



AmericanCanals

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Fall 2013

From the President

By David G. Barber

Elsewhere in this issue is an article about a threat to an existing, watered section of the James River and Kanawha Canal in Richmond, VA from a concert amphitheatre. This section of the canal has been watered since its navigational use. The article says that the watered canal and a section to the west have been proposed for restoration for twenty-five years.

I think that this illustrates the problem of proposed restorations that don't happen. Eventually, someone one will see the unused space and come up with other ideas that aren't as good. We all feel that watered canals are a good thing. It's a known fact that people like to be near water and relax near water. But, our efforts to preserve and restore watered canals have to be seen as moving forward. When the proposals remain in perpetual idle, they will not be respected. Progress with re-watering and reintroduction of boats available to the public is really the only long term option.

When I say this, I'm not only thinking of Richmond. I'm also thinking of the ten miles of the summit level of the Ohio & Erie Canal between Akron and Barberton, OH. I'm thinking of the watered canal within the Cuyahoga National Park at Lock 38 North, south of Cleveland. I'm



The Pride of Baltimore II is one of the vessels that will attend the Old City Seaport Festival in Philadelphia on October 11-13, 2013. Story on p. 3.

also thinking of two sections of the Blackstone Canal that I am involved with. So please don't feel that I'm picking on others. Folks elsewhere at Camillus, New York; Delphi, Indiana; Lebanon, Pennsylvania; Great Falls, Maryland; Canal Fulton, Ohio; Providence, Ohio; and some other sites have broken through this barrier and now can attract increased support. More of us need to answer the question of getting water into the canal and some kind of tour boat on that water. That is essential to preserve the resource.

Editor's note: In New Jersey, the D&R Canal Watch is working to put a public boat ride on the Delaware & Raritan Canal.

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American Canals

BULLETIN OF THE
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The objectives of the American Canal
Society are to encourage the preserva-
tion, 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
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objectives are welcome.

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Tall Ships to Sail into Philadelphia for the 2013 Old City Seaport Festival

by Darrah Foster at Independence Seaport Museum

It is that time of year again—where seafarers, boat lovers, and families come together for the Old City Seaport Festival in Philadelphia. The Old City Seaport Festival is a weekend-long event over Columbus Day weekend that brings tall ships, antique and classic boats, model ships, and on-the-water family fun to the Port of Philadelphia. Independence Seaport Museum will be filled inside and out with live entertainment and activities for every member of the family. Highlights of the festival include tall ships and boats, craft and nonprofit vendors, on-the-water activities, a Pirate’s Lair for children, some of Philadelphia’s finest food trucks, and a beer garden on the second floor balcony of the museum.

On Friday, October 11, a Parade of Boats will be a sight for onlookers on Penn’s Landing. On Saturday, October 12, festival guests will enjoy a day of deck and river tours and a pirate battle on the Delaware River that will surely rock the seaport! On Sunday, October 13, guests will enjoy another full day of deck and river tours, live entertainment, and activities.

The main feature of the Old City Seaport Festival is the participating ships and boats that make their way to Philadelphia. There are seven confirmed tall ships to provide deck and river tours where boat enthusiasts and curious onlookers alike will have the experience of acquainting themselves with the

ships firsthand. The ships include: *AJ Meerwald*, *Gazela Primiero*, *Pride of Baltimore II*, *Kalmar Nyckel*, *Mystic Whaler*, *Hindu*, and *Virginia*.



Kalmar Nyckel, the Tall Ship of Delaware

Also in attendance will be *Summer Wind*, *Patriot*, and classic boats from the Antique and Classic Boat Society–Philadelphia Chapter, as well as small craft from the Traditional Small Craft Association—Delaware River Chapter. The Delaware River Chapter of the TSCA will manage the small boat races in the basin on Saturday and Sunday.

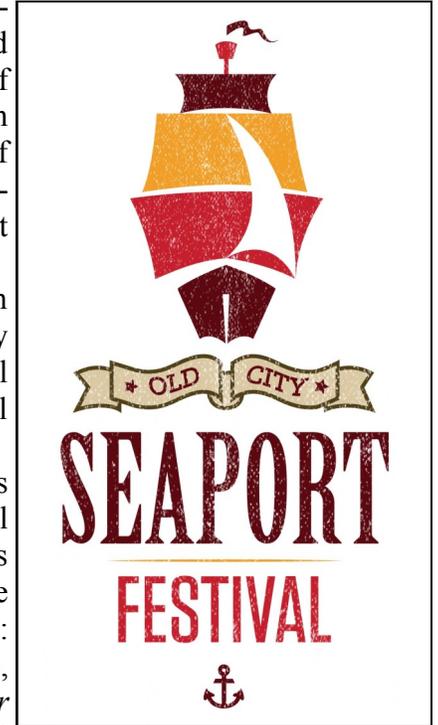
Refreshing beverages in the beer garden on the second floor balcony of the Seaport Museum is a great option for the adult crowd. The beer garden will be the perfect place to relax with a great view and a cold beer. The balcony overlooks the Delaware River, participating boats and ships, and the festival events below.

Old City Seaport Festival offers some of Philadelphia’s well-known food trucks, giving an option for every eater. Attending food trucks include: Little Baby’s Ice Cream, Reuben on Rye, Vernalicious, Just Jackies, Jimmies Cupcakes, Sum Pig, Meat or Not to Meat, and Chef Johnny Bravo’s Surf n Turf. From vegan options to gourmet sandwiches to ice cream, the Old City Seaport Festival will have something for everyone.

The Seaport Museum aims to connect Philadelphians to their rich maritime heritage. The Old City Seaport Festival provides locals the opportunity to not only look at beautiful boats and ships, but also step inside the museum to see our exhibitions, including the latest, “Oh, Sugar!: The Magical Transformation from Cane to Candy.” All exhibits offer aspects of life on the Delaware River so each member of the family will enjoy a stroll through the Seaport Museum.



A.J. Meerwald, the New Jersey state ship



HISTORIC CANAL COMPLICATES TREDEGAR AMPHITHEATER PLANS

Preservationists object to proposal for amphitheater for Richmond Folk Festival

By Michael Martz, Richmond Times-Dispatch -- mmartz@timesdispatch.com

One of Richmond's premier public events is bumping up against preservation of one of the city's most fragile historical assets, with the scenic downtown James River shoreline as the battlefield. Venture Richmond has proposed development of almost 5 acres of property that it and the city own between Tredegar and South Second streets as an amphitheater to serve as the main stage for the Richmond Folk Festival.

But the proposal includes alteration of a portion of the James River and Kanawha Canal—built almost 225 years ago and surveyed by George Washington, but now cut off from other remnants of the canal system that helped make Richmond a hub of riverfront commerce in the late 18th and 19th centuries.

Venture Richmond maintains that its plan would restore the canal to its original dimensions while providing a safe venue for the folk festival's main stage when it moves next year from its current location on NewMarket Corp. property on Second Street. "The future of the Richmond Folk Festival depends on this project," the organization declares in a written presentation on the project. "An adequate site that can safely accommodate the crowds is essential if the festival is to continue."

But experts on the canal system fear the proposed changes would erase any chance of re-creating a navigable waterway for light canalboats from the Great Shiplock to Maymont Park. "I don't want the opportunity to be lost forever when it could be such an incredible attraction for the city," said John W. Pearsall III, a member of the Canal Committee appointed by the Historic Richmond Foundation more than 25 years ago to study the potential of restoring the canal system along the falls of the James.

The proposed amphitheater at Tredegar Green also has drawn fire from civic leaders and activists in adjacent Oregon Hill, who say the main stage of the folk festival should be at a current concert venue on Brown's Island, not facing their neighborhood across Belvidere Street at the Virginia War Memorial. "We do not want the loudest, largest stage for 10,000 people aimed directly at the War Memorial," said Charles Pool, an Oregon Hill resident who has helped lead the fight against the proposal. "We do not want the canal damaged," Pool said. "We feel it's just a trivial reason to damage the canal just to improve sightlines from the (amphitheater) stage."

The proposed site plan and grading profile for the project were to have been considered in September by the Urban Design Committee, which is charged with making recommendations to the Richmond Planning Commission on public projects. But the project hit an additional bump at City Hall when the zoning administrator advised that the portion of the property between the canal and Second Street is not properly zoned for an amphitheater. The property either would have to be rezoned or receive a special-use permit to allow the amphitheater there.

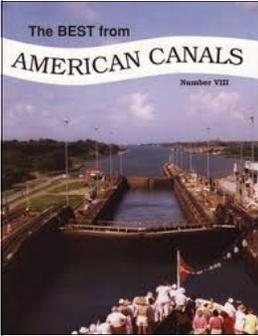
"I want to be under construction...in the spring," said Jack Berry, executive director of Venture Richmond. "I've got some time to go through all of the approvals." His biggest obstacle is likely to be potential damage to the canal and its possible future use, which Richmond sought to preserve when it paid an additional \$385,000 for a bridge over the disused waterway for the new Second Street Connector that opened this summer to create a new vehicle access to the riverfront and the corporate headquarters of Dominion Resources. The road was built by Dominion and the city on property donated by NewMarket Corp., which also donated 2.7 acres to Venture Richmond to develop the amphitheater. The nonprofit civic organization leased an additional 1.8 acres of city property to create a large enough parcel for the main stage. The folk festival has used the lower bowl of the property near Tredegar Street for one of its smaller stages, but Venture Richmond wants to use property above the canal along Second Street to accommodate a larger audience.



