead. **Barton: Britain's First Municipal Airport and Its Listed Buildings.** *IA News* 133 (Summer 2005), pp. 4-5. City of Manchester's 1928 aerodrome includes hangar, terminal building, and control tower.

BUILDINGS & STRUCTURES

- ◆ Leonard K. Eaton. **Hardy Cross, American Engineer.** Univ. of IL Press, c.2005. Cross, a Univ. of IL engineering professor (1921-1937), developed the moment-distribution method, allowing engineers to calculate statically indeterminate frames of steel and reinforced concrete for the first time. Later known as the Cross method, this achievement made possible safe and efficient designs.
- ◆ Pat Frost. **Lane End Brickworks, Buckley.** *IA News* 133 (Summer 2005), pp. 6-7. Documents Flintshire (UK) brickworks in continuous operation from 1792 to 2003.
- ◆ Dennis E. Howe [SIA]. **Concrete in the Archeological Record: How Old Is It?** *The New Hampshire Archeologist*, vol. 43/44, no. 1 (2003/2004), pp. 119-157. Methods that archeologists may use to estimate the age of concrete using physical attributes. Avail: NH Archeological Society, Box 406, Concord, NH 03302-0406. \$20 ppd.

- ◆ Chris Marr. **Owners Discuss Remake of Mill.** *Rome (GA) News-Tribune* (June 26, 2005). Adaptive re-use plans for Rome's Massachusetts Cotton Mills, est. 1896. Later part of Pepperell Mfg. Co.

BRIDGES

- ◆ Eric DeLony [SIA]. **Save Our Span!** *I&T* (Summer 2005), pp. 30-35. Stories of ten historic bridges and the community efforts to save them - Henszey's Bridge (1869), Summerdale, PA; Blaine Bridge (1828), Blaine, OH; Aldrich Change Bridge (1858), Macedon, NY; Bow Bridge (1885), Hadley, NY; Clarkton Bridge (1901), Clarkton, VA; Hojack Swing Bridge (1905), Rochester, NY; Tenth St. Bridge (1920), Great Falls, MT; Bridge of Lions (1927), St. Augustine, FL; Calhoun County Historic Bridge Park, Marshall, MI; Adaptive Use Bridge Project, Amherst, MA. Also, **Henszey's Arch (1869).** *Structure Magazine* (June 2005). www.structuremag.org/archives. Describes relocation and rehabilitation of patented bowstring arch-truss bridge to Central Pennsylvania College.
- ◆ Steven M. Richman. **The Bridges of New Jersey: A Portrait of Garden State Crossings.** Rutgers Univ. Press, 2005. Photographic and poetic "journey" across 60 of the state's bridges, from impressive suspension bridges, like the Ben Franklin and George Washington, to the small bridges that are cherished by local preservation groups.

POWER GENERATION

- ◆ T. Lindsay Baker, compiler, and A. Clyde Eide, ed. **A Guide to United States Patents for Windmills and Wind Engines, 1793-1950.** International Molinological Society, 2005. Avail.: Windmill Books & Sales, Box 507, Rio Vista, TX 76093; 121 pp., \$27.50 ppd. Finding guide to over 3,500 patents for windmills, windpumps, and wind electric generators. Introduction provides context on the history of windpower utilization in the U.S. and on the system of patents. With the individual patent numbers, readers can access the patent drawings and specifications at the Internet Web site of the U.S. Patent & Trademark Office (www.uspto.gov). Alphabetical name index to inventors.
- ◆ Robert H. Casey [SIA]. **From the Henry Ford: The Line Between Faith and Folly.** *T&C*, vol. 46, 2 (Apr. 2005), pp. 475-78. Two 8-cylinder automobile engines—the Ford X-8 and Ford V-8—are examined as case studies in sustaining motivation through the setbacks inherent in technological innovation.

AGRICULTURE & FOOD PROCESSING

- ◆ Mary Frances Donalson. **Old Turpentine Still Goes to School.** *Bainbridge (GA) Post-Searchlight* (June 14, 2005). Preservation of 1923 still, relocated from Georgia farm to the University of Florida (Gainesville) forestry museum.
- ◆ Kate Roberts. **Rising from the Ruins: The Mill City Museum.** *History News*, vol. 60, no. 2 (Spring 2005), pp. 27-29. Review of new exhibits at the Washburn A Mill in Minneapolis (*SIAN* Winter 2004).
- ◆ Jean Thalminy. **Another Round, St. Paul, Minn., Searches for a Use for its Empty 150-Year-Old Brewery.** *Preservation Online* (Apr. 15, 2005); www.nationaltrust.org/magazine/archives/arch_story/041505.htm. Efforts to find an adaptive re-use for the castle-like Jacob Schmidt Brewery complex (est. 1855).

ELECTRONICS & COMMUNICATION

- ◆ Mark Coleman. **Playback: From the Victrola to MP3, 100 Years of Music, Machines, and Money.** Da Capo Press, 2003. 237 pp. \$24. Story of machine-made music and those who made it possible. Rev: *T&C*, vol. 46, 2 (Apr. 2005), pp. 427-29.
- ◆ James W. Cortada. **The Digital Hand: How Computers Changed the Work of American Manufacturing, Transportation, and Retail Industries.** Oxford Univ. Pr., 2003. 494 pp. \$34.95. How 14 different industries adopted digital technologies after 1945. Case studies of automobile, steel, aerospace, petroleum, chemical, pharmaceutical, semiconductor, disk drives, software, railroads, trucking, and grocery, apparel, and e-commerce retailing. Rev: *T&C*, vol. 46, 2 (Apr. 2005), pp. 439-41.
- ◆ Will Eastman. **The Birth of Electronic Music.** *Prototype* (2005, Issue 1), pp. 3-5. Documenting the development of electronic instruments from the 1920s to 1970s at the Smithsonian's Lemelson Center.
- ◆ **Experimental Crystal Set Receivers.** Lindsay Publications (Box 538, Bradley, IL 60901; (815) 935-5353; www.lindsaybks.com), 2005. 48 pp. \$6.95. Reprint of articles from *Modern Electrics*, 1911-12. Crystal sets to listen to spark-gap transmitters sending morse code. Built at home by amateurs with simple materials.
- ◆ Mark Katz. **Capturing Sound: How Technology Has Changed Music.** Univ. of Cal. Pr., 2004. 276 pp. \$19.95 paper. Includes CD of music. Manipulation of sound technologies from phonograph to digital files has changed the way music is composed, listened to, and marketed. Rev: *T&C*, vol. 46, 2 (Apr. 2005), pp. 429-30.
- ◆ Andre Millard, ed. **The Electric Guitar: A History of An American Icon.** Johns Hopkins Univ. Pr., 2004. 248 pp. From inventor's workbench to recording studio, historians trace the development, manufacture, and impact of the electric guitar.

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With Thanks.

