



SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

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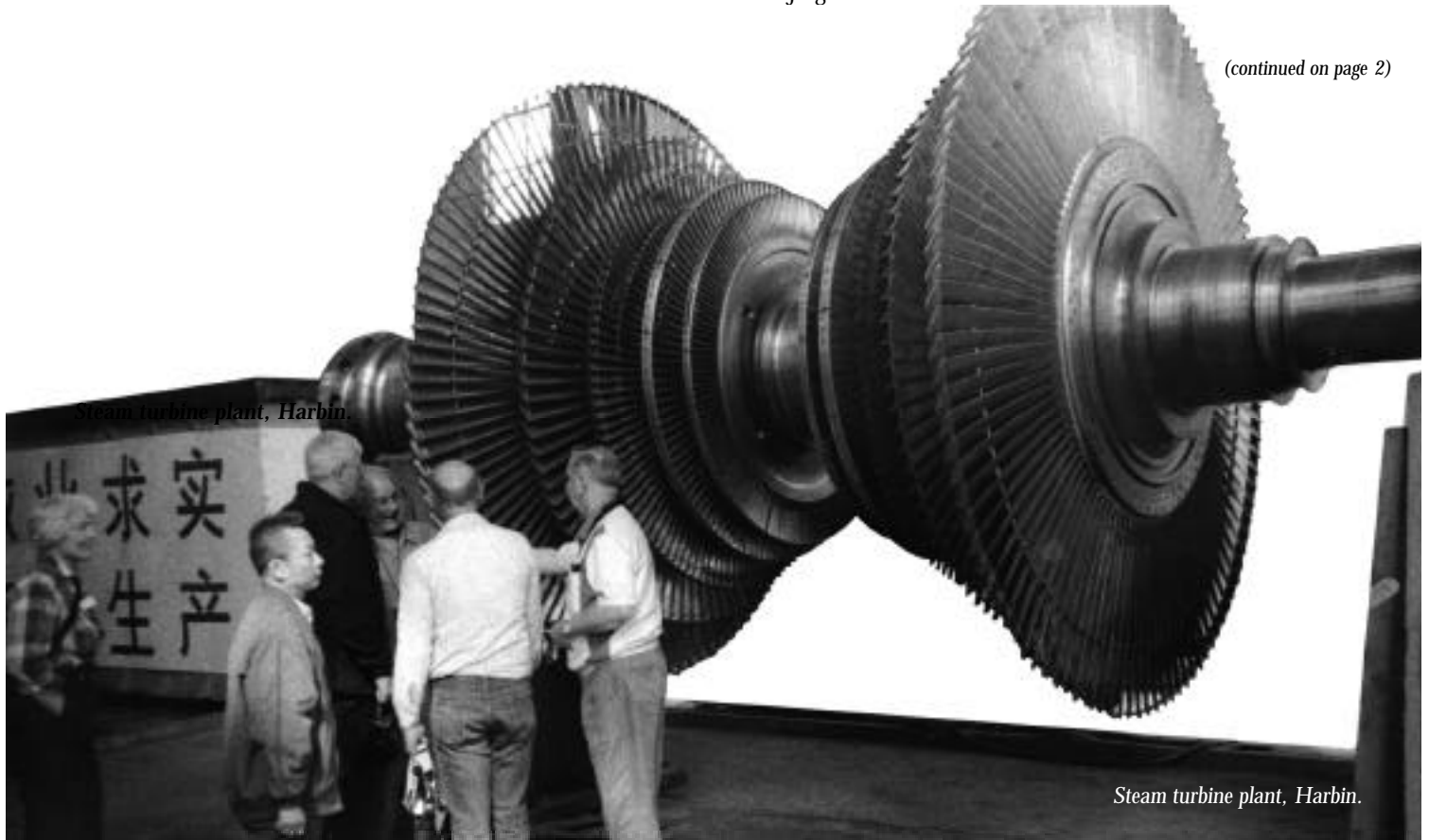
THE SIA IN CHINA

In April and May, seventeen SIA pioneers took part in the Society's first visit to Asia, a two-week tour of past and present Chinese industrial and engineering sites. The group gathered at the San Francisco airport on April 22nd and flew to Japan, where we spent the night before continuing to Beijing. Our Chinese government tourist agency guide, Zhao Zhaoing, a.k.a. Wendy, met us at the Beijing airport and ushered us to our bus and hotel, where we left our bags before beginning a tour of the Temple of Heaven.

Beijing is an enormous, bustling city with lots of new construction. As Americans, we were struck by many cultural differences, but as IA enthusiasts we were also immediately amazed to see that even the tallest buildings under construction are of reinforced concrete, not structural steel. As we were planning the trip, Academic Travel Abroad (ATA), our tour organizer, insisted that we must include standard tourist destinations like the Forbidden

Miyun dam and reservoir, which supplies Beijing's municipal water. The dam featured ample public landscaping and seemed to be a popular place for the local populace to stroll. We were surprised at the relatively lax security. We saw a "township enterprise" that makes high-quality steel castings for the petroleum industry. The township enterprise was our one glimpse at what is supposedly the most vibrant sector of the Chinese economy. Because of translation difficulties and lack of comparable reference in our own economy, we had a hard time knowing where to place such businesses along the spectrum between private and state ownership. We did learn that township enterprises provide alternative employment and investment opportunities in rural jurisdictions where most folks work the land. The enterprise we visited was one of about forty in a township with a population of about 36,000 people, most living on farms. We rounded out our Beijing tour with a

(continued on page 2)



Steam turbine plant, Harbin.

Steam turbine plant, Harbin.



Coke plant, Meishan Iron Works, near Nanjing.

(continued from page 1)

works. Like nearly every other site we visited, there were no restrictions on photography.

We next flew to Harbin, a major industrial and railroad center in Manchuria, northeast of Beijing. Harbin grew to a large modern city at the turn of this century, when the Russian railroad obtained approval to build a line across Chinese territory to Vladivostok. Harbin became a large Russian colony for railroad workers and businesses operating in the Pacific region, resulting in an eclectic array of Russian architecture, which the Chinese are restoring. The Russian heritage also explains the fact that Harbin beer was so good. In Harbin, we saw an interesting adaptive re-use project: the tunnels of an immense subterranean civil-defense installation have been converted into a giant underground shop-

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 annually. SIA promotes the identification, interpretation, preservation, and re-use of historic industrial and engineering sites, structures, and equipment. Annual membership: individual \$35; couple \$40; full-time student \$20; institutional \$40; contributing \$60; sustaining \$125; corporate \$250. 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.

Mailing date for Vol. 27.4 (Winter 1998), Feb. 1999. If you have not received an issue, apply to SIA-HQ (address above) for a replacement copy.

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.

TO CONTACT THE EDITOR: Patrick Harshbarger, Editor, SIA Newsletter, 305 Rodman Road, Wilmington, DE 19809; (302) 764-7464; e-mail: phsianews@aol.com.



Fred Quatak photo.

Excavation for the ship locks dwarfs the earth-moving equipment at the Three Gorges Dam near Yichang.

ping center beneath the central business district. We were disappointed not to see any steam locomotives at Harbin, where they had recently been taken out of service. The railroad still operates under steam power in other parts of the country.

We visited three giant state enterprises at Harbin: a steam-turbine factory, an industrial boiler factory, and a co-generation plant supplying much of Harbin's electricity and heat. At these large facilities we began to notice a pattern that was evident at all the state enterprises we toured: the grounds were beautifully designed with decorative entrances, landscaped streets and sidewalks, and ornamental ironwork. The turbine plant conducts some of its business as a joint venture with General Electric. During our tour, we met a Chinese engineer who works on quality assurance for G.E. He gave us excellent insights into the relationships among Chinese state enterprises, the government and the Party, and foreign corporations.

From Harbin, we flew to Wuhan on the Yangtze River and then bussed upstream to Yichang, site of the Gezhou Dam, which was built as a prototype of the Three Gorges Dam. It produces electricity and has locks to serve river traffic. As most members are probably aware, the Three Gorges Dam is the world's most controversial engineering project, and it is well underway. The next day, May 1st, the project's chief engineer led our tour of the construction site. There were large crowds on hand, because that day the temporary shipping channel through the construction site was ceremonially opened. The scale of construction is almost incomprehensible, even when standing on a monumental vantage point built by the authorities to afford a view of the entire area. Our group was fortunate to have Beth as our ATA guide. A China specialist, she had just completed a thesis at Harvard on the politics of the Three Gorges Dam, which she shared with us in a discussion of the dam that evening back in Yichang.

The city of Wuhan is the major industrial center for Hubei Province in the Chinese interior. From there, we bussed to the ancient Tonglushan Copper Mine, one of the major IA sites in China. Since its discovery in 1973, over eight square kilometers have been excavated, revealing extensive underground workings, timbering, and evidence of furnaces. The mine was active at least from 770 BCE to 1279 CE. It is protected as a heritage site, and a museum has been built over a small part of the excavated workings. The site is surrounded by active copper mining, both surface and underground. We could see the sheaves turning on the headframes, but learned little more of the current operations. Back at the provincial museum in Wuhan, we saw spectacular ancient bronzes, some perhaps fabricated of copper extracted from the mine we had just toured. The next day, after a stop at a

new cable-stayed bridge over the Yangtze and a silk carpet factory, we flew to Nanjing.

