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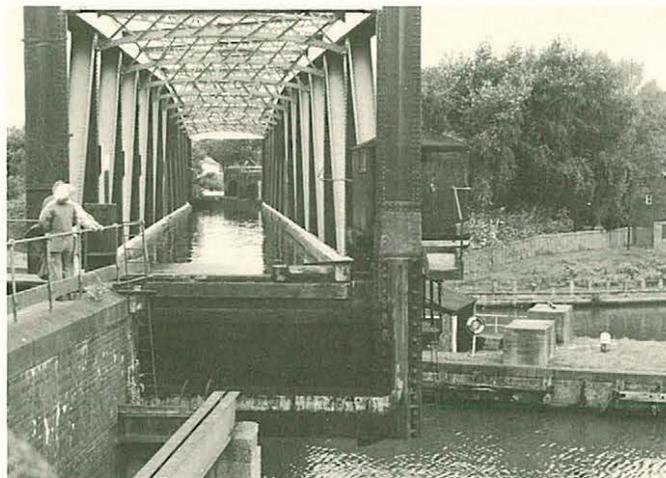
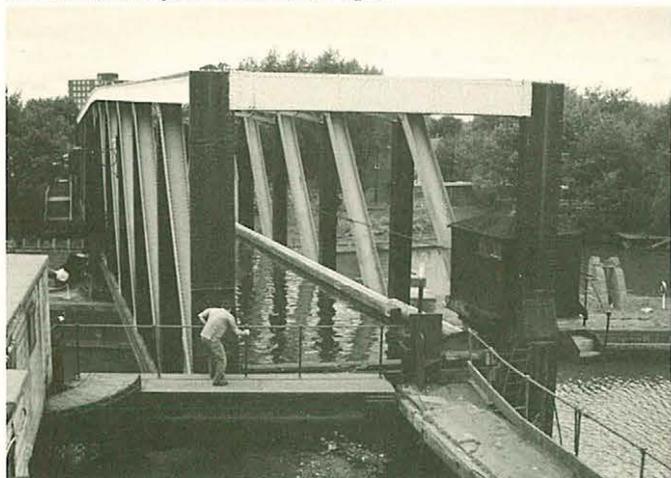
Number 3

ENGLAND-WALES STUDY TOUR, 1993

IA in the UK: an extraordinary industrial heritage



BARTON AQUEDUCT SWING BRIDGE (1893), carrying the Bridgewater Canal over the Manchester Ship Canal, Trafford park, suburban Manchester. The views above show the bridge in its closed position, carrying canal and boat. The views below show it beginning its swing to an open position to allow passage of a vessel below. Span with water weighs 1,450 tons. Black & white images don't do justice to this amazing structure, with its pink diagonals and top bracing, white upper chord, and black lower chord and end posts. *Photos by G. Weinstein (above), J. Freeman (below left), & E. Kutsch (below right).*



A full complement of 45 SIA members gathered in the late afternoon of Tuesday, September 7th, at the Kensington Park Hotel, London, to kick off the first SIA tour outside North America. The tour's waiting list had waxed and waned all summer long, so that every time there was a cancellation—and there were about a dozen—there was someone waiting to fill the vacancy. The last person to sign up did so only two weeks before the start of the tour.

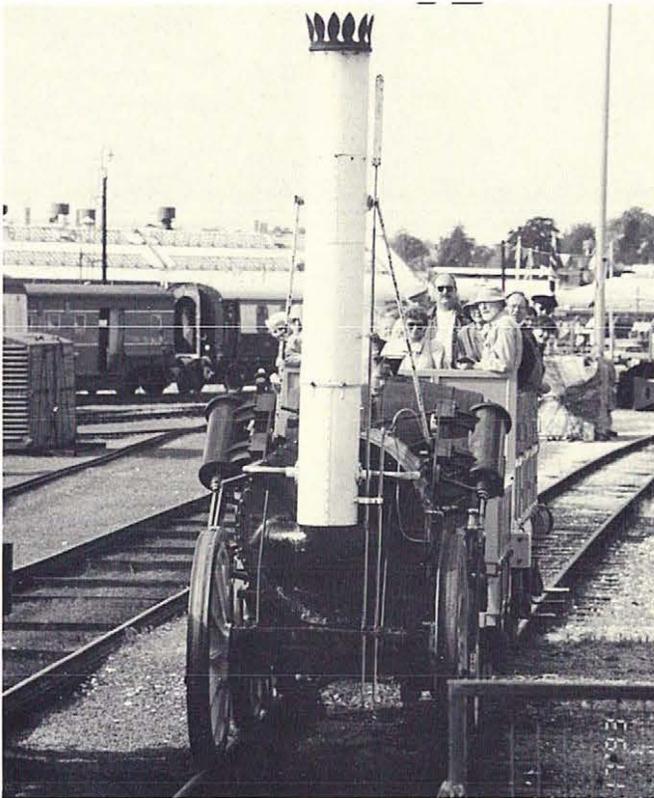
Those not suffering from jet lag walked to the **Science**

Museum for a brief inspection of early steam engines, locomotives, autos, spacecraft, and nuclear power apparatus, along with a reception of substantial canapes in the Director's Suite. There the group was introduced to Barrie Trinder of the Ironbridge Institute. Trinder was the guiding force behind the tour and would accompany us for the entire journey. As we went along we learned of his effusive knowledge of industrial archeology, the countryside, and local history, and we delighted in his willingness and desire to share that

knowledge. We also met Priscilla Clough of Gray Dawes Travel who rendered invaluable assistance with all the details of hotels, baggage (lost *and* found), plus commentary on the sights of London, royalty, shopping, and other essentials far removed from IA.

Our tour began the next morning with a stop at **Three Mills, Bromley-by-Bow**, on the River Lea, where there is evidence of a tidal mill as early as 1066. We were led on a comprehensive tour of two surviving tide mills, the **House Mill** (1776) and the **Clock Mill** (1817), and viewed the restoration currently in progress.

The rest of the morning was devoted to the London docks, including **St. Katharine's Dock** (1825-29). Our first pub lunch was at **Tobacco Dock** (1811-13), brimming with empty shops, an adaptive re-use scheme that is, so far, something of a failure. We continued our explorations, on foot and coach, of the **Shad Basin, London Hydraulic Power Station** (1890), and **West India Docks** (1802), across the isthmus of the **Isle of Dogs**. We all set our watches to Greenwich Mean Time with a view across the Thames of the **Old Royal Observatory** (1884). The afternoon ended at the **North Woolwich Railway Museum**, a former station made into a small museum.



The next morning we left London for 11 days of unmitigated adventure. The first stop, at Green Dragon Lane, was the **Kew Bridge Steam Museum** (1837), containing the world's biggest collection of large steam engines and boasting a stately Victorian standpipe tower (1867). After lunch, we journeyed to the **Great Western [Ry] Society, Didcot**, with their substantial collection of locomotives, carriages, and freight wagons. A short section of original GWR broad-gauge track (7 ft., 1/4 in.) remains operable. Our host at Didcot, Michael New, continued with us up the Thames as we passed through several locks on **Salter's** regularly scheduled boat to **Oxford**. Henry Rentschler took advantage of this occasion, with our group at rest, to present Michael with a Baldwin Locomotive Works lapel button (it looked like solid gold) and express thanks for his tour and commentary. After a brief tour of **Oxford** and the University, it was dinner on our own, before checking into the **Belfrey Hotel** (1938) with its mock Tudor architecture.

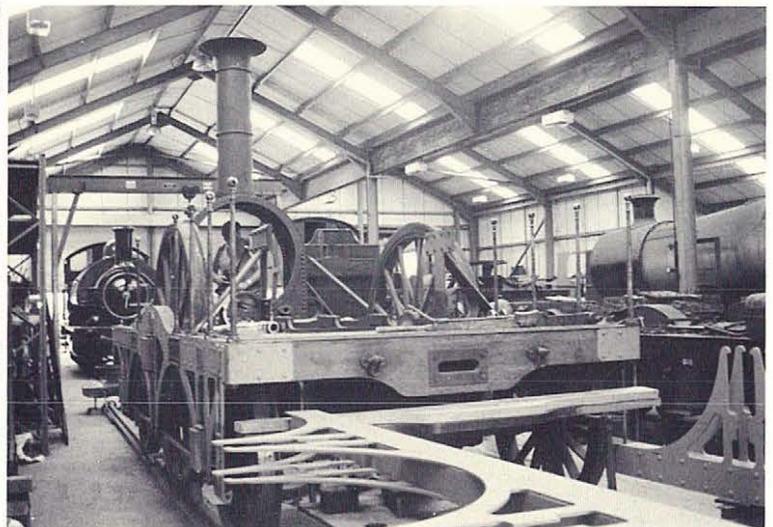
On Friday, arriving in Birmingham, we disembarked from the coach for a brisk walking tour of the mysterious network of canals entwining the central area. We paused at **Curzon Street Station** (1838), the **Proof House** (1813), and the **Horseley Company Cast Iron Bridge**, and arrived at the **Birmingham Museum of Science and Industry**. Steam was up and we witnessed a fascinating demonstration of the world's oldest working steam engine, **Boulton and Watt's Smethwick Engine** (1779). This engine had "a mind of its own" and wheezed and coughed with a delightful irregular motion and a varied stroke. There was time to explore the rest of the museum with its great display of locomotives, motor cars, and a huge **Libbey-Owens bottle-making machine** (1928)—technology "transferred" from Toledo, Ohio, to the Midlands. We departed from **Bewdley** on the **Severn Valley Railway** (1862), behind a steam locomotive to **Bridgnorth** (medieval origins) and thence to the new town of **Telford** (1960s). We already had seen several examples of the works of Thomas Telford (1757-1834), the most prolific civil engineer of the Industrial Revolution, and more examples

