AmericanCanals

Bulletin of the American Canal Society

Vol. XXXVII, No. 1 | Dedicated to Historic Canal Research, Preservation, and Parks | Winter 2008

From the President

by David G. Barber

A theme I have been pushing in these pages and elsewhere is that of canal restoration. Part of that, naturally, is a question of whom. Or more precisely, who, either engineering firms or contractors has any experience in the restoration of canal locks and other structures? Some time ago, I was asked this question by people in New Bremen, Ohio. They went on to rebuild Miami and Erie Canal Lock 1 North, which is in the middle of the downtown. Very recently, I was asked the same question by someone involved with planning the restoration of Morris Canal Lock 2E in Wharton, New Jersey. The need is for people who have some experience so old lessons do not have to be relearned.

The question was given further depth by David Beebe and his group at Camillus, NY, who are working to restore the Nine Mile Creek Aqueduct. In addition to the hurdles of what to do, funding, and historical accuracy, they have learned the need for specifications that answer all of the contractors' questions. While on many normal projects, the contractor can fill in "blanks" with his experience, on canal restoration work, the available contractors and engineers do not have experience. So, they either decline to bid or bid high to cover their unknowns.

Many people in the canal community do have knowledge about canal structures which we are willing to share. But, we do not have the staff and bonding ability to take on an engineering or general contractor contract.

To help address this question without having to search my memory on receipt of a cold phone call, I've added a page to the web site of such information. So far, I've listed fifteen projects, but have yet to add the names of engineering firms or contractors. I intend to add those as I do further research. I do not intend to endorse anyone, but the "who" of such projects is public information. Any group financing such projects will have to do their own qualifications research. My only goal is to provide starting points at an easily-accessed location.

Please look at the list on our web site. I would very much like to hear of projects, engineers, and contractors to add.

www.americancanals.org

The *Valley Gem* on the Muskingum River
Photo courtesy of Kate Sands, of the *Valley Gem Sternwheeler*

SEVEN HOURS ON THE MUSKINGUM IMPROVEMENT

by Terry K. Woods

Though it doesn't quite have the meter or the rhythm of "Fifteen Miles on the Erie Canal," seven hours on the Muskingum Improvement, actually a cruise of forty-two miles along Ohio's only active canal-era waterway, seems to be something worth writing, if not singing, about.

The Muskingum River was canalized by the State of Ohio for 112 miles, from its junction with the Ohio River at Marietta to the tiny village of Dresden, where the 2.8-mile-long Dresden Sidecut connected the Ohio Canal with the river. This Improvement was opened in 1841. The federal government, in the form of the US Army Corps of Engineers, took over the Improvement in 1887 and

(continued on page three)

American Canals

BULLETIN OF THE
AMERICAN CANAL SOCIETY

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www.americancanals.org

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For CANAL CALENDAR items and for news of local, state, and regional canal societies: c/o Linda J. Barth, 214 North Bridge Street, Somerville, NJ 08876; 908-722-7428; barths@att.net

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.
ISSN 0740-588X.

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

DEADLINE: Material for our next issue must be on the editor's desk no later than June 1, 2008. Send to Linda Barth, 214 N. Bridge St., Somerville, NJ 08876; barths@att.net.

Material submitted to *AMERICAN CANALS* for publication should be typed and double-spaced or sent by email in WORD format. You may send actual photographs (which will be scanned and returned), or digital versions may be emailed or sent on a CD.

initiated a series of rebuilds and repairs into the early 1900s. River traffic took a brief upswing during World War II, but quickly fell to nearly nothing, and the entire Improvement was ceded back to the State of Ohio in 1958. Since then, the state has endeavored to keep the river navigable while retaining the lock mechanisms and traffic customs of riverboating in the 19th century.

One of the outings put on by a local seniors group has been a cruise along this Muskingum Improvement. It was so popular that it took a couple of years for my wife and me to get reservations. But finally, in early October, we pulled into the quaint mill town of Stockport, Ohio, on the Muskingum Improvement, just below Lock No.6. The *Valley Gem* was waiting for us with her stern wheel slowly revolving.

We boarded the craft, then went directly to our assigned tables on the lower deck for a light breakfast. The vessel backed away from shore, out into the river, before we had finished eating. With my video camera, I shot some of the old mill at Stockport, the dam, and Lock No 6. I ended up with a memorable tape, but some of my extemporaneous comments were inaccurate.

Initially, I thought we were going to go through Lock No 6. Then I realized we were heading away from the lock (which was to be expected, since we were going south to Marietta). I went to the upper deck to take video and made some comment on tape about the paddle wheel being fake. When we had crossed the bridge, I had noticed that the wheel was revolving while the boat was nosed into the dock at the river bank, so I thought it was just for cosmetics. Actually, the wheel was revolving to keep the boat against the dock. It was what made the boat go.

While I was topside, the captain, J.J. Sands, welcomed us all to the *Valley Gem* (our group of 106 had the boat all to ourselves) and gave us a bit of a history and details of the boat. The original *Valley Gem* operated on the Muskingum, Ohio, and Monongahela rivers in the late 19th and early 20th centuries. This *Valley Gem*, though not a replica of the original, is set up to look like an old-time river packet boat. The boat is family owned and operated. The lower deck is enclosed and air-conditioned. The upper deck is open and has a number of round tables and chairs, and an awning covering a bit more than half of the deck.

This craft was built in 1988-89 and is powered by a 12.7-liter (500 HP) Series 60 Detroit Diesel, coupled to a ZF W325 electronic transmission. Total reduction from engine to wheel is 60:1. The craft is 25 feet wide and 157 feet long, with a draft of 2½ feet. It has radar, depth finder, and all other kinds of electronic gadgets and can carry up to 296 passengers. The vessel is inspected by the Coast Guard every five years, and this winter the bottom will be painted.