The canal lies in the sightline from the upper portion of the property to the stage. Venture Richmond wants to reduce the size of the canal towpath, a 25-foot-wide berm of earth and packed clay on the south side of the canal that is essential to hold water for future boat passage. The proposal would remove the railroad tracks laid on top of the towpath in the late 19th century after the canal ceased to be used for water commerce, reduce the height from 84.5 to 83 feet, and narrow its width to 12 feet. The width of (continued on page 22 and 23)

ACS Sales

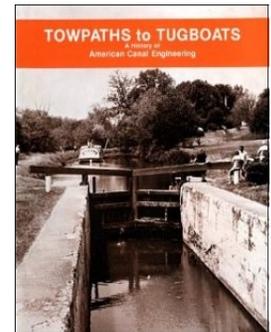
If you haven't checked the ACS website lately, you might not know that the society has the following items for sale:



Best from American Canals #1	published 1980	\$4
Best from American Canals #2	published 1984	\$4
Best from American Canals #3	published 1986	\$4
Best from American Canals #4	published 1989	\$4
Best from American Canals #5	published 1991	\$4
Best from American Canals #6	published 1993	\$5
Best from American Canals #7	published 1996	\$5
Best from American Canals #8	published 1998	\$6

<i>Towpaths to Tugboats</i>	published 1995	\$6
American Canal Guide #1: West Coast	published 1974	\$1
American Canal Guide #2: South, NC to FL	published 1975	\$2
American Canal Guide #3: Lower MS & Gulf	published 1979	\$3
American Canal Guide #4: WV, KY, Ohio River	published 1988	\$3 (Copies Only)
American Canal Guide #5: DE, MD, VA	published 1992	\$3
20 year American Canals Index 1972-1992	published 1992	\$2
Canal Boat Construction Index (12 pages)	published 1992	\$2
Canal Terminology (100 pages) Hahn & Kemp	published 1998	\$15
A Picture-Journey Along the Penn. Main Line Canal	published 1993	\$10

ACS Burgee (blue on white cloth)	\$15
ACS cloth sew on patch (2"x3" red, white & blue)	\$3
"Save Your Local Canal" bumper sticker	\$1



Shipping and handling: first two items \$4; each additional item \$1. Checks payable to: American Canal Society. Send orders to: Robert H. Barth, 214 N. Bridge Street, Somerville, NJ 08876-1637; 908-722-7428; barths@att.net. Please call or email with questions.

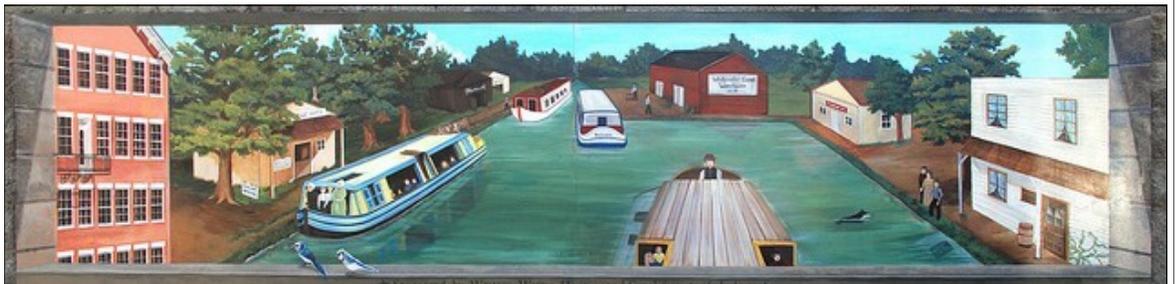
NEW CANAL MURAL IN CAMBRIDGE CITY, INDIANA

by Phyllis Mattheis

As part of the 2011 Festival of Arts mural contest in Wayne County, a Whitewater Canal mural was painted for Cambridge City, Indiana by Carly Mattingly Dee. The mural is mounted on the concrete block wall on the south side of Main Street, west of the Vinton House between the liquor store and the apartment building.

The mural was commissioned jointly by Western Wayne Heritage, Inc. and the Canal Society of Indiana. It depicts canal boats arriving at the Vinton House on the canal and passing under the National Road through a stone-arch bridge.

It was difficult to work the perspective of all the details into the two narrow panels, 4x8 feet each. When the panels were completed, they were sealed against the weather.



Courtesy, *The Hoosier Packet*, December 2011.

JAMES A. GARFIELD AND THE BEAVER & ERIE CANAL

John Clark Ridpath, LLD in *The Life and Work of James A. Garfield*, published in 1881, describes Carfields' fall as follows:

“The position of bowman on the *Evening Star* was rather an unsafe one. The place where James stood was narrow and often slippery, and in a brief period of time, he had fallen into the water fourteen times. One night as the boat approached a lock (Lock 8), the bowman was hastily awakened and tumbled out half asleep to attend to his duty. Uncoiling a rope which was to assist in steadying the boat through, he lost his balance, and in a second found himself in a now familiar place at the bottom of the canal. The night was dark and no help near. Struggling about, his hand accidentally clutched a section of the rope which had gone over with him. Now, James, pull for your life, hand over hand; fight for yourself, fight for another visit to home and mother. Strength began to fail. The rope slid off; swim he could not. Jerk, jerk; the rope has caught. Pulling away with a will, he climbed back to his place and found that he had been saved by a splinter in a plank in which the rope had caught by a knot...When the boat neared home again, James bade good-bye to the *Evening Star*...Four hard months of life on and in the canal had told heavily on the young man's constitution.”

The 31-mile-long Beaver Division of the Beaver & Erie Canal was begun in 1831 and completed in May 1834, extending northwest from Beaver, Pennsylvania on the Ohio River to Pulaski, Pennsylvania. At mile marker 21, it joined the 83-mile-long Pennsylvania & Ohio “Cross-Cut Canal.” This privately funded Ohio canal was completed in April 1840 and went from Youngstown, Ohio through Warren, Ohio and joined the Ohio & Erie Canal at Akron, Ohio. This is the route that the *Evening Star* was following to Cleveland, the home port for James Garfield, when he fell in.

When completed in 1844, the Beaver & Erie Canal was 137 miles long and extended from Beaver on the Ohio River to Erie, Pennsylvania on Lake Erie. Boats entered the Ohio River at Beaver and were towed up-stream via steamboats the 28 miles to Pittsburgh.

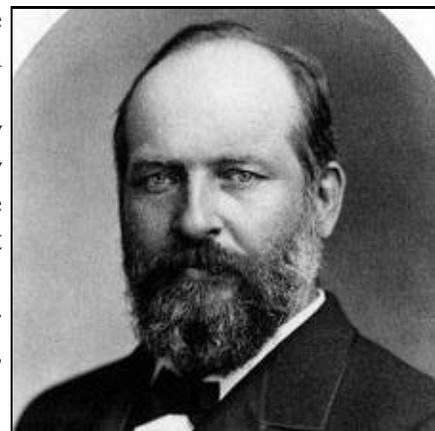
Courtesy, *The Hoosier Packet*, December 2010

A LITTLE BACKGROUND ON PRESIDENT JAMES A. GARFIELD

James Abram Garfield (November 19, 1831–September 19, 1881) served as the 20th President of the United States (1881), after completing nine consecutive terms in the U.S. House of Representatives (1863–81). As the last of the log cabin Presidents, Garfield attacked political corruption and won back for the Presidency a measure of prestige it had lost during the Reconstruction period. Garfield's accomplishments as President included a controversial resurgence of Presidential authority above Senatorial courtesy in executive appointments; energizing U.S. naval power; and purging corruption in the Post Office Department. He appointed several African-Americans to prominent federal positions. On July 2, 1881 at Washingtons Union Station, a mentally disturbed office-seeker shot the President. Mortally wounded, Garfield lay in the White House for weeks. Alexander Graham Bell, inventor of the telephone, tried unsuccessfully to find the bullet with an induction-balance electrical device which he had designed. On September 6, Garfield was taken to the seaside at Long Branch, NJ. For a few days he seemed to be recuperating, but on September 19, 1881, he died from an infection and internal hemorrhage.

In addition to being the only President to ascend to the Presidency directly from the House of Representatives, James A. Garfield is the only President to be an ordained minister. James A. Garfield's mother was the first Presidential Mother to attend her son's inauguration. Outgoing President Hayes even gave her his seat.

The James A. Garfield National Historic Site was given the name Lawnfield by reporters in 1880. You can visit his home at 8095 Mentor Avenue, Mentor, Ohio.



Locked and Dammed: The region's 23 locks and dams are on the brink of failure

Sunday, March 18, 2012

By Len Boselovic, Pittsburgh Post-Gazette



Bob Donaldson/Post-Gazette

The Consol Energy towboat Aliquippa takes two barges of sand up the Monongahela River to Monessen.

This is the first of a four-part series.

Pittsburgh's three rivers, an economic engine since Lewis and Clark departed the city for their epic exploration of the West, are flirting with disaster.

The region's 23 locks and dams, which annually move 33 million tons of coal, petroleum and other commodities that fuel the local economy, are on the brink of failure, according to the U.S. Army Corps of Engineers, the federal agency charged with maintaining them.

The failure could come at Elizabeth, the locks and dam on the Monongahela River completed in 1907. The Corps says there "are significant structural, mechanical and hydraulic problems" with the locks, including the collapsing roof of the tunnel that carries water used to fill and empty the lock chambers.

"We've had chunks of concrete coming down for many years," said Jim Fisher, acting chief of operations for the Corps' Pittsburgh district.

Or it could come 18 miles farther up the Monongahela at Charleroi, where the walls of a Depression-era lock sway back and forth each time the lock is filled and emptied. Water inside the chamber is helping to hold the walls up.

If the dam at Elizabeth collapsed and water levels dropped, the Charleroi lock could tumble into the river, closing the Monongahela. Corps and industry officials said a prolonged outage would make electricity more expensive, put more heavy trucks on local roads and highways, and even could affect water supplies for consumers and industry.

While Pittsburgh has some of the oldest locks and dams in the nation, conditions along the rest of the nation's 11,000-mile inland waterway system are not much better. One high-ranking Corps official speaking at an industry meeting last month in Washington, D.C., described the situation as "a crisis headed for a catastrophe."

The precarious status of the waterway system stems from what government and industry officials agree is a broken method of maintaining and replacing aging locks and dams.