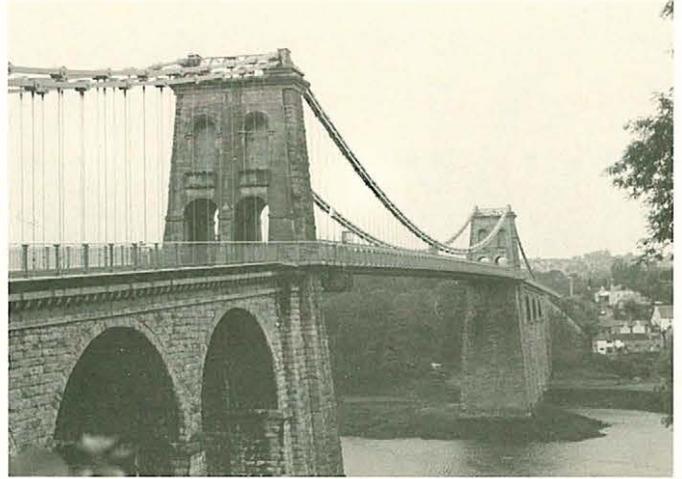
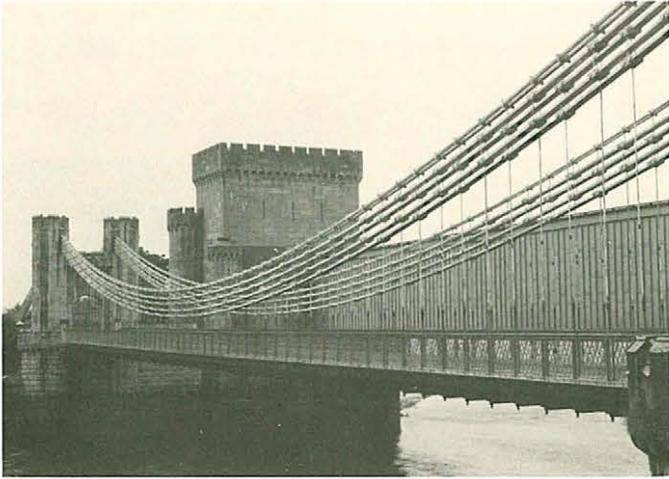
RAILROAD IA.

Left: SIA tourers take a ride in a carriage pulled by a working replica of Stephenson's **Rocket** at the Natl. Ry. Museum, York. *J. Freeman photo.*

Below: A working replica of Daniel Gooch's famous record-setting (in the 1840s) **Firefly** under construction by local volunteers at the Great Western Society's shops & yards at Didcot. *J. Freeman photo.*

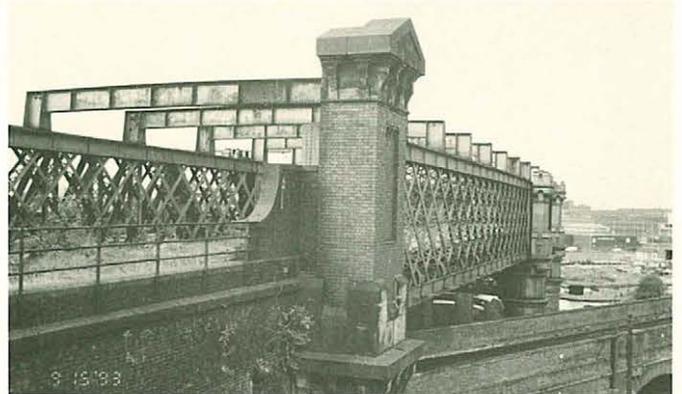
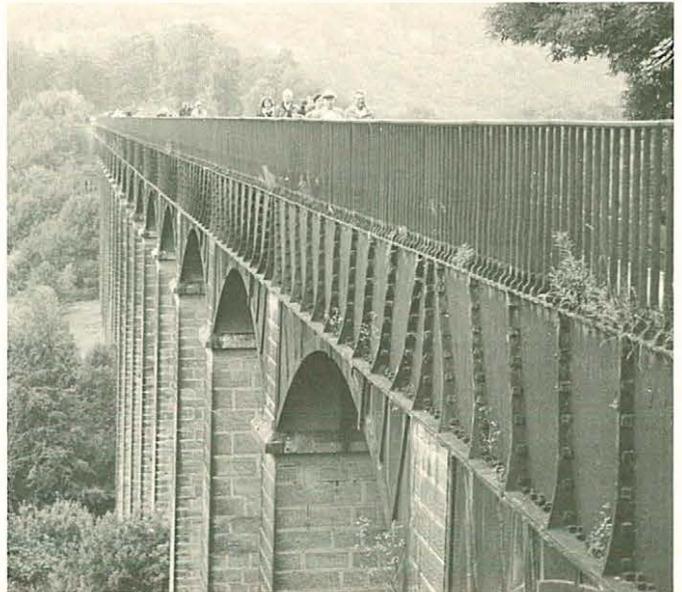
Left below: The **Severn Valley Ry.**, one of England's best preserved lines, runs 16 miles between Bewdley & Bridgnorth. It ceased commercial operations in the 1960s. *E. Kutsch photo.*





Two suspension bridges by Thomas Telford, in smaller version at Conway (*above left*) and in grand version across the Menai Straits, (*above right*), both completed in 1826 (although the latter was rebuilt several times). *E. Kutsch photos.*

Telford's monumental Pontcysyllte Aqueduct of 1802 is pictured inside with boat (*below*) and outside (*right*). *Photos by E. Kutsch (below) & J. Freeman (right).*

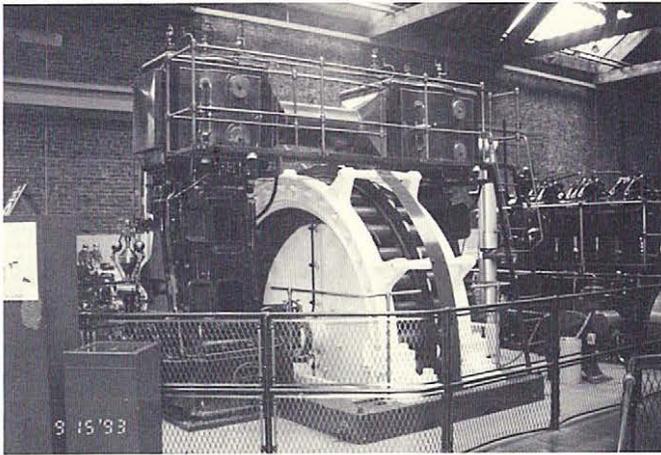


Left: Telford's first iron aqueduct, Shrewsbury Canal at Longdon on Tern. *G. Weinstein photo.*

Above: Lattice truss of the Great Northern Ry., Manchester. *J. Freeman photo.*

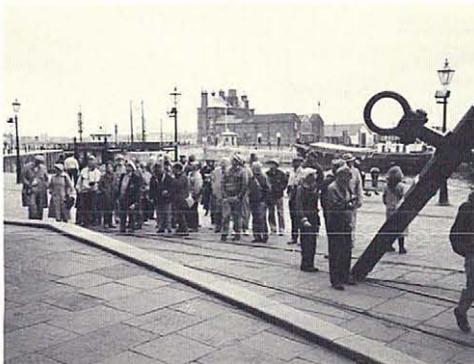
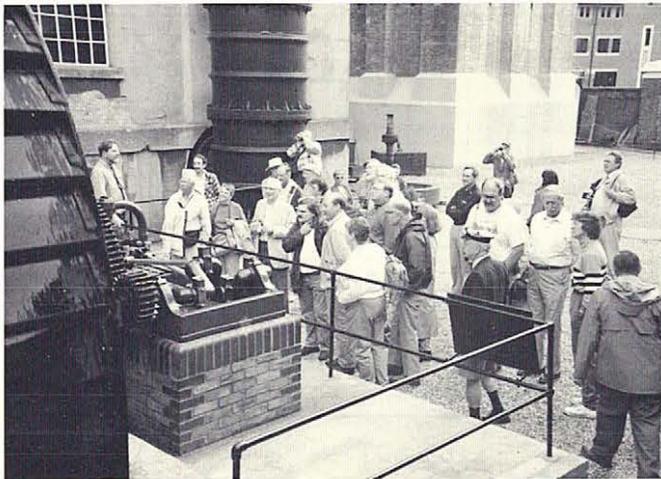
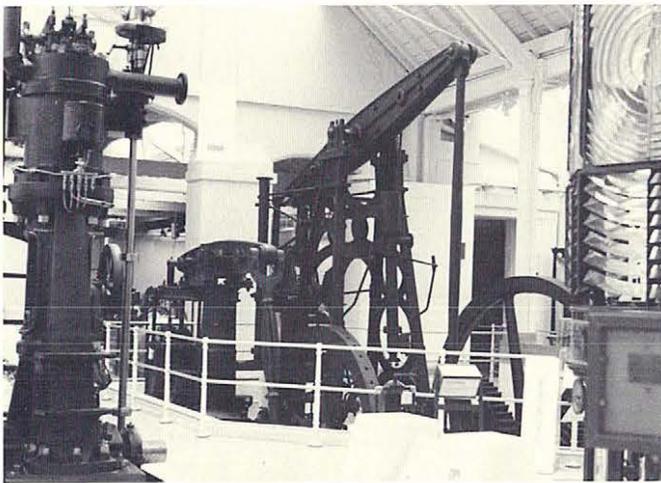
Right: In foreground, iron-lined masonry Chirk aqueduct (1801) by Telford & Wm. Jessop. Behind is 1848 viaduct for Shrewsbury & Chester Ry. *E. Kutsch photo.*





Above: Direct-coupled Siemens alternator between the twin cylinders of a Ferranti inverted vertical steam engine – plant from Deptford Station that provided first electric lighting in England, now in Manchester Mus. of Sci. & Industry. J. Freeman photo.

Below: Engines in Birmingham Mus. of S. & I. E. Kutsch photo.



Above: New waterwheel pump at Kew Bridge Steam Museum.

Left: Waiting to enter the Merseyside museum. G. Weinstein photos.

occurred as our quest continued. That evening we were treated to a six-course Victorian dinner at **Blists Hill Open Air Museum**, part of the **Ironbridge Gorge Museum** (1967). We used this festive occasion as the moment to present Barrie Trinder with a personally inscribed copy of Eric DeLony's new book, *Landmark American Bridges*, as a token of thanks from our group and the SIA.

The next day we were welcomed to **Coalbrookdale** where the remains of Abraham Darby's (1678-1717) **Old Furnace** (1709) are protected from the elements by a glass structure. Then we were on our own to view the famed **Ironbridge** (1779) itself; explore the town, the **Jackfield Tile Museum**, and the **Coalport China Museum**; and watch a steam engine and forging demonstration at Blists Hill. That evening, the **John Moore Quire**, an 18-person group, entertained us with a varied menu of religious and secular Victorian music.

