

AMERICAN CANALS

BULLETIN OF
THE AMERICAN CANAL SOCIETY

Vol. XXXII, No. 4

Dedicated to Historic Canal Research, Preservation, and Parks

Fall 2003

From the President

by David G. Barber

In England, the west side of the country is drained by the River Severn which flows south from the Welsh border to the Bristol Channel. From Stourport south to Gloucester, the river is navigable by fairly large vessels. At Gloucester, however, the river becomes very twisty and subject to some of the largest tides in the world. This difficult section of river was bypassed by the construction of the Gloucester and Sharpness Ship Canal, providing safe navigation to Sharpness, where the estuary becomes wider, deeper and straighter. The midpoint on the ship canal is Saul Junction.

Saul Junction is so named because from there the derelict Stroudwater Canal goes east for seven miles to Stroud where it makes an end-on connection to the derelict Thames and Severn Canal. The T&S then courses east for twenty-nine miles over the Cotswold summit to Lechlade. Lechlade is the upper limit of navigation on the Thames from London. The two canals total 57 locks in 36 miles and include the two-and-a-quarter-mile long Sapperton Tunnel, Britain's third longest canal tunnel. In 2001 after decades of campaigning and restoration work by volunteers, British Waterways announced that they plan to spend 82 million pounds over the next ten years to restore these two water-



Tour boat cresting the plane in the cradle car on the Elblag Canal.
(See story on page 13.) Photo by Linda J. Barth.

ways to navigation.

I point out all of this because on the web site for the Cotswold Canals Trust, they report that as a result of this investment, British Waterways estimates that there will be 1.8 million added visitor days per year to the area, 8.5 million pounds per year, increased visitor spending, 500 permanent new jobs along the canal route, and 1,400 construction jobs. A recent pamphlet of the Waterways Trust ups the number of new permanent jobs to be created to 800. The British restore canals because it makes economic sense.

In New York and Pennsylvania, the Delaware and Hudson Canal once extended for 108 miles from tidewater at Eddyville, NY, to Honesdale, PA. The most intact part of the canal

is from Eddyville to Port Jervis, NY. This section is 59 miles long and has 57 locks plus two Roebling suspension aqueducts and ten wood trunk aqueducts. The valleys through which this part of the canal runs lost population with the closing of the canal in 1899 and have never recovered. It is one of the poorest areas of New York State.

Just to the south of the D&H Canal is New Jersey, the most densely populated state, and New York City, the financial capital of the world. The people who live in New Jersey and the city and its suburbs have many options on where to spend their leisure time and money. At present, there is no outstanding reason to spend that time and money in the valleys between Eddyville and Port Jervis

(continued on page sixteen)

American Canals

BULLETIN OF THE
AMERICAN CANAL SOCIETY

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The objectives of the American Canal Society are to encourage the preservation, restoration, interpretation, and use of the historical navigational canals of the Americas; to save threatened canals; and to provide an exchange of canal information. Manuscripts and other correspondence consistent with these objectives are welcome.

An annual subscription to *American Canals* is automatic with ACS membership. Annual dues: \$20. Single copies, \$3. Four issues per year.

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ISSN 0740-588X.

Other Publications: *The Best from American Canals*; *American Canal Guides*, William E. Trout III, editor and publisher

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Wabash & Erie Canal Conference & Interpretive Center Opens in Delphi, Indiana

by Dan McCain

When the original Canal Association members first conceived their plans for restoring the old Wabash & Erie Canal through Delphi in 1971, they had no money, little community support, and no idea when this undertaking could produce results. They did, however, have a vision, one that has prevailed through the years. This group of mostly retired residents represented a generation that had come through the depression, raised their children in this mostly rural community, and found satisfaction in dreaming of the impossible.

The next generation of Canal Association leaders adopted the vision from the 1970s and produced a most unique facility -- the Wabash & Erie Canal Conference and Interpretive Center. Scores of volunteers have come together (many almost daily) to create and build Canal Park and the exciting exhibits comprising the center. This non-profit organization is solely a volunteer effort and has operated for 29 years without any paid staff.

Planning for a facility big enough to have meetings, meals, programs, and plays began a decade ago. The Long Range Planning Committee sketched the plans and looked for grants and donations for the nearly 12,000-square-foot, two million dollar facility. The Department of Transportation was the primary source of the building costs. In addition, the museum galleries, including over 60 exhibits with even more



The Wabash & Erie Canal Conference and Interpretive Center in Delphi, Indiana. Photo by Audrey Barber

graphic panels, will shortly become the Canal Interpretive Center for all to enjoy. Its cost could have been a half million dollars if not for the thousands of volunteer hours devoted to its completion and a grant from DNR's Wabash Heritage Corridor Fund.

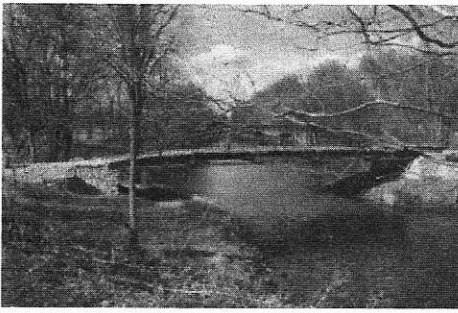
The center, adorned with replicated downtown facades from the 1850s, opened during the Canal Days Festival in July. The festivities began with a ribbon-cutting ceremony at noon on the 4th. Among the dignitaries were Delphi Mayor Lee Hoard; Jim French, past Wabash & Erie Canal Board President; Dan McCain, present Canal Board President; Ed Gruber, Canal Board Treasurer; and Bob Schmidt, Canal Society of Indiana President.

For the "Wedding of the Waters" ceremony, we used actual water taken from the Erie Canal and Genesee Valley Canal in New York State and the Welland Canal in Ontario. Bottles of the water were poured into a barrel just outside the front door of the new Canal Conference and Interpretive Center in Delphi. The

ceremony signaled the public opening of the new center 178 years to the day on which Governor DeWitt Clinton christened the Erie Canal.

The center contains state-of-the-art exhibits, including a real water model of a canal that includes an operational reservoir, aqueduct, lock and grist mill. The center will become a regional attraction with exhibits to entice children as well as adults. Our volunteer staff expects to complete the exhibits by the end of 2003.