- ◆ Megan Mullen. **The Rise of Cable Programming in the United States: Revolution or Evolution?** Univ. of Tex. Pr., 2003. 229 pp. \$22.95 paper. History of cable television over the past 50 years, from small community networks to major corporations. Rev: *T&C*, vol. 46, 2 (Apr. 2005), pp. 432-34.
- ◆ David Paull Nickles. **Under the Wire: How the Telegraph Changed Diplomacy.** Harvard Univ. Pr., 2003. 265 pp. \$30.95. Diplomats adjusting to the changing speed of communications and challenges of receiving and decoding cabled messages. Rev: *T&C*, vol. 46, 2 (Apr. 2005), pp. 422-24.
- ◆ Ralph Baer: **Video Games Wizard.** *Prototype* (Summer 2004), pp. 3-5. Baer was inventor of some of the first practical video games for use on home t.v. sets in the late 1960s. His collection of patent drawings, notes, and objects has been donated to the Smithsonian Institution.
- ◆ Kenneth Silverman. **Lightning Man: The Accursed Life of Samuel F. B. Morse.** Knopf, 2003. 503 pp. \$35. Biography explores the religious, moral, and artistic impulses in Morse's early life that shaped his ambitions to promote himself as the sole inventor of the telegraph. Excellent job of discussing the invention, development, and diffusion of the new technology. Rev: *T&C*, vol. 46, 2 (Apr. 2005), pp. 420-22.

EXPLOSIVES & ORDNANCE

- ◆ **American Machinist Memories: Ordnance 1900-01.** Lindsay Publications (Box 538, Bradley, IL 60901; (815) 935-5353; www.lindsaybks.com), 2005. 80 pp. \$11.95. Reprints of 17 articles from *American Machinist Magazine* reveal the history, design details, and manufacturing techniques of various types of ordnance from Luger pistols to 12-in. coastal guns on disappearing carriages. Includes extensive photos of Springfield Armory and tools used to mass produce the Krag-Jorgensen rifle.
- ◆ Kenneth Chase. **Firearms: A Global History to 1700.** Cambridge Univ. Pr., 2003. 290 pp. \$30. Explores the technological, social, political, and cultural factors that explain why Europeans perfected firearms when it was the Chinese that invented them. Rev: *T&C*, vol. 46, 2 (Apr. 2005), pp. 407-8.
- ◆ Jack Kelly. **Gunpowder: Alchemy, Bombards, and Pyrotechnics—The History of the Explosive that Changed the World.** Basic Books, 2004. 260 pp. \$25. General history of the use and manufacture of gunpowder from the 10th c. to the 20th. Rev: *T&C*, vol. 46, 2 (Apr. 2005), pp. 405-6.

WATER CONTROL & RECLAMATION

- ◆ Douglas E. Krupel. **Fuel for Growth: Water and Arizona's Urban Environment.** Univ. of Ariz. Pr., 2003. 294 pp. \$39.95. Development of water systems in Tucson, Phoenix, and Flagstaff from the 1820s to present. One case study documents the competition for water between Flagstaff and the Atlantic & Pacific RR.
- ◆ David A. Simmons [SIA]. **Upper Sandusky's Indian Mill: The Dam and the River.** *Timeline* (July-Sept. 2005), pp. 18-25. The dam and mill pond associated with an 1820 grist mill on the Upper Sandusky River are examined as an illustrated case study in the conflict between preserving a historic waterpower site and restoring the natural waterway by removing the dam and mill pond as impediments to fish and other native aquatic life in the river. Avail.: Ohio Historical Society, 1982 Velma Ave., Columbus, OH 43211-2497.

- ◆ Evan R. Ward. **Border Oasis: Water and the Political Ecology of the Colorado River Delta, 1940-1975.** Univ. of Ariz. Pr., 2003. 208 pp. \$45. Ecological impacts of dams and irrigation systems established by the Mexican Water Treaty of 1944, which guaranteed Mexico water from the river and provided for the Morelos Dam to store and divert the water.

MISC. INDUSTRIES

- ◆ Werner Abelshauser, Wolfgang von Hippel, Jeffery Johnson, and Raymond Stokes. **German Industry and Global Enterprise: BASF—The History of a Company.** Cambridge Univ. Pr., 2003. 677 pp. \$75. 140-yr. history of the company explores the development of synthetic dyes, rubber, and plastics, and expansion into fibers, magnetic tape, and pharmaceuticals. BASF sponsored the research and provided access to corporate records. Rev: *T&C*, vol. 46, 2 (Apr. 2005), pp. 446-47.
- ◆ Dana M. Batory. **Vintage Woodworking Machinery, Vol. 2.** Astragal Press (www.astragalpress.com), 2004. 208 pp. \$29. Second in series of guides to major woodworking machinery manufacturers. Covered in this volume are Parks Machine, Boice-Crane, Baxter D. Whitney & Son, and Crescent Machine.
- ◆ James Dao. **A New Campaign to Preserve an Old Mining Battlefield.** *NY Times* (May 15, 2005), p. A-14. Preservationists, union leaders, politicians, and property owners wrangle over whether to nominate to the National Register the 1400-acre site of the Battle of Blair Mt., where in 1921 thousands of union miners confronted a force of sheriffs, state police, and coal-company guards. The five-day battle, which included trench warfare (many miners were WWI veterans), machine gun battles, and bombs dropped from a plane, was eventually quelled by 2,000 federal troops.
- ◆ Thomas A. Kinney. **The Carriage Trade: Making Horse-Drawn Vehicles in America.** Johns Hopkins Univ. Pr., 2004. 368 pp. \$49.95. Traces the rise and fall of this varied industry, from the pre-industrial shop system to the coming of the automobile. Case studies of Studebaker, NY-based luxury carriage maker Brewster and dozens of smaller firms.

ABBREVIATIONS:

Common Ground	= Published by the National Park Service, www.cr.nps.gov/CommonGround
I&T	= <i>American Heritage of Invention & Technology</i>
IA News	= <i>Industrial Archaeology News</i> , Bulletin of the Assn. for Industrial Archaeology (UK)
Prototype	= <i>News from the Lemelson Center for the Study of Invention and Innovation</i> , Smithsonian Institution
T&C	= <i>Technology & Culture</i> , Quarterly of the Society for the History of Technology
Transfer	= Publication of the Rail-Marine Information Group, www.trainweb.org/rmig .

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.

SIA Preservation Grants Update

Four Industrial Heritage Preservation Grants were awarded at the SIA board meeting in Milwaukee on June 3, 2005. All grant recipients have acquired matching funds to aid their projects.

