

AmericanCanals

Bulletin of the American Canal Society

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Dedicated to Historic Canal Research, Preservation, and Parks

Spring 2010

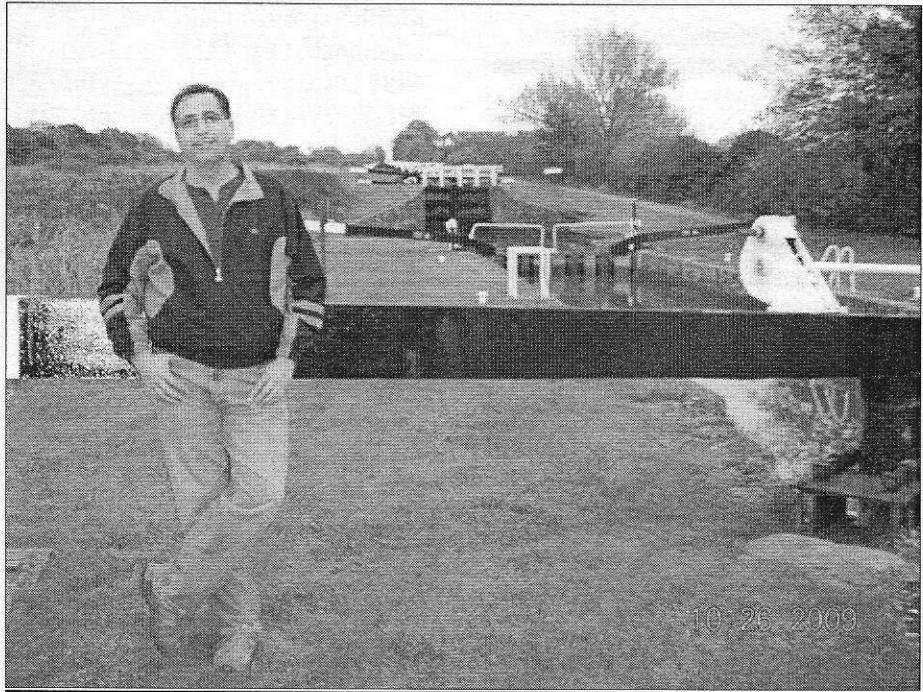
From the President

by David G. Barber

This is the spring issue. So maybe the tundra will be thawing and cabin fever will be driving you out of the house, even in arctic, deep snow areas like Maryland and Virginia. When you get out there, please take along your camera, notebook, and GPS receiver to document what you find. Don't think that all has been discovered or recorded, because it hasn't. This is even true of well known waterways. I keep finding gaps in the written record despite numerous books on a particular canal. So it is most important to update the record as to what is there today.

I find it very interesting when someone tells me that Lock X on waterway Y still exists, but is covered by a roof or filled in with the cap stones showing or used to be under a building that was just torn down. Better yet, when GPS coordinates and photos are supplied. When we know where to look and what direction to look, a lot can be seen on online aerial photos, even if it is hundreds of miles away from home. When you find such structures, we will be happy to add your photos and the coordinates to the ACS web site. That way the information can grow, rather than being lost again.

For exercise, there are hundreds of miles of canals available for your exploration. These include the entire Chesapeake & Ohio Canal, the Delaware Canal, most of the Delaware & Raritan Canal and feeder, major parts of the Lehigh Canal, parts of the Blackstone



Jim Alden, after passing through the locks at Devizes. His story begins on page five.

Canal, much of the Ohio & Erie Canal, much of the Miami and Erie Canal, much of the Illinois and Michigan Canal, and all of the Hennepin Canal and feeder. There are also pieces of many others that are preserved as parks and the total keeps growing. Other places, you need to ask permission, but there are possibilities.

When you find something that is not in our index files, please record it and send that in and write an article for *American Canals* so that we all learn about it. There are little hints about former locks, aqueducts and canals all over the place. Those who follow this hobby for any time have found that many "lost" structures are still there in the jungle. Please help find them.

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American Canals

BULLETIN OF THE
AMERICAN CANAL SOCIETY

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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.

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DEADLINE: Material for our next issue must be on the editor's desk no later than June 15, 2010. 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.

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CLEVELAND: HISTORY OF A CANAL CITY

By Larry Turner and Boone
Triplett

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authors and of the Canal Society of Ohio)

Part IV

Mistake by the Lake? Hardly. Anyone with knowledge of canal history knows that Cleveland was carefully selected as the northern terminus of the Ohio Canal. By the end of the Nineteenth Century, the small wilderness village at the mouth of the Cuyahoga River had expanded into the nation's seventh largest city, an international commercial center with a population of nearly a half million. This is the story of how Cleveland came into being, beginning as an isolated pioneer outpost on the edge of the American frontier and evolving into a mighty transportation crossroads thanks in large part to the Ohio Canal.

A "grand dinner" was held in 1825 to celebrate the opening of the Erie Canal. Goods could now easily be imported into Cleveland from New York. Now that Clinton's dream had finally been realized, Irish and German immigrants began pouring into northern Ohio with at least 2,000 at work in the Cuyahoga Valley by the end of November. Work was hard, from sun up to sun down, six days a week for 30 cents a day and a jigger of whiskey. Except for some animal-powered stump-pullers, all work was manual. Conditions were abysmal, men often laboring in muck up to their waist. Mosquitoes, malaria, fever, and ague were prevalent. But these were hardened, experienced men who were skilled with the shovel. They were put to work on the most difficult section in the

entire Ohio canal system, a 38-mile stretch between Cleveland and the Portage Summit (now Akron, the town had just been laid out and only existed on paper in 1825) which would require 44 lift locks to overcome a 395' elevation difference between the lake and the summit. De Witt Clinton himself visited Ohio to break ground for the Ohio Canal on July 4, 1825, at the Licking Summit near Newark but spades of dirt had already been thrown along Portage Summit by this time.

