

SOCIETY FOR INDUSTRIAL ARCHEOLOGY NEWSLETTER

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Chicago: Industrial Heartland, U.S.A.



Above: Bridges and architecture are two of Chicago's prime attractions. Viewed on the Sunday boat tour, the huge Merchandise Mart (1930) looms above the Franklin-Orleans St. double-leaf trunnion bascule. The Mart was the world's largest building (in floor area), until the Pentagon was built.

Below: In the Mainstream Station pumphouse, 300 ft. underground, the painted circle shows the scale of the 33-ft.-diam. hardrock tunnel. R. Frame photos.



Left: The Bismarck (and tour leaders Kim & Linda Brietenbach) welcomed the Society to Chicago.

Above: Chicago no longer is Sandburg's "Hog Butcher for the World." Only the 1875 Union Stock Yard Gate [NHL: Burnham & Root] remains from the original 475 acres of yards and packing houses. R. Frame photos.



At long last, the SIA came to Chicago. It was fitting that this legendary city of the nation's industrial heartland should be the site for the Society's 20th anniversary conference. Over 200 of the faithful attended, about equalling the city's 1834 population. With such a feast of urban IA to choose from, almost any selection of sites and tours might have been worth the trip. Our host and co-sponsor, the Public Works Historical Society, pulled out all the stops to arrange the widest possible sampling, from the internationally acclaimed

town of Pullman, to the little known, such as the Replogle Globe plant, and from the early—the Illinois & Michigan Canal, to the most modern—the great Mainstream Pumping Station. Throughout the weekend we took in the neighborhood IA around the conference HQ, the Bismarck Hotel, including the Chicago El and the many movable bridges, marvelous engineering works that are part of Chicagoans' everyday lives.

A welcoming reception Thursday evening at the Chicago Maritime Museum in the historic North Pier Terminal building kicked off the festivities. Paul Barrett, Illinois Inst. of Tech., presented a slide overview of the city's transportation networks and related industrial development. We viewed the museum's photo exhibits, including "Port to Port: 300 Years of Commerce on the Great Lakes." Phil Elmes, museum founder and conference committee member, helped organize the event.

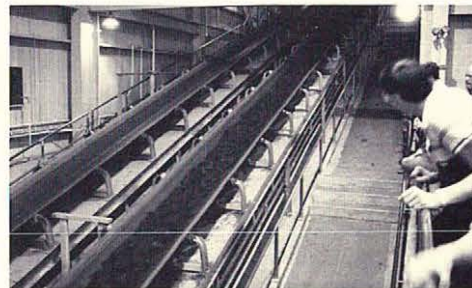
Friday morning we were up and on the buses early for the day's process tours. Registrants selected from among five different tours, with most stopping at two relatively modern examples of major urban public works: Mainstream Pumping Station and the Stickney Water Reclamation Plant.

Located in Hodgkins, Ill., the **Mainstream Pumping Station** of the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) is one of two stations in the



Left: As part of the exhibit at the Mainstream Pumping Station, this ingenious model rises out of its base to reveal TARP's complex underground system.

Right: At the end of the process at the Stickney Water Reclamation Plant, sludge ("dewatered wastewater solids") is conveyed [above] to a truck- and rail-loading facility. The Metropolitan Sanitary Dist. locomotive hauls sludge to drying areas in cylinder side-dump DIFCO gondolas [below]. R. Frame photos.



Tunnel and Reservoir Project (TARP—Deep Tunnel). It was designed to prevent backflows into Lake Michigan, eliminate waterway pollution caused by combined sewer outflows, and provide an outlet for flood waters. We made a 300-ft. ear-popping trip down the elevator to view the underground pump station for the immense 35-ft.-diam. main tunnel. Based on planning that began in the 1950s, Mainstream construction was begun in 1976 and completed in 1985. The tunnel-boring technology used here later was adopted for the English "Chunnel" project.

Mainstream is designed to pump sewage and stormwater to the **Stickney Water Reclamation Plant**, one of the largest wastewater treatment facilities in the world, serving a 260-sq.-mile drainage area. Stickney actually is two plants, the West Side (1930), which treats 40%, and the Southwest (1939), which treats 60%. The maximum combined capacity is 1,440 million gals./day. When flowage exceeds capacity, it is diverted into the 1-billion-gal. TARP tunnel system for temporary storage and is treated later, rather than overflowing into area waterways. Stickney employs conventional treatment technology, discharging the effluent into the Sanitary Drainage & Ship Canal.

Other public works facilities visited on Friday included: the **Marseilles Hydropower Plant** (courtesy of Illinois Power Co.), built 1911 to power the interurban system in the

Illinois River valley and operated until 1988; **Lockport Power Station** of the MWRDGC (1907), which not only generates power but allows outflow control of the Sanitary & Ship Canal; and **Commonwealth Edison State Line Generating Station**, built in 1927, which once boasted the world's largest turbine-generator.

Replogle Globes, Inc. is the world's largest manufacturer of geographical globes. There, we were surrounded by a cosmos of miniature planets—all Earths—ranging from an asteroid-like 4.7 ins. to a whopping Jupiterian 32 ins. (retailing for \$4,500), all in varying stages of manufacture. Newsprint manufacturing was viewed at **FSC Paper Co.** in Alsip, where this relatively modern (1968) plant uses only old newspapers as raw material. Two mammoth printing operations were toured: the great **Lakeside Press of R.R. Donnelley & Sons** (courtesy of conf. supporter Gaylord Donnelley), publishers of the Sears catalog, among other items; and the **Tribune Freedom Center**, the spanking-new and highly automated printing plant for the *Chicago Tribune*. The latter seemingly operated without the benefit of human labor; to some, it was an eerie—and dispiriting—sight.

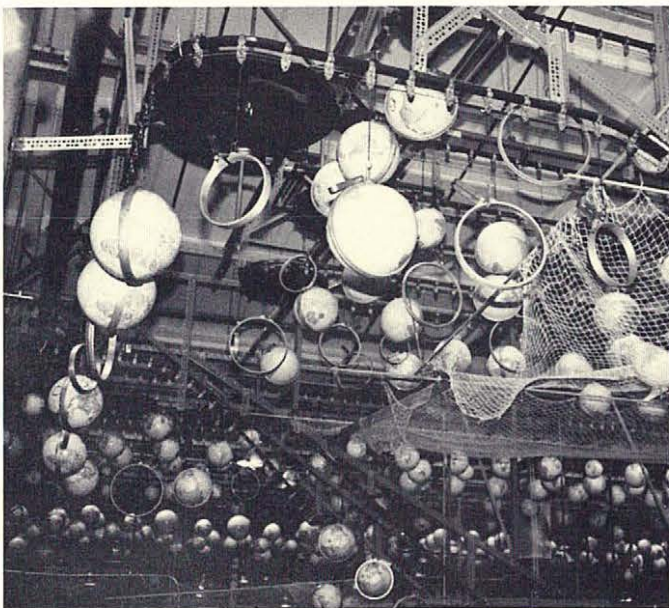
Chicago lived up to its name as Carl Sandburg's "Tool Maker." Among the metalworking sites visited was **Brad Foote Gear Works** in Elgin, which opened in 1924 and is now the world leader in bevel gears, specializing in induction hardening of individual gear teeth. Here we witnessed gear cutting of every imaginable variety and a fiery oil-quenching process. At century-old **Goodman Equipment Co.**, Bedford Park, we observed the assembly of mining locomotives.

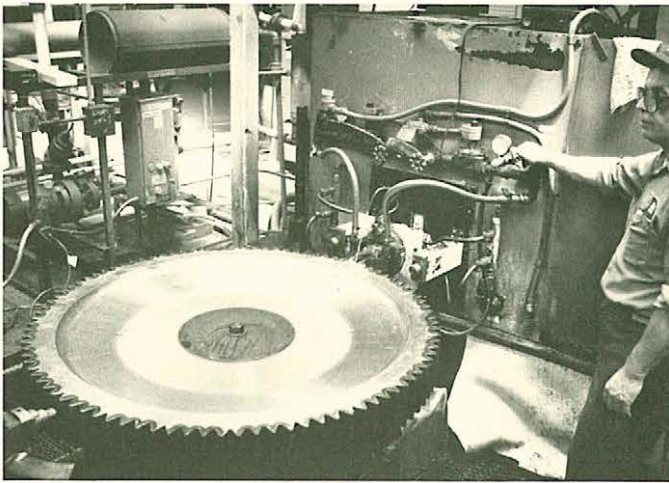
REPLOGLE GLOBES, INC.

Left: Replogle's cosmos, suspended from overhead conveyors.

Center: Die-cut hemispheres await global mounting.

Right: A southern hemisphere is fitted into an assembly jig. J. Shprentz photos.



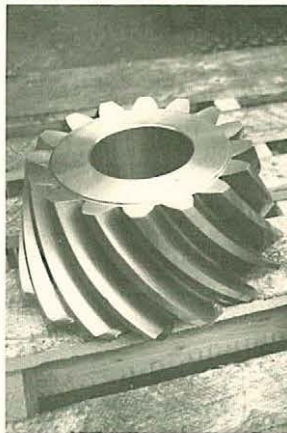
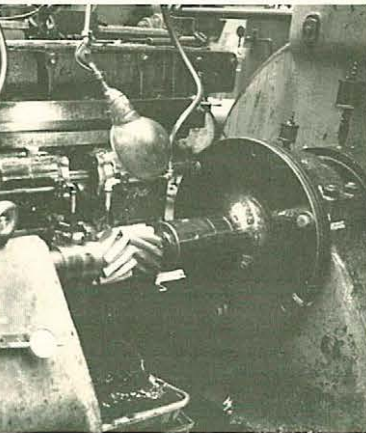


BRAD FOOTE GEAR WORKS, INC.

Above: World's only plant capable of induction-hardening of curved-tooth bevel gears.

Below left: Special cutter produces herringbone gear.

Below right: A Brad Foote specialty: the curved-tooth bevel pinion. *R. Frame photos.*



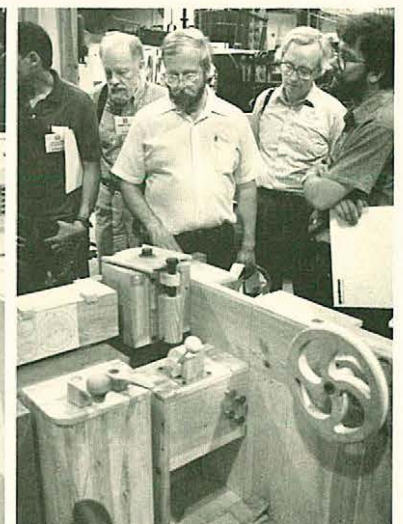
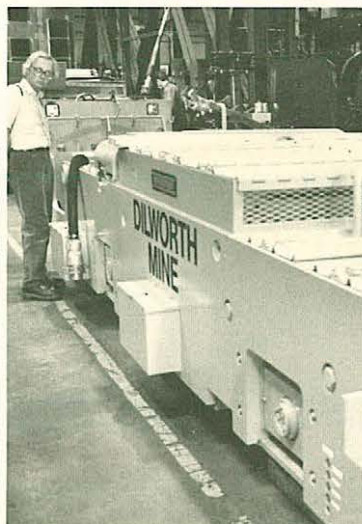
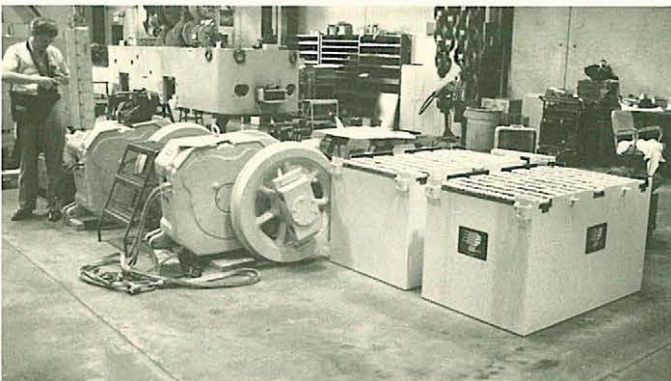
While at **Anderson Shumaker Co.**, a small open-die forge shop founded in 1902, the mostly Polish, highly skilled work force manned four steam hammers ranging from 1,500 lbs. to 6,000 lbs., turning out stainless and high-temp. steel forgings for a wide range of industries. As we watched, fascinated by the perfect synchronization of the hammer's blows and manipulation of the forging, company president Richard J.

