PRESIDENT’S LETTER

NO. 3

Greetings! We had a good response to our listing of the ACS committees in the last issue of American Canals. We added a member or two to several of the committees and are considering the addition of two new committees. We do need a new chairman for both the Canal Parks Committee and the Publicity Committee. Volunteers for these posts are certainly welcome.

We’d like to mention again that the ACS is your Society. We work best through our committees, so please use them.

Since we’re embarking this year on our second quarter-century of existence, we’re taking the time to review our organizational status to determine if it will serve us as well for the next 25 years as it has for the last 25. The American Canal Society was incorporated in the State of Maryland in October of 1972. Is incorporation as a nonprofit organization, with all the record keeping that entails, going to serve us well in the 21st century?

We would like to call on the advice and assistance of any ACS members who may have a working knowledge of corporate law, nonprofit organizations, etc. Your president would be happy to obtain your assistance.

Elsewhere in this issue is some preliminary information on the 11th Annual World Canals Conference to be held in Illinois this coming September. We will be holding our annual membership meeting on the morning of Thursday, September 17, with a directors meeting set for that evening. I’d like to offer a personal invitation for all ACS members who are able to attend the membership meeting (all are also welcome to attend the directors meeting). If you are unable to attend, please send me, or one of the other directors, any information, advice, or comments you think would help us direct the society for 1999. Till next time,

HEADWAY TO YOU!

WHEELS ON THE TOWPATH

by Philip L. Eckman

Until I visited the National Park Service C&O Museum at Cumberland, Md., and found the 1889 bicycle photograph above, I had not associated early bicycles with canal towpaths. Obviously, however, such recreation along the 1880s C&O towpath was allowed. Other photos in the collection show tour boat rides out of Cumberland to the Paw Paw Tunnel and courting couples at such sites as Great Falls and the Monocacy Aqueduct.

Today, the C&O towpath is heavily used by cyclists and hikers, proving what the old wheelmen said: “I guess we’ve come full cycle.”
CANAL CALENDAR


June 13, 1998. Canal Boat Captains Ball, Akron, Ohio. Contact: Ohio & Erie Canal Corridor Coalition, P.O. Box 435, Canal Fulton, Ohio 44614.


June 1998. 8 to 8 day trip to Nova Scotia at mid-month, visiting Shubenacadie Canal, St. Peters Canal, and other sites. Contact: Carol Gaspari, Canadian Canal Society, 905-934-0453.


August 29, 1998. Cavoring on the Canal, Zoar, Ohio. Contact: Ohio & Erie Canal Corridor Coalition, P.O. Box 435, Canal Fulton, Ohio 44614.

August 29, 1998. Early September, 1998. Inland Waterways International 16 day tour leading up to the World Canals Conference. Includes 9 days by water on the

Hudson R. and N.Y. State Barge Canal and 6 days by bus visiting canal sites in Canada, Ohio, and Indiana. To join British canalists for all or any portion, Contact: Can. Soc. of N.J., 908-722-9556.
"The Spree still flows through Berlin," went the cabaret song in those heady, hopeless days between Kaiser and Hitler. At that time, Germany's capital was Europe's largest inland port. Through the tumult of Nazi Brownshirts, wartime destruction, and superpower division, canal boats plied its murky, sluggish river and a canal system larger than in Amsterdam or Stockholm. The Allied victory reduced the city to ruins, but these vessels, hauling rubble out and construction material in, were vital in rebuilding Berlin. Even after the erection of the infamous wall, limited boat traffic continued to supply the West Zone with oil and bulk commodities. Then abruptly, the concrete and barbed wire barrier fell to bulldozers and souvenir hunters armed with hammers. In that whirlwind of change, Berlin's rich canal heritage would have vanished as quickly but for a group of insightful and dedicated people in the Berlin-Brandenburg Ship Organization. Every city's story is one with its geography, but Berlin's could hardly have begun less favorably. Glacial outwash that formed the Brandenburg plain had left layers of barren soil on hard-packed clay. Scripture warns against building on sand, and this outpost languished as an isolated river ford squeezed between the fortified Slavic settlements of Spandau and Köpenick. The first chronicles recorded the tiny, twin towns of Kölln und Berlin in 1237, when Augsburg, Hamburg and Nuremberg were proud medieval cities. The flat terrain, sandy soil, and geographic location were ideal, however, for canal building. Crude sixteenth century locks and channels begun by Elector Joachim II were developed by a succession of kings and emperors into a major system of canals. Stubbornness, if anything, is a Prussian trait, and these men of vision realized the water flowing in, around, and through their city formed, not obstacles, but highways. Canals would give access to the North Sea via the Elbe River and Hamburg, the Baltic Sea through the Oder River and the port of Stettin, as well as inland Silesia's vast coal fields and industries. As Berlin grew into an economic, cultural, and political power, so did its waterways. Five harbors were home port to hundreds of boats. Nature intended the city to become a port, but Prussian might turned it into the capital of an empire stretching from the Rhineland to the far Baltic Sea, with each corner connected by canals. In the center of this watery web stood Berlin. Located in the city center, the Maritime Museum established in 1993, is among Berlin's least known attractions. My discovery of it in 1994 was totally by accident. With an hour to idle before my departure to Warsaw, I strolled one spring evening through the restored Nikolai Quarter. Tour boats followed the channel confined by the stone embankment of Berlin's oldest neighborhood and passed into the historic Muehlendamm Lock. Then, where Fisherman Island divides the river Spree, I saw an entire fleet of historic canal boats and steam tugs moored in retirement. Any museum would envy this collection of twenty-one vessels narrowly rescued from scrap yards. Ironically, G.D.R.'s economic policy ensured their survival; even dogmatic Marxists needed these privately owned boats to move the G.D.R.'s bulk commerce. In the East, no new boat building took place after the War. However, ancient, these sturdy vessels remained economically viable within the country's compact borders until the fall of the wall brought the harsh realities of the free market economy. I returned in 1997 to where the proud banner, "Berlin was built by the Canal..."
Boat," flapped in the breeze. Unfortunately, my posted letter of introduction to the museum had not arrived. Terribly jet-lagged, my rusty college German stumbled rather than flowed. Fluent or not, it was our lingua franca since Mr. Rainer Roepel, former canal boatman and the staff member on duty, spoke only German. At fifty, he has become a museum piece representing the last generation of families whose lives from birth to death revolved on and around baseball life. By coincidence, a museum exhibition featured canal-boat life.