Progress was steady. Alfred Kelly supervised the whole affair from the saddle. Contractors were held to exacting standards as the canal bed and embankments were required to be absolutely water tight. By plunging an iron rod into the earth, Kelley was able to determine if a job had been "short cut" by overfilling with rubble such as stumps and underbrush instead of done properly with tamped earth and puddled clay. Finally, Canal Commissioner and Clevelander Kelley was able to write the following letter to Governor of Ohio Allen Trimble:

"Coshocton 11 June 1827

Dear Sir:

We expect that the canal will be in readiness for a boat to start from Akron Portage Summit on the third day of July in the morning, in season to reach Cleaveland in time to dine at that place on the 4th.

The water was in part of the canal to a sufficient depth for boating when I left that part of the line and I expect to commence letting it into the remaining levels immediately on my return to the north. I start from this place today.

I hope you and your old friend Gov. Morrow will honor us with your presence. Will you be so good as to give him notice. I do

not recollect at what place to address a letter to him.

*Very Truly Yours,
Alfred Kelley"*

(Note that Kelley inserts the first "a" in Cleveland.)

Governor Trimble and Commissioner Kelley, along with other assembled politicians and dignitaries, climbed aboard the *State of Ohio* at the appointed time and place. The *State of Ohio* was a product of the embryonic Akron shipyards. Animals hitched, the *State of Ohio* continued down the valley to Boston where it was met by the *Allen Trimble*. The *Trimble* was Boston's first boat. (The 1836 Boston Store, built by the Kelley brothers and now a National Park Service Visitors Center, houses a timber from what is believed to be from the *State of Ohio*.) Noble Merwin of Cleveland was able to commandeer a boat from the Erie Canal. Christening it the *Pioneer*, all of Cleveland's important citizens climbed aboard and headed up the canal to meet the governor's party about six miles south of town. This small fleet of three boats floated triumphantly into Cleveland on Independence Day, announcing to all that the first canal in the West was now open for business. Raucous celebrations were held all across town that evening. An interesting, if rather jaded, account of that historic day is given in Johnson's 1879 *History of Cuyahoga County Ohio*:

"Flags fluttered gayly in the breeze, cannon thundered their boisterous welcome, speeches full of rosy prophesy were made, and all were intensely enthusiastic over the great event of the day. Such enthusiasm over such a cause may seem overstrained in these fast times when railroads have absorbed nearly all the commerce of this region, and the

canals are looked on as extremely old fogyish institutions. Nevertheless the Fourth day of July, 1827, was a great day for northern Ohio. An immense tract, previously almost entirely isolated, was provided with the means of transporting its produce to the markets of the East, and every kind of business showed an immediate and very marked improvement in consequence. It is doubtful if railroads would have been built as soon as they were, had not the wealth of the country first been largely increased by the construction of the canals."

Keep in mind that this description of canals as "extremely old fogyish institutions" was written in 1879 and is generally reflective of the attitude toward canals during that era.

The economic impact was almost immediate. An oft-quoted figure is that wheat purchased by Buffalo merchants in Cleveland increased from 1,000 to 250,000 bushels in one year. But the city itself did not immediately "take off" as population had only increased to 1,075 by 1830. Much of this was due to problems at the northern terminus. The final two locks, Locks #43 and #44, were not completed until late 1829. The soil here was extremely porous and as a result of so much marshy land being tossed about at the mouth of the canal, much sickness settled over the city. Also spreading disease was the arrival of as many as 300 canal workers a week, through which George Worthington made his fortune by selling imported tools. These canal workers headed up the line to finish the 309-mile long project to the Ohio River at Portsmouth in 1832. (There were terminal problems at Portsmouth, too. The outlet locks into the Scioto River were not completed until 1834 and the course of the river there had been inadvertently redirected.)