Top speed of the present *Valley Gem* is about six miles per hour, if she has sufficient water beneath her hull. A stern wheel can pull a boat to the bottom of a shallow channel. The navigable channel of the river is marked by red and green buoys and is supposedly maintained at a six-foot minimum depth. There are shallow spots, though, particularly in the canal channels built to bypass rapids and falls. The *Valley Gem* must go slower at these shallow spots.

By the time the captain's talk was over, we were ready to enter the 35-foot-wide Luke's Chute Lock. I got a great, long shot of the boat entering the lock, but I also got an 'extra' when the boat struck the side of the lock. There is the great sound of us hitting, a shudder of the camera, and my three exclamations of "Oops!"

I videoed most of the locking-down procedure, and it provides a good idea of the length of time the operation takes. It also shows the physical effort required to open and close the gates and to operate

The original *Valley Gem* Photo courtesy of Kate Sands, *Valley G*em Sternwheeler

the valves to empty and fill the locks. We had the same two men operating each of the four locks during our trip down river. They were employees of the Muskingum River Parkway and went ahead to each lock by car.

Over the years, several types of mechanisms have been employed to fill and empty the locks. The most common are the "venetian blind" type (several slats in the gates themselves that can be raised to allow water to enter the lock), the bell valve in the (usually upper) lock walls to fill the lock, and the paddle valve, usually in the lower lock walls to empty the lock. Most of these mechanisms are operated with a hand-cranked windlass (crank axis parallel to the ground) turning an Acme worm screw. The individual lock gates are opened and closed by a rack-and-pinion arrangement. A man rotates a pinion gear by walking around and around it (crank axis perpendicular to the ground). This pinion moves a rack gear attached to the gate. This is a tedious operation with the man required to step over the rack gear during each rotation of the pinion.

Apparently the locks are all set for downstream boats, as we saw the lower lock gates being closed as we left the lock. So with the lock set that way, we just entered each lock and came to a controlled stop with our gangplank out in front of the boat, just a few inches from the closed lower gates. The upper bell valves were then closed by a man cranking the windlass on the river side of the lock. Then the gates were closed by the rack-and-pinion on each side of the lock. The two men then moved to the lower end of the lock where the lower paddles were opened and, after the boat had reached the lower level, the lower gates were opened. Regulations call for a boat to be tied off when locking up and down, and a line was looped over one of the ladder rungs in the lock's side wall, but the captain kept the boat sort of centered between the gates with the stern paddle.

Once the boat was at the lower level of the river, the lower gates were opened. The captain had to move the gang-plank from side to side (with a windlass) to give each gate room to swing. Once the gates were opened into the gate recesses, we started out into the river again – always advancing steadily upon Marietta.

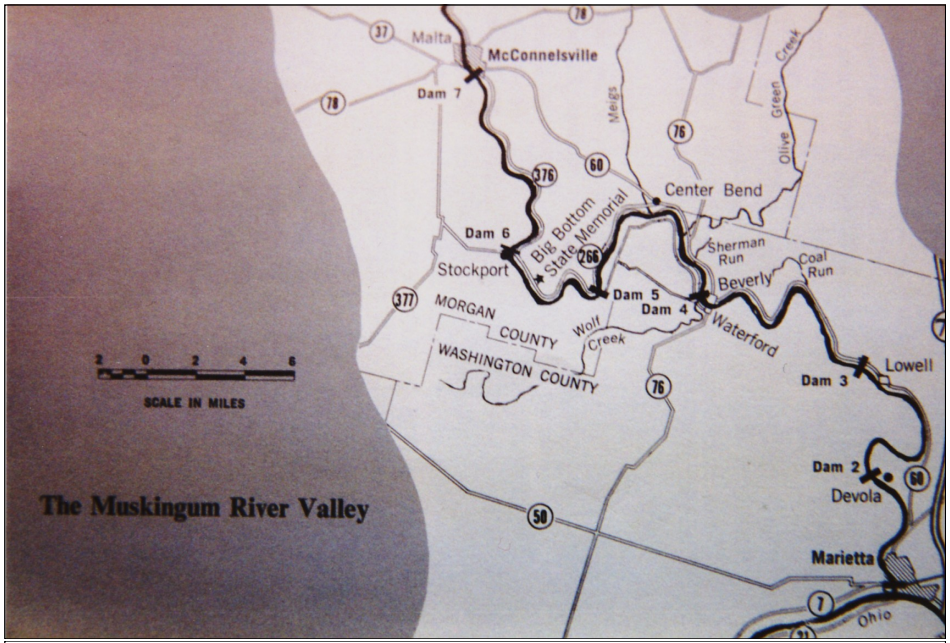
Shortly after leaving Luke's Chute Lock, our entertainment came on deck. They were the Valley Singers, Chuck and Judith Craig, husband-and-wife folk singers. They were very good and often humorous. They sang for much of the seven-hour trip down river.

We soon passed a large power plant on the right side of the river. The "Big Muskie" (a huge drag line) was used to strip coal on the opposite side of the river. The coal was carried to the power plant on a high conveyor. The conveyor bridge is still in place, but the giant drag line has been dismantled with only the bucket on display.

We soon came to the Beverly Canal. There was a flood gate at the entrance – a structure with a single set of wooden gates that could be closed in times of high water to keep that high water out of the canal channel.