Herr Roepel explained that boatmen were not rough social outcasts but proud family men who commanded respect and envy from landlubbers. Their mobility gave them little in common with the sedentary communities on the banks. With life in constant motion, locks and harbors gave pause to communicate more than a wave and shout to other passing boat families. Here news was exchanged of family and business. Babies were born in crowded cabins, and growing toddlers played while tethered to the rails. As children grew older, special boarding schools gave them a rudimentary education before they matured into adolescent deckhands, young captains, or wives whose domestic duties included scrubbing decks and making fast lines in lock chambers. For a bachelor or company boat, crews consisted of two or three, captain, engineer, and deckhand, who often helped with the hard work of loading and discharging.

Vessels ended their watery wandering with the freeze-up. Winter gave time for major repairs, temporary jobs ashore, and church, but the season's main event was the annual Schiffest. This occasion brought the scattered cousins, acquaintances, and friends together for a long evening of festivities. Dancing in the decorated halls revolved around the ship model in the center, and as a courtship ritual, the names of maidens attending their first ball hung from its masts and spars. A single young captain, ostensibly admiring the model, would wonder which name on paper matched a demure young woman, waiting for an invitation to dance. These balls lasted late because come spring, the merry-makers could scatter east to far Memel or west to the Mosel River, perhaps not to meet again until next winter.

Other exhibitions in the hold of the 1910 vessel, Renate Angelika, featured the Finow Canal, begun in 1620, brick boats that supplied boomtown Berlin with building material, produce boats loaded with fruit and vegetables that fed the growing population, and a fascinating collection of nautical artifacts of blocks, name boards, bits, and line. The scent of wood and tar lingered in the air, redolent of all things nautical, but those old photographs on display capture not only old vessels. During World War II, the age-old city center was almost leveled. With thousands homeless, historic reconstruction received low priority among Communists flaunting an image of a new, modern Germany. Ironically, vessels from that era survived, but the architecture and aura of old Berlin were reduced by bombing mainly to memories and these old prints on display.

The museum vessels vary. Handsome steam tugs probably towed some of the historic barges moored here. Other boats are self-propelled by steam or diesel engines. Excursion vessels laden with cargos of passengers enjoyed the rivers and lakes of Brandenburg province. In the G.D.R., some boats became improvised floating warehouses, while the stoked boiler of the tug Andreas repelled the winter chill by heating canal-side buildings. Within Berlin and other harbors, the masts gracing several vessels were dropped and secured for bridges, but on the open lagoons of the Baltic coast they were stepped with raised sails for an exhilarating passage. Summers, under perfect conditions, these boats still unfurl some canvas to hone rusty sailing skills.