GOODMAN EQUIPMENT, INC.

Below: Motors and batteries for mining locomotive. *Near right:* 20-ton locomotive awaits shipment to Dilworth Coal Mine in Pa.

Far right: Customers can design cab arrangement using this wooden mockup of 15-ton locomotive.

Right above: Newly assembled cab with traditional controller. *R. Frame photos.*

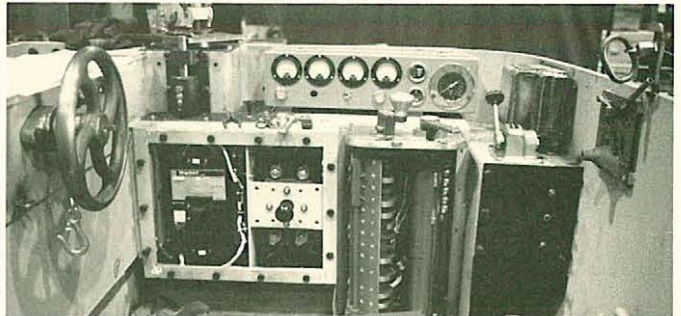


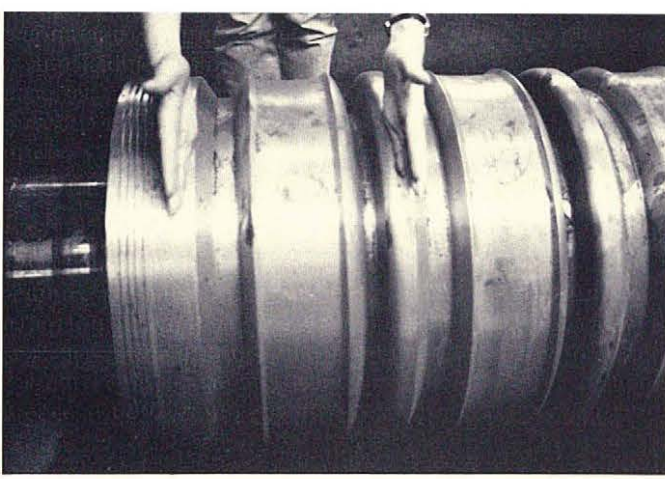
Tribble, who led the tour, confirmed our observation that the blacksmith's work is more art than science. Finally, traditional IA was viewed in the tour of the **Joliet Steel Works** ruins, which include the archeological remains of early blast furnaces. Joliet Steel began as the Union Coal, Iron & Transportation Co. rail mill in 1869.

Friday's events concluded with dinner at **The Berghoff**, Chicago's renowned German restaurant, followed by the traditional show & tell slide presentations.

Saturday was devoted to paper sessions. There was a wide variety of presentations, including: the "8th Annual Historic Bridge Symposium," chaired by HAER Chief Eric DeLony; three series of papers on Chicago IA; two "Iron/Extractive" sessions; and sessions devoted to Bureau of Reclamation projects, "Rust Belt Rehabilitation," and IA documentation. During the luncheon in the Bismarck, President David Salay chaired the SIA Annual Business Meeting (see meeting minutes under "SIA Affairs" in this issue). That evening, the **Chicago Historical Society** graciously hosted the SIA's annual banquet, catered amidst the CHS's noteworthy exhibits. Featuring nouvelle cuisine, it may well have been the most elegant in the annals of SIA feasts. Kudos to CHS Director Elsworth Brown and Curator Bob Goler (as well as the chefs).

On Sunday we all took the same two half-day tours, one by boat and one by bus, each starting in downtown Chicago in the morning, meeting in Joliet at midday, and returning by the opposite mode in the afternoon. The bus tour wandered through the city's many industrial neighborhoods, touching the near west side, home to Jane Addams' historic Hull House, through the Czech area known as Pilsen, near the site of International Harvester's McCormick Plant, and past the Central Manufacturing District, an early industrial park. We made a stop at the Union Stock Yard Gate [Burnham & Root, 1875; NHL], sole remnant of the once-vast and sprawling stockyard and meat packing zone that had made it "Hog





CHICAGO HEIGHTS STEEL. Hands define the roll area that will split one 112-lb. RR rail: the head area is at left, web in middle, flange at right. R. Frame photo.

Butcher to the World," and another stop at the incredibly modest homes of current and past Mayors Daley. Another obligatory photo opportunity was the two Comiskey baseball parks, the 1910 edition undergoing demolition (souvenir bricks available at \$15 each). A highlight of the bus tour was the visit to Pullman [Solon S. Beman, 1880-81], the company town built by sleeping-car magnate George M. Pullman to house workers at the Pullman Palace Car Co.

The boat cruised between downtown Chicago, on the Chicago River, and Joliet, on the Sanitary & Ship Canal, passing the entrance to the Illinois & Michigan; the mouth of the Calumet-Sag Channel [1911-22], a Ship Canal tributary; Lamont Quarries, supplying the very stone through which the Canal was cut; and Material Services Corp., founded in 1919 to supply building materials and now a major property owner (itself owned by General Dynamics) along the Canal. Without doubt, however, the premier attraction(s) of the boat tour was the unbelievable array of movable bridges. Chicago harbor, in fact, has more bridges than any other in the world. There were swing bridges (including an asymmetrical vehicular swing with the pivot on shore), vertical-lift bridges, bas-



Asymmetrical swing bridge with pivot on shore of Sanitary & Ship Canal. R. Frame photo.

cules of all engineering and architectural types, and in single- and double-leaf versions, and even a rare retractile bridge. A number of them were opened for our boat, and we barely inched beneath some of those that weren't; so close was the clearance that the canal level was purposely lowered so this trip could be achieved. The boat tour was superbly narrated by Harold Platt and Ted Karamanski, both of Loyola Univ.,

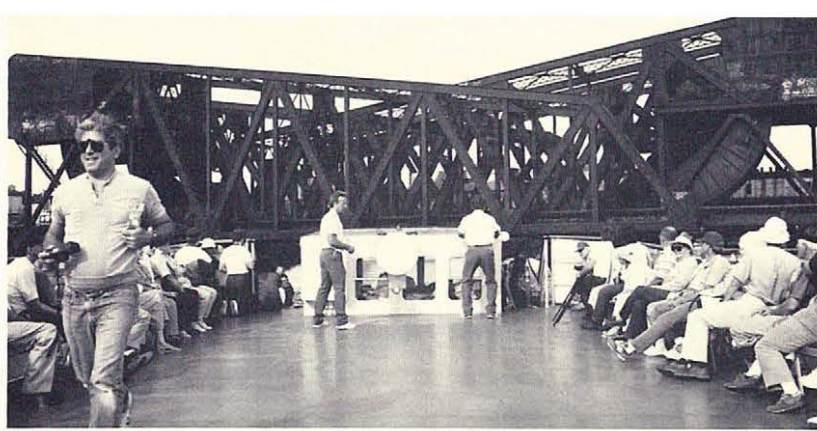


PULLMAN.

Left: Erecting shops (1880; modified in 1909 for steel cars). In background is the clock tower of the Admin. Building (1880).

Right: Hotel Florence, opened in 1881 and operated until 1975.

R. Frame photos.

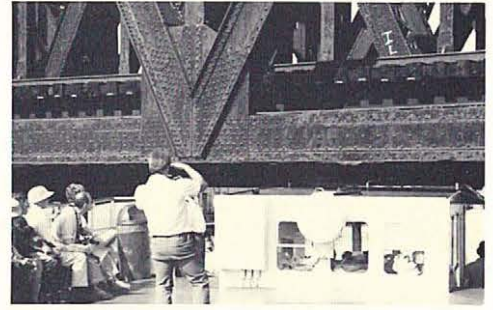


LOW BRIDGE ON S&S CANAL.

Above: Tour boat Jamaica approaches group of four (two pair, alternately opposed) rolling lift RR bridges. Seeing low clearance, Howard Rosen runs away, terrified.

Right: Crewman signals amount of clearance to pilot.

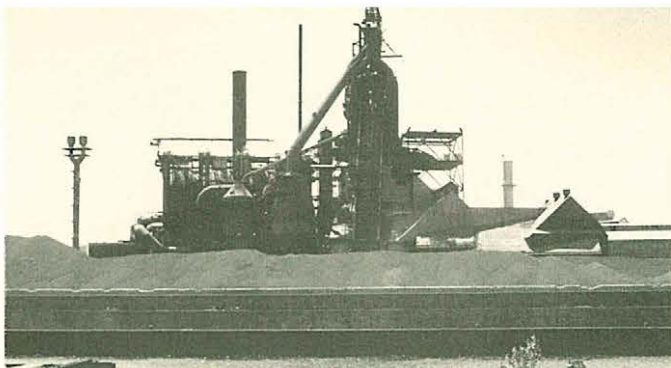
Right below: With passengers lying low, the Jamaica barely clears the bridges. J. Shprentz & R. Frame photos.



Dennis McLendon, American Planning Assn., and John Lamb, Drew Univ.

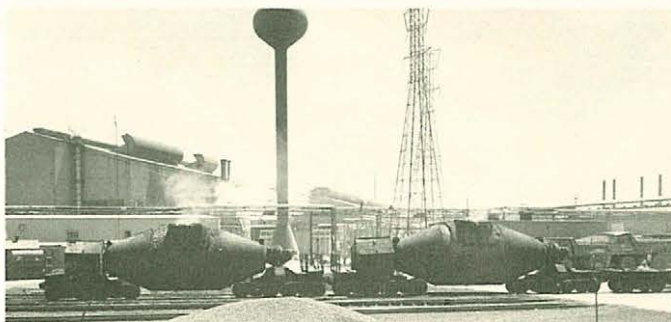
For most, the Sunday tours marked the end of a great conference. For one small group of the incorrigible that registered in time, there was another day to go. On Monday, this lucky busload went off to **Chicago Heights Steel**, founded in 1893, the longest operating RR rail rerolling mill in North America. Here, 140,000 tons per year of used rails are heated and sliced into their three fundamental parts: head, web, and bottom flange. In the mill, among 100 other products, the flanges are rolled into new rail clamps, the webs become bed-frame angles, and the heads are turned into countless fence posts—some 60,000 tons of fence posts last year. As the bus left, sharp eyes spotted the abandoned works of the **Bisbee**





USS GARY WORKS.