On the previous day's trip, the left side of this channel (going downstream) was found to be very shallow. The *Valley Gem* had become stuck, and it took a while to get her off the bottom. Due to the very shallow channel here in the Beverly Canal, we slowed to a crawl, about the speed of an old-time Ohio canal freight boat (1½ to 2 miles per hour). It was great to get a feeling for the movement of a real canal boat. We actually touched bottom on occasion, and I got some great video of the mud being churned up and carried out past our stern.

This canal was a little less than a mile long, but it took us quite a time to get to the Beverly lock. We finally did and found our lockmasters waiting for us. I had wanted to get some shots of them



Map of the Muskingum River Valley Photo courtesy of Terry Woods

closing the upper gates, but I missed it, as the bright sun sometimes made it difficult for me to read the 'record' light in the screen. Our lockmasters did as good a job here as they had at Luke's Chute, and we were soon on our way south.

We spent a lot of the next hour on deck, listening to the music and just enjoying the perfect weather, the slight drum of the engine, the strong rhythm of the paddle wheel, and the sight of the countryside slowly slipping by.

During one of their breaks, I talked with the female half of the Valley Singers and asked her if she was familiar with the Ohio canal folk singer, Pearl Nye. Surprisingly, she wasn't, though she had heard of Pearl's mentor back in the 30s, Allen Lomax. She also said she would try to find some of Pearl's canal songs.

Our afternoon meal was announced, and we all went to our assigned tables on the lower deck. Shortly after the meal, we came to the Lowell Canal. Again we slowed way down, but this canal wasn't quite as shallow as the one at Beverly. We never seemed to scoop up much mud. There was a structure on the river bank at the head of this canal, but it seemed to be the abutment for an old road rather than for a flood gate. This canal was a bit longer than the Beverly Canal, and it seemed to take a very long time to get to the lock. When we finally did, though, it was negotiated with the usual dexterity and grace. Then we were once again into the river and on our way toward Marietta.

We had been told on the bus that there would be a 'surprise' for us in the afternoon. The surprise turned out to be a good one – wine and cheese! There was also beer for those who didn't care for wine, and some fruit juices for those whose medications couldn't be mixed with alcohol (hey, this was an old folks tour).

Later, when I was sitting at a table on the upper deck, the singers mentioned that I was interested in the canals of Ohio, and they were going to sing a song they had written several years before for the Roscoe Old Canal Days Celebration. They then sang a very nice one, about the canal in general. I didn't think to turn on the video camera until the song had already begun, but I got the last portion of it. It was very good.

We then came to Lock No. 2, Devola Lock, the last one we would negotiate before docking at Marietta. The lock was similar to Luke's Chute in that there was no canal involved, just the lock in the dam. The lockmasters both worked the upper gates and then walked down to the lower gates. One fellow opened the lower paddles to drain the water from the lock; then they both held a bit of a discussion, and one of the men walked off. That meant that the boat sat there with one lower lock gate open, while the single lockmaster, after opening the river side gate, walked back to the upper end of the lock, crossed the two closed upper gates, and then walked back down the shore side of the lock to that gate and opened it. Finally with both gates opened, we entered the river again.

Now we began seeing other craft - a few small, gas-powered boats and three or four sculls from a local high school. As we got very close to our final docking spot, we saw a multitude of smaller craft docked on both sides of the river. Just at the highway bridge before we reached the dock area, an historic craft was anchored; it

Photo courtesy of Kate Sands, *Valley G*em

was the towboat *W.P. Snyder Jr*. Built in 1918, it had worked the river until 1955. The *W.P. Snyder, Jr*. is scheduled to go into dry dock soon, which may signal its refurbishment and return to active service on the river.

On the other shore, just a bit south of the bridge, was the *Claire E*, a 'make up" boat, sort of a tug that pushed other boats into proper position for loading. She was built in 1926 and named *The Diesel*. In 1966 she was purchased by Gene and Claire Fitch of Hebron Ohio, and renamed after Claire. The craft was rebuilt in 1967. Gene and his wife lived on the boat, traveling all over the country, for more than thirty years. A local businessman, Harley Noland, purchased the *Clare E* and converted her into a bed-and-breakfast about ten years ago. In 2003 the boat was sold to Dr. Roger Anderson, who will keep her in Marietta and is remodeling her to again become a bed-and-breakfast.

The *Valley Gem* powered under the bridge, went into a swooping "U" turn, and slid up to her dock just south of the *W.P. Snyder, Jr*. Our buses were waiting for us higher up on shore next to the

Ohio River Museum. We disembarked and quickly boarded the two buses. I would liked to have spent a half hour or so at the River Museum, but I think everybody else was happy to be heading home. So, our outing was over. It was a great trip and one that, with the help of this article and the 55-minute video tape I made, will stay in my memory for a very, long time.

ACS DIRECTOR ALBRIGHT "ZIP" ZIMMERMAN

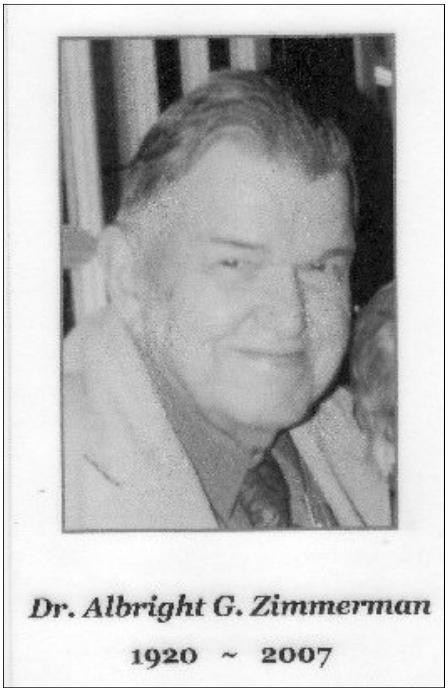
Albright "Gravenour Zimmerman, Ph.D, who we all knew as "Zip," died on November 2, 2007, with his wife of five months, Janet Knoblauch Miller, and Charles Lorimer, a devoted friend and partner of his late wife, Margaret, at this side.