Initially the center will be open to the public on weekends (Saturday 10-4, Sunday 1-4) until the display area is finished, and there will be no admittance charge until that time. Donations are welcome and will be needed to see the full completion of these galleries. The other half of this beautiful facility will house three conference rooms that may be rented for catered receptions, meetings, reunions, and a variety of community functions. Income from these uses is expected to cover the center's operating expenses, although an endowment fund has been started to cover future mainte-



The restored 1873 Paint Creek Iron Bridge now spanning the canal is on the National Register of Historic Places. Photo by Michelle Pearson

nance and replacement expenses.

The setting in Carroll County places Canal Park and this new center at about the midway point of the full length of this historic manmade waterway across Indiana and Ohio. Construction began in 1832 and was completed from Toledo to Evansville in 1853. At 468 miles, the Wabash & Erie Canal was this nation's longest canal. Significant structural remnants of the canal are identified along Delphi's Historic Trails, including three National Register Sites: the Irish workers construction camp site; Lock #33 and lockkeeper's house site; and the Harley & Hubbard Lime Kilns. The restored 1873 Paint Creek Iron Bridge now spanning the canal is on the State Register. These sites and many scenic vistas can be found along the 7-mile trail system and are accessible by hiking from the new center. The trails, too, are a product of volunteer efforts for the past 14 years.

The opening ushers in a new era of historic education for participants of all ages.

Right: Wedding of the Waters ceremony at the new Wabash & Erie center in Delphi. Photo by Michelle Pearson

SECOND TIME AROUND:

THE HENNEPIN CANAL

by Mark Beech

The Hennepin Canal in north-west Illinois has given me two very pleasant surprises.

The first was discovering it. Fifteen years ago on the way to Chicago I zipped over a bridge on I-80 and there it lay. I stopped at the Visitor Center and got some stuff to read. I was thrilled to find an historic canal so close to my home in Nebraska.

The second surprise came this summer (July 2003) when Linda and I took a whirlwind three-day tour, trying to see as much as we could in a short time. We were bowled over by how masterfully the State of Illinois has developed the old canal into a multi-use, 75-mile-long park.

A broad, meticulously maintained, hard surfaced trail follows along the water's edge. This alternates from north bank to south as circumstances warrant. For most of their length, the canal and trail glide through mature woods. But

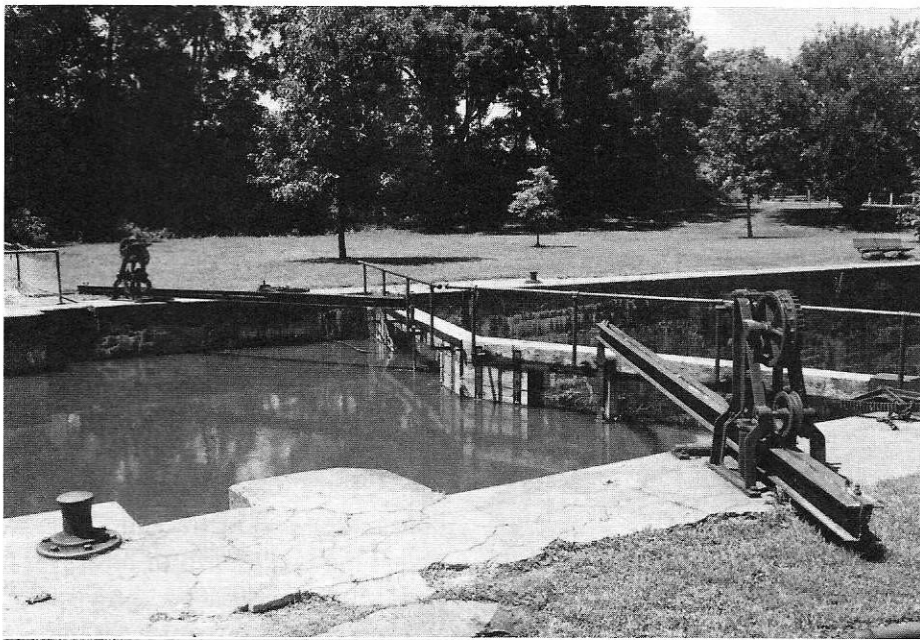
the best thing is, the canal is watered for almost its entire length, with 32 locks along the mainline.

Many of these locks are little parks of their own, nicely mowed, with parking and historical placards to tell you where you are and what you are seeing. A variety of plants in and out of the water add a sense of abundant nature.

The whole complex gets plenty of use, but doesn't feel crowded. Other patrons were constantly in view, fishing, jogging, biking, and canoeing. At Lock #24 a couple seemed to be on their first date. It was rather romantic to watch the guy explaining to the gal how the lower gates worked. Meandering through lush farmland, past little midwestern towns, the Hennepin today is a secluded ribbon of serenity.

The main historical reason that this canal has survived in such good shape is that it is the youngest of the old American canals. After many surveys and years of lobbying by local promoters, work finally began in 1892 under the overall leadership of Major W. L. Marshall, of the US Corps of Engineers. Completed late in 1907 the canal remained open for busi-





Nearly complete winches on the upper gates of Lock #24 show visitors how locks were originally operated. Unfortunately, no locks actually work at this time.
Photo by Mark Beech

ness until 1951, and after that it was preserved essentially intact till 1961 when changes were begun that made it impassable.

In 1970 the Hennepin was turned over to the State of Illinois to become the splendid park we now see. The canal has never been upgraded or enlarged.

The canal began as a sound idea, but failed commercially. Conceived as a way to extend water transportation directly to the Quad Cities* from Chicago via the Illinois River and Chicago's I&M Canal, the Hennepin begins where the Illinois turns south and from there runs west to the Mississippi just below the mouth of the Rock River.

The canal prism was originally 52' wide at the bottom, 80' wide at the surface, and 7' deep. Locks are 35' wide and could

The Quad Cities are Moline and Rock Island, Illinois, and Davenport and Bettendorf, Iowa.

accommodate a vessel 144' in length. The canal enjoys an ample supply of water from a dam on the Rock River about 30 miles north of the summit level. This is delivered by a feeder canal of the same cross section as the mainline.

But by the turn of the century

railroads were well established and had already connected the Quad Cities to Chicago. The canal's most important bulk cargo, coal from central Illinois, vanished when the coal fields closed. And as a final blow, the Hennepin, which had been too small to begin with, was dwarfed when "modern" navigation opened in 1933 on the Illinois River using 110' x 600' locks.

In one respect, however, the Hennepin was a great success. It was the first major civil engineering project in America to utilize poured concrete, rather than cut-stone masonry. The experience gained on this project paved the way, so to speak, for the Panama Canal a few years later, and for all the massive public works projects to follow.