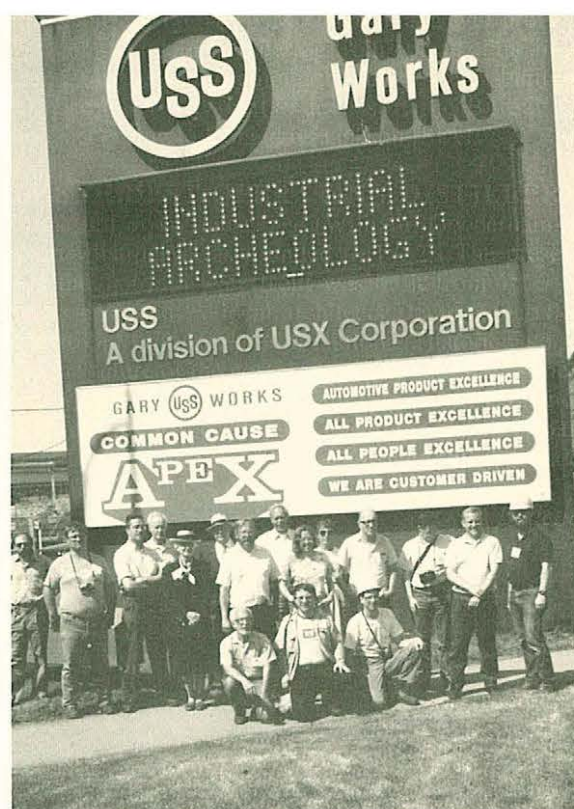
Left above: The huge, 8,000-tons/day, No. 13 blast furnace (1974).



Left below: Torpedo cars carry 120-150 tons of molten iron from the blast furnace to the steel shop.

Right: The Gary Works electronically welcomed the post-conf. Monday tour group.

R. Frame photos.



Linseed Oil Co., prompting a quick photo stop.

For Monday lunch it was back to Pullman, to dine at the Hotel Florence (1881), named for George Pullman's wife, and then on to the great **USS Gary Works** (div. of USX Corp.), originally constructed 1906-09 by Indiana Steel Co. This 6 1/2-mile-long plant is the largest domestic producer of iron and steel, turning out 6 million tons per year (85% cast, 15% plate), with five blast furnaces and 7,800 employees. We bussed past big No. 13 blast furnace (1974), one of the most productive on the continent, whose 8,000-tons/day-capacity is fed with Mesabi taconite. Then we went indoors to view the state-of-the-art, 92-in.-wide cap., Sumitomo A-Line Caster (1986), and the 84-in. Hot Strip Mill (1967), which rolls a 40-ft. cast slab into a 4,000-ft. strip, from .070 to 1/2-in. thick (84 ins. is the diam. of the finished coil, not the width of the strip).

When we arrived back at the Bismarck, the long Chicago weekend was done. For those of us who wanted to slip away from IA, there was plenty of other Chicago culture to absorb, not the least of which is the city-full of world famous Chicago School architecture, to say nothing of the Frank Lloyd Wright assemblage in Oak Park. And with our 20th Annual Conf. concluded, we only began to tap the city's IA heritage, leaving behind more than enough to generate interest in return visits. Well deserved thanks go to Howard Rosen, Joel Mendes, Ann Durkin Keating, and Antoinette C. Ewing of the Public Works Historical Society; and the local planning committee (in addition to others noted above) of: Frank Beberdick, Kim & Linda Breitenbach, David Bolanos, and Terry Sinnott.

CHICAGO: AN INDUSTRIAL GUIDE, prepared for the 1991 SIA Annual Conference, is available for \$5 from the Public Works Historical Society, 1313 E. 60th St., Chicago IL 60637 (312-667-2200). The 52-page paperback volume describes over 100 sites and includes 90 illustrations and 5 maps. It is organized into four parts. Harold Platt of Loyola Univ. provides an introductory essay that places industrial sites in a broader interpretative framework. Sections two and three include two self-guided regional tours and entries on individual sites. The book concludes with a Chicago industrial bibliography, maps, and an appendix. The guide was prepared by Ann Durkin Keating, Dan Barron, Dennis McLendon, and Joel Mendes, and was supported by the Ill. Humanities Council, the Natl. Endowment for the Humanities, the Ill. Gen. Assembly, and the PWHS.

SITES

BOTTLING MACHINE QUERY. Information is sought about the U.S. Automatic Rotary Vacuum Filler, manufactured by the U.S. Bottlers Machine Co., Chicago. One has been located at the Charles Krug Winery in northern California, and details about age and design are sought. Contact Amy Federman [SIA], 13417 Briar Path Lane, Silver Spring MD 20906 (301-871-9254).

BUFFALO BILL (SHOSHONE) DAM [1905-10; NR, ASCE Landmark], across the Shoshone River near Cody in northwestern Wyoming was one of the first high concrete dams in the U.S. In a major new project, its height has been raised 25 ft. to 350 ft. Additional work, to be completed next year, includes three new powerplants, spillway alterations, modifications to the Cody Canal, new dust-abatement dikes, and relocation of recreational areas. The height increase expands the reservoir to supply the powerplants that, combined with the old 5-MW Heart Mountain plant, will provide 25.5 MW. With its thickness tapering from 108 ft. at the base to 10 ft. at the top, the dam is among the thinnest ever built by the Reclamation Service or its successor, the Bureau of Reclamation, according to Donald C. Jackson [SIA].

CANADA'S OLDEST OPERATING DISTILLERY CLOSED last fall in Toronto. The (William) Gooderham & (James) Worts distillery was founded in 1832. The present complex on the Toronto waterfront was built from 1859 to 1880 and was designed by local architects David Roberts & Son. The distillery was declared a National Historic Site in 1989. Now the future of the complex is in doubt. It is owned by Hiram Walker Allied Vintners Ltd., Somerset, England. For information about the site and its future, contact Joan Murray, Curator, Toronto's First Post Office, 260 Adelaide St. East, Toronto, Ont. M5A 1N1.

OSIA Bulletin

Joel Shprentz goes to Chicago conf., takes the scenic IA route

You don't have to wait for conferences to view IA sites and take process tours. As I drove to and from this year's SIA Annual Conference in Chicago, I visited many small factories that were successfully operating with equipment and technology dating back 40, 50, or more years. I also stopped at a few museums that traced a single company's impact on an industry, and I stopped at some railroads that are recreating the metropolitan corridor, bringing a glimpse of urban America into every small town along the tracks.

My trip began in Flemingville, N.Y., home of the **Tioga Central RR**. Running on the former Auburn Branch of the Lehigh Valley RR, the TC offers excursion rides, dinner trains, and even carries some freight. Dinner trains run the full 26 miles from Owego to North Hartford, with stops in



Above: Newark Valley Depot on the Tioga Central RR (Rt. 38, Flemingville, N.Y.).

Below: Locomotives in front of the engine house, Arcade & Attica RR (278 Main St., Arcade, NY 14009).

J. Shprentz photos.



Flemingville and Newark Valley. The Owego, Flemingville, and Newark Valley stations are restored, but the NV is a gem.

The next visit was the **Corning Glass Museum** in Corning, N.Y. Perhaps too tame for some IAers, it nevertheless is an excellent exhibition of 3,500 years of glassmaking. In the adjacent Steuben Factory, I watched skilled workers transform molten globs of glass into crystal masterpieces, which ride conveyors through cooling ovens before being polished, engraved, and inspected.

The **Arcade & Attica RR** in Arcade, N.Y., was not operating excursions on the day I visited, so I inspected the engine house and yards. I found locomotive No. 18, a 2-8-2 Alco from the Boyne City RR, fired up and parked in the sun—a nice photo opportunity.



Above: Office & works of the Original American Kazoo Co. (8703 S. Main St., Eden, NY 14057).

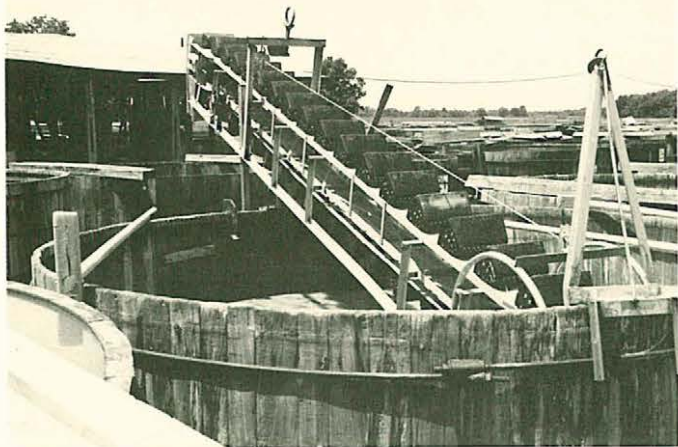
Right: Carver at work, Carousel Works (44 W. 4th St., Mansfield OH 44902).

J. Shprentz photos.



Now for an original—in fact, the **Original American Kazoo Co.** works in Eden, N.Y., which extends behind a Victorian house that holds offices, a tiny museum, and gift shop. America's first kazoo factory is now the only metal kazoo factory in the world. Belt-driven die presses built in 1907 by the Niagara Tool & Die Co. still stamp out sheet-metal parts and shape them into kazoos, just as they have done since the plant was established in 1916. The machinery once produced everything from metal dog beds to peanut vending machines, but since 1965 has made only kazoos.

A hint in the *OhioPass Travel Planner* led me to Mansfield, Ohio, where I asked a policewoman where the **Carousel Works** was. Did I want the factory or the new carousel, she asked. I knew I was in the right place. There are no formal tours, so I was invited to wander among the craftsmen, who are among the last in the world to carve, paint, and assemble full-size, amusement-park-quality, wooden carousels. Their work is divided between historic restorations and new construction. Using mallets and chisels, woodcarvers reduced laminated blocks to leaping horses. Equine anatomy references lie open on the workbench next to photos of old carousel horses. Handwork isn't perfect, and a carved wooden patch covered one animal's eye to hide a mistake. Painters applied dappling and gold leaf in the paint shop. Across the street, I watched Carousel Works technicians



Left: Pickle conveyor in wooden vat, Sechler Pickles (5686 State Rd. 1, St. Joe IN 46785).

Right: Administration Building, Auburn Automobile Co. (1600 S. Wayne St., Auburn IN 46706).

J. Shprentz photos.



building a carousel floor and frame in Mansfield's new carousel pavilion.

The assembly line stopped forever in 1937, but the mystique lives on in the beautiful art deco Administration Building of the **Auburn Automobile Co.** in Auburn, Ind. The stunning first-floor factory showroom houses dozens of Auburns, Cords, and Duesenbergs. The museum contains over 130 vehicles of various makes, mostly from Ind. Museum displays trace the engineering, economic, and



Left: Brushing off the bedstone in the mill.

Below: Bonneyville Mill with headrace (CR 131, off SR 120, Bristol, Ind.).

Right: Taking on water at the Old Wakarusa RR (SR 19 at Maplewood Dr., Wakarusa, Ind.).

J. Shprentz photos.



stylistic history of the firm's lines. The administrative and engineering offices upstairs display artifacts, with some rooms restored to their original appearance.

I had to detour 30 miles through Amish farm country to reach **Sechler Pickles** in St. Joe, Ind. Founder Ralph Sechler's granddaughter—now the manager—escorted me through the family-owned factory, begun in 1933, where new and old equipment operates side-by-side. But the cucumber sorters, pickle conveyors, and relish choppers can't do it all. People's peppered pickle packing prowess prevails. The tour ended in the factory store, where I sampled over 30 varieties, and bought more than a dozen jars.

After learning all about Oliver Evans last year in Phila., I can't drive past a mill without stopping. **Bonneyville Mill** near Bristol, Ind., is a nicely restored turbine-powered mill that grinds rye, wheat, buckwheat, and corn daily. The millstones, sifters, cleaners, and elevators are reminiscent of descriptions in Evans' *Miller's Guide*.