Amazingly, just ten years ago, these boats were part of the active commerce of these canals, with the museum staff part of their captains, engineers, and crew. A melancholy surrounds Mr. Roepel and the other beached boatmen I talked with. Although the war claimed 50 percent of Germany's canal boats, his father's boat survived both the war and communist economics. Rather that continue the tradition, Rainer's way of life ended in what appeared to be the most optimistic of times. These men's private struggles with unemployment and their adjustment to a new era reflect the struggles of the museum. Die Berlin-Brandenburger Schiffverein is a private organization and receives meager government support during budget deficits and a severe economic crisis. Still, boat excursions on historic steamers bring in some support. Perhaps too, the well-publicized and popular Hafenfest, Harbor Festival, will continue to draw attention to the museum, its vessels, and the organization's mission of preservation.

From the sturdy wood decks, we looked over the harbor where Polish boats laden with coal pull into the locks. Since the fall of the wall, Berlin no longer stands as an isolated island, but rests in the center of Europe. Kaisers, Nazis, Communists, and Democrats all understood how vital canals have been to the country's development, but what role will waterways play in the future? If the wall divided, canals now form the bridge of trade between East and West. Still, after languishing through war and division, these channels are outdated, too small for the 1,350-ton standard European boat. The city's industrial base, once fed by canals, has declined, and construction costs for canal enlargement
are staggering. Will the frenzy of recon-
struction bypass its waterways? In the last
century, no European city had grown and
changed so dramatically. If the future con-
tinues to be equally restless and uncertain,
we can be grateful that its maritime
history and heritage were rescued from
obsccurity, to remind us that fascinating
"Berlin Was Built by the Canal Boat."

The museum at Bamberger St. 58 is
open May to October, Tuesday through
Sunday, 2:00 p.m. to 5:00 p.m. weekdays,
11:00 a.m. to 6:00 p.m. weekends. Tele-
phone 030/2138041, Fax 030/2138042.
The nearest subway stop is
Jannowitzbrücke, close to the historic sites
of the St. Nikolai Cathedral and the
Nikolaiviertel and Maerkisches Museum.
The exhibit is only in German, but younger
bilingual staff members can assist English-
speaking visitors.

An excursion boat is also a popular and
relaxing way of seeing Berlin. The Berlin
Tourist Office in the Europa Center or other
locations can provide information.

For more background, World Canals, by
Charles Hadfield, devotes many pages to
German waterways.

---

**CANAL BOAT FREE-LOADING**

We have heard a story, which we believe to be true, of an itinerant
merchant, vulgarly called a pedlar, who took passage on
board of a canal boat, just before
dinner. He made a very comfort-
able meal, and expressed himself
very well satisfied with the
accommodation and in particular
with the provisions.

After having been two miles on
the big ditch, he took a polite and
affectionate leave of the captain,
regretting that he could no longer
enjoy the pleasures of the inland
navigation and tendering a six-
pence for his passage. The cap-
tain said he must pay for his din-
er, but the pedlar showed him
the rates, which were three cents
a mile, including feed, and de-
parted leisurely, to pursue his
mercantile speculations.

Pittsburgh Mercury,
20 September, 1826
Submitted by
William Dzombak

---

**THE UPPER MISSISSIPPI**

*by Bill Shank*

In October 1997 I had a chance to in-
spect, from the decks of the Mississippi
Queen, the recent works of the Army
Corps of Engineers on the upper Mis-
sissippi River, from St. Louis to Minneapo-
is/St. Paul. This was my second trip on
the Mississippi Queen, the first having been
in April, 1992, on a cruise from Memphis
to New Orleans. (See pages 64-65 of The
Best From American Canals No. 6.)

Generally speaking, there is no great
problem in navigating the lower Missis-
sippi because of the almost continual sup-
ply of water from the west via the Mis-
souri River, and from the northeast via the
Ohio River and its many tributaries. Hence
year-round navigation is possible for large
boats and barge tows.

The same was not true for the upper Mis-
sissippi until recent times. The supply of
water in that section of the river had al-
ways been highly variable, with conditions
favorable to navigation occurring only from
time to time between floods and droughts.

The federal government, aware of the

---

*The Mississippi Queen on a visit to Savannah, Tennessee, editorial headquarters of American Canals
[Photo by Emily Ross Mulloy]*
in Hannibal and Dubuque, but eliminated several stops, before being bused to the St. Paul airport to catch our planes home. Of course, our trip aboard the Mississippi Queen made up for the inconveniences. Food was of gourmet quality, and the regular evening entertainment was professional and excellent.