On the Fall 2007 Pennsylvania Canal Society Field Trip, members had the pleasure of being with Zip along the West and North Branch canals on the weekend of October 20 for the first time in several years. He was delighted to be with the group after a long absence.

Zip was born in Philadelphia and attended Overbrook High School. He graduated from The Pennington School in 1938 and completed his undergraduate degree, B.S. in education, at Temple University in 1942.

The day after his return from the Army, he enrolled at Temple to finish his MA in history, and received his doctorate from the University of Delaware in the history of technology in 1965 with his dissertation on "The Indian Trade in Colonial Pennsylvania." When World War II beckoned, he served in an Army hospital in Wales, UK, writing his mother frequently. His typed letters captured his keen observation and ability to write in three dimensions. They showed his zest for life, generous spirit, and love of history and the ordinary as he shared with her the details of his travels and his comrades.

His sense of humor and ability to take advantage of any opportunity to teach were always with him. He knew early on of his passion to teach history and did so at the junior college, high school and university levels, including Pennsylvania State University, the College of New Jersey, and the University of Delaware, during his doctoral studies. His career at Rider University began in 1959, when he chaired the American Studies Department. Zip's prime interest was canal development in the Eastern U.S. He published more than 18 papers, many on canals and transportation, and three books. His peers were astounded by Pennsylvania's Delaware Division Canal, which bore the subtitle, "Sixty Miles of Euphoria and Frustration," published by the National Canal Museum in 2002. Zip made technology readable and interesting. He also published the 187-page A Canal Bibliography. He traveled extensively around the world with his late wife, Peg, to attend International Economic History Organization meetings, and those trips frequently involved excursions on local canals. In 1990, he organized a trip with several PCS members on English canals.



His passions included food and entertaining. An active member of numerous canal and historical societies, his knowledge and camaraderie will be missed. He led more than 20 field trips for the PCS before becoming president from 1996 to 2002. He was a life member of the Pennsylvania Historical Society and many other historical societies, including Lower Makefield and Trenton (of which he was a board member). Zip and Peg were active members of Thompson Memorial Presbyterian Church.

Zip was also predeceased by his brother, Benjamin, a nuclear engineer, and a sister and brother-in-law, Alice and James Tippet. Legions of people far and wide, many exchange students to whom he and Peg had opened their home, call him "Uncle Zip."

On November 17, an uplifting celebration of Zip's life was held at his beloved canal-era Thompson Memorial Presbyterian Church (1680 Aquetong Road, New Hope, PA 18938), to which contributions may be made in his memory. He will be greatly missed, and I am grateful to have shared as much time with him as I had the opportunity to. He made the world a better place.

Ryn Agnew

BY CANAL BOAT, CABLE TRAM, AND STEAM TRAIN THROUGH ENGLAND AND NORTHERN WALES

(Part 5 of a series)

by Bruce J. Russell

A view from the top of the Anderton lift, showing the caissons filled with water. The caissons move vessels between the River Weaver and the Trent & Mersey Canal.
Photo by Bruce Russell

Our return from Ellesmere Port was uneventful, and we reached Chester by late afternoon. As we traveled along this lockless section, I noticed many narrow boats moored along the bank, some displaying signs for passing vessels to reduce speed. I subsequently learned that some people purchase a vessel and then permanently live on it. Often what they acquire, for between $50,000 and $75,000, is one that was formerly owned by a commercial hire boat company. These firms purchase their fleets new, but, after several years, dispose of them through sale to the general public. The new owners then permanently moor them along the canals. While it's cheaper than owning a house or paying rent, these folks don't get off entirely free. Instead, they pay a yearly tax of about $3000.

Furthermore, every year their boats must be placed in drydock for a hull examination. This is to make certain they don't sink and become abandoned, with the British Waterways Board picking up the cost for removal and scrapping. Later on during the trip I met an 80-year-old gentleman who, with his wife, lived permanently on a boat purchased secondhand from a rental firm. During his first 15 years of retirement, however, he had done extensive traveling throughout Britain, visiting many interesting places. The old gent informed me that he planned to die "on the cut," meaning on his boat on one of the canals. God bless him!

Upon our arrival in Chester, someone noticed that the red light on the side of the retention toilet was on. This signified that we had fifteen flushes remaining before a jam up would occur. Because the closest pumping out facility was at the Wrenbury base, our skipper said that where possible we should use the toilets in pubs or in some cases adjacent to lock chambers. If we had to call a mobile unit to come out and empty us, it wouldn't be cheap. Likewise, to refill our water tank, we had to stop at watering points situated along the canal. To access these pumps, a special key is required. Ours was provided by the hire base.

I often wondered how pure the water in the English canals actually was. From time to time I saw people with fishing poles, so obviously fish can exist in canal water. Until the 1950s, boats emptied raw sewage into the water, causing it to stink. Retention toilets are now a legal requirement, and they have caused the water to become less putrid. Nevertheless, I saw nobody swimming in it.

On our vessel, breakfast and lunch were usually prepared and eaten aboard. Most evening meals were taken in restaurants or fast food places. I normally started my day with 6-8 thick slices of bacon, 4-6 sausages, and 5 slices of toast. For me, this constituted a "canaler's breakfast," and provided me with the necessary energy to open and close the locks we passed through. On several occasions the aroma of my bacon and sausage cracking in the skillet awoke my boatmates.