After 5 p.m. there aren't many tours available to visitors,

but the **Old Wakarusa RR** in Wakarusa, Ind., stays open till dark. I rode in a four-car train pulled by a 1/3 scale replica of the famous Civil War locomotive, the General. The wood-burning 4-4-0 covers about 1.5 miles as it circles a lake, passes across a trestle, traverses Maplewood Drive at grade, plunges through a tunnel, and loops around the tractor collection to return to the station platform. As I ate an Amish "wet beef" dinner in the adjacent Come & Dine Restaurant, RR owner Delton Schrock told me a little of the OWRR's history. He also suggested seeing the Bird's Eye View Museum in Devon Rosen's basement, containing a scale model of the town of Wakarusa as it appeared from above in 1960. Alas, the hour was too late, so Devon Rosen's basement will have to wait for another trip. In the morning I drove on to Chicago and the SIA.

J.S.

In the next SIAN, Joel Shprentz travels the IA route home from Chicago.

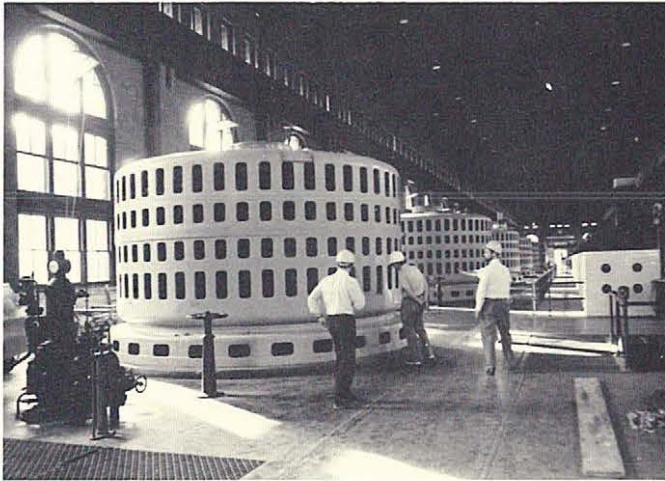
IEEE chapters tour historic Rankine station at Niagara Falls

The historic Rankine hydraulic generating station of the Canadian Niagara Power Co. opened its doors in May to a special tour by the Buffalo, N.Y., and Hamilton, Ont., chapters of the Inst. of Electrical & Electronics Engineers (IEEE). In 1992 (when the SIA meets in nearby Buffalo), the Niagara Falls station celebrates its 100-year anniversary as a corporate entity.

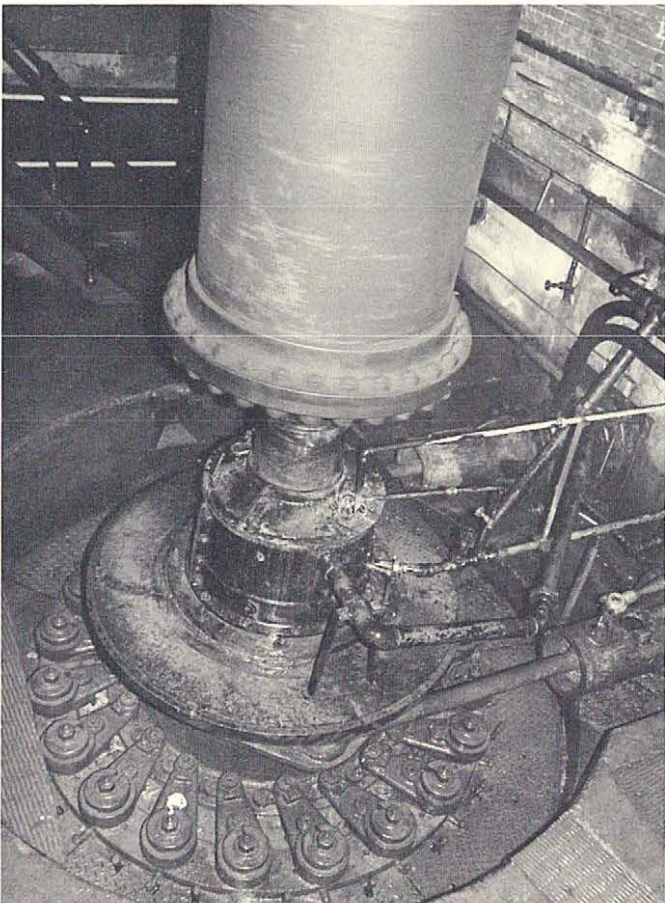
In the early 1890s in Niagara Falls, N.Y., while a generating station known as Adams Plant No. 1 was under con-

struction, its owners noted that the Canadian shore had hydraulic advantages over the American side, thanks to a bend in the river just above the Falls. In Spring 1892, the Niagara Falls Power Co. secured a franchise with the Queen Victoria Niagara Falls Parks Commn. to purchase water rights for the future needs it recognized. Because electricity was not the only power-transmission option at the time, the original franchise agreement included a provision for air compression as well as electricity generation. By the time of Canadian Niagara's first power generation, on New Year's Day 1906, however, this plant was one of six at the Falls—all producing electricity.

The plant's layout resembles Adams stations Nos. 1 and 2, the first hydroelectric plants at the Falls. (No. 1 recently was designated by IEEE as an electrical engineering milestone.) The eleven 10,000-hp turbines are located near the bottom of a deep pit, connected by 100-ft. vertical shafts to the generators at the top. While the Rankine station was known as No. 3, its resemblance to 1 and 2 is only superficial, illustrating technological change between 1893 and 1903. Although both generated power at 25 Hz (and Rankine still does), the Adams plants had two-phase alternators while Rankine has three-phase. The Adams turbines were of the Fourneyron type, while Rankine's have Francis (actually mixed flow) wheels. The Adams alternators had external rotating fields, while Rankine's are internal. And the Adams control stations were local, whereas Rankine's are central. Some earlier features remained, however, including the use of double-wheel turbines and the atmospheric tailrace tunnel. Perhaps the most remarkable thing about Canadian Niagara's century-old Rankine plant is that it continues to generate power today. For info. on the plant and the tour, contact Robert D. Barnett [SIA], 6093 Harvey St., Niagara Falls, Ont. L2J 2A9 (416-354-2203).

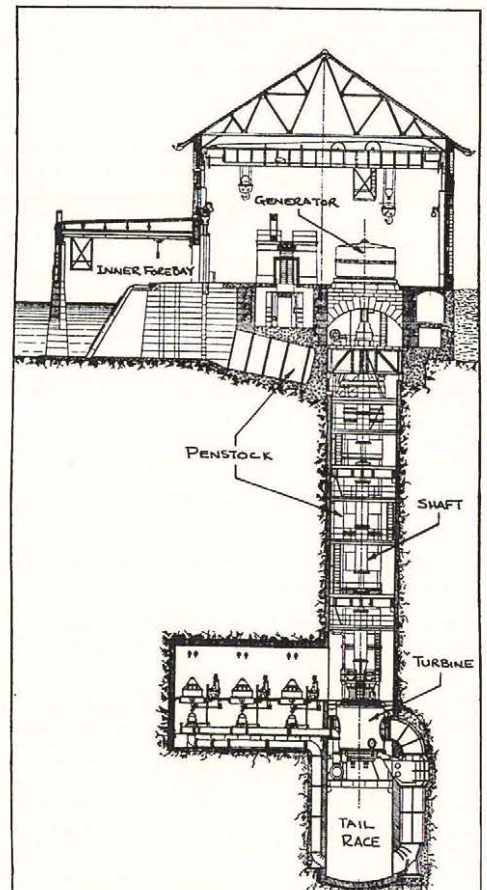


On the Rankine station generator floor, IEEE members inspect Unit 11 (1927), the last to be installed. At right is the inner forebay. At left is the turbine governor. By 1927 the problems of hydraulic-turbine governing were well in hand; for Adams Plant No. 1 in the 1890s, precisely controlling the energy in a 100-ft.-high, 10-ft.-diam. column of water was a major preoccupation of some of the greatest engineering minds. *R. Barnett photo.*



Left: The turbine of Unit 11 is a single-runner Francis type, while the other ten have double-runner Francis wheels. The circular pattern of Unit 11's wicket gates is visible, as are the two cylinders by which the governor moves the gates. The other turbines have ring gates with single-acting servos; the gates are driven open but closed by counterweight. Note the very large shaft (in motion), connecting with the generator 100 ft. above. *R. Barnett photo.*

Right: Cross section of Rankine powerhouse and wheel pit, facing up-river. From CSCE Transactions, Vol. 19.





SOCIETY FOR INDUSTRIAL ARCHEOLOGY NEWSLETTER

PUBLICATIONS OF INTEREST

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Compiled by

John M. Wickre

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TRANSPORT

Peter L. Jakab, **Visions of a Flying Machine: The Wright Brothers and the Process of Invention.** Smithsonian Inst. Pr. (Wash. DC), 1990. 263p. \$23. Visualization leading to hardware; by a Smithsonian historian who worked with a reproduction of the Wright's wind tunnel and flew a reproduction of their 1902 glider. Rev.: *JAH* 78, June 1991, p365-6.

Kenneth G. Johnson, **Pacific: 2472's Family Album.** Interurban Pr. (Glendale CA), 1990. 136p, illus. \$25. A look at the SP 4-6-2 "Pacific" (SP #2472 is now being restored). Rev.: *RRH* 163, Autumn 1990, p129.

Ronald Dale Kerr, **Lost Railroads of New England.** Branch Line Press (13 Cross St., #101, Peperell MA 01463), 1989. 143p. \$13. Incl. brief histories of several abandoned lines; chrono. listing of 363 separate RR abandonments, 1845-1985. Rev.: *RRH* 163, Autumn 1990, p124.

Amy Kesselman, **Fleeting Opportunities: Women Shipyard Workers in Portland & Vancouver during World War II & Reconversion.** St. U. of NY Pr. (Albany), 1990. 192p. Portland, OR / Vancouver, WA. Rev.: *AHR* 96, June 1991, p993-4; *JAH* 78, June 1991, p379.

Steve King, **Clinchfield Country.** Old Line Graphics (1604 Woodwell Rd., Silver Spring MD 20906), 1988. 128p, illus., maps, \$38. Carolina, Clinchfield & Ohio Rwy., coal hauler, Elkhorn, KY - Spartanburg, SC; 277 mi. of mountainous line; esp. c1963-1983. Rev.: *RRH* 162, Spring 1990, p134-5.

Lynee Elizabeth Kirby, **The Railroad and the Cinema, 1895-1929: Institutions, Aesthetics, and Gender.** Ph.D. thesis, UCLA, 1989.

John F. Kirkland, **The Diesel Builders, Vol. 2: American Locomotive Co. and Montreal Locomotive Works.** Interurban Pr. (Glendale CA), 1989. 224p, illus. \$50. From early efforts in 1917 to 1969 (Alco) and 1975 (when MLW was taken over by Bombardier). Rev.: *RRH* 162, Spring 1990, p130-31.

Maury Klein, **Union Pacific: The Rebirth, 1894-1969.** Doubleday (Garden City NY), 1987. 654p, illus., notes. \$30. Continuation (2d vol.) of Klein's history of the UP, to its restructuring into the Union Pacific Corp. Rev.: *RRH* 163, Autumn 1990, p107-08.

Bradford Koplowitz, **"The Rock Island Line is a Mighty Good Road — for Research."** In *Chronicles of Oklahoma* 66, July 1989, p40-48.