WELLAND CANAL BOOK REPRINTED

The Welland Canal Company: A Study in Canadian Enterprise, by Hugh G.J. Aitken, published by the Harvard U. Press in 1954, has long been out of print. It has now been reprinted by the Canadian Canal Society, P.O. Box 230 16, Midtown Postal Outlet, 124 Welland Avenue, St. Catharines, Ontario, Canada L2R 7P6. For a copy, send $21.95 plus $3.50 postage and handling charge.

A NEW MIAMI & ERIE CANAL TRAIL

A committee has been formed to save a stretch of the Miami & Erie Canal land in Butler County and to develop the tow path as an all-purpose recreation trail. Long term goals would be to see this trail link up with other state and national trail systems that are planned or already in existence. The committee has named itself The Butler County Canal Coalition and will meet regularly to facilitate research on the canal property, grant writing, etc. Canal Society of Ohio members of the committee, at present, are Bob Mueller and Nancy Gullick.

Interested groups were called together on November 20th by the Union Township Historical Society to view maps and listen to trail proposals put forth by the City of Fairfield and the Butler County Park District, who own some short stretches of the canal within their boundaries. Other participants in the discussion were The Isaac Walton League, The Mill Creek Valley Restoration Project, as well as the C.S.O.

Plans for the towpath trail call for a 5-7 mile stretch in the southern part of Butler County. Some of this area around Port Union was toured in July by the C.S.O. Board of Trustees.

✩ ✪ ✪ ✪ ✪ ✪
STEPS IN BUILDING
OHIO & ERIE CANAL BOATS
by Terry K. Woods

[Editor's note. Among the other hats he has worn, A.C.S. president Terry Woods has served as a consultant to the National Park Service in the planning of the museum of canal-boat building that is now one of the attractions at the Cuyahoga Valley National Recreation Area between Cleveland and Akron. One of his assignments was to prepare an outline of the construction process as it was typically carried out on the Ohio & Erie Canal. The resulting document is reproduced here, with the acquiescence of the National Park Service. The accompanying photographs of museum exhibits are by the author.]

1. A contract would be entered into with a customer to build a specific type and design of boat, or a boat would be constructed on speculation with no particular customer.

2. When a boat was built to order, the contract would describe, in general terms, the type of craft to be built, generally requiring it to be similar in design to a previous boat by that builder, but with some specific changes or alterations desired by the customer.

3. An area on the floor of the main building in the yard would be cleared to lay out the dimensions of key components of the new boat.

4. Of the 45 to 55 members (ribs) making up the frame of a canal boat, the majority were of identical shape and size. Only the first half dozen or so at the bow and another half dozen or so at the stern were different, to give a pleasing and efficient shape to the bow and stern. So only one mid-ship frame member and three or four key members at both bow and stern were required to be laid out.

5. These ribs, then, were laid out full-size on the floor of the building. The dimensions were obtained, to a large extent, from full-size templates of specific frame member curves and shapes that had been developed over the years by the master of the yard. As a result, boats built by a particular yard master had a well-defined shape and style that identified their builder.

6. The shapes of the frame members that were to be laid out were deeply etched into the packed earth of the building's floor with a knife, or more likely, cut into or onto the freshly planed wooden floor of the building or onto the freshly planed wooden surface of a special platform called a scree board. The dimensions were then transferred from the scree board to the work piece by measuring with sharp-pointed dividers.

7. While this was going on, a space in the yard was prepared for the erection of the boat. The yard master would have the proper area cleared and make sure that the ground was leveled and sufficiently tamped and solidified to support the total weight of the keel blocks and boat without any of the blocks sinking into the earth. The master also had to ensure that there would be sufficient slope from the top of the keel blocks to the canal for the boat to slide easily down the temporary slipways that would be built at launching.

8. Another of the master's jobs at this time was to obtain the lumber and iron required for the new boat. Ohio & Erie boats generally used about a ton of iron each. This was in the form of deadeyes, rubrails, and fasteners. The type and amount of iron required didn't change much from boat to boat and could be easily acquired from a local blacksmith or one in a nearby larger town if ordered far enough in advance.

The lumber in a canal boat consisted mainly of white oak for the frames and hull planking and pine or poplar for the cabins and decking. Nearly every stick of this was locally grown and milled. The large number of boat yards in the Boston/Peninsula area along the Ohio & Erie canal were there primarily because of the plentiful supply of good timber.

Nearly every yard master either owned a sawmill, was part owner in one, or had a deal with a local mill to supply the proper amount and type of lumber nearly upon demand. So obtaining the proper type and amount of lumber was merely a matter of calculating what was needed, determining what was on hand in the lumber sheds, and ordering the rest from the sawmill.

9. No description has yet been discovered of how local canal boat builders laid a keel or set up a new boat. It is likely that a version of the system employed for years in the construction of small, wooden merchant ships would be employed.