Congress has authorized \$8 billion in projects that would replace or rehabilitate aging river infrastructure. But it has not fully funded the projects up front. The piecemeal funding the projects receive generates significant cost overruns and construction delays counted in decades, not months or years.

The longer the delays, the more difficult and expensive it becomes to maintain the aging locks and dams. More than half of the nation's locks, which were designed to last 50 years, have been moving along river traffic far longer. About 40 percent of the 89 locks in the Corps' Great Lakes and Ohio division, which includes Pittsburgh, are more than 70 years old.

Corps and industry officials say it is only a matter of time before a major lock or dam fails, an event that would force elected officials and consumers to realize the important role river infrastructure plays.

More than 200 locks and related dams move about 550 million tons of freight annually: coal to power plants, grain from farms to market, fuel oil to New England. More than 20 percent of the coal used to generate electricity and 30 percent of oil and other petroleum products move by barge. About 90 percent of the corn and soy beans exported from Mississippi gulf ports gets there by barge.

While coal accounts for the majority of traffic on Pittsburgh's rivers, barges also move gravel, sand and limestone used in construction, fuel oil, fertilizer and other goods.

Rivers provide a less expensive alternative to other transportation options. Barges are more than \$14 a ton cheaper than using rail or truck, according to a 2010 report by a Corps-industry task force that recommended changes in the way lock and dam projects are funded.

"We're going to have a catastrophic failure somewhere in this country and then everybody is going to be up in arms," said Peter Stephaich, chairman of Campbell Transportation, a Houston, Pa., company that operates a fleet of 500 barges and moves about 20 million tons of commodities annually.

Funding gridlock

The \$8 billion funding backlog stems from the \$170 million Congress and industry generate each year to pay for major repairs to locks and dams or to replace them. Half of the money comes from a trust fund financed by a 20-cents-per-gallon tax barge operators pay on the diesel fuel they use. The government matches that with \$85 million in taxpayer money.

At a \$170 million-per-year pace, it will take more than 22 years to generate the \$3.8 billion needed to complete seven major projects already under way. Those include rehabilitating the Emsworth dam on the Ohio River and building new locks on the Monongahela.

Once that's done -- in the 2030s -- work could start on another \$4.3 billion in projects that Congress has authorized but not funded.

Even the extended timeline is jeopardized because another \$1 billion has been added to the cost of the Corps' top priority: replacing two Depression-era locks on the Ohio River near Olmsted, Ill., the nation's busiest stretch of river.

Because the \$3.1 billion Olmsted project gets most of the \$170 million the Corps receives each year for major projects, it will cost more and take longer to complete the Corps' No. 2 priority: the project on the Monongahela authorized by Congress in 1992.

A new dam at Braddock already has been completed. But the work not yet done includes eliminating the 105-year-old locks and dam at Elizabeth, and building two new locks to replace the Depression-vintage lock at Charleroi.

When the project was approved, it was expected to be completed in 2004 at a cost of \$750 million.

Because of funding shortfalls, the Lower Mon project is now estimated to cost a minimum of \$1.4 billion and will be completed in 2024 at the earliest, 20 years behind schedule.

Steve Fritz, the Corps official managing the project, said if Congress authorizes only minimum annual funding, work will drag into the 2030s and cost upward of \$1.7 billion. "The longer you go into the 2030s, the higher that number will climb," Mr. Fritz said.

By then, the Elizabeth lock and dam -- built to last 50 years -- would be nearly 125 years old.

"The poster child for the river system is the Lower Mon project," said Michael Hennessey, chairman of the National Waterways Foundation, a research group funded by companies that move goods on rivers.

Debilitated locks and dams are part of a larger national problem: the lack of funding to repair or replace aging infrastructure that the economy depends on. In 2009, the American Society of Civil Engineers put a \$2.2 trillion price tag on fixing roads, bridges, locks and other infrastructure.

Because many lawmakers elected in 2010 promised to slash the federal budget deficit without increasing taxes, it is unlikely that money will be forthcoming for infrastructure improvements.

"It is a function of a kind of unfortunate mentality in this country where, over time, we have become a spending nation and not an investing nation," said Michael Steenhoek of the Soy Transportation Coalition, an industry group pushing for waterways improvements.

"We just need to get back to this mentality of being an investing nation. Great nations invest in themselves," he said.

'Fix when fail'

Faced with flat funding, the Corps has adopted a "fix when fail" approach to maintaining locks and dams.

Take what happened at the Montgomery Dam on the Ohio River near Shippingport in 2006. A week after the Corps concluded that the dam had structural problems, a runaway barge hit it, damaging two of 10 100-foot-wide steel gates used to control the flow of water.

"Since that time, we've only had enough funds to put Band-Aids on the gates," said the Corps' Mr. Fisher. "We are at the border of 'fix when fail' and 'failing to fix.' "

With preventive maintenance crimped, barge operators face more frequent and longer delays as locks break down. On the Ohio River, the number of hours lost annually because of outages has tripled since 2000 to 80,000 hours, members of the House Committee on Transportation and Infrastructure were told last fall.

"I have never seen the disruptions to traffic we have now," said Martin T. Hettel, the American Electric Power manager responsible for moving coal on AEP barges to the Columbus, Ohio, utility's power plants.

The delays occur even though the Corps spends millions each year to keep outdated facilities functioning.

"That's just throwing money down a rat hole," said William Harder, a former navigation manager in the Corps' Great Lakes and Ohio River division who retired last year.

Dams are used to generate hydroelectric power and prevent flooding. They are also used to hold back water, creating a pool deep enough for barges to move up and down the river. Because the water level rises and falls at different points along rivers, locks are used to raise and lower barges depending on the depth of the river where they are coming from and the depth of the river where they are headed.

Mr. Hennessey said that if the dam at Elizabeth collapsed, "instead of having 9 or 10 feet for commercial navigation, you might have 2 feet and then everything stops."

Corps and industry officials say it would take three or more years to replace a failed lock and even longer if a dam had to be replaced.

Whatever the period of time needed, the 10 million tons of coal and other commodities that move through the Elizabeth locks each year would have to be moved by rail or truck, which are more expensive. Moreover, it would take more than 1,000 large trucks to move the same amount of coal a standard 15-barge tow carries.

"If the Lower Mon closes, there's not enough trucks to move the coal power plants need," Mr. Harder said.

A Corps-commissioned study produced in October estimated a lock or dam failure that closed the Lower Mon to traffic could increase electricity costs up to \$1 billion annually. The figure covers only what businesses and consumers could pay and not how those price increases would ripple through the economy.

But Mr. Harder, who disclosed the \$1 billion estimate at an industry meeting in Pittsburgh in October, said costs would include power plants paying more to move coal by truck or rail. He said an extended closure could cause some power plants to shut down, increasing the cost of electricity for about 21 million people along the East Coast.

Dams also make it possible for electric generation plants, other industry and municipal water companies to draw enough water from the river to supply their operations. Residents and industries who rely on the Monongahela for water might have problems if the level drops below the intake valves used to draw water out of the river.

"If we would lose those dams, we would have a lot of towns in trouble," said Jeanine Hoey of the Corps' Pittsburgh district.

Water companies say they would be able to provide water, even if a dam were out of commission for three or more years. But it might be more expensive.

"It wouldn't be easy. There certainly would be a lot of challenges," said Joe Dinkel, executive director of operations for West View Water Authority, which draws water out of the Ohio River to serve more than 200,000 consumers in the North Hills and Ohio River communities.

Pennsylvania America Water, which has 220,000 customers in the region, is discussing what the loss of a dam would mean with the U.S. Department of Homeland Security, spokesman Gary Lobaugh said.

Low water pressure

The Corps and industry officials have elevated their alarms over a looming failure at a lock or dam somewhere along the 11,000 miles of river and the economic impact it would have.

The federal budget deficit is only one reason their fears have gone unheeded.

A more fundamental reason is that taxpayers do not ride on rivers. They exert no pressure on lawmakers to do something about the aging infrastructure. Moreover, the river transport industry is dwarfed by the trucking and rail industries, which have more clout in never-ending funding fights in Washington.

People "have no idea how [river transportation] is tied into jobs and the heart and soul of economic life in this country," Mr. Hennessey said. "We don't have the political muscle in Washington, D.C., that the railroads and truckers do."

Industry officials say more reliable locks and dams could boost U.S. exports, a critical element of President Barack Obama's economic recovery plan.

They point to an expansion of the Panama Canal that will allow more and bigger ships to pass through the canal, which links the Caribbean Sea with the Pacific Ocean. The Panama project could benefit American coal and grain producers eyeing booming markets in Asia if they can efficiently ship products down the Ohio and Mississippi rivers to New Orleans for export.

"How can we double exports in five years if our transportation system can't support that?" Mr. Hettel asks.

The Waterways Council, an industry group representing carriers and shippers, estimates the Panama Canal expansion is the equivalent of six Olmsteds, the Corps' \$3.1 billion project on the Ohio River plagued by cost overruns and construction delays.

Mr. Steenhoek, of the Soy Transportation Coalition, notes that unlike Olmsted, the canal project -- run by the Panamanian government that took control of the canal from the United States at the end of 1999 -- is on budget and is expected to be completed on time in 2014.

"The country that built the Panama Canal has a lot to learn from the country that is operating the Panama Canal," he said.

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NEW LOCK FOR LOCKVILLE, OHIO

Lockville, Ohio, a small town southeast of Columbus, was the site of several locks on the Ohio and Erie Canal.

Now situated in the Lockville Canal Park, Lock 11 has recently been improved by Fairfield County Historical Parks. A portion of the lock had been filled in to make an entrance to the park. That situation has now been reversed, as the dirt has been excavated and a different entrance created to increase visitor safety.

Parks Director David Fey and canal historian David



Meyer have recently concluded that there was originally a changebridge in Lockville. It is possible that one day it could be recreated.

Earlier this year crews worked on drainage and landscaping and a bus turnaround at the park. “It really is fanstastic what is there,” Mr. Fey said. “We even have the slack water dams still in place between the locks.”