In Nanjing, we saw the great two-level (highway and railway) bridge over the Yangtze, one of China's major engineering accomplishments because of the difficult foundation problems caused by the shifting riverbed. At Nanjing's Brocade Institute, we watched silk being woven on incredibly complicated manual looms that required two artisans to operate.

The next day, we toured the Meishan Iron Works. As was typical at many of the large facilities we visited, their engineers met with us over tea to describe the overall operations, and then led us through the works. Half the ore smelted at the Meishan Works is from their own mine; the other half, from Australia. We got suitably close to the hot iron being tapped from one of three blast furnaces and also got a close look at the byproduct coke ovens in operation. The Meishan Works sells its pig iron to other mills and then buys steel slabs to roll in their hot mill. This gap will soon be closed when their BOF and continuous caster come on line. While we were there, the *Wall Street Journal* carried an article saying that China already produces more steel than it can use or sell.

From Meishan, we bussed to our final stop, Shanghai. There we had a tour of the Baoshan Steel Mill, easily the largest any of us had ever seen. The waterfront shipping facilities are quite impressive. The rolling mill is not unlike those the SIA has toured in the U.S. On the mill grounds are two hotels for the many expatriate engineers who work there. Baoshan is the best landscaped steel mill we saw, with many miles of roads lined by tall rows of pollution-resistant oleander and even a zoo.

Although our principal destinations in China were of the engineering and industrial nature, numerous bus trips through rural areas gave us ample opportunity to see—albeit through bus windows—how most Chinese live. More than 75 percent of the population is rural. Along the Yangtze, water buffalo are used to till rice paddies, and men and women transplant rice seedlings by hand. We passed amazingly concentrated wheat and cotton fields, vast vegetable gardens, lotus ponds, and tidy villages, now prospering since the introduction of incentive-based agriculture with the reforms beginning in 1978. Most houses are at least two stories and looked no more than a dozen years old. We learned that families own their own homes and pay for their construction entirely from savings. The concept of borrowing money to build a house is still foreign to the Chinese.

Two of our local guides had been urbanites sent to rural areas for "re-education" during the Cultural Revolution, and Wendy grew up in a remote village where intellectuals were sent when she was a child. All spoke freely of their experiences and gave us a variety of insights into the trying times in China's recent past.

Shanghai has long been China's gateway to the rest of the world, and the old downtown section retains many of the Western business blocks built by European and American concessionaires

of an earlier time. The buildings facing the water along the main thoroughfare, called the Bund, have been beautifully restored by the Chinese to represent the economic vitality Shanghai once exhibited. Those buildings look across the river to the Pudong District, Shanghai's new enterprise zone where this once rigidly communist country is experimenting with large-scale capitalism. Some spectacular high-rise structures in the Pudong District represent the economic vitality Shanghai hopes to see in the future. Shanghai is easily the most prosperous city we visited on our tour. It was also the city with the most obvious signs of poverty, including numerous beggars on the streets.

On our last night in China, we feasted at the historic Peace Hotel, one of the fine restorations along the Bund. Our meal was recognizable as a banquet because no rice was served; otherwise, it was much like the sumptuous Chinese fare we enjoyed at almost every other stop.

The tour was strenuous, and there were disappointments when some sites on the itinerary had to be canceled. The bicycle factory, for example, had just been closed. We still saw more than we could absorb in two weeks. Transportation was good. Food was excellent and abundant. The government travel agency promised us "modest" hotels, but they kept bumping us up into better ones at no additional charge to insure we were happy with our stay. Most hotels were excellent and modern.

One problem throughout the tour was getting enough information about the sites we visited, largely because of language barriers. Most of our hosts spoke no English and had to be translated by guides who were not familiar with the necessary technical terms. A notable exception was our visit to the ancient copper mine, for which Wendy had prepared herself to be able to translate mining and metallurgical terms. Another problem was that our tour did not evince the local care that, for example, our two tours to the U.K. have enjoyed. In England and Wales, and in Scotland, our hosts were leading authorities in our field and kindred souls who understood the kinds of sites and information we wanted. Despite the absence of Chinese IA professionals on the tour, we had a memorable time and have no serious regrets.

W.S. & F.Q.



Walter Sheppe photo

Our guide explains cloisonné, enamelware where colored areas are separated by thin metal bands, to SIA's Fred Qivik.

Brickworks near Wuhan



Walter Sheppe photo.

1999 GENERAL TOOLS AWARD

Call for Nominations

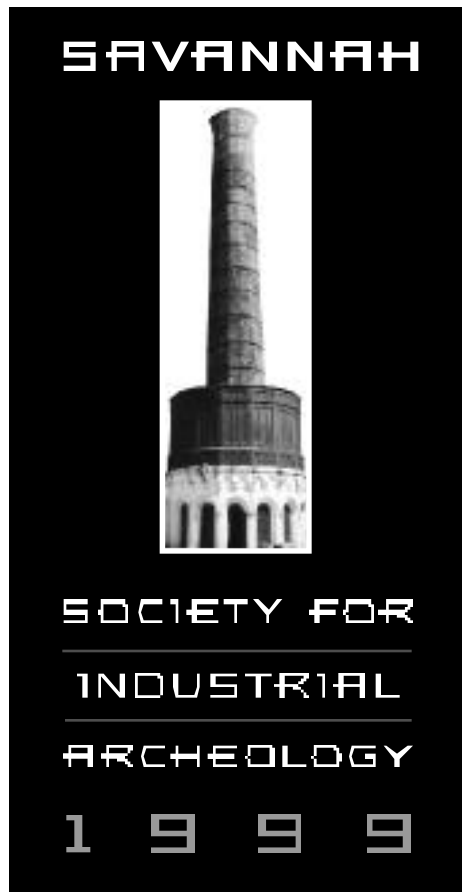
The General Tools Award Committee invites SIA members to submit nominations for the 1999 Society for Industrial Archeology General Tools Award for Distinguished Service to Industrial Archeology. The award, presented annually at the SIA annual business meeting, recognizes individuals who have given sustained, 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. Teams, groups, agencies, firms, or any other collective entities are not eligible.

The nomination, which should not exceed three double-spaced typed pages, should address the specific accomplishments that qualify the nominee for the award. Supplementary material (the candidate's resume, for example) may be appended to the nomination. Nominations must also include the name, address, and telephone number(s) of the nominator. Nominations may be made by any SIA member in good standing.

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 a citation, a commissioned sculpture, and a \$1,000 cash award. Previous recipients are Emory Kemp (1993), Robert Vogel (1994), Edward Rutsch (1995), Patrick Malone (1996), Margot Gayle (1997), and Helena Wright (1998).

Nominations, which *must be received on or before April 1, 1999*, should be submitted to: Jane Carolan, Chair, SIA General Tools Award Committee, 42 Middle St., Newburyport, MA 09150. For additional information or questions, Ms. Carolan can be reached by telephone: (978) 463-4914; e-mail: jcarolan@seacoast.com. ■



Don't Miss the 1999 SIA Conference, June 3-7, 1999. The Coastal Heritage Society and Armstrong Atlantic State University are jointly sponsoring this year's annual conference in Historic Savannah. We will be looking at the lesser-known working side of a city best known

for its southern charm and graceful colonial and antebellum architecture. Among the tentatively scheduled sites are the Central of Georgia RR shops, the Savannah and Ogeechee Canal, an antebellum rice plantation, 1912 electric generating station, steam-driven cotton gin, brick and earthen work forts of five American wars, the port of Savannah, sugar refining, paper production, shrimping, and more! Registration materials and a complete itinerary will be sent to SIA members in the Spring. Info: Mark Finlay, Dept. of History, Armstrong State Univ., Savannah, GA 31419; (912) 921-5642; e-mail: mark_finlay@mailgate.armstrong.edu.

Paper Proposals: **An important reminder that paper proposals for the annual conference are past due.** Info: Jack Bergstresser, SIA Program Committee, Dept. of Anthropology, 338 Ullman Bldg., Univ. of Alabama at Birmingham, Birmingham, AL 95294; (205) 934-4690; fax, 934-9896; e-mail: drblast@email.msn.com.

Student Travel Scholarships: The SIA has limited funds to help full-time students and professionals with less than three years of full-time experience attend the annual conference in Savannah. Those interested should submit a concise letter outlining their demonstrated interest in and commitment to the field of industrial archeology or a related field, and one letter of reference. Deadline for submissions is April 15, 1999. Info.: Mary E. McCahon, SIA Scholarship Comm., c/o A. G. Lichtenstein & Assoc., One Oxford Valley, Suite 818, Langhorne, PA 19047; (215) 752-2206; fax 752-1539. Notice of awards will be made by May 1. ■



Notes From the President

Happy New Year! I hope you all included in your 1999 resolutions a promise to visit an IA site this year and to get involved in an IA project.

At the SIA Board of Directors meeting in November we had the happy responsibility of welcoming a new chapter into the SIA family. The Southern Chapter will be based in Birmingham, AL. It has been formed in time to host this year's fall tour. If you are interested in joining this new chapter, see information elsewhere in this newsletter.

Approving a new chapter got the Board of Directors to talking about the importance of chapters. Local chapters are our first contact point with communities. They are the visible face of industrial archeology and their members "preach to the unconverted." Much of the SIA's emergency recordation and preservation activities have been the result of chapter awareness and involvement. The national organization benefits greatly from the chapters. National members frequently are recruited from local chapter activities. Chapters are the first to jump in and offer to run the annual tours and meetings, which all of us enjoy. Chapter presidents are invited to board meetings, and they are involved in the activities of the national organization. The individual is the power of the chapter. It is individual members who organize the tours, meetings, and newsletters. Some chapters have very aggressive meeting schedules, providing regular venues for members to gather, share expertise, and learn. Many national members join chapters outside of their own regions in order to receive the newsletters filled with local history and action information.