In this system, a series of large, fabricated wooden blocks were laid out along a line where the boat would lie. The tops of these blocks were all leveled and high enough above the ground so workers could have access to the future bottom of the boat for planking.

10. The majority of Ohio & Erie canal boats were constructed with an integral 6" by 8" or 12" by 12" wooden keel. This keel could be rough-sawed from one huge timber, but more than likely was fabricated from shorter pieces (to minimize warpage by proper grain orientation), then winched and manhandled onto the keel blocks, trued and leveled, and clamped into place.

11. The bottom of a typical Ohio & Erie 3-cabin freighter or line boat was a flat or vee bottom with a small dead rise and well-rounded chines (corners). The “floor” portions of the frame members were notched over the keel then, a 6" by 6" or 8" by 8" keelson was placed on top of the keel and frame members and pinned and bolted into a solid unit.

WOODEN NARROW BOATS

A collection of historic wooden canal boats, not normally open to the public, is available for viewing by American Canal Society members visiting England. The collection is located on the “Cheshire Ring” near Manchester in northwest England. To arrange a visit, write the Wooden Canal Boat Society, 5 Oaken Clough Terrace, Oaken Clough, Ashton-under-Lyne OL7 9NY, England. Membership in the society is also available, and a quarterly newsletter is published at a $10 per annum subscription cost.
12. The frame members (ribs) were made up of five sawed-to-shape pieces glued and tree-nailed into one member. This was to obtain the rounded chine shape of the hull with a maximum economy of lumber and to minimize warpage by proper orientation of the grain.

13. The necessary shapes for the keel, frames, and planking were sawed out of large timbers on a sawing stand or in a pit. A piece of timber would be positioned in the stand, and wedged and shimmmed for the proper sawing angle. Then two men, one on the ground or in a plank-lined pit, the other on a scaffold or the ground, would saw out the complex shapes chalked on the upper and lower surfaces by the yard boss or foreman. The planking and the outer curves of the frame members could readily be sawed to shape. The inner curves would be rough sawed, then interval saw cuts made to the final dimension line. A workman with an ax would remove most of the rough material, then smooth it to dimension (across the grain) with an adz.

14. Key center-frame members would be assembled from the individual pieces in the yard near the erection site, then manhandled into position on the keel with winches and muscle. Their alignment and level would be checked, then they would be locked into position with temporary wooden bracing, then bolted and pinned.

15. Special, smaller frames were used to shape the rounded hull at the bow and at the stern leading up to the transom. These were called “cant frames” and were erected on the sloping keel at the bow and stern. They often had no floor section and, as such, were often made up of just two pieces or sometimes sawed out of a single timber.

16. Each of these cant frames had to have its edge uniquely beveled to provide a smoothly curved exterior planked hull. Key cant frames were rough sawed and beveled with an adz to the approximate angle prior to erection. When all the frames were placed on the keel, thin strips of narrow wood called battens were tacked to the frames longitudinally. The remaining frames to make up the curved bow and stern were then erected and beveled to make the batten form a smooth curve. The amount of final shaping depended upon how much change in the standard bow and stern curves the customer required.

17. Once the boat’s skeleton was erected, cross braced where required, and batten tied longitudinally, the keelson could be lifted, lined up with the keel, then placed in position on top of the floor sections of the frame members. The keelson was then bored through using hand augers. The bored hole was a little smaller diameter that of the securing bolts. The bolts were driven through the keelson and frame floors into the outer keel. Sometimes the fastener was a blind fit, like a nail. Sometimes the fasteners were driven completely though the keel.

18. Any bow and stern dead wood, which had already been sawed and shaped, could now be manhandled into position, bored, and fastened with through fasteners clenchd over reinforcing washers.

19. Initial planking of the hull could now begin. Scaffolding was assembled, and the steambox fired with sawdust and scrap wood. The master and foreman would put up the shear strake (the topmost plank) and the garboard plank (next to the keel) on each side of the boat.

20. Before the rest of the hull planking was installed, it was necessary to add the deck beams. This tied together the skeleton and made the structure stable so it could not be distorted while the remainder of the hull and deck planking was installed. The main deck in a canal freighter was only a foot or so above the frame flooring, the hull being raised up some three or four feet above loaded waterline. This produced the midship holds or cargo space of a typical Ohio & Erie freighter. Cleats or steps were bolted to the frame side members, then 3" x 12" deck beams were installed.

21. The whole structure of the hull’s skeleton was now complete and ready for the final planking. The shaping of the hull planking for a wooden ship, even one as relativity simple as a canal boat, was a job that required a great deal of skill and experience.