The importance of the canal can be found on Lancaster’s city website about the community’s experience:

“The Lancaster Lateral Canal opened to commerce in 1834. With canal transportation, markets were opened to the east, and



Ohio & Erie Canal, Lock 11 south, Lockville, Ohio, 3/31/11
Looking south. Photo courtesy of the American Canal Society



with these new markets came wealth and opulence, which is still evidenced, by many fine old homes all over the county,” it reads.

“The Lancaster Lateral Canal was acquired by the state of Ohio in 1836, and by 1841, the Hocking Canal had been extended south to Athens. In 1840, the first canal boat, carrying loads of coal, arrived from the Hocking Valley. It was a great curiosity to most citizens for they had never seen stone coal.”

A Five-Generation Canal Family

(The D&H Canal Lock Tender at “Lonesome Lock”) by S. David Phraner

Prologue

This is the story of a family and its relationship with three towpath canals. What, you say? Why would a contemporary family want to be associated with an obsolete 19th-century transportation technology? The answers are in the way that one American family changed and adapted over generations, and how, over the same period, canals evolved to become relevant to the 21st century. With apologies to readers who are well acquainted with canal history and technology, my aim is to inform the more casual student of history who may be less familiar with American canals. Oblige me, therefore, if at times I dwell on canal basics punctuated with family genealogy.

Introduction to “Lonesome” Lock

Pennsylvania Lock 34 on the old Delaware & Hudson Canal was and still is a lonesome, isolated place. One would have to walk a mile in either direction on the towpath to encounter another canal feature: the village of White Mills to the east and Beardslees Basin and the hamlet of Indian Orchard to the west. The canal at Lock 34 follows the northeast bank of the Lackawaxen River, a tributary of the Delaware River. Across the river from the lock site, the Erie Railroad built the Honesdale branch of the Jefferson Division, now the Lackawaxen and Stourbridge RR. This area of northeastern Pennsylvania was then and is still called the Promised Land. The relationship of this region of Wayne and Pike counties to the Biblical namesake is lost in time.

The lock’s official nomenclature is derived from numbering the locks, starting with lock number one at the original crossing of the Delaware River on entering Pennsylvania. It therefore is officially the 34th lock counting westward from Lackawaxen, of the Pennsylvania Section, on the Lackawaxen Division.¹

In the final enlargement, Pennsylvania Locks 1-3 were replaced by New York Locks 70-72 so that the canal could pass over the Delaware and Lackawaxen aqueducts. But, the Pennsylvania locks upstream of the reroute were not renumbered. More importantly, Lackawaxen is also the place where the canal crossed the Delaware River, which forms the border between New York and Pennsylvania and the national historic site of the only

surviving intact Roebling suspension aqueduct.² The D&H Canal linked the Hudson River at Kingston/Rondout NY with Honesdale PA, near but not at the coal mines. Gravity railroads connected the northwestern extremity of the canal with the northeastern anthracite field in the Scranton/Carbondale region.

Lonesome Lock was never the lock's official title. An early table of D&H distances shows it as "Beach Flat" at mile post 4.0 from Honesdale and mile 104.0 from Rondout (Kingston, on the Hudson) endpoints of the canal.³ A doggerel lament quoted in Leroy's seminal history of the Delaware and Hudson Canal Company traces a trip eastbound on the canal. The poet cites Lock 34 in the boatman's vernacular, as "Lonesome Lock," but then misspells the lock tender's name as "Dan Correll."⁴ That lock tender's proper name was Daniel Perry Coryell, of the Coryell family, of French Huguenot lineage. More about that later.

Lonesome Lock's Features and Description

The Lock 34 site is now in ruins. It assumed that condition about a decade after the canal's demise. While the wood frame structures—the lock house and lock timber lining—have all disappeared, the stonework remained in a remarkable state of preservation until the 1970s when age and tree growth undermined the lock stone structures. Except for some squatter campers some years back, the site has been unoccupied since it and the western portion of the canal were abandoned in 1898. The old lock house foundation and the lock itself are well-defined on the landscape, even today over a hundred years after the last canal boat passed through the lock and old Dan Coryell and his family left the lock for a new life in twentieth-century New Jersey.

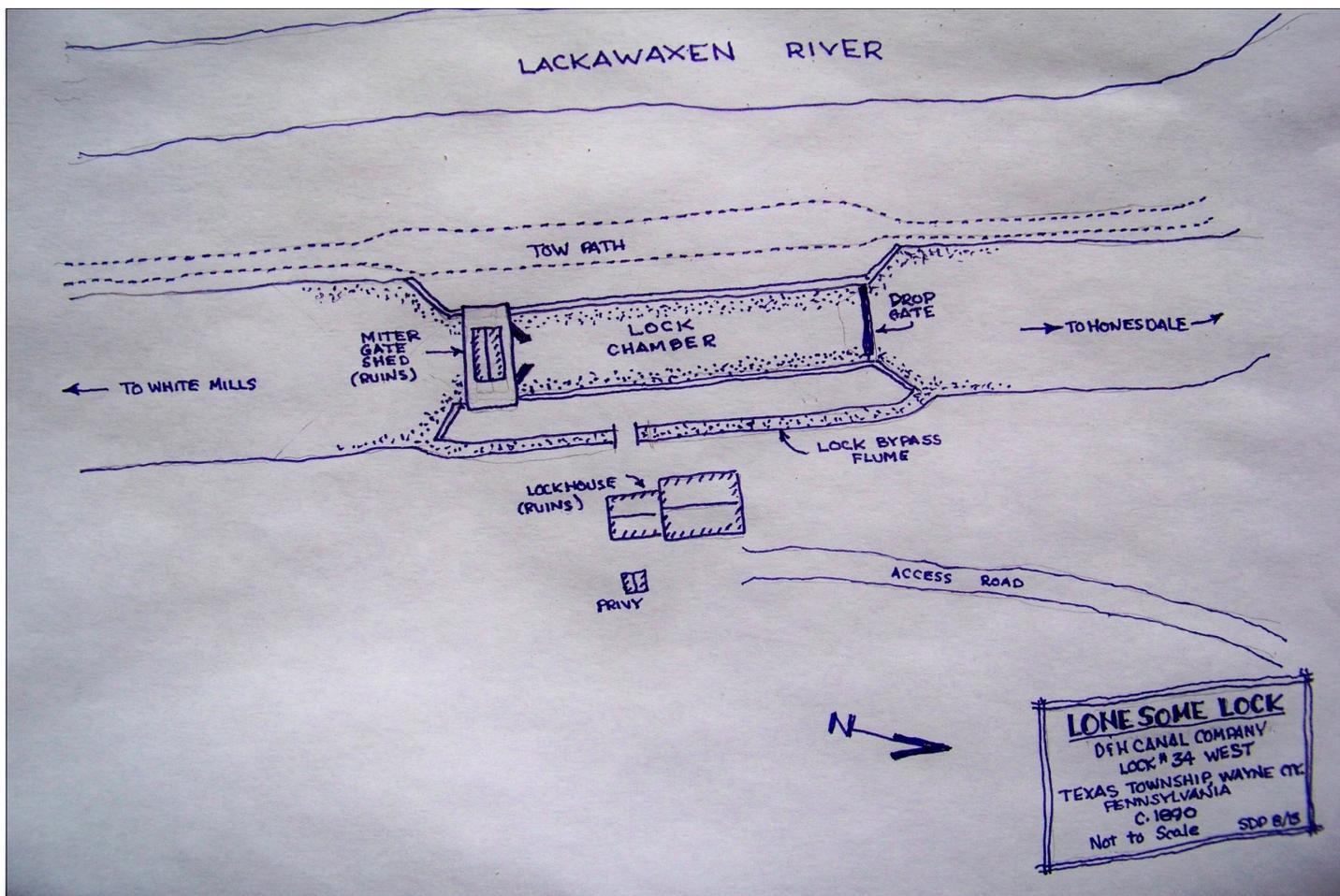
The site occupies a narrow shelf about 50 yards down a steep bank from present US 6 highway and above the east bank of the Lackawaxen River. Now heavily wooded, the surroundings during the time of the canal's operation were harvested for their timber. The view planes from the lock house then were much more open. Formed into rafts, cut timber was floated down the Lackawaxen and the Delaware rivers to Philadelphia during the spring freshets. Upon arrival, the rafts were broken up and the lumber used in construction. Hemlock was harvested for tanning and acid production. Blue stone was also a common regional product carried by the canal boats in northeastern Pennsylvania and the Catskill region to the north. The prime reason, however, for the canal and its connecting gravity railroads⁵ was hard or stone coal, more commonly known as anthracite.

An original watercolor landscape rendition (below) of how the active Lonesome Lock might have appeared accompanies this narrative.⁶ A rough diagrammatic site map (drawn by the author; next page) also shows the

Painting of what Lonesome Lock might have looked like when it was in service. Painting by the author.



major elements of the site based on examination of ruins. Note the scarcity of mature trees in the painting. This reflects the middle- to late-19th century condition when the timberlands along the canal were denuded. The lock chamber and downstream wing walls were built of native stone as shown. In the Pennsylvania section of the canal, this native building material was flat field or blue stone. The walls then would have appeared as mortarless stacked stone. Because of possible damage to the stone lock walls and the flanks of canal boat as they “locked through,” the lock chambers were lined with heavy planking. All of that plank cladding has decomposed over the years and fallen into the bed of the lock chamber.



While the bed of the canal and the lock chamber retain some moisture, a heavy rain will form shallow pools in the lock and the puddled clay liner of the adjacent canal prism. The towpath bank of the canal was breached at one or more points between the lock and White Mills, preventing the prism from retaining water to the original 5’ depth of the canal. The D&H Canal was originally built to a 4’ depth and 32’ width at the water surface, limiting the capacity of boats to about 20 tons. In the 1840s and ‘50s, the canal was enlarged three times to accommodate greater volume of coal on larger (40-, 50-, and then 130-ton) boats.⁷ The locks were enlarged during that decade. At that time, the design of the locks was changed to permit operation by one person using geared iron arms to move the two downstream miter gates simultaneously and separately the single drop gate on the upstream end of the lock. The drop gate had replaced another set of miter gates originally constructed by the D&H Company.