Sunday was characterized as "bridge day" and that it became. Walking over private property and through a pig farm, we viewed **Longdon-on-Tern Aqueduct** (1795-96) on the **Shrewsbury Canal**, the first of Telford's iron aqueducts. The next stop was the 18th-century stone arch bridge at **Atchem**, travelling over portions of the **Holyhead Road** (1815-30). (This fantastic bit of roadbuilding through the mountains is mentioned in Telford's autobiography as "an arduous and reasonably expensive work which may be expected to endure for ages.")

Now in Wales, and following the **Ellesmere Canal**, we crossed the **Chirk Aqueduct** (1801) and, for those with no fear of heights, the **Pontcysyllte Aqueduct** (1802), soaring 127 ft. above the River Dee. Others observed this hardy band of pilgrims from earthly vantage points. The wind was picking up, with a light rain, but we pressed on northward to walk across the **Menai Bridge** (1826) near Bangor. As Trinder remarked about this stunning example of a suspension bridge on this scale, it was a "serious bridge designed to do serious work." Moving along by coach and on foot, we viewed Robert Stephenson's **Britannia Bridge** (1849; radically modified in the 1970s) and the **Conway Suspension Bridge** (1826), in the shadow of **Conway Castle** (1283-89), with its eight massive towers.

On Monday, we were greeted with gale-force winds from the east, swirling thick clouds, and rain, extending over all of North Wales. The weather did not deter British Rail, and at precisely 10:03 a.m. we left **Llandudno** proceeding to **Blaenau Ffestiniog**. We had time to pick up a snack before boarding the narrow gauge **Ffestiniog Railway** (1836; steam added in 1863) to **Portmadoc**. The only major "incident" of the entire tour occurred on this single-line track, as we were stopped at the **Llanrwst** signal box to await the passage of a diesel car which had lost air pressure and had to be "rescued" by another unit. There were lots of tunnels on this spiralling line, with the longest equalling 2 miles and 340 yards in length (1879). Next on the agenda was the **Welsh Slate Museum** with a demonstration of stone cutting, a tour through the 19th-century shops and foundry, and a view of the huge (50 ft. 5 in. dia.) water wheel (1870). Retracing our path we had a closer look at the cast-iron "**Waterloo**" **Bridge** at **Betws-y-coed**, famous for its inscription dated 1815, when, in fact, the castings did not leave the **Plas Kynaston Ironworks** until July, 1816.

On Tuesday (half-way point of the tour), the weather continued very blustery, but without rain, as back in England we strolled through **Port Sunlight** (1900) opposite Liverpool, a "garden suburb" created by W. H. Lever, the soap maker.

Compared to some “company towns,” Port Sunlight exhibits contrasting styles of architecture, with very high quality housing and numerous parks and gardens. We then boarded the pedestrian ferry from **Birkenhead** to **Liverpool**. The next stop was the **Merseyside Maritime Museum** complex at **Albert Dock** (1841-46), with its huge array of ship models, navigation and safety displays, dock equipment, and many active shops. The coach then proceeded along the **Northern Docks** (1840s) and we moved gradually from the older loading areas, largely vacant, to the most modern, boasting a large container ship. Between Liverpool and Manchester there was an unexpected stop at the unique **Barton Swing Aqueduct** (1894), carrying the older **Bridgewater Canal** over the **Manchester Ship Canal**. We witnessed a rare opening, without spilling a drop of water, permitting a large tug to pass under. Afterwards the aqueduct swung closed, the retaining gates opened, and two canal boats made their way across.

We set off Wednesday on a brisk walk (*all* our walks were brisk) with Barrie Trinder leading the way through Manchester, describing the incredible architectural extravaganza. An hour later we were greeted by Patrick Greene at the **Museum of Science and Industry** on the exact date of its tenth birthday, and 163 years after the building of the first railway station in the world (claims by Baltimore notwithstanding) on the Museum site. Hank Rentschler was permitted the privilege of opening the gate and became the first entry for their second decade. We then were free to explore this 17-acre site, including the **Power Hall**—exhibiting many working steam mill-engines, the **Gas Gallery**, **Making of Manchester**, **Underground Manchester** (complete with sounds and smells), the **Machine Tools Gallery**, the **Printing Gallery**, and the **Textiles Gallery**, all with working machinery. The next stop was the **Queen Street Mill** (1894+) with 308 looms driven by the overhead lineshafting. The two-cylinder, 500-HP, tandem-compound, horizontal steam engine (1894) was re-christened “Peace” after World War I. It was driving all the shafting with a dozen, or so, looms operating and we could imagine the overpowering noise when the entire mill was running. This mill is undergoing renovation, and not normally open to the public, so this was an unusual opportunity to witness the weaving side of the cotton industry. At the **Helmshore Textile Museum** (1789; rebuilt in 1860 after a fire) we were treated to a thorough demonstration of cotton carding and roving, plus the operation of the 714-spindle mule, by Ian Gibson, Director. It seemed only appropriate, with words of thanks, to present him with a cotton SIA T-shirt, minted in 1993 by the Three Rivers Chapter for the Pittsburgh Conference. On the same site we visited the **Higher Mill** (1879) to see the process of fulling woolen cloth, all driven by a backshot water wheel creating about 50 HP. The day was far from over, however. After dinner, we boarded the coach for **Fleetwood**, and the 100-year-old electric tramway, to creak along to the famous **Blackpool Illuminations**. Words cannot do justice to this gaudy display of lights, the **Tower** (1891-94), or the **Woolworth Building** (1939), seen during the two-hour tram ride guided by Michael Stratton. It was a short night, with late arrival back at the Broughton Park Hotel, anticipating further adventures on the morrow.

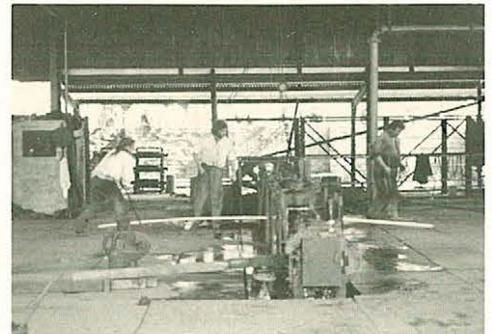
We arrived at the **Stott Park Bobbin Mill** (19th cen.) Thursday to enjoy the operation of the unguarded and dangerous machinery, formerly manufacturing 6,000 bobbins per day. All thoughts of a picnic lunch were canceled, and the

SIA policy to do field work regardless of weather was suspended, since the moors were very dangerous in the thick clouds, which reduced visibility to no more than 30 ft. On a clear day we could have seen Scotland to the north, and the **Allenhead (precipitating) Flues** extending five miles from the lead smelter to chimneys high on the Durham moorland. As we moved to a lower altitude at **Killhope Lead Mining Centre** (active mining 1696-1883), the mist lessened. The partially restored works gave insight into not only the mining processes, but the horrendous working conditions that must have been experienced by the 1,200 men and boys employed there during the industry’s peak. The next three nights were spent at the **Victoria Hotel, Bradford**, built by the Great Northern Railway in 1897.

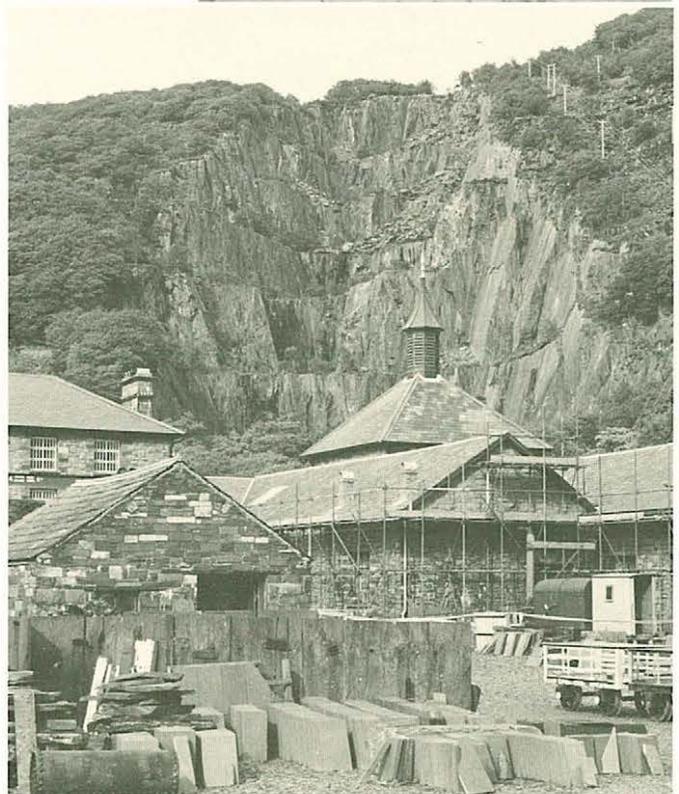
We started our tour the next day at the **National Railway Museum**, York. Those who were in the South Yards at 10 a.m. were treated to a ride, standing in the open third class coach, behind a replica of Stephenson’s famed **Rocket** (1829), which resides at the Science Museum, London. When satiated at the Museum, we were free to explore the ancient city of York. Reconvening late in the afternoon, we journeyed to **Harry Ramsden’s** (1928-31) to savor another culinary delight—fish and chips. This location serves one million customers per year, with one of the principal English contributions to gastronomy.

On Saturday, we walked about the exterior of the **Saltire Mill** (1851) and nearby company town of 800 spacious and substantially constructed workers’ homes. The mill’s steam

Right: Rolling wrought-iron bars at the steam-powered Blists Hill Wrought Ironworks, about 1-3/4 m. above the 1779 Iron Bridge, Coalbrookdale.



Below: The Welsh Slate Museum at Llanberis, in front of the Dinorwig Quarry, which closed in 1969. E. Kutsch photos.

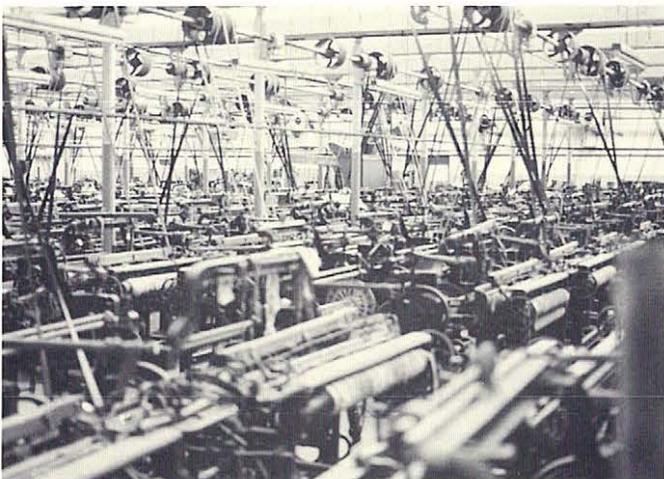




Above: Late 19th-cen. terra cotta & brick cotton warehouse, Manchester. *J. Freeman photo.*

Below: Helmshore Textile Museum, with operating 716-spindle mules.