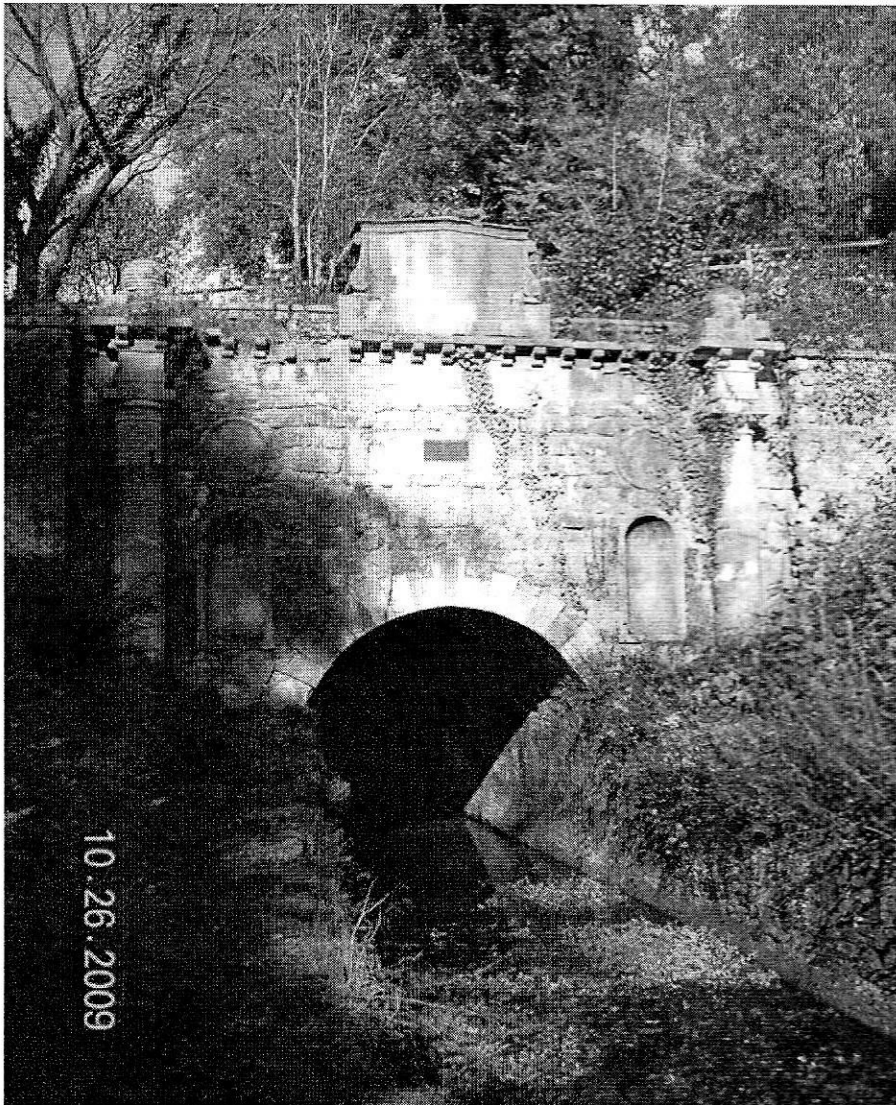
Cleveland's lake harbor was also inadequate. First, the river had to be straightened. As Moses Cleaveland found it, the Cuyahoga emptied into the lake via a delta west of present-day Whiskey Island. The area was continually choked with sand and logs. As there was one final tortuous loop of the river about 1,000 feet south of the lakeshore, the river was dammed at this point and a cut was made allowing for the river to cut a straight course through the isthmus between the oxbow and the lake. (Similarly, when an attempt was made to dig a short canal between the Scioto and Ohio Rivers at Portsmouth, the former river blew through the breach. This was not the intended result.) Taking out this last river loop in Cleveland created Whiskey Island. The first pier built in Cleveland sank into quicksand in 1816 and there another failed effort by the Federal government to construct a pier in 1825. There were considerable difficulties with the project but Cleveland was finally able to open a pier in 1840. Since so many locks were being constructed for the canal, plenty of local stone was available to build up a breakwater. Finally, ubiquitous builder Levi Johnson erected Cleveland's first lighthouse on behalf of the Federal government in 1830. Cost of the project for this brick tower was \$8,000.

When finally completed, there were the locks at the canal terminus along Merwin Street. Locks #43 and #44, these "Sloop Locks" were 100' long by 25' wide to accommodate schooners and other lake sailing vessels. All other locks on the Ohio Canal were 90' long by 15' wide.

Between the two locks was a rectangular basin (about 200' x 150') known as Merwin's or the Low Basin. Above Lock #43 was a long basin that stretched for about a quarter of a mile. This was called the Upper Basin and was the terminus during the 1827 celebrations. There were at least three dry docks along this basin for repair and maintenance of boats, likely more. The entire area was saturated with warehouses. A guard lock was installed at the foot of Seneca Street in 1851. Used to accurately determine cargo loads, it was the only weigh lock along the entire Ohio Canal.

Once the canal was finished, harbor improved, and sickness abated the anticipated boom began in earnest as unofficial census figures had the population quadrupling by 1834. The Cleveland Advertiser dropped the first "a" in 1831, "officially" changing the spelling of the city by adopting the more common form. Cleveland also launched its first rapid transit line in the early 1830's when Ahaz Merchant incorporates the Cleveland & Newburgh Railroad. Powered by horse-drawn carts, the Cleveland & Newburgh collected as much as \$125 in fares on July 4, 1835, but folded after a few years. Instead of his transit line, Merchant's lasting contribution to the city is his finely detailed map of the city published in 1835. French political historian and world traveler Alexis de Tocqueville provides a superb description of Cleveland in his *Journey to America* (1836):

"After coasting along for hours beside a dark forest that only ends where the lake begins, one suddenly sees a church tower, elegant houses, fine villages, with an appearance of wealth and industry..."



East portal, Sapperton tunnel

and flew with her to England.

My sister has the good fortune to live in the small village of Saul, which lies along the Gloucester and Sharpness Canal, a working ship canal that runs along the River Severn. My plan was to let Mom visit with baby and family while I hike and explore the canal. The week, however, turned into a canal feast for me, and I ultimately got to visit five different canals in my one week stay. I had canal fever!

The Gloucester and Sharpness Canal runs between the two named locations, and is never far from the River Severn. This is a ship canal, larger than the majority of canals in England, and more along the size and depth of the NY State Barge

Canal. Saul Junction is where the G&S meets the Stroudwater Navigation Canal, which though unusable now, is slated for full reconstruction. Since my last visit two years ago, a brand new canal boat marina (below) was constructed at this junction, in anticipation of the increased traffic. There is a beautiful bridge-tender's house at the junction, and a working swing bridge, though it is only a pedestrian bridge. Most if not all of the bridges on the G&S are swing, and all are manned by operators. Great fun to watch!