That canal enlargement also included an increased water supply to keep navigation active during the dry months of August and September. Twenty-two reservoirs were constructed by the D&H Company to feed the canal, including five at the summit level of the canal in the Town of Mamakating (Cuddlebackville to PhillipSPORT) in Sullivan County, NY. One of those five reservoirs (Wolf Lake) plays a role in the later history of the family. Another feature of Lonesome Lock (and all canal locks) was a bypass flume. Dan Coryell and his fellow D&H lock tenders were responsible for the water level of the canal downstream from their respective locks. To some extent, the release of water from the lock chamber with the passing of boats through the lock

replenished the water level in the downstream stretch of canal. Each passing of canal boats downstream with the opening and closing of the lock gates diminished the water level in that upper section. To help regulate the water level of the canal during times of little boat traffic, a ditch lined with stone, or bypass flume, provided a means to convey water from the higher to the lower levels of the canal around (but not through) the lock. The Lonesome Lock bypass flume is located on the berm (uphill) bank of the canal between the ruined lock house site and the lock itself. This stone-lined flume is still apparent at the lock site. It is narrow enough for a person to leap across easily. A large flat blue stone, still in situ, positioned across the flume between the lock house and lock chamber enabled Daniel, his wife Nancy (nee Andrews) and son Cornelius (my grandfather) to access the lock-operating mechanism at the downstream end of the lock chamber. There may have been a similar stone crossing of the flume at the upstream side of the lock, since access to the lock gate on the west (upstream) end of the chamber was necessary. The site diagram (below, drawn by the author) shows this flume and its importance in the operation of the lock.

Canal Jargon

We have used several canal terms that may be unfamiliar if the reader is a novice in canal technology. With apologies to canal enthusiasts and experts, I pause for an explanation of terms. The name *towpath canals* refers to the use of mule teams to haul canal boats. Some of those canals that survived into the 20th century adapted to modern commerce with further enlargements and the use of steam, gasoline, or diesel tugs/barge combinations or purpose-built self-propelled canal boats. Those canals graduated to the status of full *inland navigations*, such as those in navigable rivers. Notice the differentiation here between the terms canal *boat* and canal *barge*. Both are essentially inert vessels, but the 19th-century canal *boat* has a tiller and rudder and can be steered independently of its source of power. The barge is rudderless and requires the powered towing or pushing vessel to steer as well as propel it. The D&H Canal never achieved this level of sophistication. It always remained a towpath canal, though some canal company boats were self-propelled steam launches and canal company non-revenue *work boats*.

A towpath canal, true to its name, typically (but not always) had a single towpath along the margin of its banks. The traditional single towpath was routinely located on the downhill contour of the canal. The opposite bank from the towpath of the canal is known as the *berm* bank. Usually the berm side of the canal was undeveloped, except in villages and hamlets through which the canal passed, with dwellings and commerce on both sides of the canal. This common arrangement of canal elements is obvious at the Lonesome Lock site. Descending on the old access path from present Route 6, one first encounters the ruins of the lock house, then in order as descent continues the bypass flume, the lock chamber, the towpath, the retaining wall of the canal separating the river from the canal, and finally the Lackawaxen River at the lowest elevation at the site. As canals usually followed river valleys, this arrangement was common in the design of most 19th-century canals. If a canal did cross from one side of the valley to the other, the towpath crossed to the other side of the canal to stay on the downhill side. This was done by means of a *change bridge*. The change bridge enabled mule teams and their driver to cross the canal without letting go of the tow rope, thus minimizing the interruption in the forward momentum of the boat they were towing. The maneuver was accomplished by a semi-cloverleaf trace of the towpath. There were no change bridges in the immediate vicinity of Lonesome Lock. (In fact, the only places where the towpath changed sides were at the lower end of Lock 2 at Creek Locks, NY and at New York Lock 40. There were towpaths on both banks through High Falls, NY, but it is not thought that the D&H had any typical change bridges.)

Lock Features

A word or two here about the lock mechanism and its major features. All indications are that Lonesome Lock was of a conventional design. Canal lock sizes and dimensions tended to vary somewhat from canal to canal, but generally not within a single canal system. Interchangeability of boats was important to some canals, but less so with the D&H. It connected with no other canal directly, but did link with the inland waterway system via the Hudson River at Rondout. There, the D&H coal-laden canal boats were assembled into tows with steamers towing the whole flotilla to New York City. There the boats were separated to service various consignees within the harbor markets. Materials used in lock construction sometimes varied along the length of a canal depending on the proximity of suitable local material for lock construction. This was true of the



D&H. As mentioned above, the easternmost locks of the canal used cut native limestone blocks in lock construction, while the western part of the New York and all of the Pennsylvania Division used fieldstone in lock walls and blue stone capstones. To protect the boats and, to a greater extent the lock walls, from displacing stones by the movement of the boats, planks lined the interior of chamber walls. They were held in place by vertical timbers called *whalers* placed at regular intervals. A photograph of a D&H Canal lock model shows these elements.⁸ (See photo left) The model is on display at the D&H Canal Museum, High Falls, NY. Both the boat, by Abe Mathews, and the lock, by Jack P. Egehmeier, were constructed 1984.

From 1850 on, the D&H Canal's upper lock gates were typical of the drop type. That is, the gate was a single wood assembly that was normally in the near vertical position, holding back the water in the upper section of the canal. A westbound boat entering the lock from the lower level would be raised to the upper level by closing the bi-fold miter gates on the downstream end and releasing water from wickets (little doors, actually butterfly valves) in the floor upstream of the upper lock gate. When the boat had reached the uppermost level and the lock chamber was filled to parity with the upper level of the canal, the upper gate was dropped to the bed of the canal. The westbound boat then resumed its voyage by simply passing over the submerged horizontally positioned

gate. The upper gate came to be known as the *drop gate*.

The lower gates were a paired set of a different and more common design called *miter gates*. Some canals used miter gates on upstream as well and downstream ends of lock chambers as did the D&H when first constructed. This pair of gates was typically larger than the drop gates and opened in the manner of a French double door. The inner edges were mitered where they met to form the seal. The seal was further increased by the weight of the water in the lock chamber pressing against the inner surface of the gates, forcing them together and into the lock wall. This was the design of the gate mechanisms at Lonesome Lock. Only fragments of the gates remain, along with some of the iron fastenings and hardware that formed the hinge mechanism. One of these Y-shaped iron pieces has been preserved by the family. LeRoy drafted excellent drawings of the lock gates and the gate operating mechanisms in his book.⁹

We are not sure if Lonesome Lock featured a shed over the downstream miter lock gate mechanism. We are suggesting that it was a common enough feature that it would have been present to protect Daniel and his family from inclement weather as they were operating the lock mechanism. Accordingly, we have included the gate shed in the watercolor portrayal of the site. The construction of the lock gate shed varied, some with a shed roof and others with a single gable roof transversal to the axis of the lock and open at both sides, possibly with door(s) or openings on the gable ends to permit the lock tender to observe the boats entering and leaving the lock. Again we have taken artistic license in the rendering of the site by including this feature, based on photographs and drawings of other D&H locks. No known pictures of Lonesome Lock and the lock house

exist at the time when they were functioning. The lock house was surprisingly modest in size considering the number of Coryell family members it hosted. Seven residents crowded into a wood frame house of no more than 600 square feet. Daniel and Nancy had seven children, all girls except for my grandfather Cornelius (his full name was Jesse Cornelius). In addition to Adna, Martha, and Cornelius, there was Minerva and Kathryn. Not surprisingly, Cornelius left Lonesome Lock first and sought his fortune in northern New Jersey. Later after the canal *went up*, the rest of the family followed him.

Parenthetically, I never recall the Coryell family members ever describing the abandonment of the canal in any other way than...it “went up.” I have never encountered that expression in any literature on the canal referring to the canal abandonment. It may have been a common expression among the boatmen, lock tenders, and others employed by the D&H Canal Company, or it might have been a local expression of canalers and residents in Texas Township or Wayne County, PA.

There may have been a loft of some sort in the lock house to ease the family’s togetherness. We estimated the lock house dimension by pacing off what remained of the stone foundation walls. The house did seem to have a cellar of some sort based on the contemporary depression in the soil of the terrain. Again, we have taken some liberties in assuming the design of the house. Other lock houses of the D&H had a small wing, usually a kitchen. The wing would have been of frame construction and might have had a rubble stone foundation or a timber sill resting on the ground. None of this would have been that detectable at the time we first examined the site in the mid-1970s. The rendering of the house in the watercolor shows such a building wing in place.

The Coryell Family Convergence with the Canal

What of the family that lived in the little, lonesome lock house beside the canal? Lock tender Daniel Perry Coryell’s family goes back before the American Revolution and is tintured with Huguenot origins. The connection between the Coryells and the Huguenots, however, is not clear. The family did some research and determined that there was a connection, and the Coryells were authentic Huguenot progeny. The author’s mother, Florence Coryell Cooper Phraner, researched and produced the genealogical documents to argue the case and submitted them to the National Huguenot Society. Initially, these documents were accepted, and she was granted membership in the society. Later a question arose among the genealogists within the society as to the validity of the earliest Coryells who set foot in the new world being of Huguenot blood. The society membership was withdrawn with regrets, pending any further evidence in support of the Coryell family being true Huguenots. All of this debate as to Huguenot authenticity is odd because the family has in its possession a number of letters from a Mrs. H.C. Coryell who conducted genealogical studies and supported the assertion that the Coryells were Huguenots. At one time she was president of the local chapter of the National Huguenot Society.