The reader may question why, as a canal aficionado, I needed 15 years to take a closer look at the Hennepin Canal. Well, I never forgot it, but other matters always intervene to keep us from the really important things in life, like having a good time.



Just west of Lock #24, this road crossing shows the typical arrangement of one culvert for the trail and another (far right) for the canal. Photo by Mark Beech



Aqueduct #9 carries the feeder canal over the Green River. Five of the original nine aqueducts are still in use. Photo by Mark Beech

Then David Barber became ACS President and started preaching his welcome gospel of canal salvation, the doctrine of restoring towpath canals to navigation.

My spirit was lifted up and I resolved to check out the Hennepin to see how difficult it would be to restore navigation there.

Canal Parkway Superintendent Steve Moser, along with staff members Tish Swinehart and Judi Jacksohn, after working tirelessly to make the canal into a great park, are probably not delighted to have a stranger suggest that even more could be done, but in spite of my fixation, they have been very helpful and friendly. Thanks, gang.

The problem is, of course money, as always. Any effort to get boats going through the canal again would have to be taken on by a wide coalition of government and private forces. I'm betting, though, that these forces are out there. In addition to the odd federal and state dollar, the Quad Cities area has a major boating industry.

The principal impediments to through navigation at this time are the lack of functional lock gates and the fact that 52 bridges have been replaced by fills and culverts (counting both mainline and feeder). Also, new bridges, like that on I-80, have been built without regard to the head clearance on the canal below.

There are extra problems at both ends related to flood control.

Four of the eight mainline aqueducts have been replaced by inverted siphons. There is also some silting as one might expect.

But if you are a "the cup's half full" kind of thinker, the Hennepin has a tremendous amount going for it.

It's almost all there. Its water source is intact and reliable. All lock chambers still exist. An enviable park infrastructure is in place to attract and support boaters. A recreation-hungry, boat-loving urban center lies at the canal's west end. This is a rebirth of navigation just waiting to happen.

Here's how I would get things started:

(1) Do a specific, complete engineering appraisal of all the physical modifications needed.

(2) Develop specifications and a strategy to deal with the head clearance problem. This might be something like setting an ultimate goal of (say) 12 feet, and then working up to that in stages. For example, clearance under I-80 near Sheffield is about 8 feet. A



Near Sheffield, a scant 8 feet separates one hundred years of transportation history, where I-80 roars across the peaceful canal. Photo by Mark Beech

lot of boats can get under that now, and changing it is a big deal. But when that is the last 8-foot bridge on the canal, there will be more motivation to raise it.

(3) Track down all individuals and groups interested in through navigation, including those who could stand to profit. Get them organized behind a strong leader. Drum up a lot of volunteers.

(4) Use the old trick of starting the project where you can go the furthest with the least effort. This worked for DeWitt Clinton. It can work for the Hennepin.

(5) Begin actual construction by restoring one lock to working order, using metal gates. This will provide experience and refine time/cost estimates. Get everything right on the first lock before moving on. One important option that should be studied is to place new, smaller locks inside the old lock chambers. In the long run such a plan could be less expensive and would provide locks that are more reliable and easier for the public to use.

After thinking this over for a couple of weeks, and getting input from Dave Barber, I'm convinced that lock inserts are the correct design decision. There are valid considerations that place minimum dimensions at 13'x60'. That could range up to (say) 20'x80' maximum. Specific surveys and studies need to be done to pinpoint optimum lock dimensions relative to typical area boat specs and costs as a function of lock size.

(6) When it comes to the fill and culvert problem, the cheapest, simplest, fastest solution needs to be developed. Since bridge spans



Everywhere engaging vistas soothe the ruffled mind, inviting the viewer deeper into the tranquil scene. Photo by Mark Beech

need to be no more than lock width, lock size (and head clearance) must be settled first. For 13' locks, you could almost get away with precast concrete box culverts. Any bigger and conventional bridges are probably more practical. But even a 20' bridge is small, and can be spanned with precast deck segments for speed and simplicity.

(7) One promotionally strategic move would be to build a nice marina just east of Colona, Illinois, where I-80 jogs north to get around the Quad Cities. It is my preliminary assessment that from there to the Visitor Center near Sheffield (around 36 miles) is the easiest part of the canal to restore. The Visitor Center already has a boat basin which could be developed into a modest marina, and it, too, is near I-80. Plus, from the Visitor Center east to Lock #21 (the first one descending toward the Illinois River) is another 5.6 miles of unobstructed canal.

So, in this "easy zone," six

locks, twenty-five small bridges, and one aqueduct buy forty-two miles of navigable canal.

All in all, the Hennepin Canal is a beautiful park, and I believe a prime candidate for upgrading to through navigation. Such an effort could almost pay for itself dollar for dollar, and would definitely pay for itself in terms of the human satisfaction provided. Think of offering boaters the "Great Circle Tour" east through the canal, down the Illinois, and back up the Mississippi to their starting point.

Restoring the feeder would add another thirty miles of scenic waterway for boating.

The Hennepin fell through the cracks of history when it was born. Now it has the chance to be reborn on the leading edge of a new era of boating on navigable American canals.

**ALONG THE TOWPATH:
A Journalist Rediscovered the
Ohio & Erie Canal**
by Allan Simpson
Edited by Russ Musarra
Illustrated by Chuck Ayers

Reviewed by Terry Woods

Early in 1964, the State of Ohio, through its Department of Public Works, set a plan in motion to divest itself of most of the transportation canals that it had built in the 1820s and 30s. These canal sections, approximately ½ mile in length and between 100 and 200 feet wide, were first offered to political subdivisions, the villages and towns along the routes. They would next be offered to private individuals and developers.

Ralph Regula, then village solicitor of Navarre, a small community in southern Stark County, felt that all the canal lands in the county should be acquired and eventually developed into strip parklands. Ten miles of the canal within the county had been watered and structures repaired during an abandoned depression-era conversion of the canal lands into a watered park.

To help publicize his proposal, Regula planned a hike along the canal's route from the center of Canal Fulton to the center of Navarre, about sixteen miles. He asked that a reporter from the *Canton Repository* accompany him. Allan (Al) Simpson was selected, as Al was later to say, "because I was the only reporter our editor thought could even walk sixteen miles."