Anthony Korner, **"The Night Owl."** In *Artforum* 27, May 1989, p141-46. Norfolk & Western RR.

Carl La Vo, **"History Rides the Hew Hope & Ivyland Railroad."** In *Pennsylvania Magazine* 11, June 1990, p17-18.

Kenneth Michael Lemke, **The Economic Impacts of Rail Mergers & Abandonments on Kansas Export Wheat Rates & Costs.** Ph.D. thesis, Kansas St. Univ., 1989.

Laura Lu, **The Behavior of Firms' Market Shares Under Cartel Conditions: Further Analysis of the Executive Committee, 1880-1886.** Ph.D. thesis, St. Univ. of NY at Stony Brook, 1988. Railroads.

Edward L. Lyman, **"Outmaneuvering the Octopus: Atchison, Topeka and Santa Fe."** In *California History* 67, No. 2, 1988, p94-108.

James M. MacDonald, **"Railroad Deregulation, Innovation and Competition: Effects of the Staggers Act on Grain Transportation."** In *Journal of Law and Economics* 32, Apr. 1989, p63-95. Incl. RRs, barge traffic?, 1980s?

Michael Magliori, **"Populism, Steamboats and the Octopus: Transportation Rates and Monopoly in California's Wheat Regions, 1890-1896."** In *Pacific Historical Review* 58, Nov. 1989, p449-69. Incl. RRs.

Peter T. Maiken, **Night Trains.** Lake Pr. (Box 10380, Chicago IL 60610), 1989. 416p. \$50. Text, with supporting photos, detailing cities that were endpoints of sleeping car lines, 1870-1960s? (mostly 1920-1955); with a 96p appendix listing the position of all sleeping cars on a hypothetical midnight in Mar. 1952. Rev.: *RRH* 163, Autumn 1990, p132-3.

Serge Michel, **Chemins de fer en Lyonnais, 1827-1957.** Presses Universitaires de Lyon (86, rue Pasteur, 69007 Lyon, France), 1986. 192p. F120. Lyon, France, esp. two "local interest" lines west of Lyon, 1830-1914?. Lyon, site of first RR in France, became part of centralized "general interest" system begun in 1832 and built to high standards. Decentralizing law of 1880 allowed "local interest" narrow gauge lines with sharp curves and steep grades. Rev.: *RRH* 163, Autumn 1990, p115.

T. Lane Moore, **"Railroad Valuation Records."** In *RRH* 163, Autumn 1990, p93-102. Valuation records as sources for RR history.

Allen Morrison, **The Tramways of Brazil: A 130 Year Survey.** Bonde Press, 1989. (Avail.: Harold E. Cox, 80 Virginia Terrace, Forty Fort PA 18704.) 197p. \$18 pap. Rev.: *RRH* 163, Autumn 1990, p116-17.

Bruce C. Murray, **Journey into Space: The First Three Decades of Space Exploration.** Norton (NY), 1989. 381p, illus., bibliog., index. \$20. Rev.: *T&C* 31, Oct. 1990, p897-8.

Michael Nash, **"Women and the Pennsylvania Railroad: The World War II Years."** In *Labor History* 30, Fall 1989, p608-21.

Gary W. Ness, **Canadian Pacific's Dominion Atlantic Rwy.: Vol. 1.** British Railway Modellers of North Amer. (5124 33d St. N.W., Calgary, Alberta T2L 1V4), 1988. 26p. \$C7 pap. Dominion Atlantic Rwy. in Nova Scotia, 1890s-1980s. Rev.: *RRH* 162, Spring 1990, p138-9.

[*New Zealand Steam*], rev. in *RRH* 163, Autumn 1990, p117-18.

— **Steam Locomotives of New Zealand.**

Part 1, 1863-1900, by T.A. McGavin. 72p. \$NZ25.

Part 2, 1900-1930, by E.J. McClare. 72p. \$NZ25.

— **Three Preserved NZR Steam Locomotives: A Souvenir**, by E.J. McClare. 15p. \$NZ9.60 pap.

(All avail. from New Zealand Rwy. & Locomotive Soc., Box 5134, Wellington.)

Anthony Patrick O'Brien, **"The ICC, Freight Rates, and the Great Depression."** In *Explorations in Economic History* 26, Jan. 1989, p73-98.

Robert L. O'Connell, **"Post Haste."** In *American Heritage* 40, Sept./Oct. 1989, p76-86. Railway mail.

Jeffrey Orenstein, **United States Railroad Policy.** Nelson Hall Publishers (111 N. Canal St., Chicago IL 60606), 1990. 186p. \$24. Mostly negative rev. in *RRH* 163, Autumn 1990, p108-9.

Passenger Trains Annual 1989, compiled by Mike Schafer & Paul D. Schneider. Interurban Pr. (Glendale CA), 1989. 64p, illus. \$16 pap. Incl. passenger-related events of 1988; service changes, new stations, motive power roster; history of passenger trains in Newfoundland (now entirely discontinued). Rev.: *RRH* 163, Autumn 1990, p133-4.

R. E. Pearson, **"Closure of the Newfoundland Rwy."** In *Geography* 74, June 1989, p269-71.

A. R. Penney, **A History of the Newfoundland Rwy. Vol. 1.** Harry Cuff Publications (1 Dorset St., St. John's, Newfoundland), 1988. 105p, illus. \$C10. Covers 1881-1923 period. Rev.: *RRH* 162, Spring 1990, pp139-40.

George Phelps, **New England Rail Album: A Traveling Salesman Remembers the 1930's.** Trans-Anglo Books (Glendale CA), 1989. 48p, illus. \$10. Reminiscence of 19 New England railroads, both standard and narrow gauge. Rev.: *RRH* 163, Autumn 1990, p125.

Larry Plachno, **The Longest Interurban Charter.** National Bus Trader, Inc. (9698 West Judson Rd., Polo IL 61064), 1988. 96p, illus., maps. \$16 pap. + \$2 postage. Interurban journey, 1910: 2,000 miles in 6 (NE U.S.?) states, entirely on interurban lines, in car chartered by 21 businessmen from Utica, NY. Rev.: *RRH* 163, Autumn 1990, p118-19.

Jacques Payen, **La machine locomotive en France des origines au milieu du XIXe siècle.** Presses Universitaires de Lyon (86, rue Pasteur, 69007 Lyon, France), 1988. 262p. F160 pap. French locomotive design, 1830s-1850s? Rev.: *RRH* 163, Autumn 1990, p113-15.

Robert C. Post, **Street Railways and the Growth of Los Angeles.** Golden West Books (San Marino CA), 1989. 170p, illus. \$49. LA, 1874-1963; interdependence of street railway expansion and real estate development. Rev.: *RRH* 163, Autumn 1990, p120-21.

R. A. Prager, **"Using Stock Price Data to Measure the Effects of Regulation: The Interstate Commerce Act and the Railroad Industry."** In *Rand Journal of Economics* 20, Summer 1989, p280-90.

Railway History Monograph, edited by William F. Rapp. J-B Publishing Co. (430 Ivy Ave. Crete NE 68333). Rev.: *RRH* 163, Autumn 1990, p134-5.
— Vol. 19, Nos. 1-2. **"The Chicago & North Western — The Nebraska Division: Operation."** Reprints from the *Official Guide* and from C&NW public and employee timetables; plus a listing of RPO routes.
— Vol. 19, No. 3. **"Pennsylvania Railroad. Information and Instructions for Employees Incident to Abandonment of Broad Street Station."** Reprint of internal publication related to reassignment of trains, locomotives, and cars at various Philadelphia stations due to closing of Broad St. station.

"The Railway Labor Act: Why, What and for How Much Longer?" In *Transportation Practitioners Journal*, Jan. 1990, p1-34.

Janice L. Reiff & Susan E. Hirsch, **"Pullman & Its Public Image & Aim in Making & Interpreting History."** In *Public Historian* 11, Fall 1989, p99-112.

T.O. Repp, **Main Streets of the Northwest: Rails from the Rockies to the Pacific.** Trans-Anglo Books (Glendale CA), 1989. 160p, illus. \$45. Covers OR, ID, and western MT; a later vol. will deal with WA and BC. Mostly contemporary; BN, UP, SP; branch lines and short lines. Rev.: *RRH* 163, Autumn 1990, p128-9.

David Norman Smith, **The Railway and Its Passengers: A Social History.** David & Charles (N. Pomfret VT), 1988. 192p, illus., \$23. Gt. Britain, 1830-1942. Rev.: *RRH* 162, Spring 1990, p140-41.

Dick Stephenson, **The Surfliners.** Trans-Anglo Books (Glendale CA), 1988. 112p, illus. \$20 pap. Santa Fe (now Amtrak) line from Los Angeles to San Diego, the most important rail corridor in the U.S. outside of the N.E., eskp. 1938 to present. Rev.: *RRH* 162, Spring 1990, p131-2.

Alan Stimson, **The Mariner's Astrolabe: A Survey of Known, Surviving Sea Astrolabes.** HES Publishers (Utrecht), 1988. 191p, illus.,

appendixes. F125. Register of known astrolabes, plus a section on "Copies, Mistaken Identities, and Fakes." Rev.: *T&C* 31, Oct. 1990, p867-9.

Richard D. Stone, **The Interstate Commerce Commission and Railroad Regulation: An Investigation into the Major Change in Philosophy, 1976-1987.** Ph.D. thesis, Indiana Univ., 1988.

Paul H. Stringham, **Illinois Terminal: The Electric Years.** Interurban Pr. (Glendale CA), 1989. 263p, illus. \$54. Interurban railroad, Peoria, IL - St. Louis, MO, to 1950s?; upgraded with sleeping and parlor cars, became a major freight railroad, and had a large terminal operation in St. Louis. Rev.: *RRH* 163, Autumn 1990, p119-20.

Sanjay Subrahmanyam, **The Political Economy of Commerce: Southern India, 1500-1650.** Cambridge Univ. Pr. (NY), 1990. 401p. \$55. Noted here because it was the "unchallengeable maritime power" of the European traders that made it possible for them to use blockades, bombardments, ship seizures, massacres, and abductions as "regular options." Rev. in *AHR* 96, June 1991, p934, notes that "Little distinguished the calculated brutality of the Portuguese and the supposedly more pacific trading of the Dutch and English."

S. Tata, **"Buster Keaton, Railroader."** In *Descant* 20, Nos. 1-2, 1989, p5-10.

Jackson C. Thode, **George L. Beam and the Denver & Rio Grande.** Sundance Publications Limited (Denver CO), 1986 (Vol. 1), 1989 (Vol. 2). 280p [ea.?], illus. \$27 [ea.?]. Photos by Beam, D&RG official photographer, 1898-1935. Rev.: *RRH* 162, Spring 1990, p126-8 [Vol. 2; Vol. 1 was rev. in *RRH* 157]; *Utah Historical Quarterly* 59, Winter 1991, p91-2.

Alan Townsin, **The British Bus Story — Early Seventies.** Transport Publishing Co. Limited (128 Pikes Lane, Glossop, Derbyshire SK13 8EH), 1987. 96p. £9.75. Problems of bus industry in Gt. Britain, 1968-1975; incl. bus mfr. by Leyland and others. Rev.: *RRH* 162, Spring 1990, p142-3.

Cliff Trumpold, **"Hobo Sketches by an Amana Station Agent."** In *The Palimpsest* 70, Summer 1989, p103-06. Amana, Iowa.