The earliest records show a Coriell (there are at least eleven spellings or variations of the surname)¹⁰ by the name of Abraham (1) (1670? - ?). If there is a new world patriarch for the Coriell/Coryell family, Abraham would qualify. What an appropriate name for a patriarch. He was born in France and immigrated to the colony of East Jersey sometime after 1685 when the Edict of Nantes was revoked, resulting in the persecution of the Protestants in France; the edict had formerly declared Protestants as equal citizens. The direct relationship between this historic event and the departure of the Coryells from France is open to debate within the family. It is clear from local family records that Abraham came to the New World and sired four sons here: David (1709-1779), (John) Emanuel (1707-1749), Abraham (2) and Samuel. Emanuel with his siblings resided initially in an area around what is now Piscataway, NJ. For the purpose of this monograph, *we are interested almost exclusively in the (John) Emanuel (2) line.*

Emanuel (John) Coriell

Cornelius Coryell, grandfather of the author.



moved from Piscataway to an uninhabited point on the Delaware River now known as Lambertville, NJ. There he petitioned the colonial governor for a charter to operate a ferry between New Jersey and Pennsylvania; the charter was granted in 1733. This river crossing and the resulting cluster of buildings became known as Coryell's Ferry, *both in Pennsylvania and New Jersey*. This was a strategic crossing of the river for the Old York Road, a direct stage route between New York and Philadelphia. The ferry therefore prospered from very modest beginnings. Next, Emanuel established an inn on the New Jersey side of the ferry and hosted the likes of Washington, Hamilton, Greene, Knox and Monroe when they had occasion to use the ferry and coordinate military tactics during the Revolution. By this time, the common spelling of the family name had changed from *Coriell* to *Coryell*, so henceforth we will use the latter and contemporary spelling.

Emanuel's ferry crossing the Delaware was the first direct involvement of the family with inland navigation. More indirectly, the Coryell Ferry Inn also involved marine trades by hosting the Durham boatmen and rafters as they navigated the Delaware. While the ferry did not cross a canal, two canals were to follow at the ferry site along each side of the river, and their boats connected by crossing the river in close proximity to the site of the old ferry landings. The canal boat river crossing a century later at nearly the same site employed the same basic cable guidance system as the predecessor ferry.

How did Coryell's ferry function during colonial times? It was a rope or cable-type ferry, using a stout line tethered on each bank of the river. A trolley or pulley system attached to the cable at each end of the ferryboat, usually an open scow. At its largest, the shallow draft ferryboat was about 60' in length and could accommodate livestock, the Old York Road "Swift Sure Line" stages, and common teamsters with their charges. The ferryboat was inert, being propelled by the river current. The ferryman steered the vessel at an angle to the flow of the current with the bow facing more upstream in such a way that the pressure of the current against the side of the boat retained by the cable, propelled the ferry across the river. Coryell's Ferry may have been the first relationship between inland marine navigation and the Coryell family, but not the last.



Ferryman Emanuel Coryell married Sarah Tunison in 1729. The product of that union was five sons and two daughters. The second son, Cornelius (1) (1732-1831) participated in the Revolutionary War along with his siblings Capt. George (1)(d. 1814) and Major John (1730-1799) Coryell. Cornelius (1) married Sally Shaw and by his death in his ninety-ninth year of life had produced nine offspring. Among them was Cornelius (2). (1770-1862) and a notable older sibling. George Coryell (2).

Note the propensity of the Coryells to reuse the same first names in successive generations in parallel generational lines. This tendency combined with a prodigious issue of offspring in each generation, created a vexation to future research historians and genealogists. To minimize confusion I have numbered them, not necessarily by generation, but sequentially. George (2) served among General George Washington's cadre. Like Washington, he was a member of the Masonic order. When Washington died in 1799, a traditional Masonic funeral service was conducted by Washington's Masonic brethren at Mount Vernon. Washington's pall bearers were appointed from the ranks of his cadre that

Daniel P. Coryell family that crammed into the tiny lock house at Lonesome Lock: Daniel, his wife Nancy, their son Cornelius, and daughters Adna, Martha and Minerva., c. late 1880s or early 1890s.

were Masons. When one of the original Masonic pall bearer appointees could not bear his share of the weight of Washington in his casket, George Coryell (2) became the substitute pall bearer. The connection between the Coryells with the American Revolution and Washington was intimate and some think critical to what some have called the turning point of the war: the historic Battle of Trenton.

¹LeRoy, Edwin D., Delaware & Hudson Canal, A History, Wayne County Historical Society, 1950.

²There are, of course surviving Roebling designed suspension bridges, notably the Brooklyn Bridge and an earlier bridge across the Ohio River at Cincinnati OH and Newport KY as well as others. There were originally four Roebling aqueducts on the D&H Canal; another at Lackawaxen, and two others at High Falls and Cuddebackville NY.

³LeRoy, *ibid*.

⁴LeRoy, *ibid*

⁵Connections between the D&H canal and the two gravity railroads were at Hawley and at Honesdale. Lonesome Lock was almost equal distant between these two vital feeders of anthracite coal.

⁶The first attempt at sketching and painting by the author.

⁷LeRoy, *ibid*

⁸The model shown in the photograph is on loan to the Mamakating Historical Society Museum at Summitville, NY.

⁹Leroy pgs. 37, 41, 72.

¹⁰Coryell (Family) newsletter masthead Vol. 34, May 1986, reproduced in *Lambertville Legacy* by Edward Cohen.

(Part II will appear in the winter issue of *American Canals*.)



A STUDY OF THE MIDDLEBURY BRANCH CANAL (A WESTERN DIVISION P&O CANAL FEEDER SPUR)

by M.L. Bronko; researched by M.L. Bronko and R. Bruce Norton

For about twenty-five years, the Pennsylvania and Ohio Canal (P&O) served as an east-west waterway passage designed to promote direct trade between Cleveland and Pittsburgh. The eastern terminus was in Mahoningtown, Pennsylvania (now part of present-day New Castle), and the western terminus tied into the Ohio and Erie Canal in Akron, Ohio. The history of the P&O Canal is not well established, and it has always been a challenge among the modern-day canal historians to find additional information about this elusive waterway system. One particularly intriguing feature of the P&O system was a one-mile-long branch canal located at the western terminus. The Middlebury Branch Canal, as it was called, has been a virtual mystery. After several years of dedicated research, however, new historical material has finally surfaced.

Middlebury, Ohio was a prosperous community near Akron. The P&O Canal, as originally planned, was to have passed through this community. Under rather suspicious circumstances, however, Akron was eventually favored over Middlebury as the western terminus point. In other published histories of the P&O Canal, the year of 1835 is given as to when the final canal route through Akron was approved. This is a date too early, in our opinion. Here is an excerpt taken from a report made by William Boyd, a P&O Canal Company director, to stockholders at a meeting in Philadelphia on September 21, 1835:

“The summit level and deep cut are also under progress and the line down the Cuyahoga is only delayed on account of a rivalry between two villages: Middlebury and the Great Falls Village. Routes by both these places are practicable and both in order to induce the Company to give a preference to their own village, have made very liberal offers of land and water power in case the canal is located agreeably to their wishes. The Executive Committee, in deciding upon this delicate report, thought it for the interest of the Company to give the Middlebury the preference. The parties at the Great Falls of Cuyahoga think themselves aggrieved by this decision and in consequence, there have been no contracts made for this part of the line.”

It is our estimation that the final western portion of the P&O Canal route was probably decided between late-1836 and early-1837. The Middlebury Branch Canal was the end result of this controversial change and was constructed to appease angry local residents affected by the route relocation.

Both the revised P&O mainline western terminus and branch canal made use of an existing millrace that started outside of the Middlebury village limits and ran just north of Akron. The Cascade Race, as it was called, was widened and deepened to canal specifications. It should be noted that this portion of the P&O system (both mainline and branch canal) had the dual purpose of serving as both a millrace and navigable waterway. There is much question as to how the canal company acquired the millrace. Many key players directly or indirectly involved in this transaction would later testify in a court of law that no written agreement was drawn up and that no money was given to the mill owners. This remains an item for future research.

The P&O Canal Company took possession of the Cascade Race sometime in 1837 and work most likely soon began to construct the branch canal into Middlebury. Alexander McAllister, an Akron contractor, was awarded the contract by the P&O Canal Company to build the branch canal. In the process of converting the Cascade Race into a navigable waterway, a new channel entrance upstream from the original millrace point of entry was constructed. This change was most likely made to accommodate a new turning basin. Unfortunately it is of unknown name and proportions. As a precaution against high-water flood conditions, a guard lock immediately north of the basin was built to separate the Little Cuyahoga River and turning basin from the rest of the canal. A little-known fact is that there was a second basin, the Cuyahoga Basin. Unlike the first basin that was part of the branch canal system, the Cuyahoga Basin was in the Little Cuyahoga River. This, too, is of unknown size.

By late 1838, the Middlebury Branch Canal was completed, but the P&O mainline western division work was still in progress. Before the branch canal ever went into service, an engineering flaw had become apparent. The problem was that it was difficult to maintain an adequate water level in the channel below (north of) the guard lock. In order to correct this situation, a feeder channel about 20 feet wide was built to supplement the water supply. This feeder was located just downstream of the basin inlet and tied into the canal below the guard lock. A crude dam consisting of boulders and brush diverted the additional water into the new feeder channel. This particular dam co-existed with the other canal company feeder dam and functioned as a secondary diversion system. All work related to the addition of this feeder was completed on or before May 9, 1839. Upon correcting the water supply problem, the Middlebury Branch Canal was finally operational and could be put into service.

In April of 1839, the P&O connection with the Ohio and Erie Canal was completed, making it possible to travel into Middlebury from Akron. The first boat to use the Middlebury Branch Canal was the *Joseph Vance* on May 9, 1839. A large crowd gathered at the guard lock, appropriately called Middlebury Lock, to greet this distinguished visitor. The boat left the port of Middlebury the next day with a cargo of 200 barrels of flour. Other boats quickly followed. The canal was now open to navigation between Akron and Middlebury, but it would not be until the spring of 1840 that the entire P&O mainline would be fully operational.