The following day was an "off canal" excursion in which we traveled by bus to two places of interest. The first was the famous boat lift at Anderton on the Trent and Mersey Canal. While we could have gotten there by boat, it would have taken far too much time.

The Anderton Boat Lift is sometimes referred to as the "Cathedral of the Canals," and justifiably so. In the 1860s there

was heavy traffic on the Trent and Mersey Canal, which was built on the ledge of a steep hill overlooking the River Weaver. This river had, by being fitted with locks, been converted into a defacto canal or "navigation." Along the Weaver were salt mines, and the salt was loaded into narrow boats for transport throughout Britain via the waterways. At Anderton it was unloaded, placed on pack animals, and carried uphill to the Trent & Mersey Canal where it was again loaded into boats. This was cumbersome and labor intensive. Initially a long flight of perhaps 10-12 locks was planned to connect the two waterways. Going through them, however, would waste considerable time. Instead, a boat lift was designed to raise two vessels simultaneously from the Weaver to the Trent & Mersey in less than ten minutes, eliminating the need for multiple locks.

In 1875 the lift was finished. Made of iron, it relied on hydraulic pistons to raise a water - filled caisson or tank from the lower to the upper level. The procedure began as two seven-foot wide boats from the Weaver entered a caisson; a seal or water-tight barrier descended, and the caisson slowly rose. At the upper level the opposite end of the tank would open, permitting access to the Trent & Mersey Canal. As one tank rose, another descended.

The Anderton Lift was considered an engineering and technical triumph of the Victorian age, and gave the canals a better chance to compete with the railways, which were already capturing their traffic. In 1907 the boat lift was converted from hydraulic to electric power and was made stronger by the addition of steel support beams. It continued to carry commercial traffic until that vanished in the 1950s; then the lift was used by recreational boats. Often these would modify their itineraries just to include a passage up the lift which was a tourist attraction. Sadly, in the early 1980s it was condemned as unsafe because of rusting and other problems. Fortunately, canal enthusiasts rallied all over Britain and forced the government to underwrite its rehabilitation. This work was finished in 2002. In the process, the ancient structure was converted back to hydraulic propulsion, but some of the old motors were left in place.

Our group arrived in the morning and, after spending time at the new visitor center, boarded a glass-roofed boat on the River Weaver. This vessel entered the waiting caisson and was lifted to the level of the upper waterway. It was fascinating to be in a boat in a tank of water moving slowly upwards. Upon reaching the summit, our boat exited the lift and entered the Trent & Mersey. It was an amazing experience and a high point of this waterways holiday.

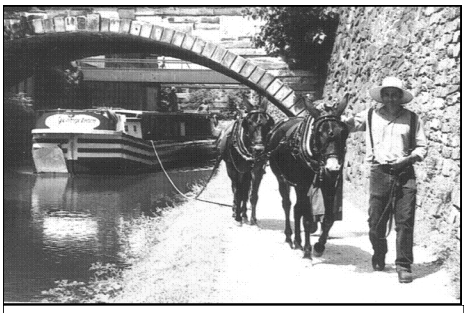
TO BE CONTINUED

Adopt a Gatehouse

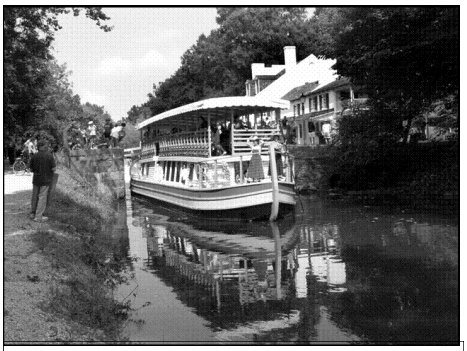
Why Being a Gatehouse Guide Is Very Cool On a Hot Summer Day

Both Lower Locks and Swamp Locks at Lowell National Historic Park are available for volunteer adoption. These gatehouses have important stories to tell. Volunteers are also needed to patrol the canal ways, meet visitors, and report on damage, maintenance and safety issues. Call the Volunteer Office at 978-275-1740 for more information. Anna Augusta, Maintenance Employee and Lock Tender Extraordinaire at Lowell NHP

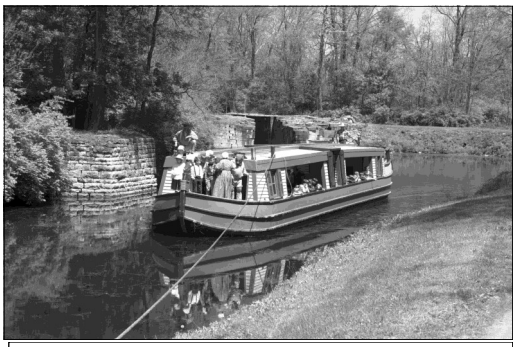
Josiah White II operates on the Lehigh Canal in Hugh Moore Park, Easton, PA. Open Memorial Day through Labor Day and weekends in May and September. Closed Mondays, except holidays. 40-minute rides begin at 11:30 AM. Last ride at 4 pm. Sunday rides start at 1 pm. Adults $7, children $5, under 3 free. Admission includes the Emrick Technology Center. 610-515-8000. www.canals.org



National Park Service's mule-drawn freighter *Georgetown*, Chesapeake and Ohio Canal NHP, 1057 Thomas Jefferson St NW, Washington, DC 20007. APR: WED & SUN and MAY-OCT: WED-SUN. Ranger-led, 1 hour rides @ 11, 1:30 & 3. $5 for everyone aged 4 and over. Reserve space for 10 or more @ 301-767-3714 or (after April 1) 202-653-5190. www.nps.gov/choh