Bottom: Queen St. Mill (1895), Harle Syke, Burnley, operating under steam power. *E. Kutsch photos.*



Above: Cotton mills at Belper, birth- & workplace of Samuel Slater: small iron-frame North Mill (1804) & larger steel-frame East Mill (1912). *G. Weinstein photo.*

Below: Clock Mill (1817), a tide mill at Three Mills on the River Lea, boundary between East London and Essex. *E. Kutsch photo.*



engines have been placed in a building with glass walls, so as to be visible from the railroad. The next stop was the **Leeds Industrial Museum** (located in a woolen mill of 1804) with its many galleries illustrating textiles, engineering, tanning, printing, and the photographic industry. Reinforced by a ploughman's lunch, our next stop was the **Yorkshire Mining Museum**, the former **Caphouse Colliery** (1791; closed 1981). We travelled by cage, in very close quarters, 450 ft. down, to be guided through various workings and observe examples of coal-mining techniques from the earliest times—using human labor—to the most modern with full mechanization.

Sunday, we spent much of the day outdoors visiting the jewel of British Steel: Scunthorpe (iron discovered 1864; first steel 1890). This now-modern plant has seen production double in recent years, whilst employment has shrunk by two-thirds. This is one of the few steel mills in the world that has, on one site (1700 acres), blast furnaces, basic oxygen converters, coking, continuous casting, and rolling mills for heavy and medium sections.

We then made our way back to London to a reception and dinner at the Kensington Park Hotel. The weariness, after 14 days of incredible sights and sounds all but vanished as our group assembled for the last time. First there were thanks to Priscilla Clough, then we bade farewell to Barrie Trinder with



MORE BRIDGES. Above is the handsome cast-iron Barker Bridge (1842) in Birmingham. Below is John Gwynn's beautiful Atcham Bridge (1770s), Attingham Park, Shropshire, in morning mist. At bottom, the group poses on an 1828 iron bridge. Photos by E. Kutsch, top; J. Freeman, middle; G. Weinstein, bottom.



Tour planner and host Barrie Trinder (right) accepts an autographed copy of Eric DeLony's *Landmark American Bridges* from Hank Rentschler, presented in appreciation for his generous efforts. G. Weinstein photo.



a parting gift (no SIA T-shirt here) of matched luggage for his next visit to Canada and the U.S. "Sic transit gloria mundi."

Special thanks for planning, arrangements, and execution go first to Barrie Trinder, along with many of his special friends and former students, and to the Gray Dawes travel staff. We also wish to thank: Brian Bowers, Science Museum, London; Mark Newland-Smith, Three Mills; Michael New, Great Western Society; Jim Andrew, Birmingham Museum of Science and Industry; Glen Lawes, Ironbridge Gorge Museum; Peter Wakelin, Cadw; Sian Parry-Jones, Welsh Slate Museum; Patrick Greene, Museum of Science and Industry, Manchester; Ian Gibson, Helmshore Textile Museum; Michael Stratton, Ironbridge Institute; Rory Wardroper, National Railway Museum; Ron Fitzgerald, Leeds Industrial Museum; the Mayor and citizens of Belper; Darryl Clark, Cromford Mills; and Shirley Ashmore, British Steel.
H.A.R.

History with a high sodium content

The International Commission on the History of Salt (CIHS) was officially founded on March 3, 1988 by the Comité Européen du Sel in Paris. It is the first international society devoted to the legal, social, economic, and technological history of salt. The CIHS holds a general symposium every two or three years. The papers presented at these meetings have been gathered into several outstanding publications covering various aspects of this history. The currently available publications are:

—*Le Roi, le Marchand et le Sel*, edited by J. C. Hocquet. 1987. Available from Presses de l'Université de Lille, rue du Barreau, B.P. 199, 59 654 Villeneuve d'asq Cedex, France.

—*Salz—Arbeit und Technik*, edited by Ch. Lamschus. 1989. Available from Deutsches Salzmuseum, Sulfmeisterstrasse 1, 2120 Luneberg, Germany.

—*Das Salz in der Rechts und Handelsgeschichte*, edited by J. C. Hocquet and R. Palme. 1991. Available from Berenkamp Verlag, Schwaz, Austria.

A fourth volume is in preparation containing the papers presented during the symposium held in Halle, Germany in 1993.

The next symposium is scheduled for Granada, Spain in late September, 1995. Besides formal paper presentations,

each symposium also includes visits to historic salt manufacturing sites.

CIHS also publishes bibliographies of articles and books on salt in different languages. Three volumes have been published to date and are available from Berenkamp Verlag, Schwaz, Austria.

— *CIHS-Bibliographie. Bibliography on the History of Salt.*

1990 No. 1 - Germany and Austria

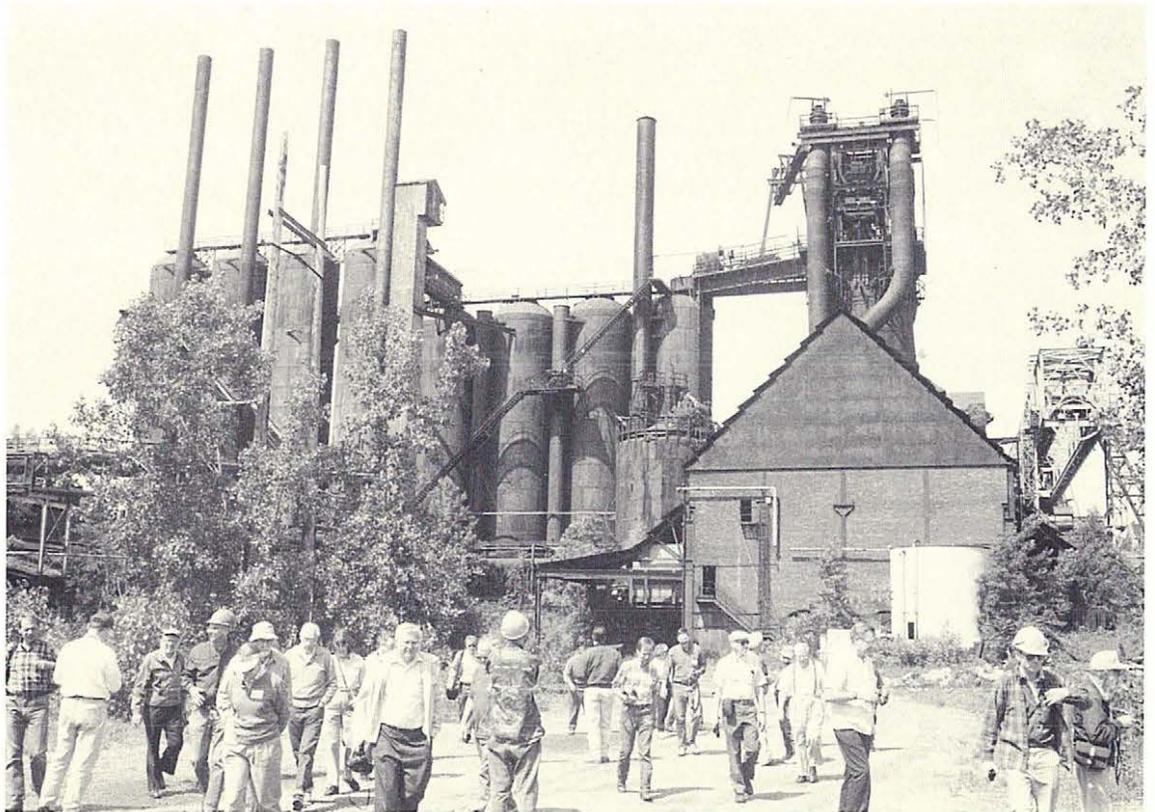
1992 No. 2 - Germany, Austria, France, England/America, Spain, 1980-1989.

1992 Special Supplement 1: 706 Citations from the Chinese Literature, 1980-1989.

The most recent activity of CIHS is the publication of the *Journal of Salt-History*, the first journal on salt history. *JSH* will publish papers on all relevant topics. The first issue will include the papers on salt history presented at the 1992 international meeting on salt held in Tokyo. The *JSH* official languages are English, French, German, and Spanish. Reports of meetings, book reviews, and all papers concerned with any aspect of salt history are solicited.

Material may be sent to the CIHS North American representative, who can also provide membership information: Carol D. Litchfield, George Mason Univ., Biology Dept., Fairfax VA 22030.
C.D.L.

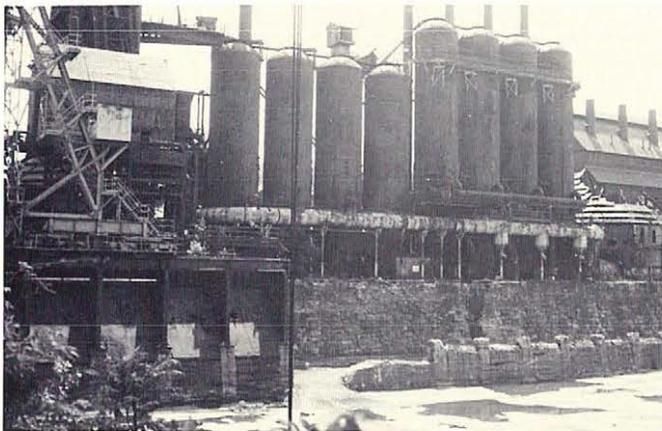
Iron City IA



Landmark blast furnaces at U.S. Steel's former Duquesne Works (1889-1984), among the most significant sites in Steel Valley.