Starting a chapter is easy. You need twelve members of the national organization to form a chapter. Not all members of a chapter have to be members of the SIA, but the officers must be members in good standing. Perhaps the hardest thing to do is coming up with a name for the chapter. If you are interested in starting a chapter in your area, or just want some information, contact the SIA Chapters Coordinator: John Stacier, Historic Madison, Inc., 500 West Street, Madison, IN 47250.

My New Year's wish is that you become actively involved in your local chapter. If you are not, join, and then enjoy the events and companionship. Don't have a chapter in your area? Start one. Get out your directory and find members in your area to arrange a new chapter. As we discussed at the "Whither IA" meeting in Lowell, education is the key to IA awareness. Your work in a local chapter can bring that education home to your community.

*Sandy Norman, President
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Proposed Slate 1999 SIA Election

The SIA Nominations Committee is pleased to present the following slate of candidates for the 1999 elections of Directors and Officers:

Director:
(3-year term): Elect three

Nancy R. Hachtel
William A. McNiece
Lance E. Metz
Marilyn Miller
Richard O'Connor
Lousie Trottier

Nominations Committee:
(3-year term): Elect one

Patrick Harshbarger
Thomas A. Leary

SIA by-laws state that the Nominations Committee shall notify the membership of the proposed slate of candidates no later than 70 days before the Annual Business Meeting (Section 2.05.a). This is that written notice, it is not a ballot. Additional nominations can be made in writing over the signatures of no fewer than twelve (12) members in good standing (dues paid for 1999) and delivered to the chair of the Nominations Committee at the address below by April 15, 1999. Candidates must have given their consent to be nominated and must also be members in good standing. Ballots with a biographical sketch and photograph of each candidate will be mailed to members for a vote in late April.

The 1999 Nominations Committee is Patrick M. Malone (chair), Robert H. Casey, David Shayt, Fred Quivik, ex-officio. Reply to: SIA Nominations Committee, c/o Patrick M. Malone, 53 Riverside Dr., Barrington, RI 02806.

Reminder: SIA membership dues were mailed in late December. Only members who have paid their dues will be allowed to vote. The membership period is the calendar year. ■

Dear SIA Newsletter friends and contributors,

The newsletter will be changing its address as of January 1999. The new address is:

305 Rodman Road
Wilmington, DE 19809
Phone: (302) 764-7464
e-mail: phsianews@aol.com

Thank you for updating your records.

Patrick Harshbarger, editor

PHOTOGRAPHING IA FROM A SEA KAYAK IN DULUTH HARBOR



The George A. Stinson takes on a load of ore.

UPPER LEFT CORNER: Duluth, Mesabi & Iron Range Rwy. Dock #6.



The Globe Elevator, Superior, WI. A local landmark since 1887. Grain handling began in Duluth in the 1870s with construction of the city's first two elevators. The 1880s brought explosive commercial growth and the railroads raced to gain advantageous harborfront locations. This elevator was placed on the Wisconsin-side of the harbor on land of the Chicago, Minneapolis, St. Paul, and Omaha RR. Today, the Globe Elevator is the only surviving pre-1900 elevator in the harbor, and believed to be one of only two wood elevators in the nation. The owners plan to demolish it and use the land for an R.V. park and marina.

When people think of sea kayaks, an outdoor adventure comes to mind, somewhere far from civilization. A kayak in the hands of an SIAer, however, can become a fascinating conveyance for exploring and photographing the industrial life of a harbor. Larry Mishkar of St. Paul, MN, has made photography from a kayak a fine art. In this article he shares his experiences in Duluth Harbor.

The idea for this story began one day when I was photographing the Garfield (Cargill) Grain Elevators C & D in the Duluth Harbor basin, southern section, shortly before they were to be razed. I had gained permission to photograph the elevators close-up from the collapsed roofs of the flooded basements, but I also wanted to photograph the elevators' relationship to the water. For the most part harbors are difficult to access, with often only one road to the pier, which is blocked by fencing. To avoid trespassing (and thus possibly ruining the reputation of future admirers of IA), I have started to use my sea kayak as a means to gain access.

I took my kayak and headed for a boat landing, about one mile from the elevators. The day was warm and a nice light was burning through the fog, which hung over Lake Superior. A power boat would have made this adventure more comfortable, and perhaps allowed for a group to join me, but the costs are much higher than a kayak, and many times I find my need for early morning

light doesn't coincide with the sleeping habits of other IA enthusiasts in my neighborhood.

After paddling for 40 minutes (and not in a straight line, since other buildings caught my eye and I had to stop, of course!), I reached my goal of the grain elevators, which were starting to show the results of explosives. From this angle, I was able to show the relationship between the elevators and the harbor. Garfield Elevator D was built by Frank Peavey and partner Frank Heffelfinger in 1907. They traveled to Russia, Germany, and Hungary to get ideas for their elevators. The Garfield Elevator D was among the earliest reinforced-concrete elevators in the United States with a slip-form construction. Garfield Elevator C was owned by the Russell Miller Milling Co. of North Dakota. Built in 1923, it was the first elevator in the harbor to be powered

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SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

PUBLICATIONS OF INTEREST

A Supplement to Vol. 27, No. 4

Winter 1998

COMPILED BY

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

GENERAL STUDIES

- Frank Beberdick and the Historic Pullman Foundation. *Images of America: Chicago's Historic Pullman District*. Arcadia (2 Cumberland St., Charleston, SC 29401; 1-888-313-BOOK), 1998. 127 pp., photos. Photos from the foundation's archives chronicle the development of George Pullman's model factory and town.
- John Harris. *Industrial Espionage and Technology Transfer: Britain and France in the Eighteenth Century*. Ashgate (1-800-535-9544), 1998. 678 pp., illus. \$110.95. Rivalry between the two nations and the methods used by France to obtain skilled manpower and technology which had given Britain the edge, particularly in the new coal-based technologies.
- Donald R. Hill. *Studies in Medieval Islamic Technology*. Ashgate (1-800-535-9544), 1998. 400 pp. \$107.95. Includes sections on mechanics, mining, hydraulic machines, and military technology among others.
- Ian Inkster. *Technology and Industrialization: Historical Case Studies and International Perspectives*. Ashgate (1-800-535-9544), 1998. 336 pp. \$89.95. Essays embrace case studies of Britain, Japan, Europe, China, India, and Australia from ca. 1700 to present. A political economy approach to industrial and technological history.
- Landmarks in Mechanical Engineering. ASME (West Lafayette, IN), 1996. 364 pp., illus. \$19.95. Lists 135 sites associated with significant accomplishments in mechanical engineering. Rev: Rev: *T&C* (Oct. 1998), p. 770.
- David C. Mowery and Nathan Rosenberg. *Paths of Innovation: Technological Change in 20th-Century America*. Cambridge Univ. Pr., 1998. 216 pp., \$27.95. The internal combustion engine, electricity, and chemistry as areas of innovation that have dominated the century.
- Darwin Stapleton. *Introducing ... Clean Water*. *I&T* (Winter 1999), pp. 24-35. The career and legacy of engineer Benjamin H. Latrobe with focus on plans to bring fresh water to American cities in the early 19th century.
- Jeffrey K. Stine and Joel A. Tarr. *At the Intersection of Histories: Technology and the Environment*. *T&C* 39,4 (Oct. 1998), pp. 601-640. Review essay. Overlap of environment and technology become a more central concern of scholarship.

RAILROADS

- Cagney's Locomotive Works, Suppliers of Complete Miniature Railroads. Fidalgo Reprints (1617 32nd St., Anacortes, WA 98221-3382), 1998. 48 pp. \$14.50 ppd. Reprint of Cagney's 1901 catalogue, the most famous name in small, passenger carrying steam railroads. Includes 16 pages of history and information on preserved locomotives. Also reproduced is a very rare Cagney brochure from the Pan-American Exposition, Buffalo, NY, 1901.
- Michael Chrimes, ed. *The Civil Engineering of Canals and Railroads before 1850*. *Studies in the History of Civil Engineering* 7. Ashgate, 1998. 416 pp., illus., £85. Avail: 1-800-535-9544. How canals and railways were built, and how engineers organized the works. Case studies from Europe and North America.
- Pamela A. Conners. *The Sugar Pine Railway: History of Sierran Logging Railroad*. USDA Forest Service, Stanislaus National Forest, 1997. 430 pp., photos. Densely detailed story of railroad and logging operations in California's central Sierra Mountains from 1903 to 1964. Rev: *PH* (Fall 1998), p. 89.
- Herbert H. Harwood, Jr. *Two Ancient Rail Beds Reappear in Baltimore*. *RH* 179 (Autumn 1998), pp. 135-148. Mid 1830s sections of unearthed rail bed. The Baltimore & Port Deposit and the Baltimore & Susquehanna railroads.
- Bill Keirce. *Pullmans, Stations, Steam: The Railroad as an Aesthetic Object*. *RH* 179 (Autumn 1998), pp. 7-30. Attempts to answer question of "Why are so many people fascinated by railroad technology?" by looking at the railroad as a source of aesthetic experience.
- J. I. Lillie. *The Enemy, Oxidation*. Chemical processes that lead to failure of the boiler tubes and firebox in a steam locomotive. *New Boiler Tubes*. Replacement of tubes in Pere Marquette locomotive 1225 and how choices were made to vary from PM's method of tube installation to ensure stability and long life. *Project 1225* 89 (Nov. 1995) Avail: The Michigan State Trust for Railway Preservation, Inc., P.O. Box 665, Owosso MI 48867-06665.
- Robert Lochte. *Reducing the Risk: Woods, Phelps, Edison, and the Railway Telegraph*. *Timeline* 16,1 (Jan./Feb. 1999), pp. 42-54. Inventors scrambled to perfect a system that would prevent collisions, but the railroads were unimpressed.