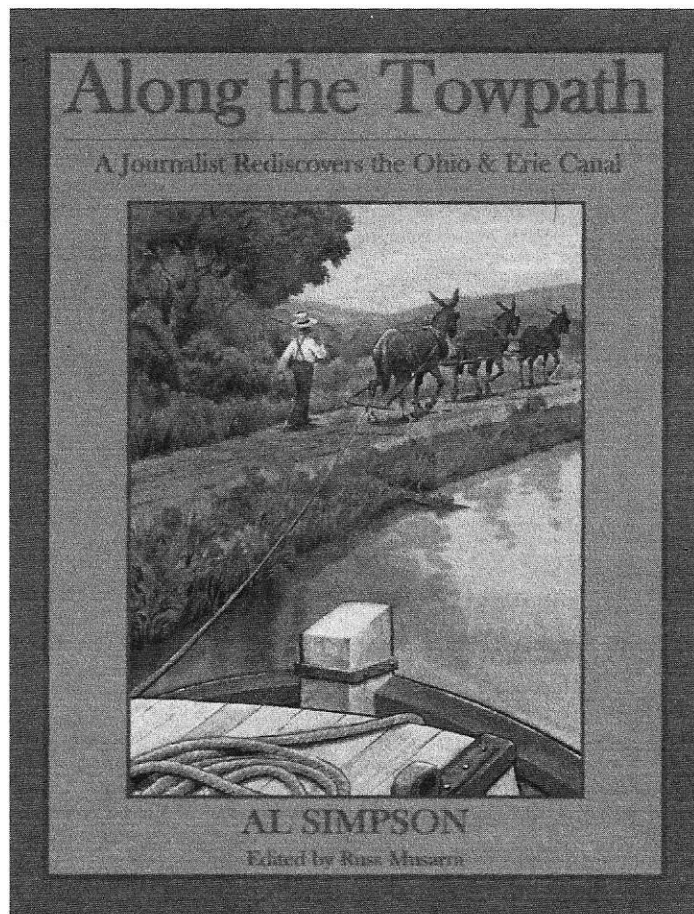
That hike took place on a wet and rainy May 10, 1964. Al wrote an article about the hike and Ralph's plan. That plan gathered

steam. Al wrote more articles and became an enthusiastic advocate of converting canal lands into watered recreational areas. After a great deal of negotiation and compromise between various political entities in the county, the Stark County Commissioners took over the 26 miles of the Ohio & Erie Canal through the county.

The fact that Stark County owned the canal lands did not automatically turn them into a park. That would take money, dedication, and effort. Al Simpson almost single-handedly provided much of that dedication and effort for the next six years. Without overwhelming support from the paper, on November 22, 1964, Al began a column called *Along the Towpath*. These columns appeared weekly in the *Sunday Repository* for nearly six years. Al was a cheerleader, a cajoler, and an enthusiastic advocate for converting these canal lands into a truly fine, watered, recreational strip park.

Now these columns have been bound together in book form. They tell the story of the many, many volunteers, both individually and collectively, who during that magical six-year period fought and worked toward making Al Simpson's dream a reality.

And they were magical years.



As a young man just out of the army living in near-by Columbiana County, I would rush to the news stand each Sunday to buy the *Repository* and read Al's column. That column, more than any other single thing, ignited my lifelong interest in all things canal and historic.

Reading this book is, for me, like a pleasant walk through the past and a reminder of what individual efforts can accomplish. Through Al's columns and connections, he conned (eh, persuaded) Al Cozy and his Louisville Sportman's Club into taking on the building of a canal boat replica. Under his urgings, boy scout troops cleared the canal channel and towpath for merit badges, garden clubs built and installed bluebird houses along the towpath, a Stark Metropolitan Park District was formed on February 17, 1967, etc, etc, etc.



The St. Helena III plies the waters of the Ohio & Erie Canal in Canal Fulton, Ohio.

Al tried to keep the column going, but had other duties at the paper. During the latter part of 1968, through 1969, the column was able to appear only sporadically. Then, on March 29, 1970, the last *Along the Towpath* column was published. Al went on to "better" things, but his work had been monumental.

The canal boat replica was less than three months from its first ride and the state was planning for a string of canal parks and watered canal sections from Clinton, just over the county line to the north, to Bolivar, just over the county line to the south. Al Simpson, his column, and the volunteer efforts of hundreds had been truly impressive, but now it was time for the professional agencies to take over.

In epilogue, the canal boat replica, *St Helena II*, was a success and garnered much publicity for the area. Unfortunately, the administration changed in Columbus and the strip park project was abandoned. Canal restoration emphasis shifted north with Congressman Seiberling's efforts to initiate a national park along the Ohio & Erie Canal in

the Cuyahoga Valley.

Then, in November 1996, Congress designated the Ohio & Erie Canal National Heritage Corridor (one of 25 such entities), stretching from Cleveland, eventually to New Philadelphia in Tuscarawas County, right through Stark County. Ironically, one of the sponsors of this bill was then U.S. Congressman Ralph Regula.

Currently, though Al's dream of a continuous rewatered strip park is not yet a reality, several of his goals have been achieved: the *St. Helena III* plies the canal waters near Canal Fulton and a through-county bike trail that often uses the canal's towpath for its right-of-way is nearing completion.

There are plans and dreams for canal lands in the future. Most of these dreams originated in and were nurtured by Al Simpson's *Along the Towpath* column. Now it is possible to reread these dreams and plans just as they happened, with all of the false starts, failures and magnificent successes.

I heartily recommend this

book to anyone who lived and worked with these projects in the 60s and 70s. I heartily recommend this book to anyone who was not fortunate enough to have lived and worked with these projects in the 60s and 70s. Maybe we can all recapture some of Al Simpson's dreams and enthusiasm on how to help remake the canal lands in our own area. The book is well worth a read.

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THE FLOATING TOWPATH — HOW THE MIDDLESEX CANAL CROSSED THE CONCORD RIVER

by Bill Gerber

One of America's earliest canals, the Middlesex was built at the dawn of our nation's great canal building era and may well have been the most ambitious undertaking of its time. Because of this, the men who built it had few models to follow, which may account for some of the unusual solutions they developed to meet their design and construction challenges. One of these challenges was how to carry the canal across the Concord River at the summit level mill pond in North Billerica. A bridge might seem like the obvious choice, but instead, the builders elected to use a floating towpath.