Enjoying the unseasonable warm weather in late October, I spent hours on this canal. I was able to walk to the canal from

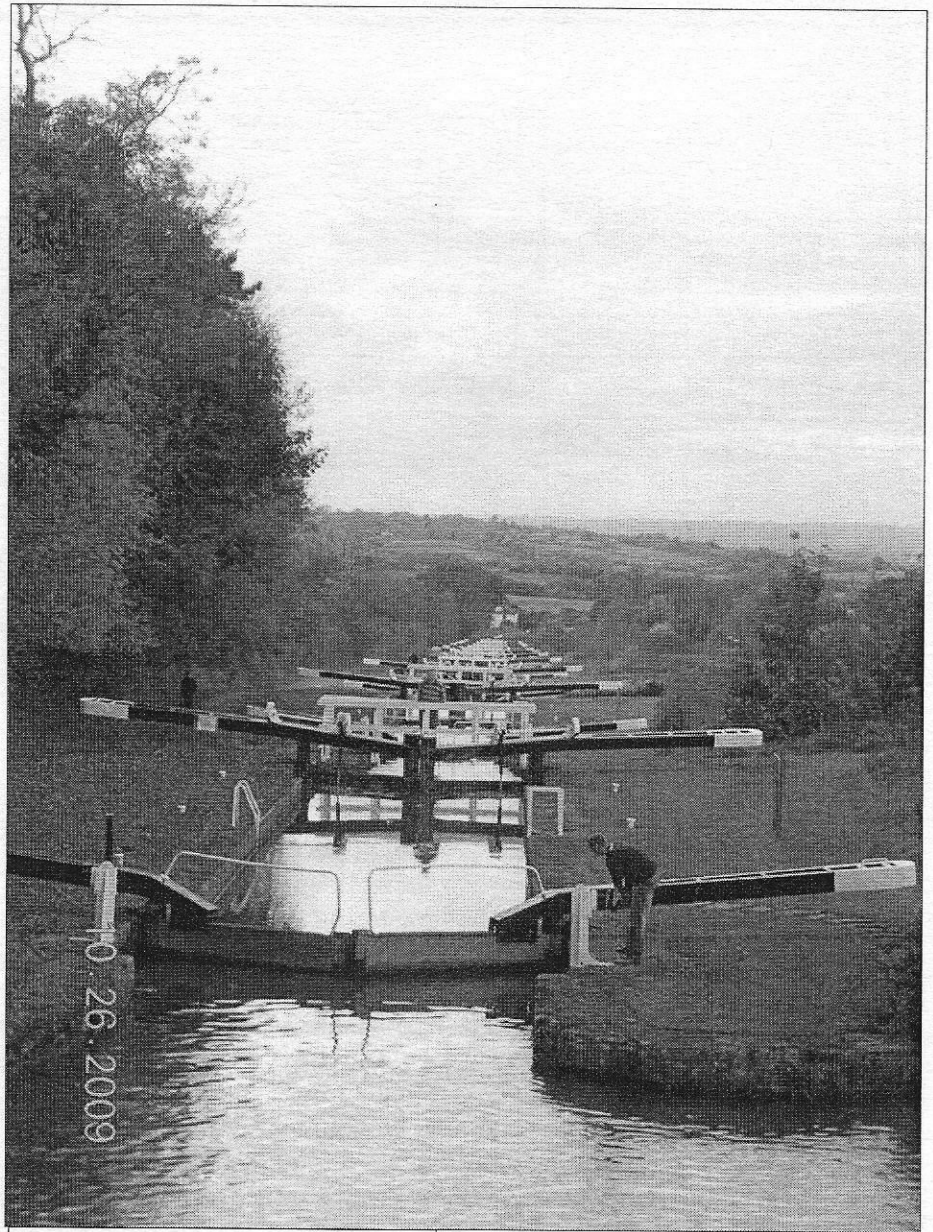
my sister's house, freeing me from relying on transportation, and allowing me hours of towpath bliss. I walked to the nearby town of Frampton, where I enjoyed a pint of good English Ale. (OK, maybe I did this more than once.) My sister Peg and I took a drive down to Sharpness to see where the canal meets the Severn, and the massive guard locks were remarkable. The Severn is tidal there, and when we visited the tide was out, so on the downside of the lock it was nothing but mud. While we were there, they suddenly opened the wickets, allowing a roar of water to come through the gates. We asked the locktender why and were told that they do this every day at low tide to scour away the mud that builds up on the other side. Fascinating and on such a big scale, especially to someone like me who is used to the typical towpath canal.

The one request I made of my sister before we came over was that I wanted to visit the town of Devizes, just east of Bath. The Kennett and Avon Canal climbs the Caen Hill here via a flight of sixteen locks. When I last visited this site in 1991, the locks were under reconstruction. My desire was to see them now as part of a restored canal. Devizes is just an hour's drive from Saul, and as we were driving my sister mentioned that she and her husband have frequently passed a sign with an arrow that says "Canal Tunnel" and would I be interested in stopping there on the way? (OK, living in the states and being the canal nut that I am, that is like asking a starving man if he would like a steak!) Would I like to see it?!? So we stopped, and took some time to visit the eastern portal (photo at left) of the 2-mile Sapperton canal tunnel on the Thames

and Severn Canal. This canal too, is scheduled to be restored, and somehow that includes restoring his remarkable engineering achievement. The tunnel is watered and has no towpath, and the boaters used professional "leggers" to get the boats through. For years it was the longest tunnel in England and is still the third longest.