The City of Superior, WI, was awarded \$3,000 to help fund a Historic Structures Report (HSR) for the **S.S. Meteor**, the last whaleback freighter (tour site—2000 Annual Conference). The ship was launched in 1896 and was designed and built by Cpt. Alexander McDougall. According to the grant application, “the unique design, including a round, cigar-shaped hull and snout-like bow was built for efficiency and stability. In addition, the steel-hulled whalebacks were less expensive to build and operate and carried significantly more cargo than their massive wooden contemporaries.” The HSR will not only provide historic data on the vessel but will evaluate its condition and provide recommendations to restore and preserve the vessel for the long-term. The National Trust for Historic Preservation is a co-sponsor of the project with the city.

Friends of the East Broad Top Railroad (EBT) will receive \$3,000 to hire an historic architect to assemble materials for a HAER documentation of the Coles Station Water Tank in Huntington County, PA, located within the EBT National Historic Landmark. The enclosed water tank is the last of many that once stood along the EBT line. The water towers, which provided water for the steam locomotives, were enclosed to prevent freezing. The documentation will be submitted to the Library of Congress to be

deposited with existing HAER materials on the EBT.

The **Niagara Power Trail Project**, sponsored by the City of Niagara Falls, NY, will use the \$3,000 awarded by the SIA to research and produce a National Register of Historic Places (NRHP) Multiple Property Listing for the Niagara Power Trail. Over 100 years of hydro-electric power history occurred in the Niagara Falls area and much of that history can be seen on the landscape. NRHP nominations will be prepared for four individual sites as well. A “Power Trail” tour will be designed as part of the overall project.

National History Day—Alaska was the recipient of \$3,000 to aid in the preservation and dissemination of the **Kennecott Copper Corp., Alaska archives**. The materials date from c.1915-37. The National Park Service is a co-sponsor and currently houses the archives in their Alaska Regional Office. The project will organize, catalog, microfilm, and provide digital access to the data through a dedicated Website.

The SIA Grant Committee proposed and the board approved at its June meeting the awarding of grants on an annual basis with announcements held in conjunction with the SIA Annual Business Meeting, generally held in June. The deadline for all applications is now 31 March, or the Monday following should the 31st fall on a weekend. All applications must be e-mailed or post-marked by that day. A total of \$12,000 per year has been earmarked for grants and no more than \$3,000 will be awarded per applicant per annum. Info: www.sia_web.org ■

2005 Student Travel Scholarship Recipients

Each year the SIA awards scholarships to students and young professionals to help defray the costs of attending the annual conference. The recipients who attended the 2005 Annual Conference in Milwaukee were:

Rachael Herzberg is a second-year graduate student at Michigan Technological University (MTU). She began life as a classical archeologist who had never heard of industrial archeology until she worked an Etruscan site where a variety of products were made. She has been to our conferences for the past two years, and she looks forward to staying active with the profession and helping other students learn about IA.

Scott F. See left a career with a computer company to return to his alma mater, MTU, to pursue a graduate degree in IA. He is completing his first year. Before moving back to Houghton, Scott was active with the Samuel Knight chapter and wrote the *SIAN* review article on the 2003 Fall Tour—Northeast Montana.

Alicia Valentino, an MTU graduate, is pursuing a doctoral degree at the University of Arkansas. Her dissertation is on a 19th-c. sawmill complex in the Ozarks. At this conference, she presented a paper on multidisciplinary approaches to understanding industrial sites, using an Arkansas mill as an example. Alicia has presented papers at past conferences and actively contributes to SIA activities.

Members are encouraged to support the scholarship program by making a donation to the fund. A check-off is provided with annual dues notices. Applications for scholarships to next year's conference in St. Louis will be accepted in early 2006. Notice will appear in future issues of *SIAN*. Info: Mary McCahon, SIA Scholarship Committee, Lichtenstein Consulting Engineers, Ste. 818, One Oxford Valley, Langhorne, PA 19047. ■



2005 SIA Scholarship Recipients (left to right):
Alicia Valentino, Scott F. See, and Rachael Herzberg.

Larry Mishkar

HAER DOCUMENTS WESTERN UNION RELAY SITE

The modest research project that David Rotenstein [SIA] began back in 2002 documenting the history of Western Union Telegraph Company's New York-Washington-Pittsburgh microwave relay system—the nation's first commercial network—is yielding some interesting results as it uncovers the history of a key chapter in American technological history. It also illustrates gaping holes in federal policies as they relate to identifying and potentially preserving historic engineering structures. Under recently issued FCC guidelines, the owners of the Western Union towers have no obligations to consider preservation or documentation of components of the historic relay system of the 1940s. Fortunately, a Historic American Engineering Record (HAER) team recently was allowed to spend two days at a decommissioned tower on a 2,000-ft.-high ridge in western Pennsylvania's Laurel Highlands.

In early 1945 the Federal Communications Commission (FCC) granted the Western Union Telegraph Company (WUTCo) permits to develop experimental microwave relay systems in the Mid-Atlantic region of the United States. The permits were issued shortly after a major allocation of spectrum to non-governmental entities that received national media coverage and spurred an electronics boom that included the widespread introduction of CB radios, car telephones, and even microwave ovens.

By January of the following year, WUTCo had acquired sites for nearly twenty relay stations where it had planned to erect prefabricated fire lookout towers modified to accommodate the revolutionary new microwave communications system. WUTCo also hired architect Leon Chatelain to design a fashionable and functional terminal station that would be compatible with the surrounding neighborhood in the Tenleytown section of Washington, D.C. (SIAN, Summer 2003). The remaining three terminal stations—New York, Philadelphia, and Pittsburgh—were high rise buildings where WUTCo placed rooftop antenna arrays.

Antennas and radio equipment designed by RCA were mounted inside a metal cabin atop each of the relay towers and in standardized concrete-block buildings. Radio equipment cabinets and each facility's physical plant (a gas engine, banks of batteries, and a furnace) occupied the concrete-block buildings. Each site was self-sufficient, remotely controlled by one of the terminal stations and visited regularly by maintenance crews.

One of the first WUTCo relay sites is located on a ridge in western Pennsylvania's Laurel Highlands. WUTCo bought the 200-ft. by 200-ft. parcel in Oct. 1945 and proceeded to build a 100-ft.-tall steel tower. The site went into service in early 1948 and it operated until about 1963. WUTCo sold the property in 1976. Bypassed by the wireless telecommunications industry and in private ownership (its current owner, Pittsburgh businessman Bob Mallet, is enthusiastic about its history), the relay station has remained unused since the 1960s.

In early June 2005, a HAER team documented the former WUTCo facility. Architect Christopher Marston, engineer-historian Larry Lee, photographer Jet Lowe, and David Rotenstein [all SIA] spent two days photographing and measuring the relay station. U.S. Forest Service lookout tower drawings and WUTCo architectural and engineering drawings provided baseline data for the fieldwork.

The documentation confirmed that the surviving archival documents left behind by WUTCo and in the files of the FCC are not sufficient to fully understand the engineering and architectural attributes of these early relay sites. Modifications were made to tailor each of the facilities to its particular location within the microwave network and to accommodate changing technology during its period of significance. Additionally, the activities of the maintenance crew also were evident in the surviving material culture. The HAER report and drawings should be completed by early 2006.