In view at right, the blast-air heating stoves are on the left and one of the furnaces is on the right. *R.M. Vogel photo.*

Below: Two additional views of the same complex, from the back and from the side. *E. Kutsch photos.*



Over 250 SIAers convened in Pittsburgh for the first time since 1974, in anticipation of a weekend filled with images and interpretations of the Iron City's industrial landscape. Headquarters was the opulent **Westin William Penn**, built as a world-class hotel in 1916 by coke magnate Henry Clay Frick. While guests arrived on Thursday, June 3, the Penn Historical & Museum Commission hosted a day-long workshop on the identification and interpretation of industrial-heritage areas. The evening reception was held simultaneously with the opening of a major exhibit—"The Artist Looks at Industrial Pittsburgh"—at the Univ. of Pittsburgh's Frick Fine Arts Gallery. Curated by Rina Youngner, the exhibit brought together for the first time over 160 prints, paintings, lithographs, sketches and photographs depicting the evolution of Pittsburgh as an industrial center. Ranging from an 1838 salt works painting to the contemporary work of Robert Qualters, Jet Lowe, and Matthew Kierstead, the exhibit also focused attention on the different ways artistic movements shaped the portrayal of heavy industry and the "Smoky City." The reception drew a huge crowd including two congressmen and many members of the Pittsburgh community involved in preserving the city's industrial legacy.

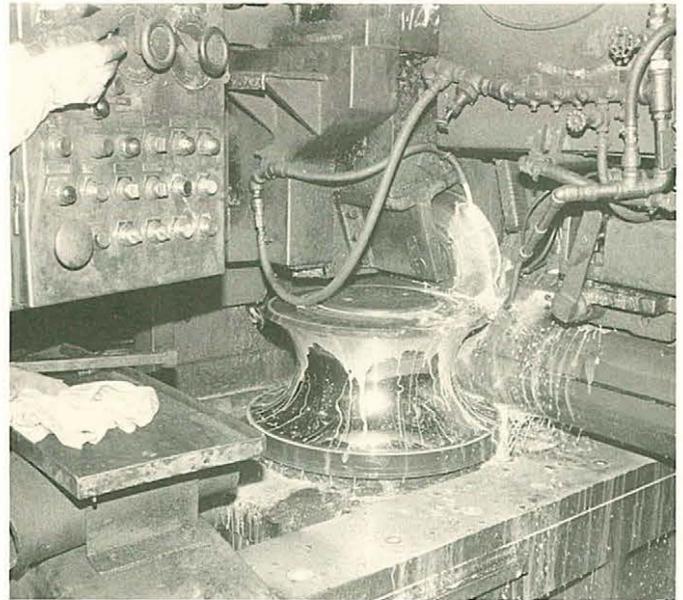
On Friday, seven different tours were offered, covering the wide range of the region's industries. Two tours involved the most celebrated process: steel-making. The Steel Valley Tour visited the Monongahela Valley, home of Andrew Carnegie's (later USS, now USX) empire, which suffered massive layoffs



The manufacture of large-diameter steel pipe at the Camp Hill Corp. plant, McKeesport, Pa., formerly National Tube.

Right: Here the pipe—far right—has been completely formed, rolled into a cylinder from flat stock, and is passing through the butt welder to close the seam. The excess weld, inside and out, is trimmed off.

Photos by E. Kutsch, above; R.M. Vogel, right.

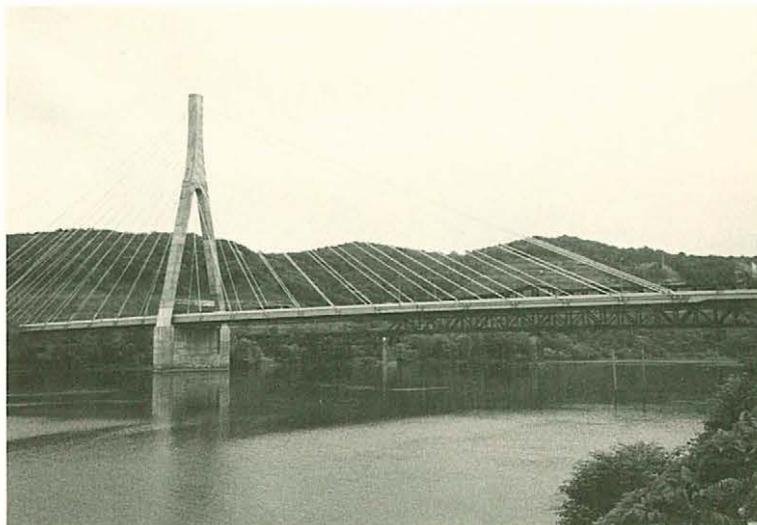


and plant closings in the 1980s. **Camp Hill Corp.**, a small remnant of the vast National Tube Works in McKeesport, opened in 1987, producing large-diameter pipe by electric-resistance butt-welding technology. The **USS Duquesne Works**, built in 1890, was closed in 1984 and is the site of continuing demolition which will save only a handful of buildings for an industrial park. Nonetheless, tourers had a chance to walk in and around the crumbling Blast Furnace Plant, home of the first fully automated raw materials delivery system in blast furnace production. United States Steel's **Edgar Thomson Works**, founded by Carnegie in 1873, is the last fully integrated steel mill in the Valley. Here tourers got a glimpse of the Blast Furnace Plant (begun 1880) and a tour of the 1972 Basic Oxygen Process building, to see firsthand how steel is made. They also toured USX's "pride and joy," the year-old Continuous Caster, seen as the modern facility that will sustain steel production in the Valley for decades to come.

Another busload went to the Ohio River Valley, at **Wheeling-Pittsburgh Steel Corporation's Steubenville Plant** visiting the Koppers by-product coke batteries and the blast furnaces. After an informal lunch at the company headquarters, the tour continued to the 1965 basic oxygen furnace, which houses two 300-ton vessels with a capacity of

3 million tons a year. The 1983 Continuous Caster and the 80-inch hot strip mill (built by Blaw-Knox in 1965) rounded out the tour. The bus returned to Pittsburgh along the Ohio, passing the **Weirton-Steubenville Memorial Bridge**, an asymmetrical cable-stayed span opened in 1990.

Two other tours ventured further "up" the Monongahela Valley to the Mid-Mon Valley and the Connellsville Coal and Coke Region. The Coal & Coke Tour visited the **USS Clairton Works**, at one time the largest by-product coking operation in the world, whose construction in 1918 sounded the death knell for the beehive coking industry of the Connellsville Region. After the other bus stopped to see the collections of the **Monongahela River Buffs Museum**, the tours went on to Brownsville, site of three projects recorded by HAER's Homestead office in 1992. The oldest of these is the **Dunlap Creek Bridge**, the nation's first cast-iron bridge, completed in 1839 for the National Road. This old boat building center is also home to the shops of the **Monongahela Railway**, a coal-hauling line recently taken over by Conrail and **HBC Barge**, a leader in inland barge production. Here one of the tours witnessed a spectacular launch of one of HBC's jumbo hopper barges. Afterwards the buses ventured further south to the **W.A. Young & Sons Foundry and Machine Shop** in Rices Landing. Here a c1900 belt-driven

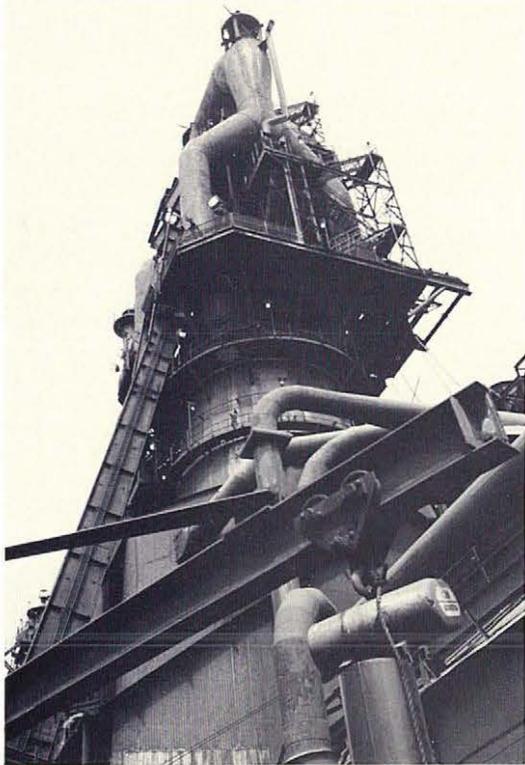


OHIO RIVER BRIDGES AT STEUBENVILLE.

Left: The Weirton-Steubenville Veteran's Memorial Bridge is an asymmetrical, 1,964-ft. cable-stayed bridge between Weirton, W.V., and Steubenville, Ohio, built 1979-83.

Right: Suspension bridge at Weirton-Steubenville. R. Frame photos.



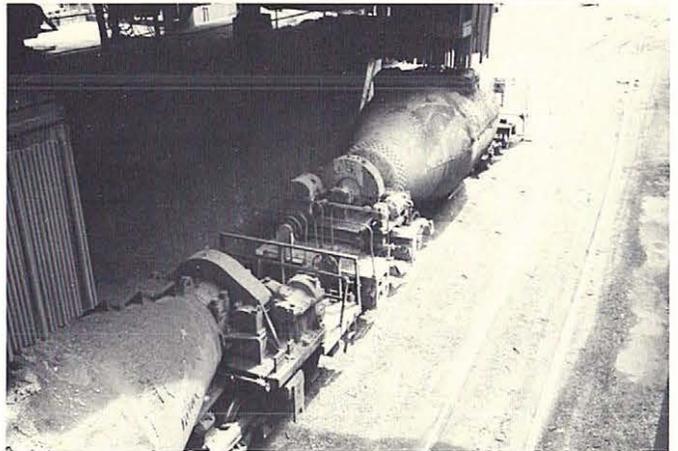
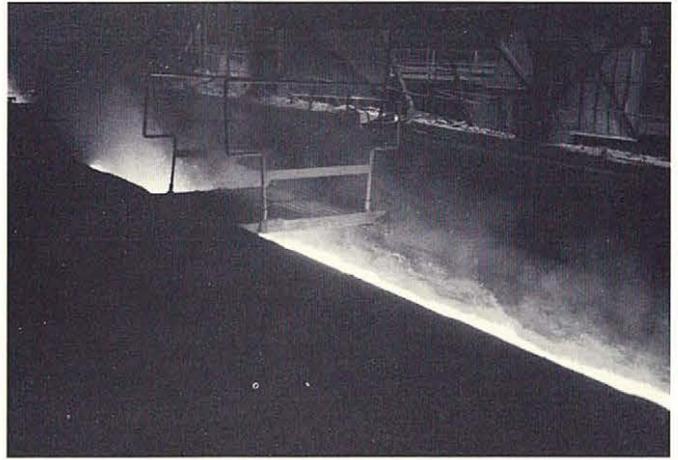


Views at South Works blast furnace, Mingo Junction, Ohio, of Wheeling-Pittsburgh Steel Corp. *R. Frame photos.*

machine shop is preserved by the Greene County Historical Society. After crossing the Monongahela into Fayette County, the Coal & Coke tour visited a “re-mining” operation, where the pillars from an old drift mine are recovered by strip mining. At **Shoaf**, the tour visited the region’s best-preserved beehive ovens, built by Frick in 1904. Here 300 ovens, Covington coke-drawing machines, and various ancillary structures are preserved by Max Noble, the site’s owner since 1959. On the return trip, the bus drove through Connellsville, Scottdale, and West Overton—the birthplace of Henry Clay Frick—for a long, but rewarding day.