National Park Service's mule-drawn excursion boat *Charles F. Mercer*, Chesapeake and Ohio Canal NHP, 11710 MacArthur Blvd, Potomac MD 20854. APR: THU-SAT and MAY-OCT: WED-SUN. Ranger-led, 1 hour rides @ 11, 1:30 & 3. $5 for everyone aged 4 and over. Reserve space for 10 or more @ 301-767-3714. www.nps.gov/choh



General Harrison at the **Piqua Historical Area**, 9845 Hardin Rd, Piqua, Ohio. Season is April through October, Wed-Sun. Rides with crew in period clothing. Three interpreter-led rides daily, 12:30, 2:30 & 4. $7/adults, $3/students, 5 and under free. www.ohiohistory.org/places/piqua; 1-800-752-2619.

CANALENDER

April 4-6—Annual Meeting, Virginia Canals & Navigations Society. Wakefield, Va. 434-577-2427.

April 11-13—Canal Society of Ohio spring trip to P&O Canal from Wayland to Girard, Ohio in the Mahoning River Valley, near Warren and Youngstown. For details, contact Dave Ambrose, 330-372-4873, ambrose@infohio.org.

April 12—Annual Douglas Memorial Hike, the Seneca to White's Ferry section of the C&O Canal. See our website, www.candocanal.org or contact Dorothea Malsbary at programs@candocanal.org.

April 18-20—Spring Field Trip to the Miami & Erie Canal, Waverly to Portsmouth, Ohio. Canal Society of Indiana. For more information, contact Carolyn and Bob Schmidt, 5909 Chase Creek Court, Fort Wayne, IN 46804; 260-432-0279; indcanal@aol.com.

April 18-20—Spring Field Trip to the Lower Delaware Canal, Bucks County, Pennsylvania. Sponsored by the Pennsylvania Canal Society and the Friends of the Delaware Canal. For more information, contact Susan Taylor, FODC Office, 145 South Main St., New Hope, PA 18938; 215-862-2021; fodc@erols.com.

April 26—Middlesex Canal Association Spring Walk, 1:30, Wilmington, MA. See the canal ox bow, the remains of Maple Meadow Brook Aqueduct, and a stone quarry. For more info, contact Robert Hagopian (781--861 7868) or Robert Winters (617-661-9230 or robert@middlesexcanal.org) or visit www.middlesexcanal.org.

May 4—C&O Canal hike, from Snyder's Landing (mile 76.7), 10:30 am, Washington County; Pat White, 301-977-5628 or hikemaster@candocanal.org.

May 4—Middlesex Canal Association, Annual Meeting, Middlesex Canal Museum, 2 pm. Tom Raphael will present "Middlesex Canal Restoration Plans."

May 17—Canal Society of NJ's field trip to the Union Canal Tunnel Park for Canal Days Festival at Lebanon, PA. Festival includes vendors, canal-era antiques, canoe rentals, and barbeque dinner. $45 (approx.) per person includes bus & dinner. Lunch on your own at vendor booths. Boat ride through the oldest existing transportation tunnel for an extra fee of $6. Bus departs the Morristown area at 9 am; return, 9:30 pm. To reserve a space, contact Mark Hamill, hamill-123@comcast.net; 908-561-1250

May 17—Society for Industrial Archaeology/NE, Tour of the Cumberland & Oxford Canal, Maine. Details in a later issue.

June 13-15—Spring Field Trip to the Oswego Canal, Canal Society of NY State. Check website for updates. Headquarters: Econolodge Riverfront Hotel, Oswego. Call 315-343-1600 for reservations at the CSNYS rate of $94.00; mention the CSNYS. For more information, contact Michele Beilman; 315-730-4495; mbeilman@ twcny.rr.com; www.canalsnys.org.

June 14-15—Transportation Festival, Wabash & Erie Canal Park, Delphi, Indiana; 765-564-2870. www.wabashanderiecanal.org.

June 21—Waterloo Canal Day, Waterloo Village on the Morris Canal; Canal Society of New Jersey, 11-4. Free admission and boat ride. Food, sales items. Museum open. 908-722-9556; www.canalsocietynj.org.

June 21—Volunteers-in-Parks Work Party, C&O Canal; 9-1; invasive plant removal between Great Falls, Md., and Georgetown, D.C. Contact Jim Heins, C&O Canal Association, 301-949-3518; vip@candocanal.org.

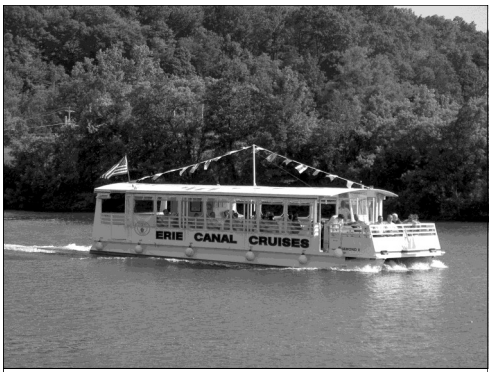
June 28-29—Heritage Tour Days, Monacacy Aqueduct, and **July 12—**Canal and Rail Fest, Cumberland, MD; www.candocanal.org

September 14 – 17, 2008—World Canals Conference, Rideau Canal, Kingston, Ontario, Canada. For more details, visit www.canals2008.com.

October 10-12—Fall Field Trip to the Cross-Cut Canal & Greene County, Indiana. Contact Carolyn and Bob Schmidt, 5909 Chase Creek Court, Fort Wayne, IN 46804; 260-432-0279; indcanal@aol.