Peg and I then decided to locate the western portal, and following some vague directions given by a local and my own canal sense, we made our way the two miles or so over the top of the hill to the town of Daneway and the western portal. We parked on the road and I was able to quickly locate the existing but overgrown canal. Peg stayed with mom and the car and I took off on a hike along the towpath to see the western portal. It was here that I lost my canal sense. I hiked for nearly an hour and passed ten to twelve locks, continuing down the hill. It was only then that I realized, of course, that the tunnel would be at the TOP of the hill, not farther down! I hiked the hour back to the car, but could not ask Mom and Peg to let me wander some more. (Those who love canallers have their limits!) So I never did see the western portal, but I must say that I so enjoyed that hike along the overgrown, but soon to be restored Thames and Severn Canal. So many of the canals in England are restored and working, but I am used to American canals: overgrown and abandoned, so I felt right at home!

On to Devizes and the Kennett and Avon Canal. Following my restored canal-sense, I was able to find the flight of locks just by watching the geography as we approached Devizes. Once we got into town, the signs were every-



Looking west down the Devizes flight

where. We parked at the top of the flight and sat on a bench to enjoy our picnic lunch before I walked over to the locks and canal itself. Halfway through the sandwich, I heard this noise which I realized was the rush of water through open wickets and looking out across the field I could see a boat dropping down as the lock emptied. I was on my feet and across that field without even thinking. After eighteen years and countless thoughts about this remarkable site, I was

actually watching a canal boat going through the second of sixteen locks. I was in immediate conversation with the owner, who was doing all of the work on the locks while his girlfriend manned the tiller. He had the typical look of someone doing a tedious job that he does all the time, while I was simply beside myself. He is a canal electrician and works on the canal. I told him I had traveled 2500 miles with the goal of seeing this flight, and asked if he would like some help? With a smile he handed me a windlass, and the two of us spent the next 2+ hours



Lock on the Gloucester & Sharpness

taking them through the next fourteen locks. Words don't do justice. My heart still skips when I think about it.

The next day, Peg and I decided to take a bike ride along the soon-to-be-restored Thames and Severn Canal, this time in the area of the town of Stroud. In Stroud, the Stroudwater Navigation Canal becomes the Thames and Severn Canal on its way to connect with the Thames. From here it climbs the Cotswolds, crossing through the Sapperton tunnel on the way. Today's bike ride was along a five-mile section of canal, passing through several towns and crossing many roads. The canal is in existence the whole route, with water more often than not, but it is overgrown and needs dredging. This is the area they are going to restore first, and it makes sense because they will get the most results from the effort, and the greatest visibility, which provides great PR. As you near the tunnel the canal is in a much more rural, and thereby less noticeable location. The ride was

great fun but quite challenging, as the towpath was rarely more than a foot wide, with the rest overgrown. Having not spent much time on a bike recently, more than once I found myself restoring my balance before getting an unwanted dunk. I managed to stay dry, but there were some white-knuckled sections!

The next morning I took a long, three-hour hike along the Gloucester and Sharpness Canal. The openness of the large, restored ship canal was refreshing after spending so much time on the overgrown non-restored canal, and I was able to just lose myself as I walked for miles along the towpath of this beautiful canal. (photo above).

At this point, I felt that I had satisfied my canal-lust, but there was one more treat to come. My sister suggested that we all take a day trip to South Wales, on the other side of the Severn. We travelled to Abergevenny, and while Peg and Mom visited the town, her husband Ken and I hiked up to the top of Sugar Loaf Mountain. It was a remarkable hike with incredible views all the

way around. After we came back down, we drove through town and stopped for a short walk along the Monmouth and Brecon or "Mon and Brec" Canal. This beautiful canal is not connected to any of the other canals as it is in southern Wales, but it is often referred to as one of the most beautiful canals in the system. I thought that of all the canals I had seen, this one most resembled my treasured Morris Canal in New Jersey. Much of the canal runs along the side of a hill for miles in beautiful green countryside, and I know that the Morris did the same. Small and quaint, its curves seduced me into a silent reverie as I walked the towpath. I could have easily spent a whole day there, but alas again I was trying the patience of my loving family. So after an hour I said goodbye to the lovely Mon and Brec, and we headed back to Saul.

I was overwhelmed by this unexpected week of canal mania! In one week, I spent hours along the Gloucester and Sharpness, the Stroudwater, the Thames and Severn, the Kennett and Avon and the Mon and Brec canals. I enjoyed walking along restored canals, operating locks and interacting with canallers as well as exploring overgrown canals and locks. I never ceased to be amazed by England's love affair with their canals, and also at the astounding number of canals there. With so many miles of restored canals, they still have so many unrestored canals, with most of them in line waiting their turn. Such a pity that we cannot see that same potential here in the states.

Jim Alden has been a member of the Canal Society of New Jersey since 1975 and is also a member of the American Canal Society, the C&O Canal Association, the Pennsylvania Canal Society and the Hugh Moore Historical Park and Museum. He resides in Rockaway NJ, a Morris Canal town. jalden1003@aol.com




Middlesex Canal Historic and Archaeological District
Lowell - Boston, Massachusetts

was accepted on *November 19, 2009* for inclusion in the

National Register of Historic Places

The National Register is the nation's official list of buildings, districts, sites, structures, and objects that retain their historical character and are important to our local, state, or national history. The National Register was established under the National Historic Preservation Act of 1966 and is administered in the Commonwealth by the Massachusetts Historical Commission.


William Francis Galvin
Secretary of the Commonwealth
Chairman, Massachusetts Historical Commission


Brona Simon
State Historic Preservation Officer

MASSACHUSETTS HISTORICAL COMMISSION
A Division of the Secretary of the Commonwealth

MIDDLESEX CANAL NATIONAL REGISTER CHRONOLOGY

The Middlesex Canal Association (MCA) was incorporated in 1964 and in 1966, the intact remnants of the canal, from Woburn to Chelmsford, were placed in the National Register of Historic Places.