There is no documentation as to the amount of boat traffic on the Middlebury Branch Canal throughout the 1840s, but it is a realistic assumption that its use was equal to that of the P&O mainline. When usage of the P&O mainline began to decline in the 1850s, the branch canal most likely suffered a downturn in business as well. This is most evident when in 1856, the Cuyahoga Basin was declared a “nuisance” and was filled in. Because the port of Middlebury was only four miles from the tie-in with the Ohio and Erie Canal, a respectable amount of goods was still probably shipped out over the branch canal. By the 1860s, the P&O Canal had become victim to a hostile takeover by the Cleveland and Mahoning Railroad. In 1867, the railroad leased the western division of the P&O Canal (Akron to Ravenna mainline and the Middlebury Branch Canal) to the mill owners who had always used a portion of the waterway as a hydraulic race.

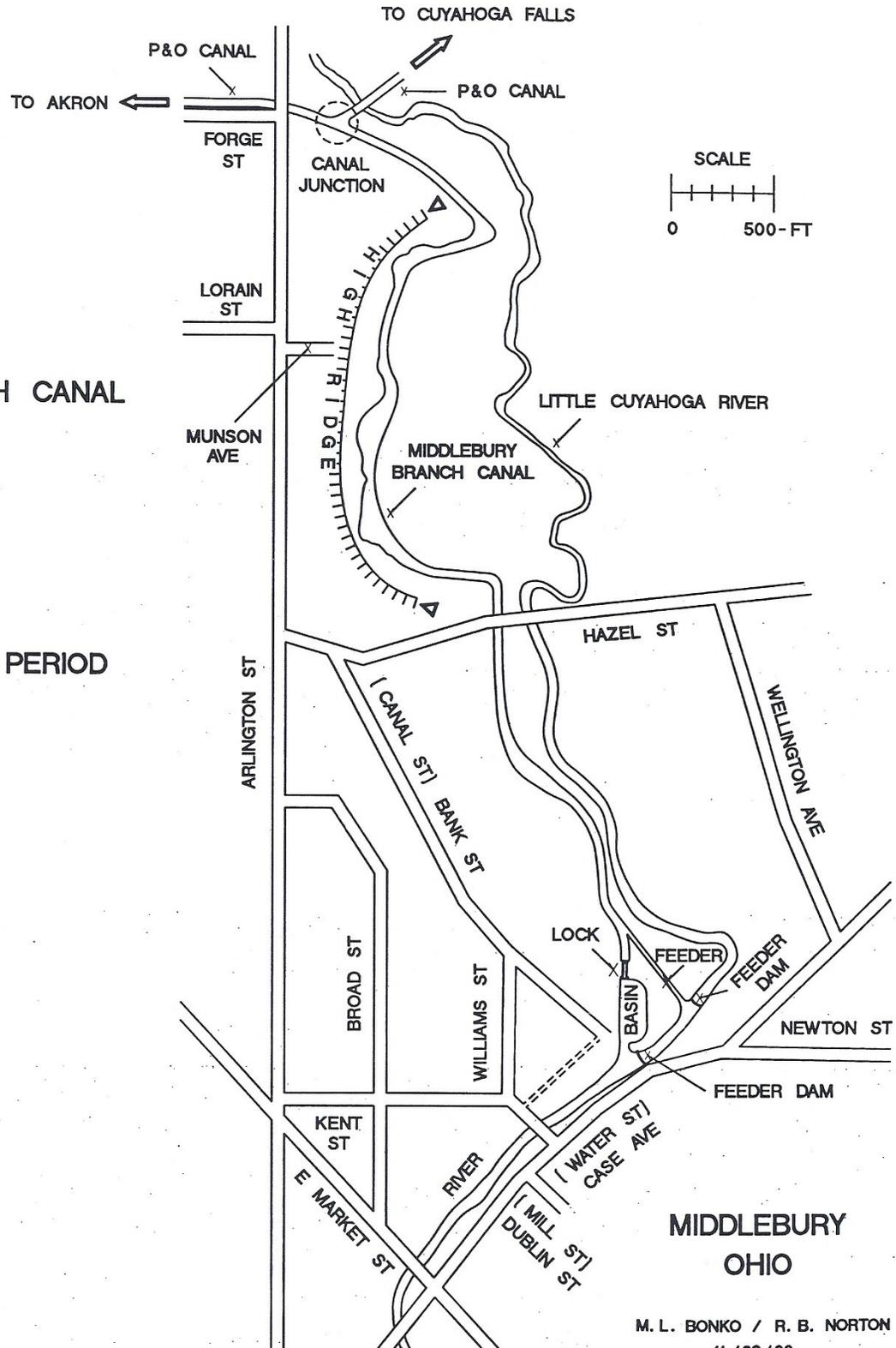
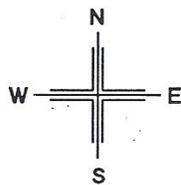
In 1869 the mill owners abandoned most of the western division with the exception of the Akron-to-Middlebury route, which could still continue to serve as both a navigation channel and hydraulic race. Under the lease agreement with the Cleveland and Mahoning Railroad, the mill owners could continue to run the canal and collect tolls. In most existing histories of the P&O Canal, all western division boat traffic stops at this point in time, a significant mistake. The Akron-to-Middlebury route was still open and remained in operation until December of 1873. There are indications that during the final years of operation, the canal business was quite respectable.

One such example comes from an Akron newspaper, the *Summit County Beacon*, on September 4, 1872. An article called, “Down in the Depths,” described a local coal mine operation, the Middlebury Coal Company,

headquartered near the junction of the Middlebury Canal and the Little Cuyahoga River. A description of the business mentions the transportation of coal on “the P&O canal boats” and that “about 350 tons of coal per day are now taken from the mine, and five canal boats loaded with this product leave the company’s docks daily.” For the branch canal’s final year of operation, the 1873 season, 94 different named boats used this portion of the P&O system for a total of 585 trips. These examples are in sharp contrast with earlier published descrip-

THE
MIDDLEBURY BRANCH CANAL

PLAN VIEW
OF
THE OPERATIONAL PERIOD



MIDDLEBURY
OHIO

M. L. BONKO / R. B. NORTON
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tions that have been given about the final years of boating activities on the Akron-to-Middlebury route.

When the Akron-to-Middlebury route shut down in 1873, the Middlebury Branch Canal and a portion of the P&O mainline continued to function as part of the Cascade Mill Race. We uncovered an excellent piece of historical trivia in our research efforts: from 1875 through 1878, boat rides on the P&O Canal in Akron were offered each October in conjunction with the Summit County Fair. “The P&O Canal is again in operation carrying passengers from Market Street bridge to the new fair grounds.” (1875) “G.A. Barber will run his fine new boat, the *Barbara Allen*, to and from the Fair Grounds, on the P&O Canal, at the small sum of five cents per head. It is a handsome boat, comfortably seated, and will be well patronized.” (1876) “Benjamin Bliler runs a boat from Broadway bridge to Fountain Park.” (1877) “Mr. B. Bliler will run a boat to and from the Fair Grounds, starting at Broadway, for five cents a trip.” (1878) This appears to be the last documented reference to boat travel on the P&O western division. This would also indicate that the Middlebury Branch was probably still intact for local recreational use.

As to the fate of Middlebury Lock, the structure was dismantled in 1879 as the result of one of many bitter disputes over the ownership of the former canal properties in Middlebury. The Middlebury Coal Company began to claim ownership of land that included the guard lock and sold the stone to F.W. Inman of East Akron. Inman then proceeded to erect a derrick and dismantle the lock. The amount of stone taken out of the lock is not known.

The former Middlebury Branch Canal continued to serve on a fairly continuous basis as a hydraulic race until the early 1950s. This is quite remarkable because the waterway endured many setbacks in its post-canal period. These included lawsuits challenging the original canal right-of-way, sabotage, and violent acts of nature. The City of Akron eventually assumed ownership of the hydraulic race and began selling parcels of the former branch canal in 1958. It is not readily apparent, but if you take the time to look, about half of the Middlebury Branch Canal can still be seen. Unfortunately, what remains of this canal is not protected, and these last glimpses are slowly disappearing.

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Students Name New C&O Canal Boat during Cumberland Education Program

In the spring the Chesapeake and Ohio Canal National Historical Park held a ceremony at the Canal Place Festival Grounds in Cumberland, Maryland to reveal the name of one of the park's new launch packet boats. The park's Chief of Interpretation, Education and Partnerships John Noel and C&O Canal Trust President Mike Nardolilli unveiled the boat's name to several hundred fourth-grade students from Allegany County Public Schools prior to the annual Canal Day School Program.

For nearly 15 years, Allegany County fourth-grade students have visited the canal terminus at Cumberland for a day of educational programs related to the history of the C&O Canal. Children "Meet the Mule," tour the C&O Visitor Center and the replica canal boat, and participate in a program on early American transportation. This year, students were invited to participate in a boat-naming contest prior to the annual field trip, which included historical research and connections to classroom curriculum.

The name selected among student recommendations was *The Katie Dreamer* (photo left), named after a canal family's child who drowned in Seneca Creek, near Lock 24, in 1903.

The first of several new park launch boats was in operation last summer at the C&O Canal Williamsport Visitor Center. Students from nearby Williamsport High School participated in a similar ceremony as the name, *The Proud Heritage* (photo right), was selected from student research of historic canal boats.

The C&O Canal Trust has been instrumental in providing funding for education programs and is currently assisting the park to expand educational outreach in Maryland and surrounding states, including support for program delivery and transportation funds for school audiences. The Trust has also assisted with the new park launch boat program.