- Mark McGarvie. A Comparative Case Study of Immigrant Contract Labor on the Milwaukee Road. *RH* 179 (Autumn 1998), pp. 69-87. Railroad turns to imported labor to build and repair line from 1908 to 1931 and during World War II. Impact of social prejudice and government regulation on business practices and the welfare of employees.
- Martin J. McGuirk. *New Haven Railroad Along the Shore Line: The Thoroughfare from New York City to Boston*. Kalmbach Pub. (1-800-558-1544), 1998. 128 pp., photos. \$18.95.
- George W. Pettengill, Jr. *The Story of Florida Railroads*. Avail: Southeast Chapter, R&LHS, Box 664, Jacksonville, FL 32201. \$16.95 ppd. Reprint of 1952-53 articles from out-of-print R&LHS *Bulletin* #86 and #88 covers the early history of Florida's railroads from 1834 to 1903.
- David A. Pfeiffer. *Researching Railroad Records at the National Archives*. *R&LHS Newsletter* (Spring 1998), pp. 5-6. Practical guide to finding most popular railroad records at the National Archives in Washington.
- Sophia Schweitzer. *Hawaii's Expensive Railroad*. *VR* (Nov./Dec. 1998), pp. 66-71. Hilo RR (1899-1946) served sugar company.
- Westinghouse Air Brake Co. *Instruction Leaflet No. 2388, January, 1947: Feed Valve Code of Tests and Repair Instructions*. ARM Reprint Books (33 Ashland St., Manchester NH 03104), 1995. A second reprint of the leaflet provides a diagrammatic view of the piping arrangement for testing type B, C, and M feed valves and the code of tests for these valves used in air brakes on streetcars, interurbans, and steam and diesel locomotives.
- Jeff Wilson. *Burlington Route Across the Heartland: Everywhere West from Chicago*. Kalmbach Pub. (1-800-558-1544), 1998. 128 pp., photos. \$18.95.
- Ted Wurm. *Mallets on the Mendocino Coast: Caspar Lumber Co.'s Railroads & Steamships*. *Timber Times* (Box 219, Hillsboro, OR 97123; 1-800-821-8652), 1999. 136 pp., photos, \$34.95. Lumber company (1861-1955) in northern California operated its own railroad and fleet of coastal schooners.
- John B. Hattendorf, ed. *Maritime History*. Vol. 1: *The Age of Discovery*. 348 pp. \$29.50. Vol. 2: *The Eighteenth Century and the Classic Age of Sail*. Krieger Pub. Co. (P.O. Box 9542, Melbourne, FL 32902-9542; phone: (407)727-7270), 1996. Illus., maps. Introductory text for undergraduate students, this is a series of essays developed from an NEH Summer Institute in early Modern Maritime History at the John Carter Brown Library.
- *Historic Lighthouses Preservation Handbook*. National Park Service (Washington, DC), 1997. 328 pp., illus. Prepared jointly by the NPS, U.S. Coast Guard, and the Dept. of Defense Legacy Resource Mgt. Program. Custom-made for lighthouse property managers, focuses on preserving varied material and construction types. Avail: U.S. Govt. Printing Office, (202) 512-1800, stock no. 024-05-01181-1, and on-line at www.cr.nps.gov/history/maritime/handbook.htm. Rev: *NCPTT Notes* (Aug. 1998), p. 9.
- Adrian Jarvis, ed. *Port and Harbour Engineering. Studies in the History of Civil Engineering 6*. Ashgate, 1998. 450 pp., illus., £85. Avail: 1-800-535-9544. British ports and harbours in the 19th century.
- Rory Robinson and Robert Bobel. *Historic Preservation Through Canal Trail Development*. *CRM* 19 (No. 4 1996), pp. 11-14. Trail development along former canal towpaths as a way to restore the historic appearance of canals and identification and preservation of artifacts and structures. Reviews issues, such as sensitive signage and historically accurate trail surfaces. Cites successful examples.
- R. Sheret. *Smoke Ash and Steam*. Fidalgo Reprints (1617 32nd St., Anacortes, WA 98221-3382), 1996. 108 pp., photos. \$22 ppd. Photos of West Coast steamboats, propeller and paddle wheel with photos, drawings, and engineering explanations of their engines, boilers, and auxiliaries.
- Donald G. Shomette. *The Ghost Fleet of Mallows Bay*. *I&T* (Winter 1999), pp. 12-23. The remains of ill-fated World War I wooden-ship-building program found in a remote Maryland backwater.

WATER TRANSPORTATION

- Timothy R. Brookes. *The Pall of Egyptian Gloom: The Sinking of the Scioto*. *Timeline* 15/4 (July-Aug. 1998), pp. 18-25. 1882 sinking of side-wheel steamer in the Ohio R.
- Diane Cole. *Big Wheel, Keep on Churnin'*. *Preservation* (Nov./Dec. 1998), pp. 82-86. Steamboating on the Mississippi today. Frederick Law Olmsted's book, *The Cotton Kingdom (1861)* used as a guide.
- James Conaway. *Zoning Out*. *Preservation* (Nov./Dec. 1998), pp. 38-47. A year before the Panama Canal passes into Panamanian hands, the structures that established a vast outpost of U.S. Culture face an uncertain future.
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AUTOMOBILES & HIGHWAYS

- Donald T. Critchlow. *Studebaker: The Life and Death of an American Corporation*. Indiana Univ. Pr., 1996. 273 pp. \$39.95. Famous South Bend car maker. Rev: *T&C* (Oct. 1998), p. 786.
- Paul Erker. *Competition and Growth: A Contemporary History of the Continental AG*. ECON Verlag (Dusseldorf), 1996. 320 pp., illus. History of fourth largest rubber company and tire manufacturer. Rev: *T&C* (Oct. 1998), p. 788.
- Michael Lamm. *The Earl of Detroit*. *I&T* (Fall 1998), pp. 10-21. Harley Earl, GM's first car stylist, had a significant influence on automobile design.

- Bob McCullough, Carol Ahlgren, Rick Greenwood. *Saving Historic Roads: 3 Case Studies*. Historic road preservation efforts in Vermont, Nebraska, and Rhode Island; Diane Kane. Conference on Historic Roads Tackles Preservation Strategies. National Trust, NPS, and Caltrans co-sponsored meeting in Mar. 1998. *SCA Journal* (Spring 1998), pp. 14-19.
- Haruhito Shiomi and Kazuo Wada. *Fordism Transformed: The Development of Production Methods in the Automobile Industry*. Oxford Univ. Pr., 1995. 320 pp., \$65. Charts the evolution of automobile manufacturing in 12 essays that explore the application and modification of Ford production techniques in many parts of the world. Rev: *T&C* (July 1998), p. 550.

OTHER TRANSPORTATION

- American Transit Assn. and Transit Research Corp. *The Maintenance Practice Manual for PCC Cars*. ARM Reprint Books (33 Ashland St., Manchester NH 03104), 1996. Illus. \$55. Reprint of the maintenance manual first published in 1948 and updated through 1957. Full size fold-out drawings, but without covers for insertion in a 3-ring binder. Traction motors and motor-generator sets, wheel and axle assemblies, air and electric brakes, and repair and testing of trolley poles.
- John Armstrong, ed. *Studies in Transport History Series*. Scholar Pr. (Aldershot, UK), 1996. Six vol. set reprints important articles from the *Journal of Transport History (UK)*. Titles are *Air Transport*; *Canals and Inland Navigation*; *Coastal and Short Sea Shipping*; *Railways (2 vols.)*; *Road Transport in the Horse-Drawn Era*. Rev: *T&C* (July 1998), p. 549.
- Marc Dierikx. *Fokker: A Transatlantic Biography*. Smithsonian Pr., 1997. 250 pp., illus. \$35. Anthony Fokker, legendary aircraft designer and manufacturer.
- Steve Harrison. *Another First for the Wright Brothers*. *CRM* 18 (No. 10 1995), pp. 46-7. Summary of analyses of a crankcase fragment held at Wright Brothers National Memorial museum which proved that it was the crankcase from the first flight in 1903 and also that the Wrights were the first aviators to use precipitation-hardened aluminum-copper alloy.
- Peter Jakab. *Visions of a Flying Machine: The Wright Brothers and the Process of Invention*. Smithsonian Inst. Pr. (1-800-782-4612), 1997. 272 pp., illus., \$15.95. Research on how the brothers visualized concrete solutions to difficult technical problems that had baffled the best-trained scientists and engineers for over a century.
- Robert C. Post. *Images of the Pacific Electric: Why Memories Matter*. *RH* 179 (Autumn 1998), pp. 31-68. Enthusiastic memories of southern California's streetcars influence today's technological choices and the resurgence of urban electric rails.
- Jennifer Reese. *Streetcar Suburbs*. *Preservation* (Jan./Feb. 1999), pp. 52-57. San Francisco suburb of Sunset where the houses were literally made of trolley cars.
- Walter Rice and Val Lupiz. *1947: The Year San Francisco Nearly Lost Its Powell Street Cable Cars*. *VR* (Sept./Oct.