David S. Rotenstein



Western Union Telegraph relay station.



HAER architect Christopher Marston [SIA] checks notes on the catwalk atop the relay tower.



HAER engineer-historian Larry Lee (left) and photographer Jet Lowe (right) [both SIA] photograph tower details approximately 90-ft. above the ground.



Western Union Telegraph radio equipment boxes and antenna mounts atop the relay tower.

David Rotenstein, all photos

New Federal Policies Endanger Historic American Engineering Sites

Recent actions by the Federal Communications Commission (FCC) and other federal agencies are increasing the likelihood that historically significant 20th-century engineering sites may be lost due to an easing of federal historic preservation regulations. The broadcast and telecommunications industries are required to comply with Section 106 of the National Historic Preservation Act (NHPA) because they receive FCC licenses and permits to construct towers in addition to the valuable licenses to use the electromagnetic spectrum. Section 106 requires the head of any federal agency having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking to take into account the effect of the undertaking on any property that is included or eligible for inclusion in the National Register (NR).

The Advisory Council on Historic Preservation (ACHP) issues rules for Section 106 compliance, including programmatic agreements when non-federal parties are delegated major decision-making responsibilities. Programmatic agreements may be tailored to streamline the Section 106 process, or they can serve to exclude certain types of federal undertakings from Section 106.

In 2003, the FCC and ACHP were under political pressure to exclude the construction of replacement communication towers from Section 106. They issued a programmatic agreement opening the way for any FCC licensee to demolish a communications facility of any vintage without first evaluating its historic significance and NR eligibility. Potentially historic engineering properties, including FM transmitters from the early 1930s, first-generation microwave relay facilities from the 1940s, and prototype satellite communications facilities from the 1960s, are not subject to Section 106 under the terms of the new rules.

The FCC and ACHP gave industry a free pass that amounts to the same as if the Department of Transportation did not have to evaluate old bridges or the Department of Defense was not required to evaluate historic military facilities. At an April 2005 oversight hearing, U.S. House of Representatives chairman of the Subcommittee on Parks (Devin Nunes, R-California) asked a telecommunications industry lobbyist, "If one of your towers was 50 years old, would it be your understanding that they'd be potentially eligible under the current definition of the Act?" The lobbyist replied, "We actually do have some towers that are 50 years old. Western Union Telegraph erected them and just like the expression, 'One person's wildflower is another person's weed,' there's a person who wishes to preserve some of these towers."

The U.S. is not the only nation with historically significant communications facilities nor is it the only one to face

preservation challenges in a rapidly changing technological world. In 2003 the English Department for Culture, Media and Sport added London's BT (British Telecom) Communication Tower (built 1961-1965) to the nation's List of Buildings of Special Architectural or Historic Interest. The BT Tower was one of seven postwar communications structures documented in a nationwide study of Cold War properties. "Britain was a world leader in telecommunications during the 1950s and 1960s, and these seven new listings are a tribute to that scientific achievement as well as being architectural icons of the times," said Sir Neil Cossons, Chairman of English Heritage. He underscored the government's opinion that listing would not "impede the building's continued scientific work" or its evolution as an active communications facility.

Officials in the U.S. apparently take a different view of significant engineering properties like communications towers and other infrastructure resources. In 2002, for example, the ACHP issued the Federal Energy Regulatory Commission (FERC) an exemption from the Section 106 requirement that it (and its applicants in the natural gas transmission industry) take into account the effects of undertakings on historic gas pipelines. Unlike the broad latitude granted the FCC with regard to its historic towers, FERC applicants bear at least some responsibility to mitigate the adverse effects of abandoning a historic pipeline.

Historian Christopher Castaneda wrote in a 2004 article published in *The Public Historian* that the pipeline exemption stripped "pipelines of their significant historic context." He added, "No matter what one thinks of the historic significance of natural gas pipelines, their exemption from Section 106 review requirements represents a powerful example of how historically significant properties can become historically insignificant under federal law." When it comes to certain types of historic properties under the regulatory oversight of certain federal agencies, then—to paraphrase Bill Clinton—it all depends on what the meaning of the word "historic" is.

As non-federal beneficiaries of federal action—FCC licensees, pipeline owners, developers, and even banks—take on more responsibilities, federal agencies are adapting to a new regulatory marketplace in which they have less involvement and delegate more compliance responsibility to their applicants. The upside of this transformation may be a more streamlined federal government but the downside may be that attorneys, industry executives, and other special interests are crafting federal historic preservation policies and setting the criteria for what constitutes a historically significant property.

David S. Rotenstein

BRIDGES OF ERNEST L. RANSOME

Editor's Note: Despite all of the survey work, a few bridges remain of which the historic bridge community is not well aware. It's not every day that one stumbles across two Ernest Ransome bridges.

In the June 1916 issue of *Concrete* magazine, reader assistance was sought in determining the oldest reinforced-concrete bridge in the U.S. Three replies were received, all of which cited the Alvord Lake Bridge (1889) in San Francisco's Golden Gate Park as the oldest.

This bridge is a grade-separation structure, designed to provide a safe path for pedestrians crossing under a portion of the main drive of the park (a section now called Kezar Dr.) on their way to and from the children's playground. It has a clear span of approximately 20 ft. and a rise of 4 ft.-3 in.

Reinforced with iron bars twisted in accordance with the design patented by Ernest L. Ransome (1844-1917) in 1884, this modest structure has been cited as the predecessor of thousands of reinforced-concrete bridges built across the nation in the 20th century. However, Ransome was known primarily as a builder of buildings, and the Alvord Lake Bridge has sometimes been believed to be his only bridge.

Two of the respondents to the query of *Concrete* in 1916, however, also mentioned that Ransome built a second bridge in Golden Gate Park in 1891, which was structurally similar to the Alvord Lake Bridge and had approximately the same dimensions. One of these men, J. T. Burton, was associated with the technical division of the Portland Cement Association in Chicago. The other respondent was Edgar K. Ruth, assistant engineer of the engineering department for the City of Cincinnati. Although these gentlemen did not mention the second bridge by name, by their description it is clear that it had to be the structure that was originally called the "Tunnel under Main Drive" or the "Chicken Point tunnel."

Still extant, this bridge passes underneath what is now called John F. Kennedy Drive, in front of the Conservatory of Flowers. Rough measurements indicate that it has dimensions very close to those of the Alvord Lake Bridge, and both structures feature an exterior finish designed to make the concrete appear like stone. But unlike the Alvord Lake Bridge, in which concrete "stalactites" hang above the

heads of pedestrians, the interior finish of the Tunnel under Main Drive is smooth.

The "tunnel" is undoubtedly the second oldest reinforced-concrete bridge in the United States. Both it and the Alvord Lake Bridge were built by the Ransome & Cushing construction company, which also built the Leland Stanford Junior Museum in Palo Alto (1894), the largest reinforced-concrete public building in the world at the time.