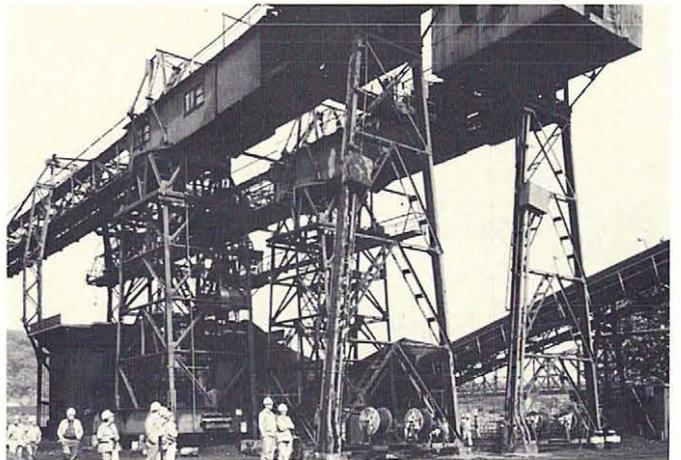
The Robotics & Glass Tour was not the run-of-the-mill SIA tour. Beginning at the futuristic robotics labs at **Carnegie-Mellon University’s Engineering Design Research Center**, tour participants were given an in-depth look at some of the new technologies under development that eventually will eliminate bottlenecks in product conceptualization and design. At this somewhat unlikely setting for an SIA process tour, participants asked numerous questions and even took photos of transparencies used in the presentation. The tour then proceeded to the float-glass plant of **Pittsburgh Plate Glass** at Meadville. The bus passed

Coal is delivered by barge to the By-Product Coking Operations at the East Works in Follansbee, W.V., of Wheeling-Pittsburgh Steel Corp. Below (left & right) are views of the barge-unloading operation. *R. Frame photos.*



through western Pennsylvania’s rolling hills and some of its best agricultural land, stopping for lunch at **McConnell’s Mill**, a mid-19th century grist mill. The PPG tour was fascinating in many respects, but one of the most striking features was the near-complete automation of the process and the near absence of glass workers. On the return trip to Pittsburgh, tourers viewed early-20th-cen. movies of window glass production. In general, participants found the long bus trip a relaxing break from the usual jam-packed SIA tour.

Another group spent the day sampling the art and artifacts of one of Pittsburgh’s oldest industries: brewing. Although only two breweries remain active, Pittsburgh nonetheless boasts a rich heritage of extant brewery architecture. These include the former **Duquesne Brewing Co.**, **Christian Moerlein Beer Warehouse**, and the **Wilhelm Brewery** on the Southside. The feature process tour was through the **Pittsburgh Brewing Co.**, home of Iron City, including a look



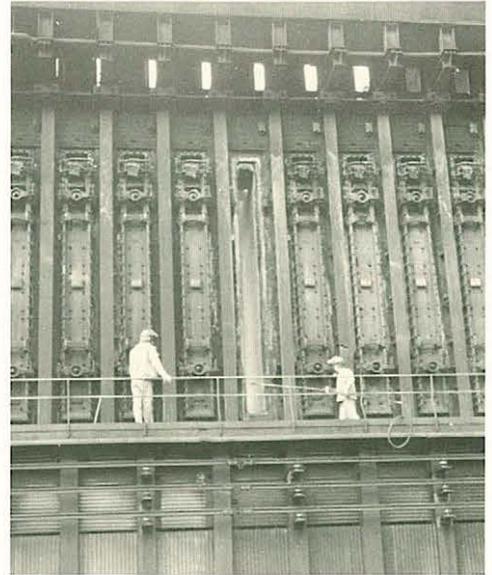


COKING.

Left: Beehive coke ovens at Shoaf Coke Works (1904-72).

Right: Coke ovens at USS Clairton Works (1916). Note the oven without a door, undergoing maintenance.

A. Eisenpress photos.



at several 19th-cen. copper kettles. Lunch and further sampling occurred at the **Allegheny Brewery and Pub** in the city's old "Deushtown" section. Here Tom Pastorius has renovated an abandoned brewery and used German brewing techniques and equipment to establish his own line of "Penn Pilsener" to standards of the German "reinheitsgebot."

The industry of the Allegheny River was the focus of yet another tour. After passing many notable bridges constructed in the 1920s, the bus stopped at the **Aspinwall Pumping Station** and filtration plant, built in 1905. It also stopped by **Allegheny River Lock & Dam No. 2**, visited by SIA in 1974. The **Tour-Ed Mine** was next, a restored operating coal mine in Tarentum. Finally the tour explored the problem of industrialization vs. environmental concerns by stopping by the **Rachel Carson Homestead** and the nearby **Cheswick Power Station**, a coal-fired generating plant with a 750-foot stack.

After a full day of tours, participants were treated to a walking tour through the lenticular trusses of the **Smithfield**

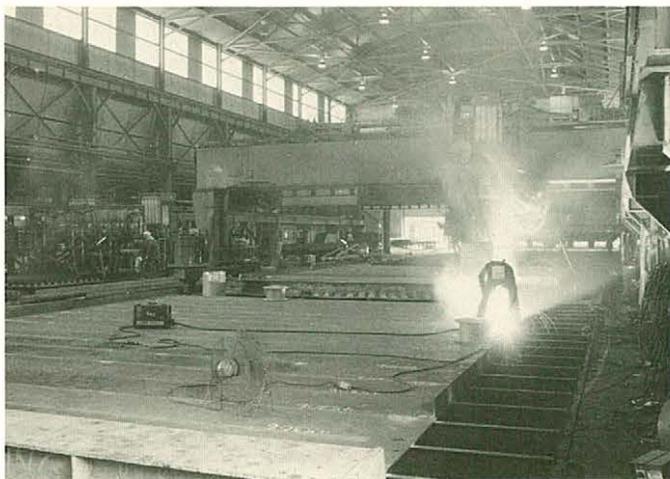
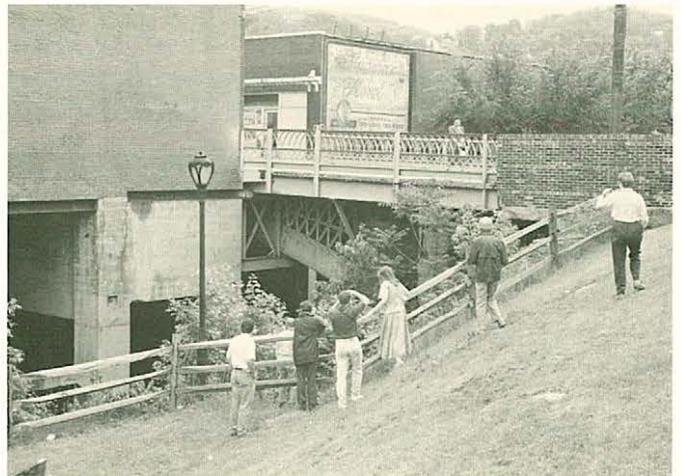
Street Bridge (Gustave Lindenthal, 1883), enroute to a reception hosted by the Pittsburgh History & Landmarks Foundation. The setting was Station Square's **Bessemer Court**, whose centerpiece is an A.M. Byers Co. Bessemer converter, one of many industrial artifacts that will be part of an industrial riverwalk [SIAN Summer 1991:1].

Saturday featured the traditional SIA paper session, including the first all-day IA video session. At the Annual Business Meeting, Three Rivers Chapter member Emory Kemp received the inaugural "SIA General Tool Award for Distinguished Service to Industrial Archeology." Saturday

Below Left: Welder at work, standing on unfinished barge at Hillman Barge & Construction Co., Brownsville, Pa.

Right-upper: SIA tourers strain for view of the almost-hidden Dunlap Creek Bridge (1836-39), Brownsville, first cast-iron arch built in the U.S.

Right-lower: General view inside W.A. Young & Sons Foundry & Machine Shop (1900), Rices Landing. *A. Eisenpress photos.*





Right: Banqueting beneath the roof trusses of the 1898 Lake Chautauqua Ice Co. Warehouse, future home of the Pittsburgh History Center. *R. Harris photo.*

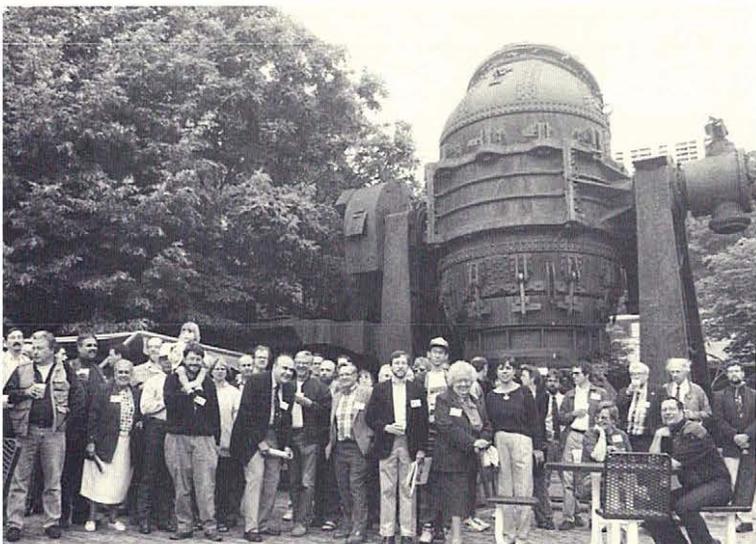
Left: Viewing the unique lenticular trusses of Lindenthal's Smithfield Street Bridge (1883). *R. Frame photo.*



Views from the Monongahela River boat tour. Photos by R. Harris, left; R. Harris, below.