In 1977 the Middlesex Canal Commission (MCC) was authorized, and three noted archaeologists were hired to provide a comprehensive inventory of the canal. They traversed and recorded, including aerial photographs, the whole route of the canal, its location, its condition and significant features; in 1980 they published the Middlesex Canal Heritage Park Feasibility Study. They recommended preservation and reuse of the canal. In 1980-1985, the MCC placed stone monuments, with brass plaques showing the route of the canal, in each of the nine canal communities.

In 1996 the Massachusetts Historical Commission (MHC) suggested that the complete length of the canal should be recorded in the National Register. A review at the Metropolitan Area Planning Commission (MAPC) indicated that there were no maps showing the detailed record of the current lots of the canal route in the overbuilt parts of Charlestown, Somerville, Medford and Winchester. These would be needed for the National Register as well as for any restoration effort. In March 1996 Tom Raphael started the deed and assessor map research for the MAPC's Geographic Information Systems (GIS) laboratory to assemble a Map Book. This produced a corresponding, community by community, list of the canal lot owners.

On October 20, 1997, a group of 17 people met at the National Park Service Office in Lowell to form a committee to consider the MHC proposal to revise the National Register. They agreed to pursue placing the whole route of the canal on the National Register. In September 1998, using an MHC Grant, the Public Archaeology Laboratory (PAL) was hired to prepare the basic nomination information. They accumulated all previous historic and background literature, and researched the archaeological resources, the environmental setting and the Native American usage from the Paleo-Indian Period (12,000 BP). They walked and photographed the canal

corridor and prepared a complete description of current conditions. In September 1999, PAL submitted its report.

In an April 12, 2000, letter to Nolan T. Jones (President, MCA), MHC said that, based on its files, research by MCA and the PAL Survey and Planning Report, the canal should be eligible for nomination to the National Register, and that Betsy Friedberg and Leonard Lopato of MHC would be available to explain the format and answer questions on how to proceed. As the information was being assembled and the work progressed, it became obvious that a professional historic consultant would have to be hired to complete the nomination.

Susan Keats, a professional who had done several nominations of Winchester historic districts, offered to prepare the canal's National Register nomination at no charge. On February 2002, all of the previous work was now turned over to Susan to be assembled into the required format for the nomination. By September 3, 2003, Susan sent MHC the preliminary sections, the narrative, the matrix of data sheets and the Map Book, for review. These three separate documents now had to be arranged so they were consistent with each other. They were reviewed at every step by each of the specialized members of the MHC staff.

As the nomination was being developed, it was found the property lots of the canal owners could not be accurately superimposed on MassHighway Street maps or State GIS or U. S. Geological Survey maps. Waterfield Engineering Associates (WEA) proposed and was hired to sequentially scan all the assessor plates and configure them into a map book. The owners of the lots the canal formerly ran through were identified, and meetings were conducted by MHC in each community to notify owners of the nomination and receive their comments and approval. On March 15, 2006 in a letter from MHC to Nolan, the canal was declared eligible for inclusion in the Massachusetts State Register of Historic Places and for nomination to the National Register of Historic Places. In December 2006, however, MHC requested further work to include all non-related structures of the period along the canal. This required new research, segment by segment, and then the addition of the new compilations to the corresponding segments of the map book and the matrix of data sheets. This was completed by January 2008. By this point, however, new photographs of the current conditions were needed, as the previous photos were ten years old. On March 4 2009, Nolan Jones submitted the new photographs. On October 2, 2009 MHC submitted the nomination to the National Park Service for inclusion in National Register.

This whole project lasted thirteen years and involved countless hours of volunteer effort, in addition to salaries staff and direct contract costs in excess of \$50,000. The Middlesex Canal will now have one further record to assure its rightful place in history.

Thomas Raphael, November 3, 2009

TOM CASTALDI RECEIVES ELI LILLY LIFETIME ACHIEVEMENT AWARD

The Indiana Historical Society presented its 2009 Eli Lilly Lifetime Achievement Award to **Tom Castaldi** of Fort Wayne at its annual Founders Day Dinner in December. The presentation took place at the Eugene and Marilyn Glick Indiana History Center in downtown Indianapolis.

The Eli Lilly Lifetime Achievement Award is bestowed upon an individual who has made extraordinary contributions over an extended period of time to the field of history and/or the affairs of the Indiana Historical Society. Mr. Castaldi was nominated for this award by ACS Director Dan McCain, President of the Wabash & Erie Canal Association in Delphi.

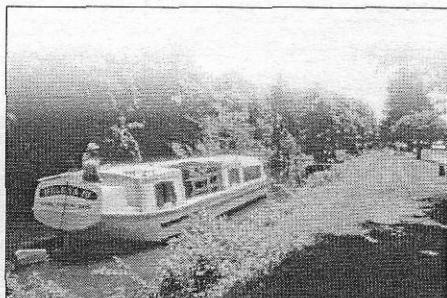
While his professional life has been in the business world, Tom Castaldi's passion has been historical conservation. He serves as archives committee chairman of Wabash & Erie Canal, Inc. and Allen County historian. He also served as the first board president of the Indiana State Museum Foundation during the funding and building of the new museum and received its first honorary director position. He also serves on the boards of the Fort Wayne Historical Society and Maumee Valley Heritage Corridor and is a participant in several local and regional committees.