The story of Ransome's contribution to the design of reinforced-concrete structures in the U.S. dates back to 1870, the year that he emigrated to America from England to exploit his father's patent for concrete, which was popularly referred to at the time as "artificial stone." About 1875, after approximately four years as superintendent of the Pacific Stone Company, Ransome founded his own company, manufacturing artificial stone, silicate of soda, and associated products.

In 1884, Ransome received the patent (No. 305,226) that became the basis of the Ransome system for reinforcing concrete. Ransome adapted a concrete mixer to twist iron bars up to two inches in diameter, believing that twisted bars had greater tensile strength than smooth round bars. His primary focus was on finding the best way to make the concrete adhere to the metal.

In the same year that he received his patent, Ransome built his first reinforced-concrete building, the Artic Oil Works in San Francisco. For the next five years, he listed himself in the San Francisco city directories as "patentee" and manufacturer of artificial stone, concrete, and artificial pavement. He continued to operate as a sole proprietorship until about 1889 when he formed a construction company partnership with Sidney B. Cushing, who is perhaps best remembered as president of the Mill Valley & Mount Tamalpais Scenic Rwy. The memorial amphitheater near Rock Springs on Mt. Tamalpais is named for Cushing.

In 1889 Ransome formed a partnership with Francis M. Smith, the "borax king," and opened the Ransome & Smith Company in San Francisco while also maintaining his partnership with Cushing. Ransome & Smith built an addition to the Pacific Coast Borax factory in Alameda, CA, in

(continued on page 21)



Alvord Lake Bridge (1889), Golden Gate Park, San Francisco.



Tunnel under Main Drive (1891), Golden Gate Park, San Francisco.



Footbridge (c. 1900) at Presdeleau estate, Shelter Island, NY.

THE TIMBER CROSSING AT ROCKFORD, ILLINOIS

One of Rockford's initial claims to fame was that it lay on the route from Chicago to Galena, site of America's most productive lead mines in the 1830s. Galena is situated in the northwestern corner of Illinois near the Mississippi River. The Galena & Chicago Union RR, chartered in 1836, hoped to supplant the shipping of lead down the Mississippi, but almost two decades lapsed before, in 1852, the first train chugged into Rockford. Another year lapsed before the Rock River in Rockford was bridged to the west. The G&CU never did make it to Galena; the main line went from Chicago due west to the Mississippi at Fulton, conceding the Galena lead market to the Illinois Central RR.

An 1869 photograph shows work underway on an all-timber, arch-braced, G&CU railroad bridge across the Rock River. Whether this bridge was the original 1853 crossing or a later replacement is undocumented. The bridge in the photograph does not appear to be a new structure, but one that is being repaired or upgraded. Reinforcing this belief is that by 1869 it had become common practice to use iron rods or bars, rather than timber, for the tensile members of trusses, and there are no iron members in this truss.

The most distinguishing feature of this all-timber bridge is that the diagonal members in the truss web extended across two panels, while the counter diagonals are contained within a single panel. The paired, two-panel-long diagonals are set at 45-degree slopes, theoretically the most

efficient angle. The lower-stressed counter diagonals are enclosed within a single panel between the verticals and thus are cleverly tucked away from physical conflict with the main diagonals. The bracing arches are secured on the outside of the underlining three-layer truss web sandwich.

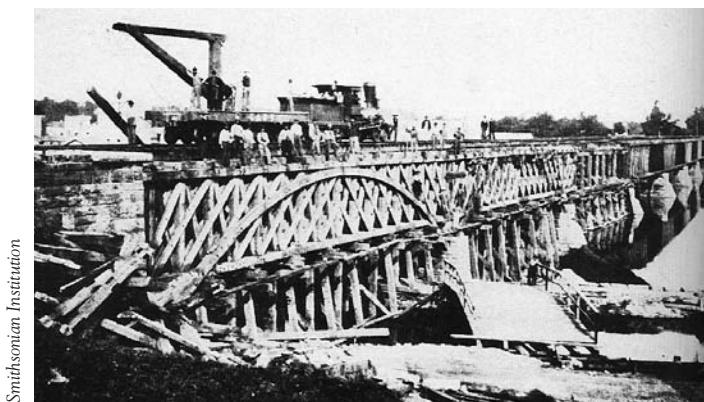
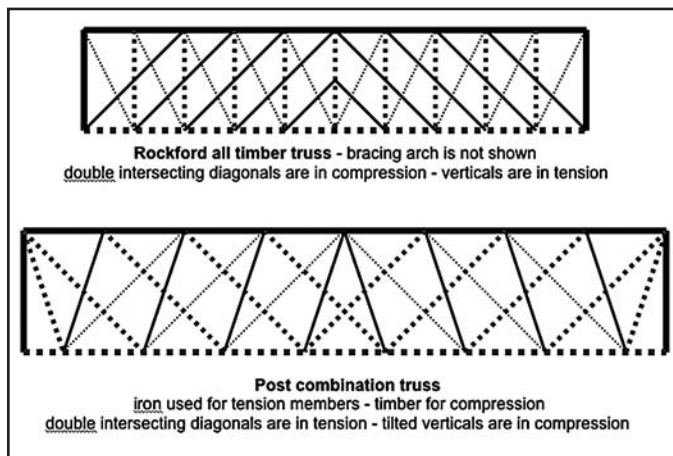
The Rockford configuration represents an intelligent and practical utilization of timber; the design maximizes the use of compressive members and minimizes the use of tensile members. Compression joints between timber members are easily made, while tensile joints are difficult and inefficient. Since all of the web's diagonals are arranged in a manner that places them under compression, they can be secured simply by end bearing. The tensile verticals, although weakened by being notched to secure them to the chords (see members laying on the ground in the foreground of the photo), are double the usual number, thus lessening the stress on each.

The Post truss, widely used between 1865 and 1880, shares similar characteristics with the Rockford Bridge truss in that both have two-panel diagonals and single-panel counters. The geometric pattern of the Post truss diagonals, however, reverses that of the Rockford truss. The Post's diagonals slope down towards the center of the span, placing them in tension rather than compression. The slightly tilted verticals are in compression rather than tension. Early examples of the Post truss used wrought iron for the diagonal and bottom-chord members, and timber for the top chord and tilted, vertical members, thus clearly expressing the nature of the forces on its members by the selection of the appropriate material.

Since the 1869 photograph of the Rockford crossing is the only discovered evidence of the bridge, how its builders arrived at their solution is speculative. Apparently, a major requirement was that only timber members could be used, and a logical configuration was then devised to maximize the use of compressive members in order to minimize the more difficult tensile connections between timber members.