Below: Conf. registrants standing in the shadow of the Bessemer converter preserved at Station Square, originally the Pittsburgh & Lake Erie RR Terminal. *R. Harris photo.*



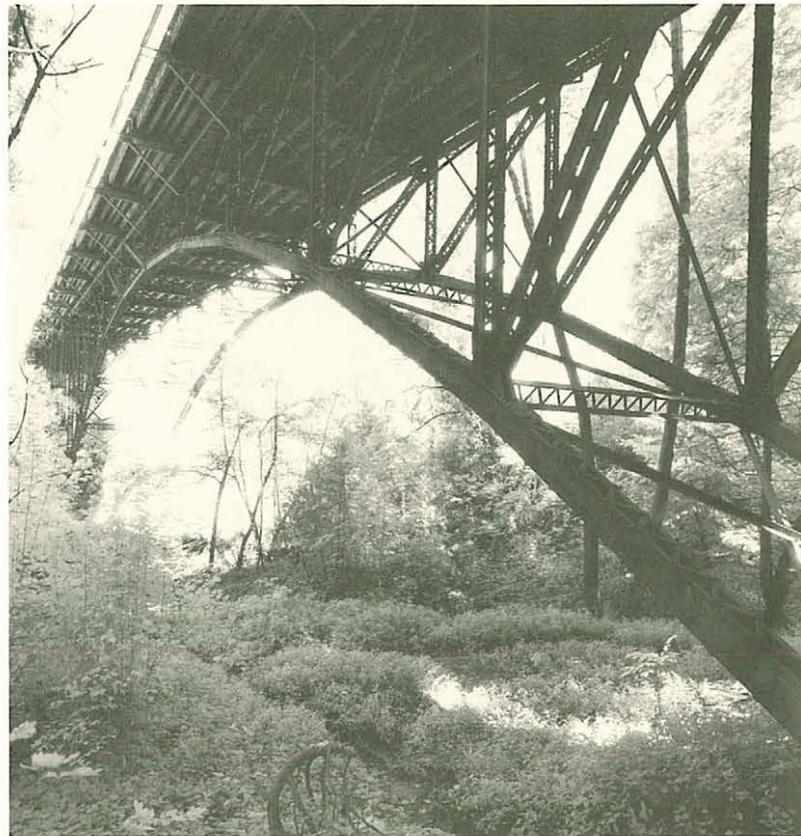
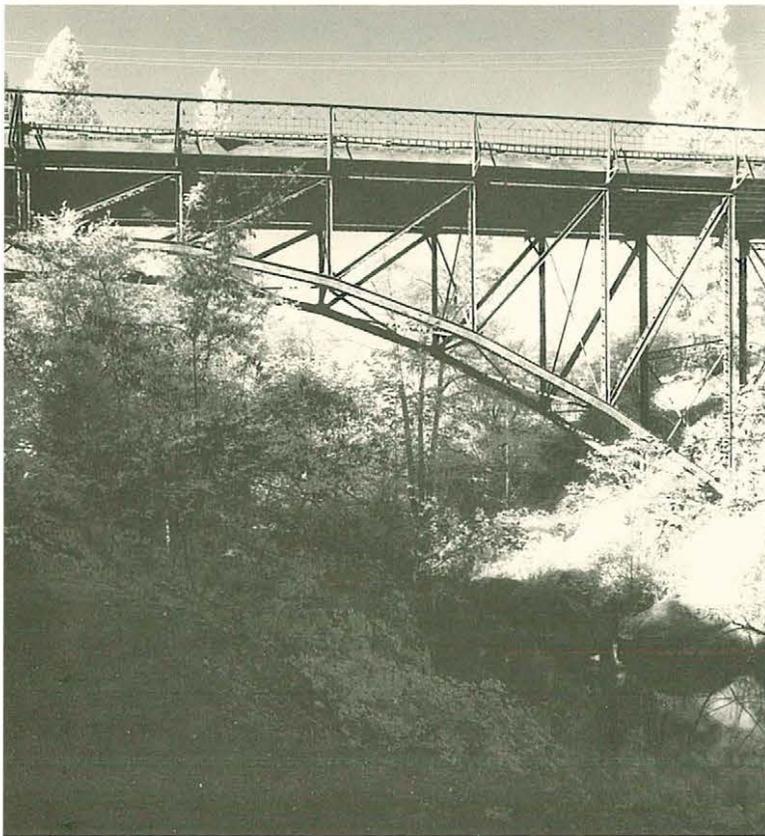
night's banquet was hosted by the Historical Society of Western Pennsylvania in the 1898 **Lake Chautauqua Ice Co. Warehouse**, future home of the Pittsburgh History Center.

Sunday morning offered a brunch and cruise up the Monongahela from Station Square to Elizabeth. This three-hour trip passed the sites of several steel mills and "The Pumphouse," a survivor of the bloody 1892 Homestead Strike. Also surveyed were many of the region's bridges, from the county's historic highway bridges to hot-metal bridges built by the steel companies. At the tour's end, architectural historian Walter Kidney led a walking tour of downtown Pittsburgh's **Golden Triangle**, passing H.H. Richardson's **Allegheny County Courthouse** and the headquarters of many present and former industrial concerns including Frick, Mellon, Jones & Laughlin, PPG, Alcoa, Gulf, Koppers, and USX.

The post-conference tour on Monday featured the historic sites of America's Industrial Heritage Project (AIHP). After a three-hour bus ride on the 54-year-old **Pennsylvania Turnpike**, SIAers reached Orbisonia, Pa., to ride and tour the shops of the **East Broad Top Railroad**, a narrow-gauge coal-hauling line begun in 1874. On the drive back the tour stopped at world-famous **Horseshoe Curve**, part of the Pennsylvania RR Mainline since 1854.

Many people and organizations contributed to the success of this conference. The conference co-chairs were Richard O'Connor and Christopher Marston, president and vice-president of the Three Rivers Chapter, respectively. Steering Committee members included Jim Alexander, Mark Brown, George Danko, Christine Davis, J.K. Folmar, Matthew Kierstead, Billy Joe Peyton, Fred Quivik, and Joel Sabadasz. The Conference host was the SIA Three Rivers Chapter along with the Historical Society of Western Penn., Pittsburgh History & Landmarks Foundation, the Institute for the History of Technology & Industrial Archaeology, the Steel Industry Heritage Corp., America's Industrial Heritage Project, and the Penn. Historical & Museum Commission. Contributors to the *Guidebook to the Pittsburgh Region*, edited by Christopher Marston, included (in addition to those named above): Ted Muller, Richard Dochter and Richard Wagner, Fred Quivik, Walter Kidney, and Christine Jones. The guidebook is available for \$10 from the Institute for the History of Technology & Industrial Archaeology, c/o Communications Coordinator, 1535 Mileground, Morgantown, WV 26505 (314-293-2513).
C.H.M.

Last days for Calif.'s oldest 3-hinged steel-arch truss



Two views of the historic c1903 Gault Bridge [NR] in Nevada City, Calif., the oldest three-hinged steel-arch truss in the state. The images were recorded on infrared black and white film, rendering the foliage lighter than produced by conventional film. *T.L. Peck photo for Foster Engineering, Inc.*

A historic, but ailing, Nevada City, Calif. bridge, in the state's Gold Country, will soon be replaced by a new one. San Francisco-based Foster Engineering, Inc. [SIA] has been retained by Nevada City to design a replica of its ninety-year-old dilapidated Gault Bridge [NR], in the process, upgrading its load-carrying capacity and traffic safety features to present-day standards.

Gault, or Pine Street Bridge as it also has been known, built c1903, is the oldest three-hinged steel-arch truss in the state, spanning 150 feet over the Deer Creek ravine, just south of the historic downtown. The bridge was designed by W. W. Waggoner, fabricated by American Bridge Co., and erected by Stockton, Calif. contractors Clark & Henery. The two-lane bridge is timber decked with asphaltic road surfacing. Its two approach ramps each are supported by two braced towers, independent of the arch structure. The bridge replaced an 1862 suspension bridge designed by Andrew Hallidie of San Francisco cable-car fame.

The bridge is the major means by which local traffic crosses Deer Creek, 50 ft. below. It connects the city's downtown and Piety Hill residential districts. While the bridge's importance accrued from the local gold mining and agricultural industries at the turn of the century, today its significance lies with the new "gold" industries: tourism and recreation.

Since 1988, traffic on the bridge has been restricted to one vehicle per lane per crossing, severely impeding the normal residential-tourist traffic in the area. The Calif. Dept. of Transportation (Caltrans) imposed this limitation following inspections and recommendations by Foster Engineering. These inspections revealed extensive corrosion and fatigue in significant structural members.

Final design of the new bridge will be under way by the end of 1993. The design will include new steel lattice-girders and trusses, and ornamental railings of self-rusting Cor-ten Steel, to match as closely as practicable the original bridge details and appearance. New concrete approach abutments and arch "spring blocks" will be designed, the former to be clad with granite panels to replicate the ashlar stone of the existing abutments. The roadway deck also will be concrete, as will the new vehicle traffic barriers, constructed to Caltrans standards. The barriers will be partially screened from view by the ornamental railings.

Prior to demolition, the historic bridge will undergo extensive graphic and written documentation, to Historic American Engineering Record guidelines. Thereafter, a permanent interpretive display of selected salvaged bridge components will be mounted in a local museum. Construction will begin in mid-1994, with completion in 1995, at a cost of about \$1,000,000.

T.L.P.

SIA AFFAIRS

22nd Annual Business Meeting June 5, 1993 Pittsburgh, Pennsylvania



Emory Kemp, at left, receives the 1993 SIA General Tools Award for Distinguished Service to Industrial Archeology from General Tools Chairman Gerry Weinstein. Matt Roth, who made the presentation statement, looks on. *A Eisenpress photo.*

The meeting was called to order by President Amy Federman at 1:10 p.m. in the Pittsburgh Room of the William Penn Hotel. [Editor's Note: This is the same room, hotel, and city in which the SIA met in 1974, 19 years ago, at the 3rd Annual Conference.]

PRESIDENT'S REPORT. President Federman expressed general thanks to the conference organizers, noted the excellence of the lunch, and asked for chapter members to rise as she called out their chapter names. Mention then was made of plans for the 1994 meetings (SIA and TICCIH), and Phyllis Rose rose to speak on plans for the Toronto conference.