The Concord is not a wide river; where the Middlesex Canal intersects it, at the Concord Mill Pond, it may only be about 600 or 800 feet across from shore to shore. It appears that the builders filled part of this distance in with a peninsular causeway that extends perhaps a third of the way across the river from the east shore. Quite possibly, the causeway was constructed of earth taken from the "Deep Cut" immediately to the east of the mill pond; and one can only wonder if the "core" of the causeway might be constructed of timber cribs filled with rubble stone and earth. At the west shore there is a great stone (Figure 1), often referred to as "the anchor stone for the floating towpath," into which two very large iron rings were attached with embedded eye-bolts. The floating

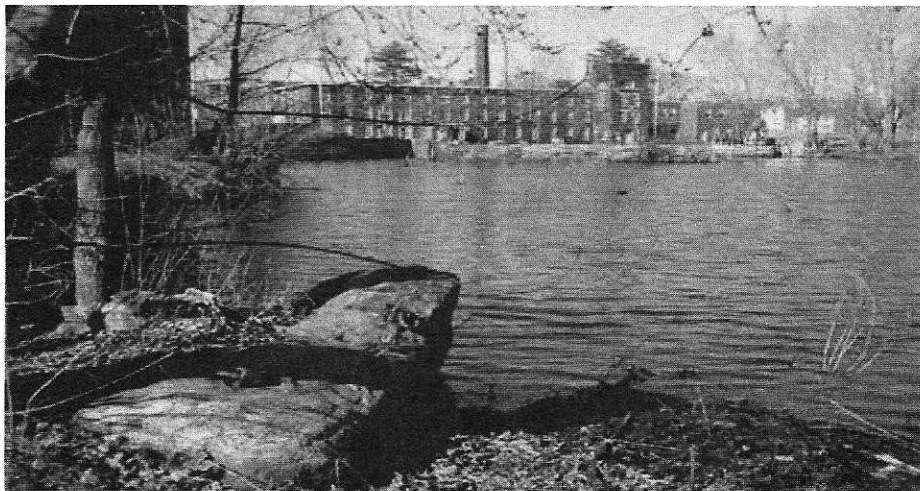


Figure 1. Floating towpath anchor stone (foreground). Middlesex Canal Museum and Visitors Center, Faulkner Mill (background). Photo by Robert Winters.

towpath spanned the remaining distance between the end of the causeway and either the anchor stone or a point nearby.

According to the historical record, a prominent feature of the floating towpath was that it could be "parted" or "opened" to allow debris to be cleared away from the upstream side, to enable boats or rafts of logs to enter or exit the canal from the river, and, in conjunction with the nearby Oak Lock, to allow boats traversing the river to bypass the mill pond dam. (This feature may have accommodated the passage of Henry David Thoreau and his brother in 1839 when they made the trip that became the basis for the book, *A Week on the Concord and Merrimack Rivers*, published a decade later.) But how was this opening accomplished?

By whatever means, it seems probable that some sort of device would have been needed to draw at least a segment of the towpath apart, possibly like a "gate" from a larger fixed section. Likely this "gate" would have been drawn upstream using a block and tackle or winching mechanism or the strength of animals. If the former,

some "hard point" would have been required, some distance upstream, to anchor the fixed end of the mechanism. The location of such a "hard point" has not yet been discovered and may have been destroyed when a parking lot was built in the area immediately adjacent to the shore at this site.

Initially, boats were pulled across the river by one of the crew who walked the floating towpath, the first version being inadequate to support the weight of a draft animal. At this time, the animals were detached from their towline and led by another of the crew over the dam and around to the opposite shore. Later, the floating towpath was enlarged to carry the weight of an animal. Eventually a railing was added, reportedly to reduce the tendency for animals to "spook." (Its purpose may also have been to keep the draft animal from being swept off the towpath if the boat or towline snagged on something or the object under tow was pulled away by the river current.) In its ultimate form, given that rafts of logs constituted frequent cargo on the canal, it seems probable that the flotation would have had to be sufficiently robust

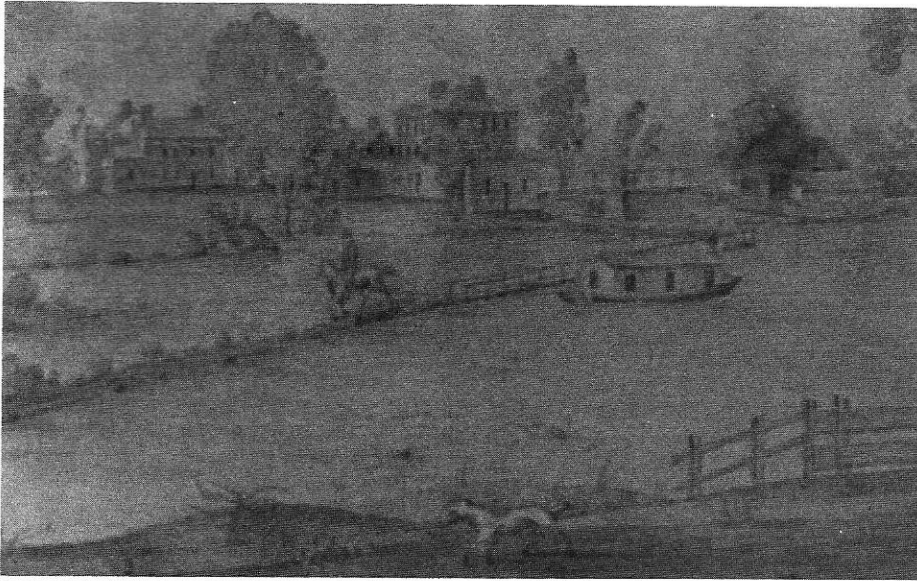


Figure 2. "The Floating Towpath across the Concord River at North Billerica." Water color by William Barton, 1825

and buoyant to support at least a single ox, and perhaps the two of a single yoke.

There were other requirements that would have been met. The towpath would have had to accommodate changes in the level of the Concord River. And it would have had to either be pulled out before the river froze over at the end of the season, or be otherwise protected to avoid ice damage, and then reinstalled after ice-out in the spring. (If the towpath was constructed in "lock-lengths and widths", then upon disassembly, the sections might have been floated into the canal beyond the guard gates and "grounded" by draining that section of the canal.

All very intriguing, and until recently the above description and speculation would have been a reasonable summary of all that was known about the floating towpath. But how was it actually built?

Regrettably, no builders' notes that describe the actual design and/or construction of it are known to exist. But in the

Mogan Center for Lowell History (repository for those papers that belong to the Middlesex Canal Association) there is a book of photographs of the Middlesex Canal (compiled in March, 1968, by Charles T. Sheldon using his own photographs together with some from other, earlier contributors). Among the many photos are a few of the

Concord Mill Pond basin at a time when the pond had been completely drained.