1998), pp. 82-88. The political fight and protest that led to the street cars' preservation. Includes description of cable car operations.

AGRICULTURE & FOOD PROCESSING

- J. B. Gough. *Winecraft and Chemistry in 18th-Century France: Chaptal and the Invention of Chaptalization*. *T&C* (Jan. 1998), pp. 74-104. The diverse origins of adding sugar to fermenting, underripe grapes.
- Peter D. McClelland. *Sowing Modernity: America's First Agricultural Revolution*. Cornell Univ. Pr., 1997. Examination of changing American farming technology and practices from 1815 to 1830. Plowing, sowing, harrowing, cultivating, reaping, threshing, winnowing and straw cutting. Rev: *ALHFAM Bulletin* (Fall 1998), p. 9.

BRIDGES & TUNNELS

- Marion K. Pinsdorf. *Engineering Dreams into Disaster: History of the Tay Bridge*. *RH* 179 (Autumn 1998), pp. 89-116. Analysis of mistakes and milieu that led to famous Scottish bridge disaster in 1879.
- Frederic D. Schwarz. *Don't Lower the River, Raise the Bridge*. *I&T* (Fall 1998), pp. 8-9. Efforts to save the 1868 Zoarville bridge, America's only surviving Fink through-truss bridge.
- Linda Perelli Wright and Rachel Fertik, et. al. *Route 15 Bridge over the Housatonic River (CT)*. *SIA New England Chapters Newsletter* 18,2 (1998), pp. 10-14. 1940 bridge connecting Merritt and the Wilbur Cross parkways.

BUILDINGS & STRUCTURES

- Documenting the Career of Architect Robert Mills. *Annotation: Newsletter of the National Publications & Records Comm.* v.26,3 (Sept. 1998), pp. 13-14. Widely scattered papers of Mills (1781-1855) made available in a definitive microfilm addition. Architect of many important public buildings including Washington Monument, Treasury, and Patent Office buildings. Between 1820-1830 served on the South Carolina Board of Public Works working on road, river, and canal development.
- Tawny Ryan Nelb. *Documenting Michigan Architecture Project*. *Annotation: Newsletter of the National Publications & Records Comm.* v.26,3 (Sept. 1998), pp. 15-16. Project to actively seek out and collect documents related to architecture and engineering, including buildings and structures related to Michigan's industries.
- Preserving Architectural Collections at the Art Institute of Chicago. *Annotation: Newsletter of the National Publications & Records Comm.* v.26,3 (Sept. 1998), pp. 7-8. Papers of city planner Edward H. Bennett, Sr. (1874-1954), and of architect David Adler (1882-1949).
- Janet Wright. *Crown Assets: The Architecture of the Department of Public Works, 1867-1967*. Univ. of Toronto Pr., 1997. 326 pp., photos, drawings. \$35. Development of Canadian public architecture, as built by the federal government. Rev: *PH* (Fall 1998), p. 84.

WATER CONTROL & RECLAMATION

- Donald C. Jackson, ed. *Dams. Studies in the History of Civil Engineering 4*. Ashgate, 1998. 404 pp., illus., £80. Avail: 1-800-535-9544. Papers selected to examine key technical issues influencing dam construction from ancient times to the early 20th c.
- Paul C. Pitzer. *Grand Coulee: Harnessing a Dream*. Washington State Univ. Pr. (Pullman WA 99164-5910), 1994. 504 pp., illus., bibliog., index. \$40; \$24.95 pap. The political struggle to build the Grand Coulee Dam and Columbia Basin Project, describing the New Deal era's fascination with planning and social engineering. Actual construction is covered in less detail. Rev.: *Oregon Historical Qtrly.* (Spr. 1996), p. 92.
- Salvatore Ciriaco, ed. *Land Drainage and Irrigation. Studies in the History of Civil Engineering 3*. Ashgate, 1998. 414 pp., illus., ú85. Avail: 1-800-535-9544. Control over land and water for the purposes of agriculture from ancient times to the present across Asia, Europe and North America.

IRON & STEEL

- Reed Karaim. *Tempered By Time. Preservation* (Jan./Feb. 1999), pp. 46-51. Restoration of first Carnegie Library in Braddock, PA, and how attitudes toward Carnegie have changed in aging steel mill town.
- Charles M. Keller and Janet Dixon Keller. *Cognition and Tool Use: The Blacksmith at Work*. Cambridge Univ. Pr., 1996. 200 pp., illus. \$49.95. Nonverbal thinking by tool users. Rev: *T&C* (Oct. 1998), p. 759.
- Roch Samson. *The Forges du Saint-Maurice: Beginnings of the Iron and Steel Industry in Canada, 1730-1883*. Department of Canadian Heritage, Parks Canada, and Ispat Sidbec, Inc., 1998. 458 pp., illus. Recounts the history of Canada's first iron works, located in Quebec. Research from the extensive archeological program undertaken by Parks Canada to develop the Forges du Saint-Maurice National Historic Site, created in 1973.

MINES & MINING

- W. Julian Parton. *Death of a Great Company: Reflections on the Decline and Fall of the Lehigh Coal and Navigation Company*. Canal History and Technology Pr. (30 Centre Sq., Easton, PA 18042; (610) 559-6617. 123 pp., illus., map, \$15.95. Problems that led to the closing of one of Pennsylvania's oldest anthracite companies in 1954. Author was a company engineer and manager.

POWER GENERATION

- Christopher J. Castaneda and Clarence M. Smith. *Gas Pipelines and the Emergence of America's Regulatory State: A History of Panhandle Eastern Corporation, 1928-1993*. Cambridge Univ. Pr., 1996. 296 pp., illus. \$44.95. Construction of pipe line from Kansas and Texas to Midwest in 1920s and 1930s. Business strategy and shifting regulatory environment. Rev: *T&C* (Oct. 1998), p. 797.

- Matthias Heymann. *Signs of Hubris: The Shaping of Wind Technology Styles in Germany, Denmark, and the United States*. *T&C* 39,4 (Oct. 1998), pp. 641-670. Comparative analysis of wind turbine designs.
- Werner Troesken. *Why Regulate Utilities? The New Institutional Economics and the Chicago Gas Industry, 1849-1924*. Univ. of Mich. Pr., 1996. 132 pp. \$37.50. Impact of water gas process over older coal gas process influences changes in competition and regulation of gas industry. Rev: *T&C* (Oct. 1998), p. 797.

TEXTILES

- Maureen Fennell, ed. *Textiles: Production, Trade and Demand*. Ashgate (1-800-535-9544), 1998. 352 pp. \$107.95. Examines the role of textiles within the expanding global economy in the Age of European Exploration, ca. 1400-1800.
- David J. Jeremy. *Artisans, Entrepreneurs and Machines: Essays on the Early Anglo-American Textile Industries, 1770-1840*. Ashgate (1-800-535-9544), 1998. 386 pp., illus. \$99.95. Essays deal with the transfer of early industrial textile technology from Britain to the United States.
- George Watkins. *The Textile Mill Engine*. Landmark Pub. (Waterloo House, 12 Compton, Ashbourne, Derbyshire DE6 1DA, England), 1998. 224 pp., photos. £19.95. Reprint of 1970-71 two volume set. Insight into the steam power that drove Britain's textile mills.

ABBREVIATIONS:

| | |
|-------|---|
| CRM | = CRM: Cultural Resources Management, Avail: National Park Service, Cultural Resources Box 37127, Washington DC 20013-7127. |
| I&T | = American Heritage of Invention & Technology |
| PH | = Public Historian |
| R&LHS | = Railway & Locomotive Historical Society |
| RH | = Railroad History |
| T&C | = Technology & Culture |
| VR | = Vintage Rails |

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We endeavor to make citations as complete as possible, but they are from a variety of sources, and are sometimes incomplete. If a date, publisher, price, or other statistic is missing, it simply means that it was unavailable, and, unfortunately, we do not have the time to track down these missing bits. The SIA, unless otherwise noted, is not a source for any of the cited works. Readers are encouraged to use their library, bookstore, or school for assistance with locating books or articles.

(continued from page 6)

by electricity. It had its own substation. The last I heard, the Garfield C&D were now just big piles of concrete and steel.

Subsequently, I found myself paddling in and out of slips, shooting images of old rail cars, new industrial sites, and the occasional Great Lakes ship. Many of the original harbor structures have been demolished. Pilings far from shore show the position of an old dock, and rails and ties jutting out of the sand indicate an earlier time when the railroad was supreme. Grain and iron ore were the big commodities sailing out of Duluth Harbor, and that has not changed much except that today the total quantities are much smaller. After seeing the results from my first trip to the Duluth Harbor basin, I went back to explore the St. Louis Bay area. There I was able to photograph the Oliver double-decked bridge, the Grassy Point Draw, and the Duluth, Mesabi & Iron Range RR Dock #6.

There are many advantages to using a sea kayak. Since I do most of my exploring solo, mobility is important. Weighing 50 pounds, it can easily be transported on the roof of my auto and removed at a moment's notice. And because my sea kayak is designed for ocean travel, it has an added safety value over a canoe since the harbor's water can change from calm to big waves in a short period of time. The draft of the sea kayak is just a few inches, thus making it ideal for shallow water travel or use anywhere there are pilings or other debris. Paddling a sea kayak is easy after a little practice; it travels faster than a canoe and takes far less energy than a rowboat.