For more information on the Chesapeake and Ohio Canal National Historical Park, please visit www.nps.gov/choh



Canal in Richmond (continued from page 4) the canal itself would be narrowed from 67 feet to 50 feet at its top and from 37.5 feet to 25 feet at its bottom. Venture Richmond also wants to smooth the canal's slope to make it less dangerous for concertgoers.

For opponents, any change to the current dimensions is unacceptable. "The Oregon Hill Home Improvement Council is strongly opposed to any plan that would damage the historic canal or the railroad tracks," said Charles Woodson, the council's director, who also cited concerns with noise, traffic and parking in his neighborhood.

Venture Richmond says its plan would restore the canal to its original dimensions, but Pool and other opponents say the canal and its towpath were much larger in the heyday of its use in the early- to mid-19th century, when big freight canalboats replaced small, light bateaux. They also take issue with the organization's claim that "unfortunately, over the last few decades the canal bed has become an overgrown, unsightly and unsafe ditch." The organization's presentation includes pictures that show discarded tires and other trash in the canal bed. Advocates of the preserving the canal blame the neglect on the property's former owner, NewMarket, and its predecessor, Ethyl Corp. "That is not the canal's fault; that's the way the owners treated it, blocking the entry of water into the canal and hoping it would go away," said William E. "Bill" Trout III, past president of the Virginia Canals & Navigation Society and author of *The Falls of the James Atlas*, in a letter of opposition. "And what's left is not just what they call 'remnants' of the canal; it's the real canal, not the fake reconstruction that Venture Richmond wants," Trout wrote.

But not all canal experts have made up their minds about the proposal. Pearsall and Lyle Browning, an archaeologist for the Canals & Navigation Society and a consultant, say the most critical issue is the height of the towpath. They say it must remain high enough to contain enough water to float boats down the canal and over a utility pipe in the canal bed under Lee Bridge. For Browning, who helped excavate canalboats from the old Turning Basin beneath the James Center in the early 1980s, the towpath cannot go lower than 83 feet. “If (Berry) keeps it at 83 feet, I’m satisfied,” said Browning, who added, “It’s a little tight, but it’s doable.”

Pearsall said the water level could not fall below 82 feet in the canal and still handle boat traffic, but he’s reserving judgment until he sees the detailed engineering surveys for the project. The bottom line for him, Browning and others is preserving the potential connection of the restored Haxall Canal with the James River and Kanawha Canal—an uphill challenge that would require a series of locks or other apparatus, but would open the way to tour boats to float the full length of the Richmond riverfront. “Anything that blocks that, I’m opposed to,” Pearsall said.

Venture Richmond has presented its plan to the Historic Richmond Foundation and the Virginia Department of Historic Resources, which Browning said would have to review and approve the plan under the National Historic Preservation Act. “We are not ready to say ‘yes’ or ‘no,’ ” said Mary Jane Hogue, executive director of the foundation. She said the latest proposal is vastly better than Venture Richmond’s original plan. “They are going in the right direction,” she said.

For canal enthusiasts, the only direction can be upriver, so the remaining canals on the eastern portion of the city riverfront one day can connect with their brethren leading west to Maymont and beyond. “The end game of all of this is rewatering the canal and getting it to Maymont,” Browning said.

CANALENDER

September 20-22 - The Canal Societies of Indiana and Ohio will sponsor a trip to Delphi, Indiana. HQ: Comfort Inn; 765-447-3434. See the canal park, a battleground, and a wolf park. For more information, email Indcanal@aol.com.

October 16 - 2nd I&M Canal Alliance Congress. 8:30-4 p.m. at Four Rivers Environmental Education Center in Channahon. The congress provides opportunities to learn how your organization can partner with the Canal Alliance. Build your network of partners and discover new opportunities and programs. If you or your organization has a project or program you would like to share at the Canal Alliance Congress, please contact Heather Wickens at hwickens@canalcor.org.

October 17-19 - The Bicentennial Train, 3 freight cars, rolls into Delphi, IN carrying a traveling exhibit, *The Next Indiana*, which explores the state’s past through the lenses of transportation, land use, talent, and community. After visiting the exhibit, visitors can do hands-on activities, visit with a historic interpreter, and shop in the History Market. Free.

October 18-20 - Canal Society of New York State Fall Meeting, Eastern Mohawk. 3 Erie Canals in the Lower Mohawk Valley: Montgomery, Schenectady and Saratoga counties – The Noses to Clute’s Dry Dock. Based in Schenectady, the tour will examine the storm/flood damage in this area of the Erie Canal. For more information, see www.newyorkcanals.org.

October 18-20 - Pennsylvania Canal Society Fall Field Trip: Union Canal from Middletown to Reading. Includes a tour of the C. Howard Hiester Canal Museum, which shares the story and history of the Union and Schuylkill canals. For information, contact Bill Lampert, indnbl@yahoo.com or www.pacanalsociety.org.

October 20 - Joint MCA-AMC Fall Middlesex Canal Walk, Woburn. Meet at 1:30 at the SE corner of the parking lot behind the Woburn Cinemas, Rt. 128 for this level, 3-mi. walk along 2 sections of the historic canal. From Rte. 95/128 exit 35 in Woburn, take Rte. 38 S 0.1 mi., R onto Middlesex Canal Dr. past the Holiday Inn to the meeting place. Contact 978-670-2740. Robert Winters 617-661-

9230; robert@middlesexcanal.org, Roger Hagopian 781-861-7868 www.middlesexcanal.org.

October 26 - Chesapeake & Ohio Canal Assn. Annual Heritage Hike Evening dinner and program to follow. Details in September newsletter. Contact Marjorie Richman, programs@candocanal.org.

November 3 - Middlesex Canal Assn. Fall Meeting in the museum at 1 p.m. Speakers Bob and Linda Barth will discuss the Delaware & Raritan and the Morris, the two principal canals of New Jersey. Refreshments. Faulkner Mills, 71 Faulkner St., North Billerica, Massachusetts.

December 14-15 - Old-Fashioned Christmas. Sat., 10-4; Sun., noon-4. Wabash & Erie Canal, Delphi, Indiana. www.wabashanderiecanal.org.

February 9, 2014 - Winter Meeting, Middlesex Canal Association.

March 1, 2014 - Canal Society of NY State Winter Symposium, Rochester, NY. www.newyorkcanals.org.

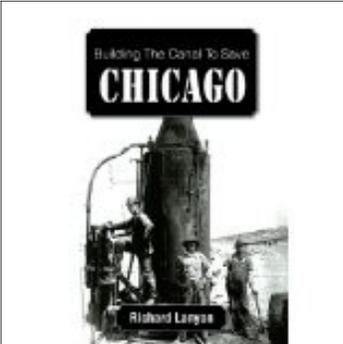
May 31-June 1, 2014 - Erie Canal Cruise and tour of Buffalo sites sponsored by the Canal Society of Indiana. Contact the Schmidts, Indcanal@aol.com, for more information.

CANAL BOOKSHELF

BUILDING THE CANAL TO SAVE CHICAGO

by Richard Lanyon

To accomplish the reversing of the flow of a river wouldn't be possible today. But to Chicago, near the end of the 19th century, it became a matter of survival. Though it is an unlikely place for a large city, with flat topography and poor drainage, its location on the shore of the Great Lakes and near to a river into the continent showed that Chicago was destined to be a great city.



Building the Canal to Save Chicago, written by Richard Lanyon, tells the story of the complexity of implementing a massive and innovative public works engineering system to save Chicago from a perilous nuisance and public health crisis.

During the 1800s, Chicago's location appealed to westward expansion pioneers who traveled by water. A city was born, the railroads replaced water transport, population surged, and the lake was both the water supply and toilet. The river became overwhelmed with the commerce of a port city and its sewage. Flooding from the interior tore through the city to get to the lake.

Without sewage treatment, it was decided to breach a subcontinental divide, send the sewage away, and save the lake. It received legislative blessing with the promise of a navigable canal. Chicago's own shoulder-to-the-wheel determination made it work. The river was transformed into a canal flowing the other way. Without the infrastructure of this canal system, Chicago may not have survived the limitations of the natural systems to become the vibrant metropolis that it is today.

Chicago is a city that went on to grow and prosper because of the pioneering effort of its local leaders who conceived, financed, and implemented the canal system. After more than a century of service, the canal system continues to provide economy and efficiency in water transportation, protects public health and welfare by efficient drainage of treated wastewater and urban storm water, offers an amenity for waterfront property, allows reuse of water for industrial cooling, and is an outlet for those seeking water recreation in an intense urban setting.

This book imparts to readers the history of this little understood canal system in Chicago. With its flat topography, any disturbance of the surface drainage system may have profound effects on the future welfare of the city.

Technically oriented readers will enjoy reading the details of the engineering and construction challenges in building the canal and many bridges. Those who may feel technically challenged will enjoy the photographs and captions. The rich archive of photographs is a story in itself.

For more information on this book, interested parties may log on to <http://www.Xlibris.com>.

About the Author: Richard Lanyon has had a lifelong association with the waterways in and around Chicago. He grew up along the North Branch, attended the University of Illinois Navy Pier campus, worked as a beginning engineer on the Lake Diversion legal controversy, and capped his working life with 48 years of service with the Metropolitan Water Reclamation District. He enjoys biking along the waterways, Lake Michigan, and Evanston, Ill., where he lives with his wife Marsha Richman.

EAST MILLSTONE, NJ 3RD ANNUAL CANALFEST ON OCTOBER 19!

The 2013 East Millstone Canal Fest, 11:00 a.m. - 5:00 p.m. A beautiful autumn day on the banks of the historic Delaware & Raritan Canal in East Millstone, NJ. What a perfect backdrop for outdoor music, arts and crafts, and canal history! Enjoy vendors, family-oriented activities in our children's area, informative lectures about life on the canal and some of the environmental issues facing it, shopping in one of the quaint businesses in the village, and the great sounds of local bands on one of the three stages. Whatever the age, CanalFest is always fun. And the restored bridgetender's home will be open to visitors. Rain Date: Sunday, October 20.