Mr. Castaldi was named a Sagamore of the Wabash in 1994 and was honored by his company, Essex, with the founding of the Thomas E. Castaldi Award for Community Service upon his retirement in 1998. He has written numerous books and magazine articles, has several CD recordings featuring regional Indiana history, and is a regular contributing writer for *Fort Wayne Monthly* magazine. His knowledge of canal history, communication techniques, and museum methods of preservation and cataloging, as well as his statewide and national contacts in the field of historical research make him an invaluable asset to his community.

CANAL BOAT RIDES IN THE U.S.

If you will be traveling around the eastern half of the United States, you might want to visit one of the many canal boat concessions. Here is a partial list of the many choices:

OHIO



The Canal Fulton Heritage Society operates the *St. Helena III* canal boat rides in May, weekends only; June through September, daily, Tuesday – Sundays, 1, 2, & 3 pm, weather permitting. School & group charters also available. Adults, \$7; seniors, \$6, children 5-12, \$5; children 4 & under, free. Old Canal Days Museum tour also available for a small additional fee. For more information, please call 330-854-3808 or 1-800-Helena3, or visit our website, www.DiscoverCanalFulton.com.

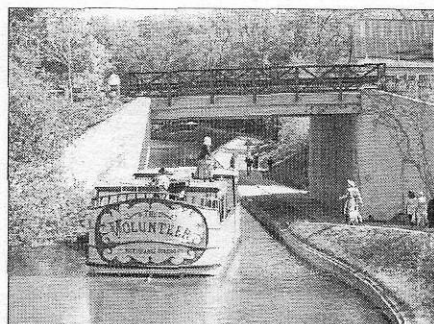


A relaxing cruise on the canal boat *Monticello III* makes a visit to **Roscoe Village** complete. This 1-1/2 mile, 45-minute, horse-drawn ride allows passengers to experience this early mode of transportation. The captain provides insight into life on the canal during its 1800s heyday. Group rates and special charters available. 23253 State Route 83, Coshocton, OH 43812-9601; 740-622-7528; 740-622-3415 or 800-877-1830.
www.coshoctonlakepark.com

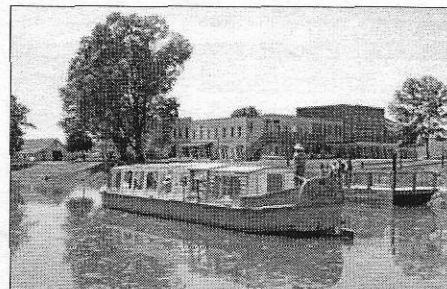
Ride the *General Harrison* at the **Piqua Historical Area**, 9845 Hardin Rd, Piqua, Ohio. Season is April through October, Wed-Sun. Rides with crew in period clothing. Three interpreter-led rides daily, 12:30, 2:30 & 4. \$7/adults, \$3/students, 5 and under free. 800-752-2619. www.ohiohistory.org/places/piqua



All aboard the *Volunteer* at Ohio's **Providence Metropark** in Grand Rapids, near Toledo. During the 45-minute trip, with passage through an original lock, living history characters tell educational and entertaining stories about life in the late 1800s. June 3 through September 3: Wednesday - Friday 11 a.m. to 4 p.m. Saturdays noon to 4 p.m. September 3 through November 1: Wednesday - Friday 10 a.m. to 2 p.m. Saturdays noon to 4 p.m. Canal boat tickets: \$6 adults, \$5 seniors (60 and over), \$4 children (3 to 12), ages two and under free. Tours of the Isaac Ludwig Mill, free. 13827 US 24 West (at SR 578), opposite Grand Rapids on the Maumee River. 419-832-6004.
www.metroparkstoledo.com

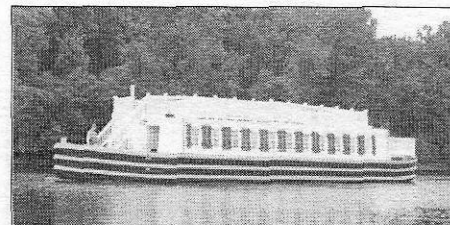


INDIANA AND ILLINOIS



Step aboard the *Delphi* for a trip down the **Wabash & Erie Canal** in Delphi, Indiana. Saturday, 11 am and 2 pm; Sunday, 2 pm, through Labor Day; charter on all weekdays, \$100 per hour and \$50 for an additional hour. Tickets: adults, \$5; seniors and school-aged kids, \$4; pre-school kids, free. Buy tickets at the interpretive center. Boat and onboard restroom are wheel-chair accessible. 1030 West Washington St., Delphi, IN; 765-564-2870.

www.wabashanderiecanal.org

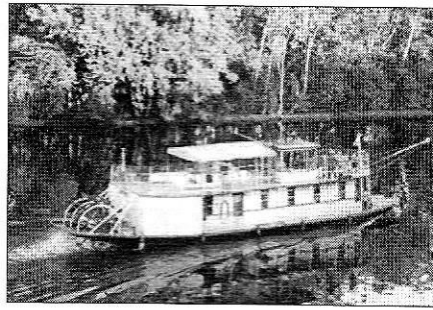
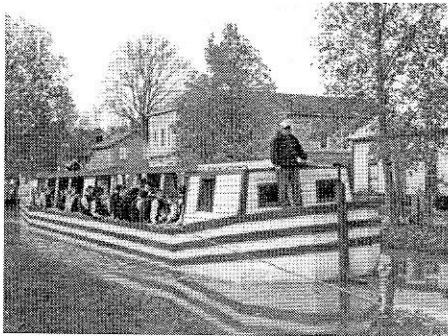