I use a 17-ft.-long fiberglass boat that is not meant for speed but to carry cargo. I wear a personal flotation device made for kayak paddling (it is short in length and allows maximum freedom of movement). I also carry a water pump in case of submersion, a plastic whistle to signal for help, two paddles, large brim hat, lunch, a rain jacket, sun block, polarized sun glasses and plenty of water since dehydration is common with long exposure to the sun.

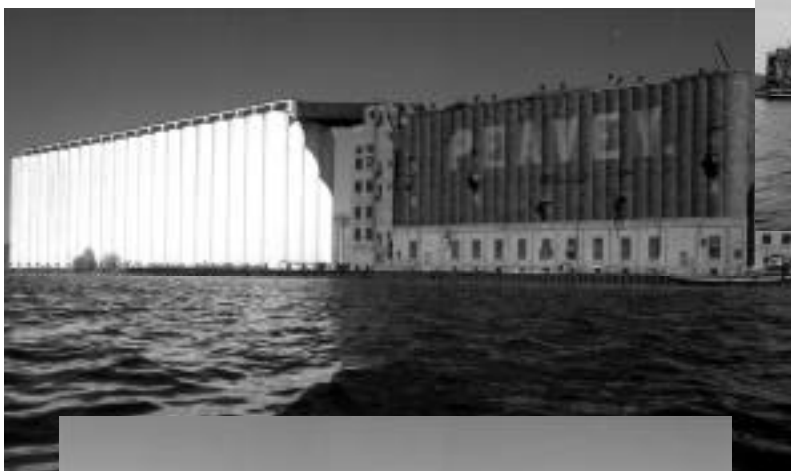
A light for attaching to the boat is a good precaution.

My camera bag is carried in the rear deck port. Film is kept in resealable plastic bags behind my seat, and a camera and a few lenses are strapped to the deck just forward of the cockpit. When waves get high or rain is in the forecast, large resealable bags are used to stow gear between my legs under the front deck.

My camera of choice is an auto-focus and auto-exposure model. Positioning the kayak, balancing the paddle across the deck, and trying to make a usable photo are difficult. I find that the auto modes allow me to concentrate on the subject, as well as allowing me to concentrate on the bouncing waves and changing winds. Lenses of choice are a 20-35 zoom and an 80-200 zoom, both 2.8 models. The new internal stabilization (IS) lenses are great for just this use where one bounces a lot at times. Also, tilt-shift lenses help reduce "keystone" distortion which is a result of using ultra-wide lenses in tight areas with tall structures.

A few precautions. Large boats, submerged pilings, and currents are the biggest obstacles to photographing successfully from a sea kayak, as well as staying upright. Small boats and dive bombing water birds are the least of worries. Large yachts and harbor tour boats, even though slow moving, make some of the largest waves I have seen. Currents are not located where one would expect, and combined with pilings just a few inches below the surface, harbors are dangerous places. Polarized sunglasses are a big help in seeing what is beneath the surface. Info: Larry Mishkar, 324 Summit Ave., Apt. 11, Saint Paul, MN 55102.

L. M.



The Grassy Point Draw of the Burlington Northern RR built in 1887 by the St. Paul & Duluth Rwy.

Cargill (Garfield) Grain Elevators C & D. Garfield C (1923) on the left, and Garfield D (1907) on the right. Larry Mishkar photos



Interstate Bridge, originally known as the Duluth-Superior Bridge, was built by the Duluth-Superior Bridge Co., controlled by the Great Northern Railway, in 1897. Completion of the present High Bridge in 1961 (visible in background) eventually brought about the older bridge's closure. The draw span was pulled out in 1972 with only the Parker through-truss approach span remaining.

The Champion #4 Shafthouse (1902) has been undergoing stabilization since the SIA's visit during the 1997 Annual Conference in Houghton, MI. Painesdale Mine & Shaft, Inc. (PM&S), the volunteer group working to preserve the shafthouse, reports that they have completed the second phase of the restoration project, including replacement of lost steel panel covering and windows. They have also been working to clean up and restore the captain's office and the surrounding grounds. PM&S has created a website that offers a cybertour of the interior of the shafthouse, and an internet book and gift store, proceeds of which assist restoration. The group of volunteers at PM&S would like to extend their thanks to all the SIA members who toured the shaft-house. They received many donations and words of encouragement. Info: PM&S, Box 332, Painesdale, MI 49955; website: www.portup.com/copperrange.



Patrick Harsikbarger photo

The Cliffs Shaft Mine is slated to become a mining heritage theme park.

The Bricklayers Union and the Marquette Tourism and Convention Bureau. The site will be used for displays on open-pit and underground mining equipment, geology and mineralogy, and the social aspects of life on the Marquette range. There will be a walking tour, gift shop, cottage industry, and students doing living history. Cleveland-Cliffs, the current owners, have agreed to turn over the property to a non-profit corporation.

The ruins of the Washburn A Mill (NHL) in Minneapolis are the subject of an \$11 million project to convert the hulk of the old flour mill into a historical museum, according to the *Minneapolis Star Tribune*. The mill burned in 1991, with much of the equipment crashing to the basement and only the exterior walls, which tower to an 11-story height, surviving the blaze (see *SIAN*, Spring 1991). Although damaged, the Washburn A Mill is among the only surviving mills from the era when Minneapolis was the milling capital of the nation. During its 1880 to 1930 heyday, the Minneapolis riverfront numbered 30 mills. The Washburn Crosby Co., which built the Washburn A Mill in 1879 and rebuilt its south section in 1928, was the forerunner of General Mills. The mill was closed in 1965, when General Mills moved out of the city. It was then allowed to deteriorate before vandals set the fire in 1991. Interest in adaptively reusing the mill has grown as the neighborhood surrounding it has boomed with upscale condominiums. The museum will tell the story of how waterpower at the falls

Tragic Fire at Pullman Factory



Frank Eberstadt photo

What remains of the Pullman factory administration building with its old clock tower stands gutted after the fire of December 1.

On December 1, a five-hour fire destroyed the Pullman administration building, clock tower, and severely damaged the connecting erection shops on the south-side of Chicago. The fire was apparently started by a vagrant who was arrested. He claimed to have heard voices in his head directing him to set the blaze. The Pullman factory is a historic site with a national level of significance, and the damage caused by the fire is a tremendous loss to our heritage.

George Pullman built the factory and company town for the manufacture of luxurious railroad passenger cars in 1880. After being touted as a model industrial community that provided workers with housing, churches, and schools, it became a symbol of benevolent paternalism to America's industrial leaders. However, management's control of the community led to resentment among workers, and after an economic recession caused wage reductions, it became the stage of a strike that captured the nation's attention in 1894. Federal troops intervened but not before 13 people were killed. Afterward, Pullman became a powerful symbol of the organized labor movement. The factory closed in 1982 and it was subsequently purchased by the State of Illinois.

The Historic Pullman Foundation was leading an effort to preserve the Pullman factory buildings. The complex was to have become a national transportation and railroad museum, but now those plans have been put on hold. What remains of the brick walls and foundations have been evaluated for stability and for feasibility and cost of restoration. The initial evaluation is encouraging with most of the walls still standing structurally sound to their full height. Many residents of Pullman have already voiced their commitment to going ahead with restoration, and they have started a petition drive and letter-writing campaign to the state legislature asking them to appropriate the necessary funds to restore the buildings. ■

on the Mississippi River built the city and how the flour-milling industry influenced the lives of the people who moved to Minneapolis for jobs. The Minnesota Historical Society will plan, develop, and operate the museum, to be called the St. Anthony Falls Heritage Center. Nearly half the funds needed to complete the museum project have

already been raised. The plan is to convert some of the relatively undamaged lower floors of the mill's south section to a gallery and exhibit space while stabilizing the north section and upper story walls as an historic ruin overlooking the river.

The Minnesota Historical Society has also expanded the number of historic industrial sites under its care by acceptance of the donation of the Grey Cloud Island lime kiln (NR), just outside of St. Paul. According to the society's newsletter, the 115-year old stone kiln is believed to be the only surviving free-standing lime kiln in the region. It measures about 20-ft. sq. and stands about 35-ft. high. Local residents used the lime for construction and agricultural purposes, and made the lime by piling the inside of the kiln with oak logs, placing slabs of the area's plentiful limestone on top of the wood, and setting the fire. When the fire died down, a usable powdered lime remained. The donors have designated an endowment fund for the structure's upkeep and preservation.

A project to preserve the McNeill Street Pumping Station

(Shreveport, LA) has been revived after more than a decade of dormancy. The station was built in 1887 and it had the last steam-powered equipment to deliver water to a major city in the United States when it was closed down in 1980. In the early 1980s, the station was documented by HAER, listed in the National Register, and given National Historic Landmark status, but local efforts to preserve the site floundered for reasons of limited funding and lack of political support. Since that time, the buildings and equipment have been allowed to deteriorate. In June 1998, efforts to revive the project gained momentum when the Shreveport Branch of the American Society of Civil Engineers nominated the station as a National Historic Civil Engineering Landmark. A newly organized McNeill Street Pumping Station Preservation Society held its first meeting in November. They heard presentations on the benefits and feasibility of preservation by local architects, city officials, and former city employees who worked at the McNeill Street plant. There was sufficient initial interest in the project to proceed further and the group has taken the steps necessary to incorporate as a non-profit organization.