October 13-18—C&O Canal through bike ride, Cumberland to Georgetown. Contact Tom Perry at 301-223-7010.

Oct 17 - 19—Penn. Canal Society, Field Trip to Lower Chesapeake & Ohio Canal, with stops at the Monocacy Aqueduct, Whites Ferry, Edwards Ferry, Lock 25, Seneca Aqueduct , Lock 24, Violettes Lock, Pennyfield Lock, and a tour of the refurbished Great Falls Tavern Visitors Center. A ride on the mule drawn canal boat will be included in the trip. For information, contact Dave Johnson at 301-530-7473.



1-1/2 hour **ERIE CANAL CRUISES** on *Lil' Diamond II*, Herkimer, NY. Fully-narrated historical cruise through a lock. A must for the history buff. Discounted rates for private groups. Public cruises mid-May through mid-October. Twice daily, 1 and 3 p.m. Adults, $18; children 3-10, $12. 315-717-0350; www.eriecanalcruises.com.

QUESTION OF THE DAY

For this column, we invite readers to submit questions in the hope that some of our distinguished readers will respond with answers to be shared in the next issue. Also, please send in your answers to the Question of the Day.

Here is the last **Question of the Day**: **Was the towline normally detached from the object under tow when approaching a lock?**

From George Hume:

In reply to the Question of the Day, I did a little bit of research, since I have very little personal experience with horse-drawn canal boats. In The Canal Age, Charles Hadfield explains that the barges on British canals were to be drawn in to locks by manpower. On page 129, he states: "Optimistic rules were made about how locks were to be worked. Horses were to be unhitched, and boats man-hauled or shafted into the locks to prevent them coming in too fast, stern ropes or straps should be used to check them before they could hit the far gates, and, in case they did, a roller or fender should be fitted to the bow, or a piece of wood held there as a protection."

Charles Hadfield also notes that not all bridges over canals had a towpath under them, and the handlers would have to unhitch the horse, take the horse around the bridge and hitch up again on the other side. He also recounts that in a few instances, iron bridges were built as cantilevers with a slot between the halves where the rope could be slid through, and the horse continue to pull the boat through under the bridges.

This past summer at WCC-2007, Sue Day brought her horse-drawn barge, *Maria*, hauled by her horse, Queenie, to Liverpool for the conference. On a tour, we went to the swing aqueduct over the Manchester Ship Canal. Sue explained how she crossed the aqueduct on the way to the conference. The towpath was originally cantilevered over the trough inside the trusses of the aqueduct, and the horses walked above the barge being towed. The towpath has rotted away, so Sue had to get Queenie up to speed, trot up the ramp to the aqueduct towpath entrance, stop, and unhitch, letting the barge continue across under its own inertia. Then Sue and Queenie walked around by the road bridge, probably causing a traffic jam, before they could rejoin the canal at the next access. The boat didn't have enough way on to get there, so it had to be poled for a few hundred yards, but it did clear the aqueduct before it stopped. Despite the historic comments that a crew of two could operate a horse-drawn barge, Sue said she needed at least six because of the need to overcome the canalside barriers such as lifting the rope over moored boats and shrubs and the effort to move the boat when facilities for her horse were no longer available.

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From Terry Woods**:**
HEADWAY, by Dillow D. Robinson, Independence, Ohio
TOWPATHS, Vol. X (1972) # 1.

The command, "Headway," meant to quit towing and was given at every lock whether going up or down stream. "Headway" meant that the boat had enough momentum to make the lock, and the teamster could ease up on the towing so as to give slack to the towline so it could be released from the deadeye of the boat. After the line was released, the mules were allowed to resume their pace to the lock.

To give the word "headway," the steersman had to consider how fast the boat was being towed, how much draught, and also the current of the raceway when close to a lock. Too much momentum could mean a broken snubbing line or a post pulled from the ground. I've never heard of either happening, but if it did, it would mean that the boat would crash against the apron or miter sill of the upper gates and be damaged.

If the boat were to be raised, the upper gates were first closed, then the wicket in each gate was slowly opened, a few inches at a time. The flow from these paddles would cause a reverse current in the lock chamber and the current would drive the boat forward, sometimes near the miter sill where water would enter the forward cabin windows. When the water in the lock rose above the paddles, this current would subside, and the boat would drift toward the lower gates.

The snubbing ropes were loosened while the boat was being raised or lowered. We never used pike poles to fend off from the lock, even when we got a bit of water in the cabin windows. The water only came in for a few seconds, so we didn't bother.

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From Roger Squires:

In the UK it was standard practice to pull the boat into the lock and out of it on the tow line. It was not detached.

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From Dave Meyer:

I have not seen any detailed written accounts of "lock through" procedures from someone who was there, but I looked at photos showing boats during the process and I don't see any with the tow rope attached to the hull. On some it is impossible to tell one way or the other but on others it appears that the rope is not on a cleat anywhere.

The next **Question of the Day** is:

What were the mechanisms used to move boats across free-flowing rivers?