Clearly visible in these photographs is a single stone-filled timber crib at the western tip of the causeway. Then, increasingly out of focus, there appear to be two additional timber cribs spaced perhaps one quarter and three quarters of the way between the tip of the causeway on the east side of the river and the western shore. (These are "eyeball" estimates; the photographs are pretty fuzzy.)

With the timber cribs in mind, a careful examination of an 1825 painting of the floating towpath (possibly of the early packet *George Washington* under tow) reveals a small dark line at the junction between the causeway and the floating towpath, between the horse's rear hoofs (see Figure 2). Could this be the artist's depiction of the timber crib at the end of the causeway? Is this the abutment for the east end of the floating towpath?

There is also a question regard-

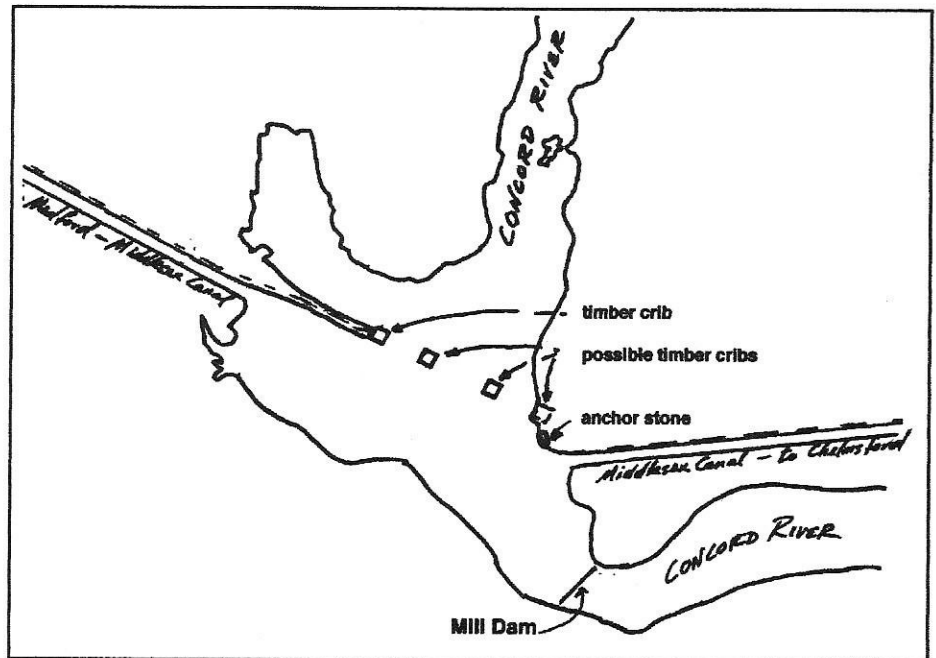


Figure 3. Possible placement of timber cribs to support the Floating Towpath
Map by William Gerber

ing the function of "the anchor stone." Though impressive in size, it seems "puny" in comparison to the power of a raging river; i.e., if the stone really was the primary anchor and the towpath was subjected to great strain, e.g., from spring freshets acting against it and whatever debris might have accumulated, this stone would likely be ripped from its perch.

Furthermore, aerial photography of the site suggests that the causeway points not to the stone but to a perturbation in the bank a short distance upstream of the stone. Could this point have been another timber crib. And if so, then what purpose would the anchor stone have served? Could it, instead, have been used in some way for the seasonal disassembly and assembly of the towpath? Or could it have been the "hard point" for a means to close the towpath, after it was opened to accommodate the cleaning of debris or the passage of river traffic? Could it have been used simply to stabilize the towpath itself?

If this is the correct interpretation, then the arrangement of timber cribs and anchor stone might be somewhat as shown in the plot-plan of Figure 3.

At this point we can only speculate about the remaining construction features. It seems likely that the towpath would have been floated on barrels or "hulls," something that would not become water logged over time and which could be serviced and repaired as needed. And likely it would have been built in manageable sections that would have been assembled over or between each of the several timber cribs. And finally, was a timber crib (or the anchor stone) the pivot point for the section of towpath that could be opened? If so, might an opened towpath look about as shown in Figure 4?

Other interpretations of the photographs and their captions are possible, as are other interpretations of what is known and said about the floating towpath. A modicum of archaeology work in the pond might shed additional

light on its design and construction. Or perhaps, someday, someone will find builders' notes that will further define the design and construction of it. But until then, the foregoing descriptions and speculation may be about as good as we can do based upon what we

The following article was discovered by Bob Geelan on the website of the Brooklyn Historical Society, which has all issues of the *Brooklyn Daily Eagle* from 1841 to 1902. The website, which is free, can be found at: <http://eagle.brooklynpubliclibrary.org>. Bob reminds us that Brooklyn was the 4th largest city in the country until its merger with New York City in 1898. It was also the site of the Atlantic Basin and the Erie Basin, terminals for Erie Canal vessels.

19 Thrown Into Water Rowboat Used as a Ferry on the Morris Canal Upset by Swell From a Tug

Jersey City, August 9, 1901 — A rowboat used as a ferry on the Morris Canal was upset by the swell from the railroad tug *Bernice* today. Nineteen persons were thrown into the water, but all were rescued without difficulty.

The boat was stove in and sank. The tug was stopped at once and the work of rescue begun.

Few of the men in the water could swim and this made the work difficult, but with the aid of deckhands of other craft that happened to be nearby, all were finally saved.

There are two ferries operated on the Gap, one by former Park Commissioner Mills and the other by the Lehigh Valley Railroad.