IA EXHIBITS

Images du Patrimoine Industriel des États-Unis (The Industrial Heritage of the USA), see *SIA* 26,4 (Winter 1997) and 27,2 (Summer 1998), an exhibit of over 200 photographs of American technology and industry with many SIA-member contributors, has continued its travels in Italy. The show opened Nov. 5 in Terni, at the recently restored 17th-century Palazzo Gazzoli in the historic center of the city. The exhibit was sponsored by Istituto per la Cultura e la Storia d'Impresa Franco Momigliano (ICSIM). Terni, 50 miles northeast of Rome, was a large industrial center up to the mid-19th century, and a producer of iron and steel; more recently electrical equipment is manufactured there. ICSIM is a private research and training institute with a special focus on industrial heritage. The show closed Dec. 22, with the possibility of a subsequent showing in Rome, or in Cagliari, Sardinia.

The Mid-America Windmill Museum held its grand opening in May 1998. The museum exhibits a collection of over a dozen operating, restored windmills at Kendallville in northern Indiana. *The Windmillers' Gazette* (Summer 1998) reports that the new museum is devoted to the collection and preservation of historic water-pumping mills and interpreting the technology to the public at its outdoor museum with visitor's center. Northern Indiana was once the home of a number of windmill manufacturers including the Flint & Walling Co. of Kendallville. Info: Box 5048, Kendallville, IN 46755; (219) 347-0875.

The Altoona Railroaders Memorial Museum opened its Master Mechanics Interpretive Facility in April 1998. The exhibit is located in the four-story, brick, Master Mechanic's building that was part of the Pennsy's Altoona shops. It focuses on the work and lives of railroad men and their families. Displays interpret the work of pattern makers, foundrymen, boilermakers, track workers, and engineers. The museum has been drawing national attention, including a feature article in the *Washington Post* travel section (June 3, p. D9), which listed the museum as a "great weekend escape."

HAER Exhibit Receives Award. *Lying Lightly on the Land: Building America's National Park Roads and Parkways*, an exhibit at the National Building Museum, Washington, D.C., has received the Vernacular Architecture Forum's 1998 Paul E. Buchanan Award for Excellence in

Fieldwork, Interpretation, and Public Service. The exhibit uses Historic American Engineering Record (HAER) fieldwork on roads, bridges, and parkways to explore issues relating to the automobile and the natural landscape of American's national parks. Many SIA members have been involved with the HAER documentation projects over the years. Timothy Davis, guest curator, was congratulated for the successful integration of a wealth of technical information compiled by HAER with an interpretation that demonstrated how cultural context is essential to an understanding of the physical environment. The Buchanan Award honors the late Paul E. Buchanan, who served for 31 years as architect for the Colonial Williamsburg Foundation.

The Machine Tool Trail is a newly developed self-guided heritage-trail tour of sites related to the history of the machine tool industry in Springfield and Windsor, VT. The Precision Valley was home to many important inventions and improvements in the history of manufacturing. Among the sites participating in the trail are the American Precision Museum, the Windsor-Mt. Acutney Train Station, and the Hartness House (home of the founder of a leading machine tool company). Process tours are also part of the trail; Cone Blanchard Corporation gives tours of its modern machine tool shop where they manufacture the largest grinders in the world, and Simon Pearce offers hand-crafted glass and pottery making. Several inns and restaurants are also included on the trail. Brochures and maps are available. Info: American Precision Museum (802) 674-5781.

Oil Patch Dreams: Images of the Petroleum Industry in American Art is a striking exhibit of paintings, photographs, and other artwork depicting the oil industry from the early 20th century to the present day. It reveals changing attitudes of society toward the industry, and how oil caused Texas in particular to evolve from a rural, agrarian state into a wealthy industrial state with vital urban centers. The exhibition, organized by the Art Museum of Southeast Texas, will touring various galleries in Texas throughout 1999: Museum of the Southwest, Midland, thru March 14; El Paso Museum of Art, Apr. 8-May 29; Austin Museum of Art, June 26-Aug. 22; Wichita Falls Museum and Art Center, Sept. 4-Nov. 13. A review of the exhibit appears in *American Art Review* (v.10,5), Sept./Oct. 1998, pp. 200-210.

CHAPTER NEWS

Samuel Knight (Northern California) has quickly grown to become one of the SIA's most active chapters. In 1998, the chapter offered 12 tours! Tours slated for early in 1999 include the remains of the IXL Lime Company kilns (1874-1919), and a walking tour of the bridges of the Central Pacific RR in Niles Canyon. The chapter has been very active raising funds to save the Knight Foundry with more than \$150,000 already committed toward that end.

Oliver Evans (Philadelphia) presented speaker Larry DeYoung on the history of Conrail in October with a discussion of what will happen now that its operations are to be folded into those of its new owners, CSXT and Norfolk Southern. The chapter held its 10th annual Lance Metz Film Festival in December with this year's films including the Delaware River Bridge, trolleys, and electric trains. The Annual Meeting was held at the end of January.

Northern New England hosted its fall meeting and tour in November at the Bath Iron Works in Bath, ME. The chapter took a walking tour of the works, and also stopped at some local industries including the Great Bowdoin rag paper mill and the shipyards.

Southern New England enjoyed its fall tour to the southeastern Massachusetts iron district. The program began at the Henry Perkins Co. in Bridgewater, a family-run foundry established in 1848. The group inspected the 75-acre Bridgewater Ironworks complex, a site in operation from circa 1707 to 1988. It has been gifted to the Town of Bridgewater with prospects of development as an "Iron Works Park." Several SIA members have worked to document the site. In February, the chapter hosted the 12th Annual Conference on New England IA at the Slater Mill Historic Site, Pawtucket, RI.

Roebling (NY-NJ) toured four bloomery forge sites in Morris County, NJ, in December. Tour leaders were Bierce Riley and Joe Macasek. The Annual Meeting was held at Drew University in January with a show-and-tell session following the business meeting. The chapter traveled to the Picatinny Arsenal Museum in February.

CONTRIBUTORS TO THIS ISSUE

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With thanks

SIA Southern Chapter Forms

The Southern Chapter held its kick-off meeting on December 16th in Birmingham, AL. The chapter, approved by the SIA Board at its November meeting, elected officers and formalized its work plan. Officers are Bode Morin, president; Sarah Cowie vice-president; David Brewer, secretary; and Dorah Rosen, treasurer. Although the majority of the members reside in northcentral Alabama, the group's boundaries are broadly defined and include most of the Southeastern U.S.

A key component of the chapter will be the use of e-mail for primary correspondence and newsletters. Jack Moore of Birmingham has agreed to be the first "under secretary for electronic information" and will distribute news and discussion via computer. Electronic access to the Southern Chapter is open to any SIA member, providing of course that Jack can handle the volume without a server. To be put on the e-mailing list, simply send your request to Jack Moore at jackamoore@mindspring.com or contact Bode Morin at (205) 324-1911.

There are six standing committees for the chapter. The first is the service committee, chaired by David Brewer, which will organize quarterly volunteer groups to perform needed clean up, conservation, research, recording, or interpretation at under-funded or under-cared for industrial sites. The second is the program committee, chaired by Jack Bergstresser, which will organize quarterly events, tours, and lectures for the chapter and general public. The third is the preservation committee which will track developments and changes at endangered industrial sites and generate a chapter agenda to promote the preservation and interpretation these sites. The fourth is the education committee to develop chapter goals to promote the better understanding of our history through industrial artifacts. The fifth is the membership committee to recruit and sustain memberships in the chapter and the SIA.

The sixth is the industrial archeology clearinghouse chaired by Sarah Cowie. The Southern Chapter would like to periodically compile information about IA-related work conducted in the southern states, and periodically share that information in such publications as the *SIAN*. Individuals and organizations are invited to summarize their on-going and recently completed work in various aspects of IA, such as archaeological excavations, HABS/HAER recordations, National Register eligibility evaluations, public education, preservation efforts, and private scholarship. Please submit a brief description of the project and contact information to Sarah Cowie, Southern Research, Inc., 5045 Milgen Crt., Expressway Industrial Park, Ste. 7, Columbus, GA 31907; (706) 569-7233; e-mail: cowiesarah@aol.com. Deadline for our first newsletter is March 1, 1999.

The group's other major program is the 1999 SIA Fall Tour which will be held in Birmingham on the first weekend in November in conjunction with Sloss Furnaces and the University of Alabama at Birmingham. For more information about the Southern Chapter or Fall Tour, please contact Bode Morin at Sloss Furnaces, (205) 324-1911.

B.M. & S.C.

A Workshop on Surviving Historic American Industrial Processes (SHAIPs in Motion) will be held April 13-16 at Shepherdstown, WV. The workshop is co-sponsored by the Historic American Engineering Record (HAER), the Institute for the History of Technology and Industrial Archaeology (IHTIA), and the Audio Visual Division, Harpers Ferry Center, National Park Service. The opportunity to see workers using vintage equipment from the 19th and early 20th century is rapidly disappearing. The two-day workshop will discuss methods of preserving and documenting historic industrial processes by film and videotape. Traditional HAER documentation of measured drawings, photos, and text does not record the sounds and movement of the surviving industries, and the present focus of research has tended toward heavy industry and manufacturing processes as opposed to craft industries. Space to attend the workshop is limited. Info: Dan Bonenberger, IHTIA, (304) 293-3589; e-mail: bberger@wvu.edu.