David Weston, **For the Love of Steam.** David & Charles (N. Pomfret VT 05053), 1989. 120p, color illus. \$75. Paintings of English RR scenes by Weston. Rev.: *RRH* 163, Autumn 1990, p130.

John H. White, **"Home to Roost: The Story of Live Poultry Transit by Rail."** In *Agricultural History* 63, Summer 1989, p81-94.

Nicholas Wood, **A Practical Treatise on Railroads.** Repro. of illus. from French edition, orig. pub. 1834. P.E. Waters & Associates (105 Highland Road, Bromley, Kent BR1 4AA), 1986. 11p + 14 plates. \$6 + \$2 surface mail or \$5 airmail. Illus. of rails, switches, rolling stock, locomotives, and equipment for inclined planes; does not include the 306p of text in the original. Wood, a mining engineer, worked with George Stephenson at Killingworth Colliery, Northumberland. Orig. pub. in 5 editions, 1825-1834. Rev.: *RRH* 163, Autumn 1990, p112-13.

Robert Yanosey, **Tidewater Triangle.** Morning Sun Books (11 Sussex Court, Edison NJ 08830), 1989. 160p, color illus. \$45. Richmond, VA - Raleigh, NC - Hampton Roads triangle; mostly 1966-70; various RRs, incl. N&W. Purely pictorial, with extended captions. Rev.: *RRH* 162, Spring 1990, p135-6.

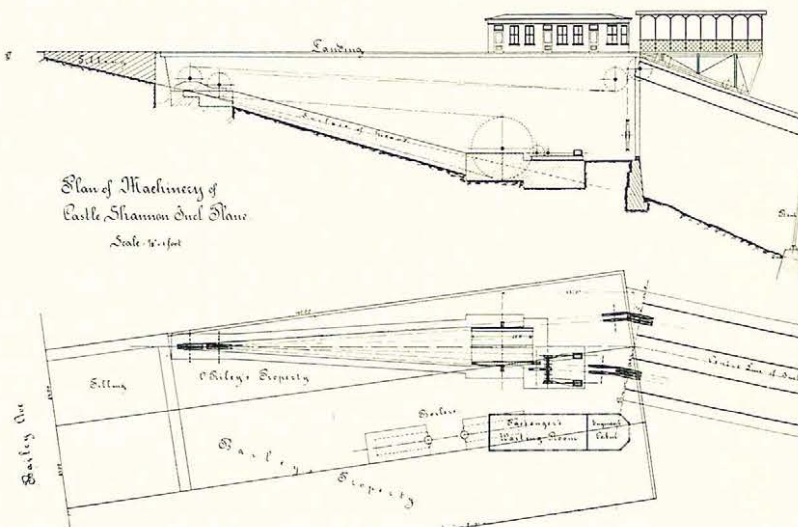
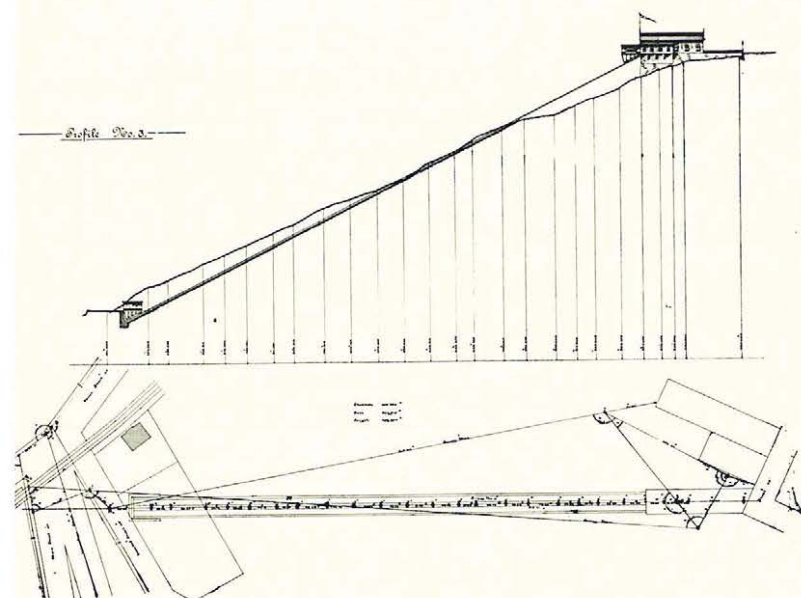
IA OF THE PAST (THAT NEVER HAPPENED)

William Gibson & Bruce Sterling, **The Difference Engine.** Bantam Books (NY), 1991. Historical science fiction of the Industrial Revolution, 1855 — but an 1855 in which Babbage's perfected Difference Engine powers a world driven as much by information as by steam.

Abbreviations used in this PoFI:

AHR American Historical Review
JAH Journal of American History
RRH Railroad History

Readers are urged to send all notices of pertinent publications to John M. Wickre, Compiler, Publications of Interest, SIA Newsletter, P.O. Box 65158, St. Paul MN 55165-0158 or 61 Clapboard Ridge Road, Danbury, Connecticut 06811.



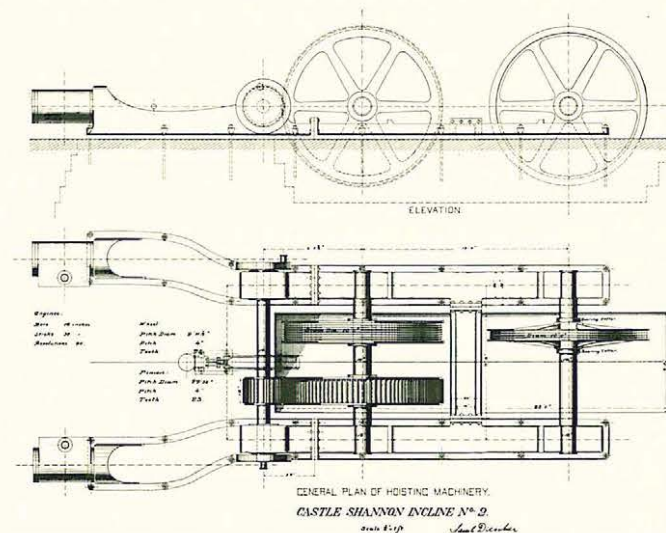
DIESCHER DRAWINGS.

Above left: Profile & plan for proposed inclined plane (1892), West End, Pittsburgh, Pa.

Above right: Plan of machinery, Castle Shannon Inclined Plane #1 (c1888), Pittsburgh, Pa.

Below: Hoisting machinery, Castle Shannon Inclined Plane #2 (c1892), Pittsburgh, Pa.

Drawings courtesy Carnegie Mellon Univ.



Diescher engineering collection opened for research at Carnegie Mellon Univ. in Pittsburgh

A major collection of Samuel Diescher's ink-on-linen drawings has been acquired by the Carnegie Mellon Univ., Pittsburgh, Pa. Diescher (1839-1915) was born in Hungary, educated in Germany and Switzerland, and active in Pittsburgh from c1870 to 1915. His sons entered into partnership with him in 1901 under the name of Samuel Diescher & Sons, and the firm remained active into the 1940s.

Diescher designed industrial projects, including: furnaces, buildings, and entire plants for the steel industry; tin-plate plants; coal-handling equipment; and machinery for tasks ranging from steel fabrication to sugar-beet processing to soap and cigar manufacturing. He also designed water works and, perhaps most significantly, the majority of heavy inclined planes in the U.S.

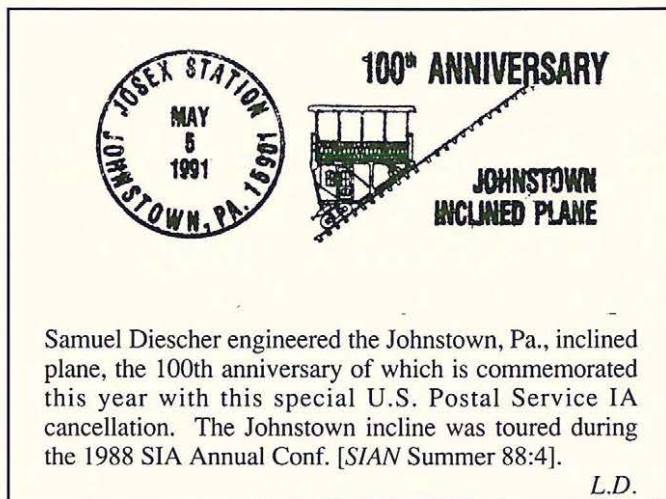
His inclined-plane projects included several in southwestern Pa.: Duquesne Hts. Incline, Monongahela Incline, Castle Shannon Inclines Nos. 1 and 2, Penn Incline, Fort Pitt Incline, and Nunnery Hill Incline, all in Pittsburgh; and the Cambria Incline in Johnstown. There also were incline projects in Cleveland; Duluth; Orange, N.J.; Hamilton, Ontario; and in Giradot and Camboa, Colombia.

Diescher's more specialized projects included the machinery for the famous Ferris Wheel at the 1893 Chicago World's Fair, designed for Pittsburgher G.W.G. Ferris, and a 1912 design for an energy generating plant for the U.S. Wave Power Co. in Atlantic City, N.J.

The Diescher Collection consists of hundreds of handsome ink-on-linen drawings dating from c1887 to 1930, documenting 51 projects, including most of those noted above. The 21 inclines are represented by drawings of rights-of-way, stations, track arrangements, cars, machinery, and parts. Also included are drawings of standard configurations for industrial plants and machinery, as conceived by Diescher and his firm.

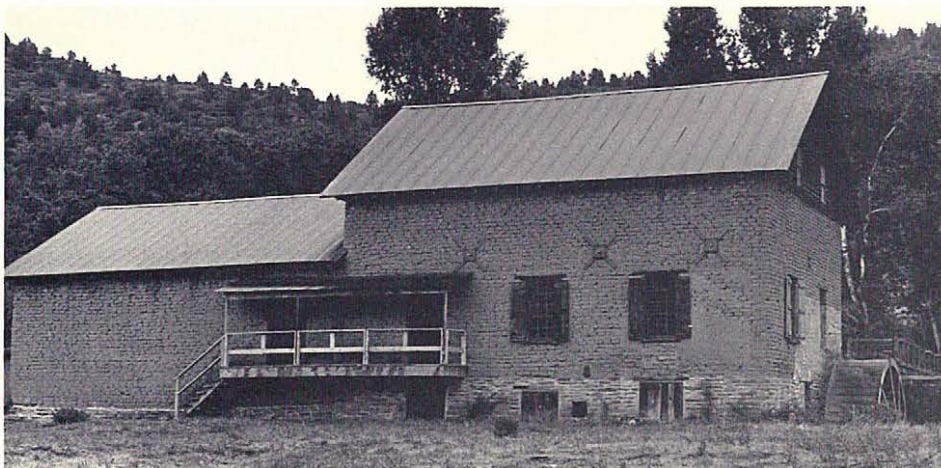
The collection has been processed and a finding aid is available. Info.: Carnegie Mellon Univ. Architecture Archives, Univ. Libraries, CMU, Frew St., Pittsburgh PA 15213-3890 (412-268-8165/2451).

M.A.



L.D.

Southwestern IA: Cleveland, N.M., Roller Mill Museum



Above: The Cleveland Roller Mill. *Tilgner photo.*



Above right: Roll stands and spouting inside the mill. *S. Watkins photo.*

Distance from East Coast population and research centers, as well as sheer geographic scale has served to make the IA of the West less well known than it deserves. Yet, fascinating and extensive remnants of this region's industrial heritage remain to reward the adventurous traveler interested in such sites. Visitors to Albuquerque and Santa Fe, areas of exceptional historical richness, might want to include a visit to the Cleveland Roller Mill on their itinerary. Located about 40 miles north of Las Vegas, the mill, placed on the National Register in 1979, is commencing its third museum season.