The total planked width of a boat from the keel to the shear strake was greater at the boat’s center than it was where the bow and stern were shaped and contoured. The line of each plank could be made up of a number of individual pieces to form a continuous line (like siding a house). The width of that continuous line of plank then, was required to be wider at the middle of a boat and thinner at the bow and stern to make the lines of plank parallel. The width change was normally determined by calculating the number of planks required along the maximum-periphery frame; then figuring how wide the planks would have to be at each tapered frame to use the identical number of planks. The bevels of the planking edges would also have to be determined as the boat’s curves were followed. A wedge-shaped gap between planks was required for a caulking-iron and oakum.

The yard master and the foreman would set off the next line of frames (dubbing the frame edges with an adz to the final angle as shown by the battens and previous plank) while others in the yard made the planking from converted timber in the shed and got it steamed.

22. The steambox, itself, was a heavy, oak-planked box about two feet square by 20 or 30 feet long with a brick furnace and
chimney. Steam was let into the box from a boiler alongside. There were doors at both ends of the box. Several planks at a time were inserted into the box, then the doors were closed and any gaps stuffed with rags to keep the thing fairly steamtight.

When thoroughly soaked with steam, planks became very soft and pliable. They would also be very hot when they were drawn out of the box by two or three men and carried rapidly over to the nearby boat skeleton. The carriers had to wear gloves and have thick pads on their shoulders. The planks were then shoved, shouldered, wedged, shored, and clamped into place. This final fitting had to be done at speed, before the planks cooled, dried, and became rigid again.

23. Deck planking was done next. Here there was no need for the steamy process.

24. Before the actual caulking of the hull could begin, the hull planking was faired by hand planing to give a smooth surface to the seams. The pitch for the caulking, in block form, was broken up with hammers and placed into a cast iron pot. The pots were placed on a metal grid over a wood and shavings fire. There might be any number of these glowing fires and pots along both sides of the boat, depending upon how many caulkers were working.

The caulkers themselves would be squatting on low, work-box stools unpacking oakum in long skeins from the bales. Each caulker would be wearing a leather or canvas apron. They would run the oakum skein across their laps and roll it into a thread of uniform thickness, then form the thread into a ball of manageable size. As soon as enough oakum was rolled, a caulker would begin laying a thread into the garboard seam, then to one side and upward, working on a "shift" of seven to eight planks. This was to prevent too much pressure and oakum being put into one seam and closing up the seam on adjacent planks.

The caulker carried his tools, a mallet and several caulking irons, in his tool box stool. The mallet had a double-ended cylindrical striking head of about two inches in diameter, banded with an iron ring. The handle was about 18" long by 1 1/4" in diameter. Slots were cut through the striking heads to provide a resilient blow rather than a dead one. The irons looked like a cross between a metal chisel and a thick putty knife.

The first oakum thread would be laid as a straight line in the bottom of the seam. The second and third or fourth would be looped in by the forefinger and iron to widen the lay of the thread to fill the seam. Caulking continued up the hull by driving oakum into the wedge-shaped seams with mallet and irons. The density of the oakum packed into a seam was tested by driving a spike iron into the seam. Then the dressing iron was used to compact the oakum and a reeding iron to give a parallel orientation to the dressed oakum.

The caulking was finished at the outside of the seam after reeding and molten pitch was "rolled on" using mop or brushes, filling the seam. After the pitch had hardened, the excess was scraped off leaving a watertight joint.

25. Now the cabins or houses were erected on deck. There was more freedom here from what had been done before. Each customer had his own ideas about how he wanted his living and crew quarters and cargo space. Most freighters of this period had a crew's cabin in the bow and a captain's cabin in the stern. The long-haul boats would have a stable cabin in the center. Boats for carrying grain and perishables would have the space between cabins housed over in a long house. Large openings would be installed along both sides for loading and unloading cargo. These could be closed when running with double-hung shutters. For boats carrying bulk cargo, the midship holds would be open and a narrow catwalk would connect the roofs of cabins. Hatches from the top deck or catwalk allowed entry into the cabins. The bow and stern cabins usually sported small windows, closed with double-hung shutters. These windows were sometimes closed with screen, but no glass. The living quarters cabins would be fitted with built-in bunks and cupboards. The stern cabin would carry a coal stove.

26. The priming and painting could begin next. The majority of Ohio & Erie boats had white hulls and cabins with green or black trim. The steel mill near Four Mile Lock south of Cleveland poured so much iron oxide effluent into the canal, however, that many north-end boatmen took to having their boats' hulls painted iron color to
BIBLIOGRAPHY

A Canal Boat Primer, (Syracuse: Canal Museum, 1984?).
Sweeney, J.B., Drawing of an Ohio & Erie canal boat, (New Philadelphia, 1950s?).