Please submit answers to:
American Canals, c/o Linda Barth, 214 North Bridge Street,
Somerville, NJ 08876, barths@att.net

Hennepin Canal Lock 1

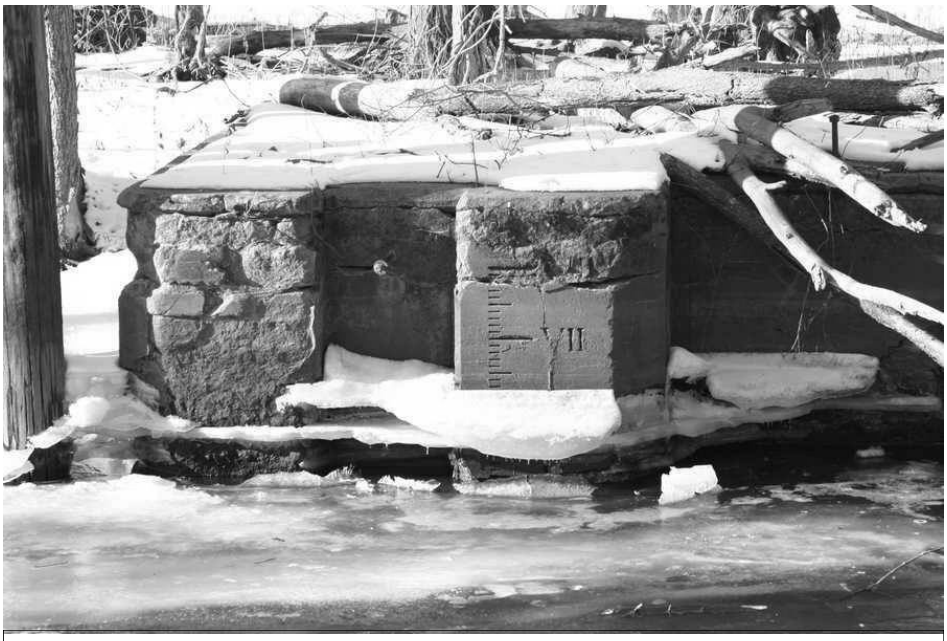
by Dave Barber

Anyone reading about the Hennepin Canal in Illinois will be informed that the canal had thirty-three concrete locks, 170 feet x 35 feet, of which thirty-two were on the main canal and one was at the inlet (north) end of the navigable feeder. Further reading indicates that thirty-two of these survive, with Lock 1 at the eastern end of the canal being submerged by improvements on the Illinois River. This improvement, apparently, was the construction of the Peoria Lock and Dam by the Corps of Engineers in the late 1930s. An increase in river level would have been necessary to gain the present nine-foot deep channel.

But a few months ago, I noticed in the entry for the Hennepin Canal on Wikipedia that Russ Price had provided photographic evidence that Lock 1 was still visible. That means that all thirtyi-three locks are intact and above water.

Recently, I have managed to contact Mr. Price and confirmed that Lock 1 does exist, that it is accessible from Lock 2 a mile to the west, and that it is built of concrete. Mr. Price reports that the towpath from Lock 2 is extremely overgrown and suggests only traveling the route in winter. His access may have been aided by frozen ground and ice at any gaps in the towpath.

Looking at the location on Google Earth gives no evidence of the lock. While Locks 2 and 3 to the west are very visible, the canal east of Lock 2 is obscured by leaves on the trees that envelop the area. It is unfortunate that the aerial photos were not taken in winter.



Hennepin Canal Lock 1, stop plank groove to west of upper gate showing depth gauge. Photo taken on 2/13/04 by Russ Price.

Fortunately, Mr. Price has visited the site several times and has photographic evidence of the lock above water with backwater from the river on a level through the lock. The backwater through the lock may be what led to the report of it being "submerged."

His photos of the lock show many interesting details, including remains of the upper miter gates, gate hardware, and a Roman numeral depth gauge above the upper gate recess. The depth gauge shows about 5-1/2 feet of water over the upper sill without gates on the lock. One unexplained detail at the lock is several piles of concrete blocks on the south (towpath side) wall.

Please see the attached photos by Mr. Price, plus more on the ACS web site.

Hennepin Canal Lock 1, view across lock from upper towpath gate to lower berm gate recess with upper gate remains. Several piles of blocks on right hand wall are unexplained. Photo taken on 2/13/04 by Russ Price.

Martin Street Bridge

by Dave Barber

Lincoln, RI is the location of one of the two watered sections of the Blackstone Canal. Midway between the Aston Dam and the Kelly House on the north and Cranberry and Scotts ponds on the south, the canal is crossed by Martin Street, which next crosses the Blackstone River between Lincoln and Cumberland, RI. This section is also about midway in the first segment of the Blackstone River Bikeway.

For the past two years, the canal and bikeway have been off limits at Martin Street while the bridge over the river was rebuilt. After crossing the river, the roadway crossed the canal on a narrow, low bridge with marginal height for a canoe and its passengers. The bikeway along the towpath intersected the road at grade.

This fall, the Rhode Island DOT opened the new bridges. Without fanfare and much to my surprise, the new bridges over the river, bikeway, and the canal cross at a higher elevation. The bikeway dips down under the roadway with a 10-1/2' clearance. The air draft over the canal is about the same, allowing the future passage of full height canal boats. While the bridges are steel structures with concrete decks, they have wooden accents. This is much more than I had hoped for and a demonstration that Rhode Island is a leader in canal preservation and restoration. Before and after photos are included for your perusal.

Erie-Champlain Canal Boat Co.
Offering lock tours of the Erie or Champlain Canals, family and educationally oriented departing from the Waterford Harbor Visitor Center at Waterford, NY. Self-captained boats are also available for hire by the day or the week (May thru October). For more information, please

Champlain Canal Tours
Open May through October, with regularly scheduled boat rides from 1 to 3 hours, day trips and overnight excursions. See rivers, canals and waterfalls on the Hudson River and Champlain Canal. Canal House, PO Box 9, Schuylerville, NY 12871; 518-695-5609; 518-695-5496, ticket office (in season); info@champlaincanaltours.com; www.champlaincanaltours.com/