The photo shows an arch only on the end span of the multispan bridge. As there had been a functioning railroad bridge across the Rock River since 1853, it seems reasonable to hypothesize that the photo is showing arches being added to an existing crossing in order to help support the ever-increasing weight of locomotives. Another scenario, suggested by Kyle Wyatt, Curator of History & Technology at California State Railroad Museum, is that the arched-braced spans are in the process of being removed in order to be replaced by new trusses resting on the old piers. Whatever is taking place at the time of the photograph, the arched-braced truss shown in the photograph depicts a distinctive configuration that was the product of a sophisticated reasoning process.

The practical common sense underlining the design of the Rock River Bridge lends credence to the suspicion that other examples of this design may have been built, though none have come to light.



The Rock River Bridge of the Galena & Chicago Union RR, Rockford, IL, 1869.

David Guise

tinues to fight for a National Museum of Industrial History at the Bethlehem site.

Lance is responsible for written histories of many of the industrial sites of Pennsylvania, including *The Anthracite Iron Industry of the Lehigh Valley* with Craig Bartholemew, *Saint Nicholas Central Breaker* with Michael Workman, and *Bethlehem Steel* with photographs by Andrew Garn. He has written or contributed to many other books as well and has produced articles on a wide range of topics, including the Molly Maguires. He is also the editor in chief of Canal History & Technology Press, where he compiles the impressive proceedings of its annual symposium and tirelessly promotes its publications.

The SIA has long benefited from his participation. He has been a director on the SIA board, president of the Roebeling Chapter, a frequent presenter at annual conferences, and the organizer of our fall tour in 2002.

Lance is a public historian in the best sense of the term. He reaches out to a wide audience and brings new people into our field. He is particularly impressive for his work with young people, who represent the future of industrial archeology. When he is introducing eighth graders to

blacksmithing, he is laying the groundwork for future scholarship and sharing his exceptional gift for public interpretation of the industrial heritage.

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.

The General Tools Award was established in 1992 through the generosity of Gerald Weinstein [SIA], chairman of the board of General Tools Manufacturing, Inc. 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. ■

NOTES & QUERIES

American Canals, NY State Barge Canal, and Knox Mine Disaster. The National Canal Museum (Easton, PA) and the Pennsylvania Canal Society are sponsoring a series of public lectures and book signings. Sept. 15: Robert Kapsch [SIA], *Canals*, a modern treatise on canal engineering and the impact of canals on America's national development. Oct. 20: Michelle McFee, *The Long Haul: A History of the New York State Barge Canal*; Nov. 17: Kenneth Wolensky, *Voices of the Knox Mine Disaster* (the 1959 breakthrough of the Susquehanna River into an anthracite mine brought underground mining to an end in the Wyoming Valley). All lectures begin at 7:30 pm at the Two Rivers Landing auditorium, 30 Centre Sq., Easton. Info: (610) 559-6613.

Info on Architect William Higginson. A graduate student at NY University is seeking information on, and possibly the papers of, the architect responsible for many of the reinforced-concrete warehouses and factories along the Brooklyn waterfront, including most of Bush Terminal (tour site—2003 Annual Conference). Info: Malka Schwartz, ms1186@nyu.edu.

Upstate NY Industrial Tours. The Hudson Mohawk Industrial Gateway and Burden Iron Works Museum sponsor a series of tours each year. Recent and planned tours include NY State Barge Canal Workshops, textile manufacturing at M. N. Bird Co., origins of the modern horseshoe, railroad history of Troy, and stained glass. Info: HMIG, One East Industrial Parkway, Troy, NY 12180; (518) 274-5267; www.hudsonmohawkgateway.org.

IA in Philately. Canada Post has issued four new, domestic-rate (50¢) stamps that are a celebration of Canadian bridges. The bridges are unusually depicted as "action photos" of people "interacting" with the bridges. The 1900 Jacques Cartier Bridge over the St. Lawrence at Montreal is shown from the driver's perspective, looking through a windshield with the driver's eyes shown in the rearview mirror. The other stamps depict the 1955 Angus L. MacDonald suspension bridge in Nova Scotia from the perspective of a sailboat passing underneath it; the 1955 Canso Causeway swing bridge that connects Nova Scotia with Cape Breton Island from the perspective of a Coast Guard ship passing the open drawbridge; and a 1904 "swinging" pedestrian suspension bridge in Souris, Manitoba.

Trading Music: New Jersey's Instrument Makers. Exhibit at the Museum of Early Trades & Crafts (Madison, NJ) runs through Jan 15. Examines the techniques and tools used in the fabrication of musical instruments from an early-19th-c. clarinet made by the NJ Peloubet Co. to a modern-day Puerto Rican-made guitar known as a *cuarto*. There will also be a fife from the War of 1812, Civil War bugle and flute, 1830s guitar, church bass, and late-19th-c. banjo. Info: (973) 377-2982; www.metc.org.

Eureka Smut Separating Machine. An English flour mill preservation group, the Crabble Mill restoration trust, is seeking information, drawings, and advice on restoring to operation an American-made 19th-c. grain cleaning and smut separating machine. SIA members with information are encouraged to contact Neil at neil@worldinpiece.com; www.ccmt.org.uk ■

IA ON THE WEB

Chicago Steel Museum (www.chicagosteel.org). Chicago's Steel Heritage Project plans to purchase the former Acme Steel coke works for a steel industry museum.

Merritt Parkway (www.merrittparkway.org). Merritt Parkway Conservancy is working to preserve and celebrate the late-1930s motor expressway in southwest CT.

Mesta Machine (images.library.pitt.edu). 164 on-line images illustrate the manufacturing of steel-mill equipment at Mesta's factory in W. Homestead, PA, between 1906 and 1920. The entire collection of more than one-thousand glass-plate negatives is held by the Historical Society of Western PA.

Schell Bridge (www.schellbridge.org). Northfield, MA, is rehabilitating the 1903 cantilever-truss bridge over the Connecticut River, out of service for more than 20 years.

Steamboy (www.sonypictures.com/steamboy) is a Japanese, animated film that takes place in England in the 1860s. The plot is typical for the genre and some of the thermodynamics are questionable, but it's a feast for IA eyes—gadgets, flying machines, locomotives, and bursting steam pipes.

Textile Factories in the South, 1861-65 (www.uttyl.edu/vbetts/textile_factories.htm). Extensive collection of newspaper clippings from Civil War-era newspapers locate and describe textile mills and their operations.

Triangle Shirt Waist Fire (ocp.hul.harvard.edu/www/organizations_ny_investigation.html). The complete 13-vol. investigating report is available in digital format. The 1911 fire took the lives of 146 workers in NYC. The report was a full-scale investigation of working conditions in the garment industry.

"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 by e-mail: phsianews@aol.com. ■

ERNEST RANSOME (continued from page 18)

1889, and a warehouse in Bayonne, NJ, in 1898, using Ransome's method.