UNTETHERING DEFENDER

GILBERT GUDE AND THE MONOCACY AQUEDUCT

by Kate Mulligan

[This material was first printed in Montgomery Magazine of Gazette papers, and is used here with their permission.]

Gilbert Gude took on a familiar role when he led a photographer and a reporter on a tour of the Monocacy Aqueduct. The former four-term Maryland congressman (R, 8th Dist.), who once led the battle for the creation of the C & O Canal National Historical Park, is now fighting to save one of the park’s most historic structures.

The aqueduct, located near Dickerson, is a beautiful sandstone structure built during the early 19th century to carry canal boats across the Monocacy River. It survived repeated efforts by Confederate soldiers to blow it up but since then, floating logs and debris in flood waters have battered its columns repeatedly. After Hurricane Agnes in 1972, National Park Service staff encased the aqueduct in a steel harness to prevent further damage. Now they are considering options for its restoration.

Gude is quick to tick off the reasons the aqueduct should be saved.

“First is its historic importance. The aqueduct is part of the fabric of a trail that originated with George Washington’s vision to open up the west by building a canal along the Potomac River. If we replace the aqueduct with a makeshift bridge, we lose all that history,” he says, adding, “In itself, the aqueduct is a monument to the early bridge builders. It’s a beautifully engineered, using classical motifs of the time.”

The former politician knows what it takes to pry funds from a deficit-conscious Congress and a financially strapped park service.

“We need to be advocates for the aqueduct. The C & O Canal Association has done a good bit to keep the attention of park service staff focused on restoration but we need to make the aqueduct more visible to the general public. Its out-of-the way location has meant that it has never had the support it deserves.”

More than 25 years earlier, Gude led a delegation to the same spot. Then, he was trying to persuade public officials that the area around the C & O Canal should become a national park. He had been elected to Congress in 1967 after serving terms in the Maryland House of Delegates and State Senate and finally had a chance to work at the national level to protect the canal area from development.

Gude’s interest in establishing the canal park grew out of his earlier work. “Suburbia was on its way,” he says. The Parks and Planning Commission was very active. I was interested in stream valley
parks so my attention naturally turned to the Potomac River.
From that subject, it was only a short jump to a concern about the C & O Canal. "I always knew a park would be a good thing," says Gude.
The park, however, was by no means, a sure thing.
"Sometimes, the park history has seemed like the 'Perils of Pauline,'" says Gude.
Today, the battle is to maintain the park and canal structures in the face of frequent flooding. Decades of organizing and advocacy to protect the area's historical character preceded the current struggle.
One of the most publicized of the early adventures occurred in 1954. An editorial in the Washington Post supported a plan to build a scenic parkway along the abandoned bed of the canal. William O. Douglas, then a 55-year-old Associate Justice of the Supreme Court, challenged the Post's editorial writers to walk with him the full length of the canal to discover what would be missed by someone traveling in an automobile.

Gilbert Gude

Architect Frank Lloyd Wright even created an architectural design for buildings and roadways for Sugarloaf Mountain that promoted the use of cars. The Interstate highway system was coming in and the German autobahns were much admired.
On his last day in office, President Dwight D. Eisenhower designated the park area a National Monument, offering it some protection. However, he also offended the chair of a key Congressional committee by failing to consult about the committee by failing to consult about the designation. Gude and congressional colleagues smoothed over the ruffled feathers and kept up the pressure until the C & O Canal National Historical Park finally was created in 1971.
"It was so nice to be recommended by those two people who had such concern for the environment," she recalls.
"Gilbert's contribution to the quality of life in the region has been enormous," Morella says. "He really bound to nature in the way that Shakespeare used the term. The river, the canal and the wetlands, he's concerned about them all. He's our Theodore Roosevelt, not in the Rough Rider sense, but in his advocacy for the natural environment. He's a gentle version of Roosevelt."
In 1975, Gude made an unconventional decision about how to spend the August congressional recess. Instead of making the rounds of political barbecues, he traveled the 400-mile length of the Potomac River from its origins in the West Virginia mountains.
"I was always taking reporters to see different areas of the Potomac River. One of them said, 'You ought to travel the whole length.' I thought it was the dumbest idea I'd ever heard but the thought kept growing in my mind," he says.
"Learning about the Upper Potomac has been, for me, a search for congruence among politics, history, science, literature and poetry," he writes in the introduction. They are big subjects but the book manages to combine elements of all of them in a readable account "Like any congressman, I'd been a careful observer and interpreter of my constituencies, so I was comfortable studying the small valley and talking with its inhabitants," Gude writes. He includes reminiscences of mining on the terrain.
He concludes, "At its beginning and at its end, the Potomac is drawn together by a common history of environmental abuse."
Five years later, Gude published "Small Town Destiny: The Story of Five Small Towns along the Potomac Valley." The book opens with a loving remembrance of his childhood in Rockville, then the quintessential small town. He describes the unleashing of the wrecking ball and bulldozer on downtown Rockville in 1965 and the subsequent loss of small town community and social life. He calls the book an effort "to demonstrate American small town social and cultural reactions and resilience to the

Monocacy Aqueduct
influences of today's world."