European settlement was pioneered here by immigrants of Spanish descent during the late 18th C, and the Santa Fe Trail brought trappers and traders of other ethnicities. Throughout the 1840s, the population of the Mora Valley grew steadily, and with Native American peoples restricted by government control, economic stability for new residents was assured. By mid-century, the area's earliest grist mills had begun to be replaced by more modern complexes built in the small towns along the Mora River. Until well into the 20th C, these mills served the valley's extensive network of small farms, which produced oats, alfalfa, hay, and wheat, the latter the economic mainstay of the region.

The Cleveland Roller Mill, constructed in the 1890s, was the last of its generation and remains the best preserved. Others survive, including the La Cueva and St. Vrain (1850) mills, though these are not open to the public. The mill was built by Joseph Fuss, who had come there from Pa. in the 1870s. In 1899, the J.B. Ehrsham Co., Enterprise, Kan., began the equipment installation and production began in 1901. Fuss sold the mill in 1914 to Daniel Cassidy. Its economic decline began during the 1920s and was accelerated by the Depression and World War II. When it ceased full-time operations in 1947 it was the last operating mill in the area.

The two-story adobe structure, still owned by Cassidy's descendants, remains unique in New Mexico because its original roller-mill equipment survives intact. It was powered by an 18-1/2 ft. steel overshot wheel supplied by Hanover [Pa.] Water Works, although an auxiliary steam engine was installed in a separate engine house. Following a 1921 explosion, the engine house was rebuilt with a new engine, which was dismantled and sold in 1957.

The mill has been undergoing restoration since 1984 and

now is operated by the Historic Mora Valley Foundation, which recently was aided by a grant from the N.M. Endowment for the Humanities for expanding the permanent exhibit with the addition of 1870s Spanish milling equipment.

The mill is open from Memorial Day through Labor Day, Weds. through Sun., 10-4; weekends only through Oct., 10-4. Info.: Cleveland Roller Mill, P.O. Box 287, Cleveland NM 87715 (505-387-2645).

B.F.



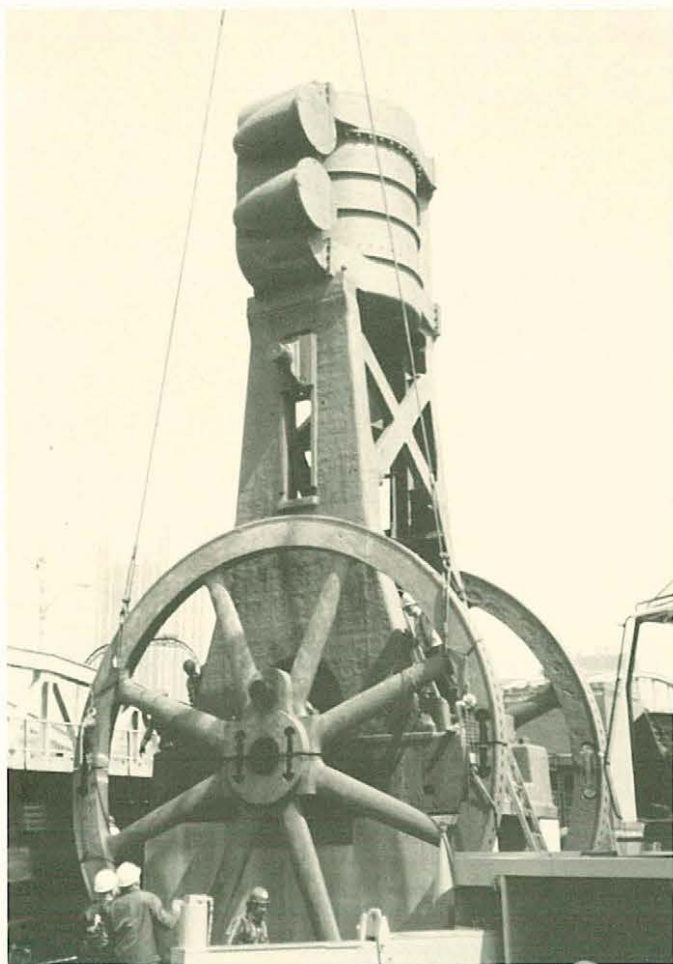
NOTES

POSITION OPENINGS AT SLOSS FURNACES NATIONAL HISTORIC LANDMARK. Sloss is a 32-acre blast furnace plant that produced pig iron from 1882 to 1970, and now is operated by the City of Birmingham as a museum of industrial history. The site will be part of the proposed Birmingham Industrial Heritage corridor and will be the center for an ambitious facility in the metal arts.

Director, with experience in all phases of museum operations. Responsibilities include administration of a \$400,000 annual budget, managing a staff of ten, and building a capital fund for the restoration of the historic site. Qualifications: Ph.D. preferred, MA/MS minimum; considerable museum experience. Salary competitive, based on qualifications and experience. Send resume to A.J. Millard, Search Committee, SFNHL, POB 11781, Birmingham AL 35202. Applications will be reviewed beginning Sept. 15 and accepted until the position is filled.

Preservation Coordinator. Plans, develops, and implements conservation and preservation techniques, through research into metals and masonry, to preserve historical artifacts. Responsible for establishing a schedule of construction, renovation, and routine maintenance for some 60 industrial structures onsite. Qualifications: BA/BS in history, museum studies, engineering, or related field; two years experience in historic preservation; knowledge of techniques and practices of conservation and preservation of industrial structures. Starting salary: \$23,700. Send resume to Paige McWilliams, SFNHL as above. AA/EOE.

Blowing engine re-erected at Station Square, Pittsburgh



A c1900 double-acting blowing engine, built by the Mesta Machine Co. of West Homestead, has been re-erected at Station Square, a former RR station now operated by the Pittsburgh History & Landmarks Foundation. The single-cylinder steam engine is from the Shenango Furnace Co. works at Sharpsville, Pa., near Sharon. It was driven by a two-cylinder E.P. Allis engine, furnishing the air at 30 psi to a blast furnace. The engine originally stood 37 ft., 3 in. above the floor, with the two, 20-ft. flywheels partly sunk in a well. As rebuilt at Station Square, with the flywheels fully exposed, it stands about 48 ft.

Station Square, founded in 1976, is the Foundation's adaptation of the buildings and lands of the Pittsburgh & Lake Erie RR's main station. Its 52 acres stretch 6,600 ft. on the south shore of the Monongahela. The engine is a major artifact on Station Square's developing River Walk, which, when completed, will extend a mile parallel to the shore, celebrating the major industries of the Pittsburgh region through their artifacts. Already in place, besides the blowing engine, are a Bessemer converter, a 1905 Heroult electric steel furnace, a 1950-era aluminum smelting pot, a Boyd refractory brick press, an ingot mold, and a sample chord section from the arch of the Hell Gate Bridge. On the grounds and awaiting installation are two additional electric steel furnaces, blast-furnace parts, coke-oven parts, electrical equipment, a petroleum vacuum tower, dredge machinery, a hot metal car, and two fireless steam locomotives. Committed to the Foundation are a strand caster and runout table and an oil-



Left: Workers finalize re-erection of the c1900 engine.

Above: Bessemer Court at Station Square, Pittsburgh, Pa.

Photos courtesy W.C. Kidney.

pumping rig, including a Reid hit-&-miss gas engine, which will be operated. Additional equipment is sought to represent Pittsburgh-area coal mining and the glass and food industries. The present East Warehouse, at the center of the lot where the engine stands, will house a large indoor museum of Pittsburgh industrial and social history. Nearby is the Monongahela Incline.

Station Square is Pittsburgh's oldest industrial area, dating to coal mining in the 1760s. The coal-fired O'Hara-Craig glassworks probably was the first local industrial plant. In 1859 the first coke-fired furnace—Clinton Furnace—was blown in, working until 1928. Railroads dominated after 1900, and by 1930 almost all the present Station Square property was RR terminal. The story is recounted in James D. Van Trump's *Station Square: A Golden Age Revived*, avail. for \$2.50 + post. from Cornerstone, Freight House Shops, Station Square, Pittsburgh PA 15219 (412-765-1042). For industrial hist. info., contact Walter C. Kidney [SIA], Historian, PH&LF, 450 The Landmarks Building, One Station Sq., Pgh. PA 15219-1170 (412-471-5808).

CONTRIBUTORS TO THIS ISSUE

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RECENT ASME LANDMARKS

Steam Drainage Pumping Station Cruquius



Photo by Robert Gisolf, Hoofddorp, courtesy ASME.

The Cruquius steam drainage pumping station in the Netherlands, one of three nearly identical pumping stations built to drain the Haarlemmermeer (Haarlem Lake) in 1849-52, was designated this June as the 33rd International Historic Mechanical Engineering Landmark. The bilingual ASME ceremonies were in cooperation with the Royal Institute of Engineers (Koninklijk Instituut van Ingenieurs), the Netherlands. Following the original drainage, the three stations continued in operation to maintain the polder's water table. The 45,000-acre Haarlemmermeer is located in the triangle formed by Amsterdam, Haarlem, and Leiden. The Cruquius's eight lift pumps are placed around the circular engine building, from which they were driven by a single annular-compound steam engine with pistons of 7 ft. (high pressure) and 12 ft. (low pressure) and 10-ft. stroke, working on the Cornish cycle at 5 strokes/min. The pumps lifted 55,000 gals/min.

Cruquius was retired in 1932 and preserved as one of the first industrial monuments in the Netherlands. Its original engine and pumps remain in their original, unmodified condition; the boilers were scrapped and the engine house now is a polder museum, with 30,000 visitors annually. The other stations—Leeghwater and Lynden—were modernized and are in service today.

The station was designed by consulting engineers Joseph Gibbs and Arthur Dean, London, with architect Jan Arne Beijerinck. The engine was built by Harvey & Co., Hayle, Cornwall; beams and boilers by Van Vlissingen & Dudok van Heel, Amsterdam; pumps by Fox & Co., Falmouth, Cornwall.

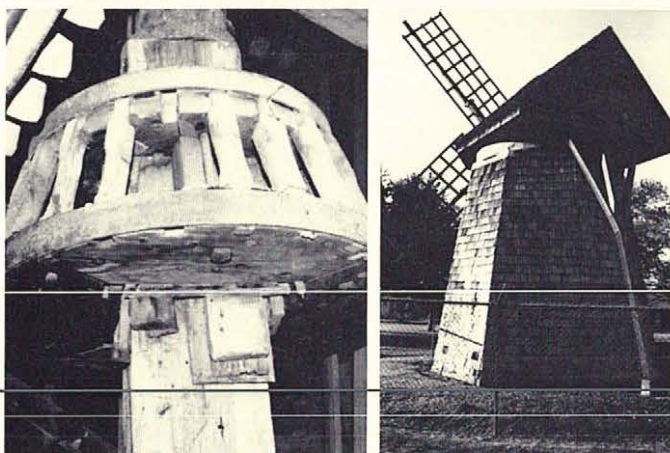
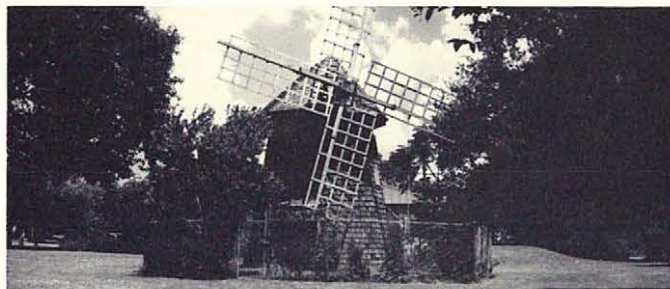
Greens Bayou No. 1 Station

The Greens Bayou No. 1 Station (1949) of the Houston Lighting & Power Co. was designated an ASME National Historic Mechanical Engineering Landmark in June. The Greens Bayou steam-electric plant was the first fully outdoor turbine-generator to operate in the U.S. It was built in response to an urgent post-World War II demand for additional power that could be provided quickly and with lower

construction costs by designing generators without the traditional "turbine hall" housing. Engineers had to deal with freezing water-based steam systems, exposure to severe weather, corrosion, and maintenance access to sealed components. The Greens Bayou 66 mw turbine-generator was designed and manufactured by Westinghouse Electric Corp. for Ebasco Services. Design engineer Walter Sinton, now retired from Westinghouse, had primary responsibility. It was one of the earliest designs using the IEEE-ASME preferred standards applied to the utility industry after the war.