(continued on page thirteen)

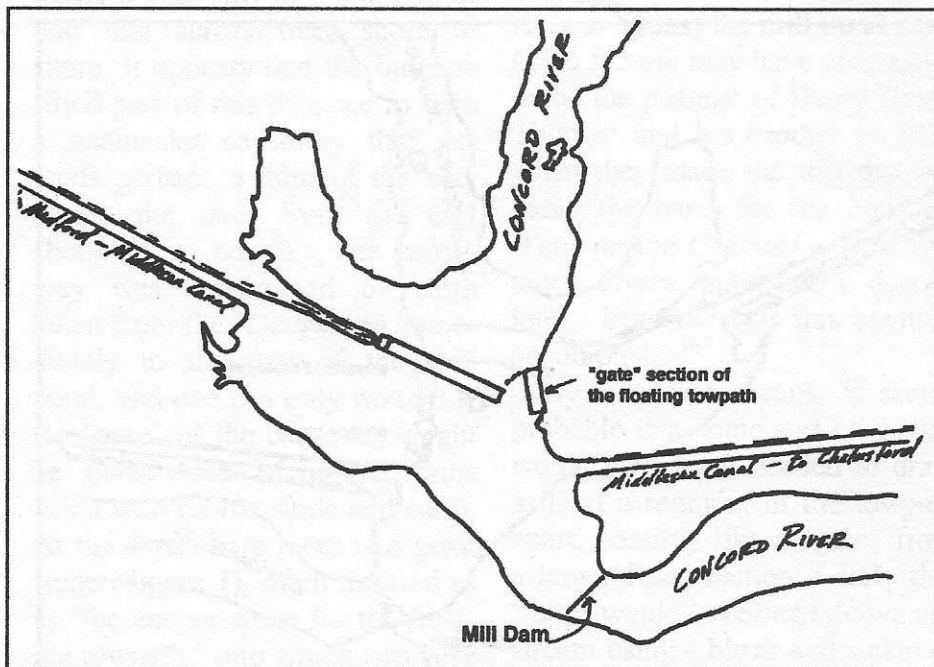


Figure 4. Possible view of the Floating Towpath with a section "gated" open.
Map by William Gerber

These ferries are the only means of exit and entrance to the Jersey Central and Lehigh Valley depots from the district north of them and morning and evening they are crowded with workmen and commuters. The Lehigh Valley tugs go through the Gap to the warehouses at the western end, and there have been many narrow escapes.

The boat that was sunk was in charge of John Rockoff. It belonged to the Lehigh Valley Railroad and was carrying employees to their work in the yard.



Canal Society members rode up with this vessel at the Hebewerks, a double boatlift at Scharnebeck in Germany.
Photo by Linda J. Barth

WE RODE THE INCLINED PLANES! The Canal Society of New Jersey's tour of German and Polish canals

by Linda J. Barth

"It's as though the Morris Canal has come back to life!"

"Who knew the ride would be so quiet?"

"Look at the cable going through that slot into the powerhouse."

"Jim Lee would love this!"

After years of waiting and wondering, eighteen members of the Canal Society of New Jersey discovered what it must have been like to ride up a Morris Canal inclined plane -- slowly, smoothly, and silently ascending a steep, grassy slope.

Of course, it wasn't really "our" canal, but the Elblag Canal in Poland, the prime destination for the travelers on this summer's trip, led by Fred Heide and Piotr Kumelowski. Of all the fabulous lifts, locks, and aqueducts we visited, the Elblag and

its five working inclines will always be the most memorable part of the trip for me.

Fred planned many canal and rail stops, beginning with a visit to the Kiel Canal (Nord-Ostsee Kanal), which cuts across northern Germany, enabling vessels to avoid the long trip around Denmark. At the Baltic Sea (eastern end of the canal, we saw the smaller, older locks now used mainly by pleasure boats. Huge ocean-going freighters go through the newer, longer outlet locks.

We stopped for lunch at a fascinating canalside restaurant in Rendsburg. From a control booth on the terrace, the owner plays the national anthem for the country of each passing ship. The rail fans were happy to dine under the railroad bridge that crosses the canal. A transporter ferry, suspended from the bridge by cables on a trolley, takes cars and passengers across the canal, just above water level; of course, we had to ride it!

Monday was an all-canal day,

beginning in Lauenburg with a look at the Palmschleuse, a round lock built in 1398 (the oldest in Europe) on the Stecknitz Canal, which was later replaced by the Elbe-Luebeck Canal. We were then privileged to have a behind-the-scenes tour of the *Hebewerks*, a double boatlift at Scharnebeck on the Elbe-Seiten Kanal. The museum featured models of many European lifts. We were thrilled when our guide allowed us to ride on the caisson as a freighter was raised 38 meters. At Uelzen, three stepped basins are used to refill the huge lock and save water; and an even larger one is under construction right next door.

In Magdeburg, the next day, we were treated to an all-day tour, led by Herr Toelle, a manager for Project 17, which, when completed, will allow vessels to shorten their trip around Magdeburg and avoid two very sharp turns in the Elbe River. At the ship lift, boats were raised by means of submerged air-filled chambers, called floats, connected to the boat caisson by truss towers. Nearby, we were allowed



Canal Society member John Drennan examines the Palmschleuse, a round lock built in 1398 and thought to be the oldest in Europe. Photo by Linda J. Barth

to walk across the new, soon-to-be-opened (October 2003) aqueduct, and then go inside to see the support structure up close. At our last Project 17 stop, we donned hard hats and rubber boots and scaled an embankment to see the construction on the new lock, the last link in this impressive new shortcut.

Our day and a half in Berlin provided both fun and serious contemplation. The group members had free time to sightsee. Some visited museums and cathedrals, some relaxed at a lake west of the city, and others explored the courtyards and artists' enclaves. Bob and I took in the sights from the water with a three-hour cruise on the River Spree and the Landwehr Canal. In the Wall Museum at Checkpoint Charlie, stories of daring escapes brought back the sadness of those many years when the people of East and West Berlin were separated. But the stories

also told of love, loyalty, and ingenuity.

Thursday morning was spent at the Niderfinow lift, near Eberswalde. Our tour boat took us into the lift, down, and back up. Then it was on to Poland to meet our guide, Piotr Kumelowski. Born and raised in Poland, Piotr now works for

New York City Transit. He met us at the station in Wolsztyn, where steam locomotives are still used for both freight and passenger trains.

At Wielichowo we boarded a self-propelled car on a narrow gauge (750 mm) track and rode past farms and through small towns to Stare Bojanowo. At times the trees were so close that branches scraped the train; we even stopped to photograph a "tree tunnel." After lunch at the carriage house of the Czerniejewo Palace, we visited Biskupin, a restored Bronze Age village; these early longhouses were very similar to those of New Jersey's Lenape. We spent the night in Gniezno, the first capital of Poland, and walked through the market square with its churches and outdoor cafés.

Saturday's six-hour narrow gauge steam train ride was the highlight for the rail fans. We shared a dining car during what may have been the last trip along this right-of-way. It is no longer used for freight and is in danger of closing. We enjoyed frequent photo run-bys with scenic vistas



Looking down Plane 5 on the Elblag Canal. The empty cradle car, heading down, is about to pass the loaded car. Photo by Linda J. Barth

and steam and smoke billowing into a cloudless sky. The passing scene included lumberyards, lakes and beaches, an open-pit coal mine, farms, and even a cow that charged toward the train. At one point, midway on the trip, we stopped at the former Prussian-Russian border and waited for a diesel engine that would take us the rest of the way to Slesin. A dinner cruise on Gopło Lake capped our day.