150th Anniversary of the Wheeling (WV) Suspension Bridge will be celebrated with an *International Conference on Historic Bridges*, Oct. 20-23. Well known historians of technology, together with engineers involved in the preservation of historic bridges, will present papers over a two day period. The conference will feature a promenade on the newly renovated suspension bridge, a tour of local historic bridges, a reception in the 1859 U.S. Custom House, and a gala conference banquet. This is the sixth in a series of historic bridge conferences. Info: Emory L. Kemp, IHTIA, 1535 Mileground, Morgantown, WV 26505; (304) 293-7169; fax 293-2449; e-mail: LSypolt@wvu.edu.

International Directory of Textile History Scholars. The Pasold Research Fund in England publishes *Textile History*. They are compiling an international directory of textile historians, which will be made available on-line. They wish to include scholars working in such fields as economic and business history, costume and clothing, fashion, fabrics, and textile related archives, but also technology, machinery, and mill architecture. Those who wish to be included should provide their name, address, telephone, fax, e-mail, textile interests, country of interest, and period to Mary B. Rose, Dir., Pasold Research Fund, Dept. of Economics, The Management School, Lancaster Univ., Lancaster LA1 4YX, UK; Fax +44 (0) 1524 594244; e-mail: m.rose@lancaster.ac.uk.

Recent Advances in Archeological Prospection Techniques is a workshop offered by the National Park Service on the practical application of geophysical equipment and aerial photographic techniques available for the identification, evaluation and ultimately, the conservation and protection of cultural resources. Such techniques include electromagnetism (EM), ground penetrating radar (GPR), metal detectors, electrical resistivity, and seismic. It will be held May 10-14 at Effigy Mounds National Monument, Harpers Ferry, IA. Applications and tuition are due by March 18. Info: Mark Lynott/Steven De Vore, Federal Building, Rm. 474, 100 Centennial Mall North, Lincoln, NB 68508-3873; (303) 969-2882.

SIA Journal Makes Headlines in Great Falls. SIA-member Arlyne Reichert showed *Great Falls (MT) Tribune* journalist Tom Kotynski the recent green engineering issue of *IA* (v. 24,1) that included Pat Malone's analysis of the landscaping at the Anaconda Copper Mining Company's refinery. During the Great Depression, smelter manager A. E. Wiggan made the refinery grounds his personal greenhouse and garden park. Kotynski was so taken with the paradox of an oasis of green in the midst of one of the nation's most notorious industrial polluters that he featured the story in his front page column of the paper's city section (Dec. 7, 1998). Many people in Great Falls feel a sense of disappointment that some vestiges of the reduction plant and its landscaped grounds have not been preserved.

Call for Papers, Engineering Heritage Conference, Gdansk, Poland. The Technical University of Gdansk has issued a call for papers for the *International Conference on Preservation of the Engineering Heritage—Gdansk Outlook 2000*, Sept. 7-10, 1999. The main object is an interdisciplinary overview of current research and conservation projects of engineering heritage. All activities at the conference will be conducted in English. Participants wishing to present a paper are invited to submit an English written abstract of a max. 500 wds., or two pages, including graphics. Requested text format is Word 6 in Times New Roman 12 pt. Three camera ready copies of this abstract, and the relevant diskette, should be sent to Conference Secretary, Waldemar Affelt, PEH_GO 2000 Sekretariat, Politechnika Gdanska, Wydział Budownictwa Ladowego, uul. Narutowicza 11/12, 80-952 Gdansk, Poland; tel: +48/58/347 2705, fax +48/58/347 2044, e-mail: affew@pg.gda.pl; homepage: www.pg.gda.pl/pehgo2000.

Michael C. Robinson Prize honors a historical study that contributes to the formulation of public policy and is administered by the National Council on Public History (NCPH). It is intended to recognize the finest historical studies prepared in support of public policy formulation. The prize honors the late Dr. Robinson who worked for the American Public Works Association from 1974 to 1982, first as associate editor of the bicentennial history of public works in the United States, and then as research coordinator. He became the first historian for the U. S. Army Corps of Engineer's Mississippi River Commission/Lower Mississippi Valley Division. He wrote extensively on civil engineering and environmental history. Criteria for the award are that the author(s) must have served as a public agency historian or as a contractor at the time the study was prepared; studies must be shown to be related to policy formulation; studies will be judged on the basis of professionalism, clarity, and impact on policy; studies may be prepared for use at any level of government; studies completed in the two years preceding the year in which the prize is given are eligible. Prizes will be awarded every two years. Donations in memory of Michael C. Robinson and in support of the prize should be made out to "NCPH Endowment (Robinson Prize)" and sent to David G. Vanderstel, Exec. Secretary, NCPH, 327 Cavanaugh Hall-IUPUI, 425 University Blvd., Indianapolis, IN 46202-5140.

CALENDAR

1999

March 20: 18th Annual Canal History & Technology Symposium, Lafayette College, Easton, PA. Info: National Canal Museum, 30 Centre Sq., Easton, PA 18042-7743; (610) 559-6613.

April 13-16: SHAIPIs in Motion: A Workshop on Surviving Historic American Industrial Processes, Shepherdstown, WV. See article elsewhere in this issue. Info: Dan Bonenberger, WVU Inst. for the History of Tech. and IA, (304) 293-3589; e-mail: bbberger@wvu.edu.

April 14-18: American Society for Environmental History Biennial Meeting, Tucson, AZ. Info: Edmund Russell, SEAS, Thornton Hall A-237, Univ. of VA, Charlottesville, VA 22903; e-mail: epr5d@virginia.edu.

April 23-25: Ironmasters Conference, Morgantown, WV. Info: Lee Maddex, (304) 743-3829; e-mail: lmaddex@wvu.edu.

April 29-May 1: National Council on Public History, Annual Conference, Lowell, MA. Info: NCPH, 327 Cavanaugh Hall-IUPUI, 425 Univ. Blvd., Indianapolis, IN 46202-5140. Website: www.iupui.edu/it/ncph/ncph.html.

May 17-18: Montana Historic Bridges Conference: Protecting Our Engineering Heritage, Great Falls, MT. Co-sponsored by Preservation Cascade, City of Great Falls, Montana State Historic Preservation Office, Montana DOT, ASCE (Montana Section), HAER, and the National Trust. Info: Linda Atkins, Project Director, 737 Blaine St., Sand Coulee, MT 59472; (406) 736-5368 phone & fax.

June 3-7: SIA Annual Conference, Savannah, GA. Info: Mark Finlay, Dept. of History, Armstrong State Univ., Savannah, GA 31419; (912) 921-5642; e-mail: mark_finlay@mailgate.armstrong.edu.

June 13-17: Assoc. of Living History, Farm and Agricultural Museums Annual Conference, Kansas City, MO. "Across the Wide Missouri: Crossroads & Cultures." Themes include changes in transportation and other technologies; the role of Kansas City

in the movement of goods between east and west. Paper proposals requested. Info: Watkins Mill State Historic Site, 26600 Park RD N, Lawson, MO 64062. Website: www.alhfam.org.

June 21-27: Railway & Locomotive Historical Society, Annual Meeting, Sacramento, CA. Held jointly with the National Railway Historical Society and in conjunction with Railfair 1999. Info: Box 8289, San Jose, CA 95155-8289.

September 7-10: International Conference on Preservation of Engineering Heritage, Gdansk, Poland. See article elsewhere in this issue. Info: Conference Secretary, Waldemar Affelt, PEH_GO 2000 Secretariat, Politechnika Gdanska, Wydział Budownictwa Ladowego, uł. Narutowicza 11/12, 80-952 Gdansk, Poland; tel: +48/58/347 2705, fax +48/58/347 2044, e-mail: affew@pg.gda.pl; homepage: www.pg.gda.pl/pehgo2000.

Sept. 29-Oct. 2: American Assoc. for State and Local History & Mid-Atlantic Assoc. of Museums Conference, Baltimore, MD. "Caring for Treasures at the Millennium." Info: AASLH, 530 Church St., Ste. 600, Nashville, TN 37219-2325; e-mail: www.aaslh.org.

October 3-7: Society for the History of Technology (SHOT) Annual Meeting, Detroit, MI. Info: SHOT, Dept. of History, Auburn Univ., Auburn, AL 36849. Website: <http://hfm.umd.umich.edu/tc/SHOT>.

October 18-23: World Congress of Conservation and Monumental Heritage, XII General Assembly, ICOMOS, Mexico. General paper sessions at various locales in Mexico. Issues related to conservation, heritage tourism, archeology, etc. Conservation of Industrial Architecture is a scheduled session. Info: Carlos Flores Marini, Coordinator-Mexico 99, Mazatlan 190 Col. Condesa, C. p. 06140, Mexico, D.F.; Tel. 515-1471, Fax 272-4128; e-mail: icomosmex99@compuserve.com.mx.

October 20-23: International Conference on Historic Bridges, Wheeling, WV. See article elsewhere in this issue. Info: Emory L. Kemp, Inst. for the History of Tech. & IA, 1535 Mileground, Morgantown, WV 26505; (304) 293-7169; fax 293-2449; e-mail: Lsypolt@wvu.edu.

Nov. 4-7: SIA Fall Tour, Birmingham, AL. Info: Bode Morin, Sloss Furnace NHL, Box 11781, Birmingham, AL 35202-1781; (205) 324-1911; fax 324-6758.

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