Predecessor designs were built beginning in 1933, when GE installed a power plant in Schenectady, N.Y., having the turbine and boiler outside, but which operated on the Emmet mercury-vapor cycle and didn't have the freezing problems of a water-based system. Other systems were built in 1936 for Tucson Gas & Electric and Utah Power & Light and in 1941 in Burbank and Glendale, Calif., but Greens Bayou was the first to eliminate the removable cover. The ASME designation recognizes it as the first to carry the outdoor concept to its logical conclusion by placing all components—boiler, turbine-generator, condenser, and auxiliaries—outdoors. It was in service until the end of 1986 but remains operable if needed.

Wind-powered gristmill in Texas



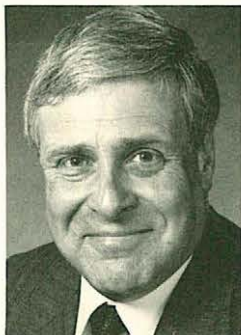
Photos courtesy ASME.

The last surviving wind-powered mill in Texas, and possibly in the Southwest, was dedicated a Regional Historic Mechanical Engineering Landmark in May by the American Society of Mechanical Engineers. Built in 1870 in Victoria, it is the first windmill to receive ASME designation. It incorporates parts of the state's first windmill built in the 1840s. The 35-ft.-high dutch-style mill has four 15-ft. sails, which drive a pair of 4-ft. Norwegian millstones via the 15-in.-diam., 20-ft. main shaft. In 1935 the builder's great-granddaughter gave the mill to the city of Victoria, moving it to a park, where it has been restored with minimal changes to the mechanical system. It was listed in the National Register in 1979.

SIA AFFAIRS

NEWS OF MEMBERS

Paul Rivard, who completed his term as SIA president at the 1976 Annual Conf. in Lowell, Mass., has returned to the Merrimack Valley—this time as the new director of the Museum of American Textile History, North Andover, Mass. Rivard, one of the founding members of the SIA, served as director of Slater Mill Historic Site in Rhode Island (1969-74), of the Rockwell Museum, Corning, N.Y. (1974-77), and the Maine State Museum (1977-91). While in Maine, he developed the important and successful "Made in Maine" exhibition, incorporating a multi-story woolen mill and other large industrial artifacts into the museum setting. He takes up his new post in mid-Sept. and says he looks forward to getting back into industrial history full time.



20th Annual Business Meeting June 15, 1991 Chicago, Illinois

The meeting was called to order by President David Salay during the noon luncheon in the Pavilion theater of the Bismarck Hotel.

PRESIDENT'S REPORT. President Salay reviewed the Society's accomplishments over the previous 20 years, refuting the SIA's tongue-in-cheek reputation as a "harbinger of destruction" (some have preferred "angels of death") for industrial sites once visited, but soon thereafter lost to fire, explosion, demolition, &c. Salay applauded the general rise of a historical industrial consciousness or awareness at large, and especially acknowledged the designation of "industrial corridors" for purposes of recording and preserving their industrial heritages. He extended rounds of thanks to the SIA's all-volunteer workforce and to the Chicago Annual Conference organizers. The membership responded with sustained applause.

TREASURER'S REPORT. Treasurer Nanci Batchelor reported that the SIA began 1990 with a fund balance of \$41,590 and ended with \$42,582; 1990 revenues were \$47,131 and expenses were \$46,140. To date, 1991 revenues are \$33,035 and expenses are \$24,372..

NORTON PRIZE. The 1991 recipient of the Norton Prize was announced by Bob Frame, chair of the committee, which included Jane M. Gibson, Duncan Hay, and Robert M. Vogel. Frame read the citation awarding the prize to Richard Candee for his article, "The 1822 Allendale Mill and Slow-Burning Construction" (*IA*, Vol. 15, No. 1, 1989). Laurence Gross accepted the prize for Candee, who was unable to attend.

ANNOUNCEMENTS. President Salay announced the forthcoming SIA Fall Tour in South Dakota, Oct. 9-12, 1991, and the 21st SIA Annual Conference in Buffalo, N.Y., June 4-7, 1992. He announced the newly agreed-upon \$40,000 collab-



The Standard Elevator (1928, 1941), in the Buffalo River Elevator Dist., is one of four still unloading vessels with mechanized marine legs and scooper gangs. *Jet Lowe photo for HAER.*

Hustle off to Buffalo in 1992

Buffalo and the Niagara Frontier region look forward to welcoming the SIA 21st Annual Conf. on June 4-7, 1992. Conf. co-sponsors include the Buffalo & Erie County Historical Society, the Graduate Group on Industrial Heritage Policy at State Univ. of N.Y.—Buffalo, and the N.Y. State Museum.

A major Great Lakes port and center of heavy industry, Buffalo's significant IA sites date from the 1890s through the 1920s. Conf. organizers hope to serve up an appetizing IA menu featuring primary metals, auto components, and grain storage and processing. Sunday options will include a harbor boat tour or a bus circuit through Niagara Falls, U.S.A., and the Erie Canal landmark of Lockport. Info.: Tom Leary, Libby Sholes [both SIA], 816 Ashland Ave., Buffalo NY 14222-1102 (716-884-9131).

oration between the Society and the Historic American Engineering Record (HAER), which will fund one \$18,000 fellowship for the study of material culture of industrial history and reserve the remainder as an endowment, with the interest funding historic industrial site documentation. Salay alerted the membership to the likelihood of an increase in SIA annual membership fees, and said that more information would be presented in future issues of the *Newsletter*.

NOMINATING COMMITTEE REPORT ON ELECTIONS.

Chair Richard Anderson announced the election results:

Secretary: **David H. Shayt**
Treasurer: **Nanci Batchelor**
Director: **Jane Carolan**
Nominations Committee: **Sandra Norman**

SIA representative to The Intl. Committee on the Conservation of the Industrial Heritage (TICCIH): **Dennis Zembala**.

MICHAEL FOLSOM MEMORIAL. Laurence Gross presented a memorial resolution honoring SIA member Michael Folsom, who died Dec. 12, 1990. The resolution passed unanimously.

Following closing remarks on the Chicago conference, the meeting was adjourned by President Salay.

David H. Shayt
Secretary

CALENDAR

Have a meeting, conference, or event of interest to SIA members? Submit announcements to the Editor, SIAN.

Sept. 22-28: Annual Conf., Assn. for Preservation Technology, New Orleans, La. Info.: Wm. Langkopp, AIA New Orleans Chap., 330 Exchange Alley, New Orleans LA 70130 (504-525-8320; fax 504-525-9327).

Sept. 26-28: Annual Meeting, The Lexington Group in Transportation History, Detroit; hosted by Grand Trunk Corp. Info.: Don L. Hofsommer, Dept. of Hist., St. Cloud State Univ., St. Cloud MN 56301.

Sept. 27-29: Annual Convention, Assn. of Rwy. Museums, Inc., Rockhill Trolley Museum, Rockhill Furnace (near Huntingdon), Pa. Info.: 1991 ARM Conv., RTM, POB 203, Rockhill Furnace PA 17249.

OCT. 9-12: SIA FALL TOUR, DEADWOOD & NORTHERN BLACK HILLS, S.D. Info.: Allyson Brooks or Jim Wilson, S.D. Hist. Pres. Center, POB 417, Vermillion SD (605-677-5314).

Oct. 10-12: Annual Meeting, Pioneer America Society, Milwaukee, Wis. Info.: William G. Laatsch, Dept. of Geography, Univ. of Wis.—Green Bay, Green Bay WI 54311-7001 (414-465-2355).

Oct. 16-20: 45th Natl. Preservation Conf. & Trade Show, Natl. Trust for Hist. Pres., San Francisco. The SIA is a co-sponsor; David McCullough [SIA] is a keynote speaker. Info.: Pres. Confs., NTHP, 1785 Massachusetts Ave. N.W., Wash. DC 20036 (800-YES-NTHP).

Oct. 17-19: 13th Annual N. American Labor Hist. Conf., "Men, Women, & Labor: Perspectives on Gender & Labor Hist.," Walter P. Reuther Library & Dept. of Hist., Wayne State Univ., Detroit. Info.: Elizabeth Faue, Dept. of Hist., 3094 Faculty Admin. Bldg., WSU, Detroit MI 48202.

Oct. 20-23: 2nd Intl. Conf. on Historic Canals, Hilton Inn at Quaker Square, Akron, Oh. Inc. trips to Ohio & Erie Canal, Cuyahoga Valley Natl. Rec. Area. Info.: Cuyahoga Valley Assn., POB 222, Peninsula OH 44264 (or call Canal Visitor Center, 216-524-1026).

Oct. 23: 6th Annual British Connection Conf.: A Transatlantic Exchange of Ideas on Building Conservation, N.Y.C. Co-sponsored by N.Y. Univ. & Real Estate Inst. Case study of Carnegie Hall structural engineering project & others. Info.: Real Estate Inst., 11 W. 42nd St., NY NY 10036 (212-790-1338).

Oct. 31-Nov. 3: Annual Conf., Society for the History of Technology, Univ. of Wis., Madison. Info.: Bruce Seely [SIA], SHOT Newsletter, Dept. of Social Sciences, Michigan Tech. Univ., Houghton MI 49931.

Nov. 2: 11th Annual Drew Symposium on IA in the N.Y.-N.J. Region, sponsored by Roebling Chap. SIA. Info.: Tom Flagg, Symposium Coordinator, SUNY College of Optometry, 100 E. 24th St., NY NY 10010 (O: 212-420-5155; H: 212-666-5744).

1992

May 13-16: Annual Meeting, Vernacular Architecture Forum, Portsmouth, N.H. Paper proposals due Oct. 15. Info.: Richard Candee [SIA], 6 Scituate Rd., York ME 03909 (207-363-6635).

JUNE 4-7: SIA 21st ANNUAL CONF., BUFFALO, N.Y. Info.: Tom Leary, 816 Ashland Ave., Buffalo NY 14222 (716-884-9131.*

**Find details on this event elsewhere in this issue.*

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 \$25; couple, \$30; institutions, \$30; contributing, \$50; sustaining, \$100; corporate, \$250; student, \$20. Send check payable to SIA to Treasurer, Room 5020, National Museum of American History, Smithsonian Institution, Washington, D.C. 20560; all business correspondence should be sent to that office.

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