Rose offered some teasers to entice members to head for Toronto next year, having distributed Toronto promotional materials to each table.

Dennis Howe spoke on the upcoming Fall Tour to New Hampshire.

President Federman noted that Baltimore members have agreed to host the 1995 Annual Conference and observed that proposals for future sites are sought.

SECRETARY'S REPORT. Secretary David Shayt requested corrections to, and, seeing none, approval of the minutes of the 1992 Annual Business Meeting. Motion to approve was made by Fred Quivik, seconded by Sandy Norman, and was carried unanimously.

TREASURER'S REPORT. Treasurer Nanci Batchelor summarized the year's revenues and expenses.

NORTON PRIZE. Chair of the Norton Prize Committee, Robert Vogel, reviewed the prize's history and intent and announced that the Committee, composed also of Larry Gross, Duncan Hay, Dean Herrin, and Carter Litchfield, was unable to identify a winning article from those in the issues of *IA* under consideration. Therefore, no Norton Prize was awarded this year.

Vogel then announced that the incoming chair of the Committee would be Dean Herrin, and that he was prevented from announcing the new committee member until the Board had voted on his or her acceptance.

SPECIAL RESOLUTION. Carol Poh Miller rose to read a resolution calling for the local landmarking and preservation of Cleveland's Hulett ore unloaders, visited by SIA at the annual meeting in 1986, and now very much at risk.

Motion to approve the resolution as read was made by David Simmons, seconded by Tom Leary, and carried unanimously.

PUBLICATIONS COMMITTEE. Committee Chair Fred Quivik noted the progress of both journal and newsletter, and called for a volunteer to serve as compiler of the Publications of Interest section of the newsletter. None appeared at the time. President Federman offered words of thanks to longtime Publications of Interest compiler, John Wickre.

GENERAL TOOLS AWARD. Matthew Roth, of the Award Committee, comprised also of Dennis Zembala, Chair, and Terry Reynolds, summarized the history of this new award. Roth introduced Gerry Weinstein, chairman of General Tools, Inc., and award benefactor and designer, who displayed the actual presentation piece: a polished, 32-oz. General Tools brass plumb bob suspended in a cloth-lined shadow box of fine wood and set with a pair of engraved brass plaques.

Roth then announced the recipient of the 1993 General Tools Award for Distinguished Service to Industrial Archeology: Emory L. Kemp. A standing ovation followed.

ACKNOWLEDGEMENTS. For their efforts in making the 1993 Pittsburgh conference possible, President Federman thanked conference co-chairs, Richard O'Connor and Chris Marston, and the following organizations: Pittsburgh History & Landmarks Foundation; Institute for the History of Technology & Industrial Archeology; Steel Industry Heritage

Project; Pennsylvania Historical & Museum Commission; and Three Rivers Chapter SIA.

President Federman also acknowledged the year-around services of headquarters volunteer, Clare Smith; the work of John Bowie; and the achievements of outgoing directors Jane Mork Gibson, Fred Quivik, and Edward Rutsch. She further acknowledged the emergency services of Nominations Committee Chair Carol Poh Miller, whom Federman then introduced.

ELECTION RESULTS. Miller thanked fellow committee members Sandy Norman, David Salay, and David Simmons, and then announced the results of the 1993 election:

Directors: **Chris Andreae**
Tina Van Dyke LeCoff
Carroll Pursell
Gerry Weinstein

Nominations Committee: **Susan Appel**

Following a closing refrain on the kazoo by John Light, President Federman declared the meeting adjourned at 1:45 p.m.

Respectfully submitted,
David H. Shayt
Secretary

1994 General Tools Award Call for nominations

The selection committee for SIA's General Tools Award has called on the membership to submit nominations for the 1994 SIA General Tools Award for Distinguished Service to Industrial Archeology.

The Award is designed to recognize individuals who have provided both extended and outstanding service to the field of industrial archeology. Nominees do not have to be members of the SIA, but must have provided sustained and distinguished service to the field beyond merely academic publication.

Nominations may be made by any SIA member in good standing. The nomination statement should be no longer than three typewritten, double-spaced pages and should specify why the individual nominated should receive the award. The statement must, of course, also include the name, address, and phone number of the nominator.

The General Tools Award was created in 1992 through the generosity of Gerry 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, predecessor firm of General Tools.) Besides a formal presentation piece, the award carries an honorarium of \$1,000. It was first conferred upon Emory Kemp at the June 1993 meeting of SIA.

Nominations for the 1994 award should be submitted to Terry Reynolds, Chair, General Tools Award Committee, Dept. of Social Sciences, Michigan Technological Univ., Houghton, MI 49931. They must be received on or before March 15, 1994. If additional information is needed, contact Reynolds at 906-487-2113, or via e-mail at TREYNOLD@MTU.EDU.

23rd Annual Conference June 2-4, 1994, Toronto

The SIA solicits proposals for presentations at its 23rd Annual Conference to be held June 2-5, 1994, in Toronto, Ontario. Proposals may include: presenting a paper (20 mins.), organizing a panel discussion (90 mins.), reporting on work-in-progress (10 mins.), or co-ordinating a session (90 mins.). A separate room will be set aside for video sessions.

An abstract of not more than 250 words is required for all formats. It must be typewritten and include the title of the presentation, names of all participants, brief c.v., address, phone/fax numbers, and audio-visual requirements.

Submit proposals or requests for info. to Julie Harris, Program Chair, 1994 SIA Conf., 120 Sunnyside Ave., Ottawa, Ont. K1S OR1 (613-730-0932; internet ad895@freenet.carleton.ca)

For general conf. info., contact: 1994 SIA Conf., IHPST, Univ. of Toronto, 73 Queens Park Cres. E., Toronto, Ont. M5S 1K7 (416-535-5723).

CONFERENCE SCHOLARSHIP. Through a generous donation, the SIA offers modest scholarships to support students' attendance at the 1994 Annual Conf. in Toronto. Full-time students may be eligible for financial support for registration and conference activities. Interested persons are asked to apply to Janis Langins, Institute for the History & Philosophy of Science & Technology, Victoria College, Univ. of Toronto, Toronto, Ontario M5S 1K7. Please include a description of your course of study and a letter of recommendation from a faculty member of your institution.

CALL FOR PAPERS. The "Three Rivers Chapter Winter Symposium" committee welcomes proposals for papers and works-in-progress focussing on IA of the Three Rivers region: iron and steel, coal and coke, glass, transportation and navigation, etc. The symposium will be held at West Virginia Univ. on Saturday, Feb. 5, 1994, 10 a.m.-4 p.m. It is co-sponsored by the Three Rivers Chapter of SIA and WVU's Institute for the History of Technology & Industrial Archaeology.

Each session will be 20 min. followed by a 5-min. question and answer period. Students, professionals and others interested are encouraged to submit proposals.

Abstracts of 300 words should be directed to Lee Maddex or Billy Joe Peyton at the Institute, Bicentennial House, 1535 Mileground, Morgantown WV 26505.

A BRIEF MESSAGE ABOUT THE NEWSLETTER. Your faithful and obedient *SIA* editor, Bob Frame, requests your patience through 1993-94 as he works to produce the *SIA Newsletter* from Cambridge, Mass., while completing a program at Harvard's Kennedy School of Government. Always a volunteer effort, like all the good work of the SIA, the *Newsletter* will be published on as timely a schedule as possible until things return to "normal." Well-written news items about the IA in your area are always welcome, and are especially appreciated now. Send your story to *SIA*, POB 65158, St. Paul MN 55165-0158 (E-mail to framero@ksgl.harvard.edu).

CALENDAR

1994

Feb. 5: Three Rivers Chapter Winter Symposium, West Virginia University, Morgantown, W. V. Info: Lee Maddex, Institute for the History of Technology & Industrial Archaeology, West Virginia University, 1535 Mileground, Morgantown WV 26506 (304-293-3829).

Mar. 16-18: Annual Meeting, National Council on Public History, Sacramento, Calif.. Info.: James C. Williams, California History Center, 21250 Stevens Creek Blvd., Cupertino CA 95014 (408-864-8964).

May 11-14: Annual Meeting, Vernacular Architecture Forum, Charleston, S.C. Info.: Jonathan Poston, Historic Charleston Foundation, 11 Fulton St., Charleston SC 29401 (803-724-8486).

JUNE 2-5: SIA 23rd ANNUAL CONF., TORONTO, CANADA. Info.: Phyllis Rose, 127 Hilton Ave., Toronto, Ont. M5R 3E8 (416-535-5723).

Sept. 17: Conference, "Breaking New Ground on Old Buildings II: Historic Architecture and Landscapes in Minnesota and Wisconsin," St. Paul, Minn., sponsored by Minnesota Historical Society and State Historical Society of Wisconsin. Info.: Michael Koop, Minnesota Historical Society, 345 Kellogg Blvd., St. Paul MN 55102-1906 (612-296-5451, fax 282-2374).

OCT. 20-23: SIA FALL TOUR: Madison, Ind. Info: John M. Staicer, Historic Madiosn, Inc., 500 West St., Madison, IN 47250 (812-265-2967).

CONTRIBUTORS TO THIS ISSUE

Aron F. Eisenpress, New York City; Jack Freeman, Philadelphia, Pa.; Randy Harris, Pittsburgh, Pa.; Edward M. Kutsch, Douglassville, Pa.; Carol D. Litchfield, George Mason Univ.; Christopher H. Marston, Homestead, Pa.; Terry L. Peck, Foster Engineering Inc., San Francisco, Calif.; Henry A. Rentschler, Paoli, Pa.; Terry Reynolds, Michigan Technological Univ.; Phyllis Rose, Toronto, Ont.; Robert M. Vogel, Washington, D.C.; and Gerry Weinstein, New York City.

With thanks.

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; institutions, \$40; contributing, \$60; sustaining, \$125; corporate, \$250; student, \$20. Send check payable to SIA to Treasurer, Room 5014-MRC629, National Museum of American History, Smithsonian Institution, Washington, D.C. 20560; all business correspondence should be sent to that office.

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Submission deadlines: Feb. 1 (Spring), May 1 (Summer), Aug. 1 (Fall), and Nov. 1 (Winter).

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TO CONTACT THE EDITOR: Robert M. Frame III, Editor, *SIA Newsletter*, P.O. Box 65158, St. Paul, MN 55165-0158. (612-291-7882).

Room 5014-MRC629 National Museum of American History
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