After Gude left Congress, he spent the years from 1977 to 1986 as director of the Congressional Research Service. Today, his resume opens with the all-purpose words: writer, lecturer, consultant. At 74, he keeps busy. In addition to working on the Monocacy Aqueduct project, he sits on the boards of the Montgomery County Historical Society, the Maryland Historical Trust and The Accokeek Foundation and is past president of the Maryland Humanities Council.

One activity seems to lead to another. For example, Gude helped found the Potomac River Basin Consortium to bring academics together to look at research concerning the Potomac River.

"A member of the group said, 'You ought to teach a class about this,'" he says.

Gude proposed the idea to the Georgetown School of Continuing Education, which has offered Potomac River Overview for the past six years. The class offers Gude a chance to share his most persistent interests with a wide variety of people. In a series of three field trips, the group travels to the spot where the Potomac River begins, walks through the Paw Paw tunnel on the canal and explores some of the small towns along the Potomac. Ecology, natural and social history and contemporary issues of small town life are all incorporated in Gude's view of the Potomac River.

Gude also remains fascinated with what is happening closer to the Bethesda home where he lives with his wife, Jane.

"Suburbanization has come to Montgomery County," he says. "What has happened here has happened to America."

---

**LETTER TO THE EDITOR**

[Ref.: "1920s Views of the Lehigh Canal," by Walter Messek and Bruce Russell, American Canals, No. 103, Autumn 1997, pp. 6-7.]

There are several corrections to the captions of the photos for the issue above. These corrections have been verified by Lance Metz.

Middle photo, page 6: There was no gravity railroad at White Haven which was the head of the upper division. There was a gravity railroad at Mauch Chunk (today's Jim Thorpe) known more commonly as the "Switchback Railroad."

Bottom photo, page 6: Lehigh Canal boats carried a maximum of 90 to 95 tons, not 150 tons. However, these boats could not carry that much on the Morris Canal since the Morris Canal was not as deep as the Lehigh Canal. The boats did not move at five miles per hour. Lance advises that captains on the Lehigh Canal were fined if they went faster than four miles per hour. We usually think of three miles per hour as normal on the Morris Canal.

Bottom photo, page 7: Lehigh Canal and Morris Canal section boats did not have to be "unhinged" to go through the Morris Canal locks. Barges from both canals were disconnected in the plane cars that carried them over the inclined planes of the Morris Canal. Section boats were also convenient for other reasons: separating two different cargos, turning around in the canal where there wasn't room to turn a single boat of the same length, loading or unloading at different locations, or carrying a smaller cargo with one section only.

Sincerely,
Bill Moss
Canal Society of New Jersey

---

**LOCK FOR SALE**

Lock 34 on the West Branch Canal, near Lock Haven, Pennsylvania, is for sale. The 1.1-acre site also includes a well-preserved lock house and Susquehanna River frontage. Due to its flood-plain location, the property may not legally be used for residential purposes; daily use is permissible, perhaps as a museum, visitors center, or simply historic site.

The asking price is $59,900, but the possibility of a better deal is inferred from the fact that the property has been on the market for a considerable length of time.

For more information, get in touch with A.C.S. member David C. Hill, 2714 Hillside Avenue, Williamsport, Pa. 17701, phone (717) 323-6061.

---

**Canal Calendar - Concluded from Page 2**


September 17, 1996. American Canal Society annual meetings, in conjunction with World Canals Conference (above). 10:30 a.m. – membership meeting: 7:00 p.m. – directors meeting. Contact: Terry Woods, 330-832-4621.

September 19-20, 1996. Canal Town Days, Palmyra, N.Y., on the Erie Canal. Contact: Mr. or Mrs. Cooper, 315-597-5700.


November 7, 1996. Towpath hike, Jackson Township on the Ohio & Erie Canal. Contact: O&B Canal Corridor Coalition, P.O. Box 435, Canal Fulton, Ohio 44414.

February 26-27, 1997. Illinois Valley Symphony Concert featuring Illinois & Michigan Canal and wat...