Recently, a third Ransome-built bridge has come to light: an elegant little arched footbridge across a pond on Presdeleau, Smith's private estate on Shelter Island, NY. The construction date of this bridge has not yet been documented, but it was probably built just after 1900.

The two bridges erected in San Francisco and the bridge at Shelter Island are the only bridges known to have been constructed by Ernest Ransome. Others may exist, however, and SIA members are encouraged to contact Robert Jackson at drwjack@yahoo.com.

Robert Jackson

CHAPTER NEWS

Oliver Evans (Greater Philadelphia) held its annual film-fest in May. Lance Metz [SIA], historian at the National Canal Museum, presented a railroad-themed evening with 1950s footage of the Reading RR, Pennsylvania RR electric locomotives of the 1940s to 1970s, and the silent-film classic *The General* (1924) starring Buster Keaton. In June, chapter member Bob Thomas gave a presentation and led a tour of Philadelphia's Kensington & Tacony railbed, which is being converted into a heritage trail.

On July 16, the chapter celebrated the 200th anniversary of Oliver Evans's *Orukter Amphibolos* with a lecture and ceremony at the Atwater Kent museum attended by more than 100. Philadelphia's mayor proclaimed July 16 "Orukter Amphibolos Day," and a group of dignitaries rode on a decorated amphibious "duck" vehicle, bowing low as they passed 9th and Market where Oliver Evans had his shop and built the *Orukter* in 1805. The *Orukter* was an amphibious steam-powered dredge that is widely regarded as the first motorized vehicle to travel a public street (SIAN, Spring 2005).

Roebling (Greater NY-NJ) toured the infrastructure of Roosevelt Island in June. Sites included the tram station, the Goldwater Hospital steam plant, the trolley kiosk, and the ruins of the smallpox hospital. In Aug., chapter members cruised the East River aboard the fireboat *John J. Harvey*.

Southern New England visited the Old New-Gate Prison and the Noble & Cooley drum factory in May (tour sites—1998 Fall Tour, Central Connecticut River Valley; SIAN, Spring 1999). The prison includes the remains of an 18th-c. copper mine. Noble & Cooley, est. 1854, manufactures military, toy, and professional-grade drums on vintage machinery. Company president Jay Jones demonstrated the machinery. Helena Wright [SIA], curator of graphic arts at the Smithsonian, gave a brief presentation about the processes used to print patterns on toy drums.

SUPPORT YOUR LOCAL CHAPTER

For info on a chapter near you or to start one, contact:
Lynn Rakos, SIA Director, Local Chapter Chair
(917) 790-8629; lrakos@hotmail.com



Ned Heite, 1939-2005

Edward F. "Ned" Heite, 66, died April 17, 2005 in Camden, DE. He held BA and MA degrees from the University of Richmond, was the Editor of *Virginia Cavalcade* for a number of years, and also functioned as the first *de facto* Virginia state historical archeologist. After moving to Delaware in 1969, he was a Hagley Fellow at the University of Delaware and became chief of the Delaware Bureau of Archives and Records. He also taught business information systems in the University of Delaware's Dept. of Business Administration.

He collected printing presses, and ran them. He had a vintage Land Rover that he used as his personal transportation and belonged to every mailing list and subscribed to every publication on them that existed. He wrote syntheses on iron in the Chesapeake region and on town plans as artifacts. He reviewed beer and brewed his own, and had his own artifact type collection, wrote reviews of books, wrote op-editorial pieces, "stinkbombs," for local and national distribution and was honestly distressed if folks agreed with him. His objective was simply to get people to think.

He founded Heite Consulting, Inc. as a historian and archeologist and worked indefatigably on the industrial history of Delaware. He was a member of the Advisory Board for the Falling Creek (VA) Ironworks Committee (the first New World iron furnace). He excavated at the Fredericksville (VA) Furnace, site of the first industrial archeological excavation in North America in the 1880s.

Certified by the Society of Professional Archaeologists, he was the author of over 200 technical reports. He was insatiably curious about every aspect of archeology and was a decidedly anti-theory-oriented practitioner. He said, "We ask the dirt." His motto was, "Any knowledge



Ned Heite with "Baby," his vintage Land Rover.

is a subset of archeology."

An excavation of a 19th-century cannery resulted in a few cut sheets of metal that he turned into a treatise on the manufacture of cans. That was a typical Heite contribution. He excavated acculturated Native American sites in Delaware. Recognizing connections from his historical work in Virginia, he wrote a highly regarded report on ethno-historical research. His last and unfinished work was on small-scale bloom smelting on a Delaware farmstead.

Most of all, he was remarkable for his vast knowledge of virtually any subject imaginable, provided it could be related in some way to the past. He melded the objective and the practical knowledge together and used that to extend his understanding of the technological processes involved.

Lyle Browning

SITES & STRUCTURES

Celebrated ... Two sites of IA interest were designated National Historic Landmarks (NHL) in April. NHL status is reserved for sites of exceptional historic significance. The **Auburn Cord Duesenberg Automobile Factory** in Auburn, IN (SIAN, Winter 2002) was designated as one of the few remaining examples of an independent specialty automobile company that made hand-assembled rather than mass-produced automobiles. The NHL includes the Art Deco-style showroom and administration building, service and new parts department building, and the Cord L-29 building. The **Lightfoot Mill** (1749-1830) in Chester Springs, PA, is a small 18th-c. custom grain mill with its power transmission system surviving completely intact. Survey suggests that no other custom mills in the U.S. from this period survive with a system so intact. The basic technology of this mill dates from the mid-18th-c., later adapted to make use of several of the automating inventions of Oliver Evans. At Lightfoot,

one can see the impact of automation on traditional milling. Info: www.cr.nps.gov/nhl/.

In June, the American Society of Civil Engineers (ASCE) and the Canadian Society for Civil Engineering (CSCE) celebrated the **Bridges of Niagara** with a plaque dedication ceremony at Niagara Falls State Park, NY. The bridges were recognized as an International Historic Civil Engineering Landmark. The plaque reads, in part, "Since 1848 many bridges have spanned the Niagara Gorge below Niagara Falls. The design and construction of these bridges was necessary for the economic development of the Niagara Falls area. The demand for safe and convenient crossings was easily apparent. This need provided a great challenge to civil engineers and to the development of bridge engineering technology. The successful crossing of the gorge

(continued on page 23)

required the skill of many engineers willing to take risks and extend their engineering knowledge beyond established limits. Their foresight and intuition contributed to the refinement and advancement of design techniques for suspension and arch bridges.” The Bridges of Niagara are the Niagara Suspension Bridge (1848); Lewiston & Queenston Suspension Bridge (1851); Niagara Railway Suspension Bridge (1855); Niagara Falls & Clifton Suspension Bridge (1869); Niagara Cantilever Railway Bridge (1883); Niagara Railway (Whirlpool Rapids) Arch Bridge (1897)*; Falls View (Honeymoon) Arch Bridge (1898); Lewiston & Queenston Suspension Bridge (1899); Michigan Central Arch Bridge (1925)*; Rainbow Arch Bridge (1941)*; and the Lewiston-Queenston Arch Bridge (1962)*. (* currently in use.)