Torun, where we spent the night, had a beautiful embankment along the Vistula River. Piotr led a tour of this city, a UNESCO World Heritage Site, including the gates and wall, the cathedral, and the home of Copernicus, whose theory that the earth orbited the sun created much controversy. Sunday was a day of castles. At Gniez, there was a Renaissance festival with jousting and many re-enactors. But the highlight of the day was our stop at Malbork, the largest brick castle in the world and another UNESCO World Heritage Site. Our English-speaking guide was bubbly and funny and made the lives of the 13th- and 14th-century Teutonic Knights come alive for us.

And then it was time for the Elblag Canal. As a teaser, we first visited a lock at which, surprisingly, there was a monument to Pope John Paul II, who had visited this site as a bishop. Then, finally, after years of waiting, the *pièce de résistance*, the first of the inclined planes! We spent hours watching the boats – and cradles – ascend and descend. We heard the “click” as the shining cable passed over the idler pulleys. We saw the aquatic grasses festooned on the drip-



A transporter ferry, suspended from the bridge by cables on a trolley, takes cars and passengers across the canal, just above water level. Photo by Linda J. Barth

ping cradle as it rose out of the water and began its slow climb to the top. We photographed the plane from every angle. At the Plane #5 museum, our guide, Ryszard Wojcik, expressed his delight in learning about the predecessor of “his” canal. He even visited our CSNJ website while we were off exploring! We expect to continue our dialogue with Ryszard via email.

And then we were allowed into the powerhouse. How did it all work? Water from the higher level of the canal entered the intake siphon, filling a tank that fed a ton of water into each bucket on the waterwheel. As the huge wheel rotated rapidly, it turned a drive shaft driving a set of reduction gears (gear train) that powered a 12-foot diameter cast-iron drum. The gear train included a set of bevel gears to permit reversing the motion of the drum. The glistening wire-rope cable entered the darkened powerhouse through a slit in the

wall and then was wound onto the winding drum. At the other end of the drum, cable was being paid out. It returned to the cradle car via vertical blue pulleys mounted in the center of the canal.

The boat floated into the cradle car and the crew secured it with lines. And so, as the drum wound the cable, the vessel and the cradle soundlessly moved up or down the plane.

After our second night in Elblag, we drove to the waterfront at 8:00 a.m. and boarded one of four tour boats that daily ply this waterway, a very popular tourist stop. We all found seats on the top deck of the *Pingwin* (Penguin) and cruised first through Lake Druzno, a marshy estuary filled with swans, gulls, wagtails, and many other shore birds. At 10:15 we came in sight of Plane #1, rising in the distance. We were enchanted to finally learn what it felt like to ascend an inclined plane.

From the President

(continued from page one)

despite their proximity.

But, both Kingston, NY, which is close to Eddyville, and Port Jervis are accessible by commuter train from New York City. Lock 1 at Eddyville has water on its floor and boats moored within feet of it. Using the usual canal standards, a one-way cruise from Eddyville to Port Jervis would be a comfortable 5 days. The Lockmaster boats made by Mid-Lakes Navigation for use on the Erie Canal would fit in D&H Canal locks. Both ends of the sixteen-mile-long summit level are still watered. Most of the locks remain intact and much of the route is in public ownership.

How many jobs and how much economic activity would be created in this poor section of New York State by the restoration of the canal from Eddyville to Port Jervis?

2003 CANAL CALENDAR

November 21 — Canal Society of New Jersey's summer tour to Germany and Poland; slide presentation; 908-722-9556.

November 22 — Hike the Bluff at Old Santee Canal Park; a nature walk through the park as Old Santee Canal readies for winter. Fall is a most exciting time along the limestone bluffs; 843-899-5200.

January 16—Canal Society of New Jersey—program on lock restoration, presented by Abba Lichtenstein and Denis McMullan; slide presentation; 908-722-9556.

February 8 — Friends of the Delaware Canal sponsor a two-canal walk. Begin in Lambertville, NJ, and explore the outlet lock of the Delaware & Raritan Canal; cross the river to New Hope, PA, and stroll along the Delaware Canal; 2 pm; 215-862-2021.

PAUL BARTCZAK TO BE NEW EDITOR

We are pleased to announce the appointment of ACS member Paul Bartczak as Editor of *American Canals*. Paul is a Director and Vice President of the Canal Society of New York State. He and his wife Kay have recently retired to Eden, NY.

WE RODE THE INCLINED PLANES (concluded)

The canal fans photographed the planes and cradles, noting the many similarities to the Morris Canal (tracks, powerhouses, idler pulleys, wire-rope cable, the wheels and braking mechanism on the cradle) and some differences (one plane used a turbine while the others were powered by waterwheels, the shives stood vertically in the water instead of lying horizontal and submerged, some bypass channels could be seen and some couldn't).

At Plane #5 we again visited with Ryszard and took a few more photographs before leaving the Elblag Canal and our ride back into history.

As our bus toiled along the highways of Poland, we were delighted to see so many storks; this beautiful bird looks nothing like the cartoon bringer of ba-

bies; its distinctive black and white feathers make it easy to spot. We dubbed ourselves "The Stork Club" and announced sightings: "Two on the ground on the left," or "Nest with three storks on the right." We finally convinced our leaders to stop for a photo op.

Unique translations sometimes gave us pause and provided a light-hearted look at our language. One restaurant offered "shoot-in-flight duck" and "happy pears." A bridge, restored after WWII, was said to have railings and obelisks that were "original copies."

The tour continued on to Gdansk with its huge harbor hosting vessels from all over the world. We continued west along the Baltic coast as we returned to the border. At Szczecin we saw canal boats tied up, looking just like the old photos of Erie Canal boats rafted together in New York harbor. Crossing into Germany, we visited the innovative and fascinating museum devoted to Otto Lilienthal, a pioneer aviator. Another interesting stop was Peenemunde, the research facility at which the Nazis developed and tested the V1 and V2 rockets.

The last stop on our tour was the narrow gauge railroad from Bad Doberan to the coastal town of Kuhlungsborn. Amazingly, as this train leaves Bad Doberan, it snakes its way through the center of town, right down the middle of the narrow main street! There is no room for cars, so traffic must wait until the train has gone.

Lifts and locks, castles and canals — and the most memorable was the Elblag and its inclined planes.