Preserved ... Harrison Coal & Reclamation Historical Park (New Athens, OH) is preserving a c.1950 **Marion 7200 dragline** donated by James Brothers Coal Co. Volunteers have been mobilizing to raise funds to move the dragline, which has a 7-yd. bucket, 120-ft. boom, and a Fairbanks-Morse engine. Up to 18 semi-truck loads (four of them oversize) will be required to move the disassembled dragline to the park for reassembly. The Marion 7200 will be joining the HCRP’s growing shovel and dragline collection that includes a Hanson 31 shovel, Marion 111-M dragline, and Insley L dragline. The park’s ultimate goal is to acquire the Silver Spade, a 105-cu.-yd. Bucyrus-Erie 1950-B, the last operating stripping shovel in Ohio, and one of only four in the U.S. The organization is seeking volunteers and donations to help it preserve southern Ohio’s surface mining heritage. Info: www.hcrhp.org.

New York City’s **High Line** project (SIAN, Spring-Summer 2004) received a crucial federal authorization in June, effectively opening the way for the 1.5-mile-long viaduct’s transformation into a public park. The High Line was built between 1929 and 1934 to eliminate grade crossings of the New York Central’s West Side Freight Line in Manhattan. The last freight train operated in 1980 and since then the High Line had deteriorated. Since 1999, the Friends of the High Line (FHL) have been working to reuse the viaduct as an elevated walkway. Mayor Michael Bloomberg endorsed the project in 2002. The Surface Transportation Board (STB), the federal body that oversees rail corridors, issued a Certificate of Interim Trail Use (CITU) on June 13. The certificate enables CSX Transportation, the High Line’s current owner, to negotiate for the transfer of the High Line to the city. This process, known as “railbanking,” is a method of creating trails from out-of-use rail corridors. It was established by Congress in 1983. To date, over 13,000 miles of rail-trails have been opened across the U.S., with nearly 16,000 more in development, but none that incorporate such a lengthy structure as the High Line.

Threatened ... the **Simon Silk Mills** complex at 39th St. in Union City, NJ, is on Preservation New Jersey’s “10 Most Endangered Historic Sites” list. The mammoth industrial

site, many parts of which date to 1874, is the last of the great mills that made northern Hudson County a center of the silk textile industry. Info: www.nationaltrust.org/magazine/archives/arc_news_2005/021005.htm.

Lost ... Four iconic smokestacks that were part of the **Long Island City Powerhouse** (1903-05) in Queens, New York City, have been demolished as part of a plan to redevelop what remains of the powerhouse as luxury condominiums. Roebling SIA chapter and other preservation groups initiated a campaign to save the 275-ft.-tall, black smokestacks but the developer was unwilling to wait to receive a variance that would have allowed them to be incorporated into the condo’s design. The powerhouse was one of the first steam-turbine generating plants in the country. For nearly a century it has been a prominent, visual landmark of the Queens waterfront.



It has been over 100 years since the last iron lenticular-truss bridge was built. Now, a new bridge of this unique geometry has been fabricated and is currently on display at the University of Massachusetts—Amherst. Alan Lutenegger [SIA], Prof. of Civil & Environmental Engineering, designed the bridge; engineering students fabricated and constructed it. Modeled after the shortest spans built and sold by the Berlin Iron Bridge Co. of E. Berlin, CT, from about 1880 to 1900, the new bridge is a three-panel 20-ft.-long pony truss. It will be used as a pedestrian bridge. Like many of its predecessors, the new bridge has upper chords and end posts fabricated from channel sections, and lower chords composed of flat eye bars. Prof. Lutenegger is currently working on a book about the design and application of lenticular-truss bridges in the 19th century. He has visited all of the remaining 60 or so built by Berlin and documented their dimensions and conditions. He is also planning to design and build a 5-panel, 40-ft.-long configuration next.

CALENDAR

2005

Sept. 29-Oct. 2: SIA FALL TOUR, DETROIT, MI.
Info: events@siahq.org; www.sia-web.org.

Oct. 5-9: Assn. of Railway Museums Conference, Strasburg, PA. Hosted by the RR Museum of PA. Info: www.rrmuseumpa.org.

Oct. 14-16: Historic Ironmaking Conference (Ironmasters Conference), Sterling Forest State Park, Tuxedo, NY. Info: Edward J. Lenik, 100 Deerfield Rd., Wayne, NJ 07470; edlenik@hotmail.com.

Oct. 20-22: Annual North American Labor History Conference, Wayne State Univ., Detroit, MI. Topic: Labor, Solidarity, and Organizations with an emphasis on the IWW. Info: Janine Lanza, Dept. of History, 3094 Faculty Admin. Bldg., WSU, Detroit, MI 48202; 313-577-2525; ao1605@wayne.edu; www.cla.wayne.edu/history/confcal/nalhcn.

Oct. 27-29: Pioneer America Society Annual Conference, Baton Rouge, LA. Theme: Changing Landscapes of the Lower Mississippi Valley. Tours of French and Arcadian vernacular architecture, and of the human transformation of the valley's environment, including engineering of the Mississippi River. Info: www.pioneeramerica.org.

Nov. 3-6: Society for the History of Technology Annual Meeting, Minneapolis, MN. Info: www.shot.jhu.edu.

Nov. 4-6: Technology and the Home Conference, New Brunswick, NJ. Paper sessions explore the positive and negative impacts of appliances, lighting, heating, and decorative materials. Info: www.wcenter.ncc.edu/gazette/.

Nov. 20-26: SIA STUDY TOUR TO BOLOGNA, ITALY. Info: Mary Habstritt, SIA Events Coordinator; events@siahq.org; 212-769-4946.

2006

Mar. 29-Apr. 2: Second International Congress on Construction History, Queens' College, University of Cambridge, UK. Info: www.chs-cambridge.co.uk.

Apr. 27-30: Preserving the Historic Road Conference, Boston, MA. Info: www.historicroads.org.

June 1-4: SIA ANNUAL CONFERENCE, ST. LOUIS, MO. Info: events@siahq.org; www.sia-web.org.

June 8-10: Business History Conference Annual Meeting, Toronto, ON. Info: BHC, Box 3630, Wilmington, DE 19807; www.thebhc.org.

June 9-11: Railroad Station Historical Society Convention, Helena, MT. Tours of stations, bridges, tunnels, roundhouses and shops; annual banquet with speaker. Info: Art Peterson, 3200 Gordon Dr., Greenville, NC 27834; (252) 756-7380; stationarchives@msn.com.

June 14-17: Vernacular Architecture Forum Annual Meeting, New York, NY. Theme: City Building. Info: vernaculararchitectureforum.org.

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