The *Volunteer* at LaSalle, Illinois, takes you on a one-hour journey on the **Illinois & Michigan Canal**, the same hand-dug waterway that 19th century pioneers traveled. Your guides, dressed as canal-era crew and passengers, will take you back in time to life on the American frontier and the Illinois prairie. Daily 10:00, 11:15, 1:00, 2:15, 3:30 pm. Buy your tickets at 754 1st St.; 815-223-1851. Adults: \$12; Seniors (65+): \$10; Youth 16 and under: \$6; Children under 3: Free; Family - 2 adults with 2 children under 16: \$33. The LaSalle Canal Boat is wheelchair accessible. www.lasallecanalboat.org

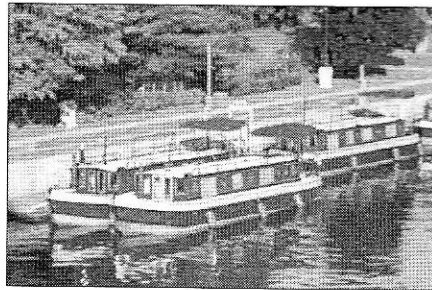
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INDIANA AND ILLINOIS

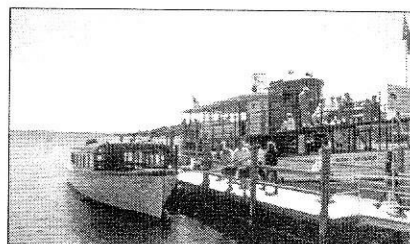
Come to Metamora, Indiana and take a half-hour excursion on the *Ben Franklin III*. Open May 3rd through October 31st for rides. Wednesday - Sunday, at noon, 1, 2, 3 and 4. There is an additional 5 p.m. ride every Saturday in June, July, August. Rides are dependent on canal conditions. For more information, call 765-647-6512. \$4.00 Adults (12-54); \$3.50 Sr. Citizens (55+); \$2.00 Youth (4-11); \$1.00 Student School Groups; Free to 3 and under. www.metamoraindiana.com/Attractions.htm.



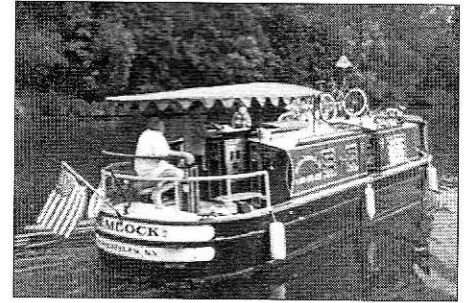
Champlain Canal Tours is open May through October, with regularly scheduled boat rides from 1 to 3 hours, day trips and overnight excursions. See rivers, canals and waterfalls on the Hudson River and Champlain Canal. Canal House, PO Box 9, Schuylerville, NY 12871; 518-695-5609; 518-695-5496, ticket office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



Erie-Champlain Canal Boat Co. offers 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 call 518-432-6094 or visit our website at www.eccboating.com.



Mid-Lakes Navigation offers one-week or half-week charters on its Lockmaster. You pilot your narrowboat along the Erie Canal. Or take the *Emita II* and let someone else do the driving. Contact: 11 Jordan St., PO Box 61, Skaneateles, NY 13152; 315-685-8500; 800-545-4318; info@midlakesnav.com www.midlakesnav.com

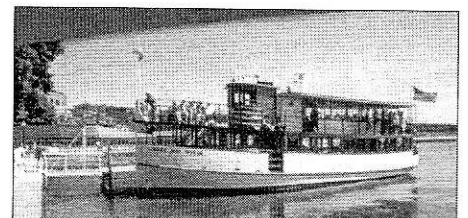


The *Emita II*, our double-decked tour boat, offers cruises from July 1 to September 24. With departures only minutes from downtown Syracuse at Dutchman's Landing, you can discover the legendary Erie Canal. ▼



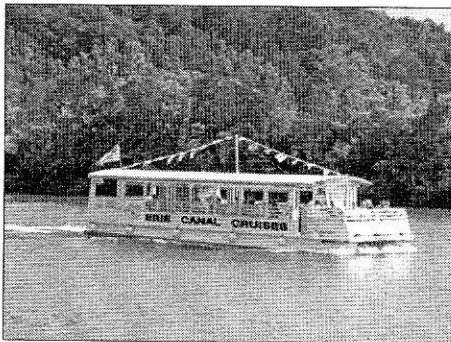
Mid-Lakes offers cruises each day from May 19 to September 30 on beautiful Skaneateles Lake located about 40 minutes from downtown Syracuse. From a one-hour sightseeing cruise in July and August to our US Mailboat to our Champagne Dinner cruise there's something for everyone!

Below, Judge Ben Wiles ▼



← Mid-Lakes Navigation's mailboat on Skaneateles Lake

NEW YORK STATE

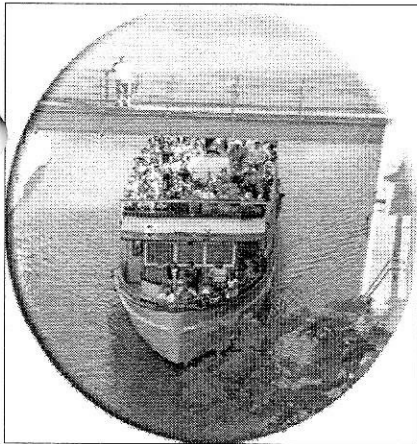


1-1/2 hour **Erie Canal Cruises** on *Lil' Diamond II*, Herkimer, NY. Fully-narrated historical cruise through a lock. A must for the history buff. Discounted rates for private groups. Public cruises mid-May through mid-October. Twice daily, 1 and 3 p.m. Adults, \$18; children 3-10, \$12. www.eriecanalcruises.com;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

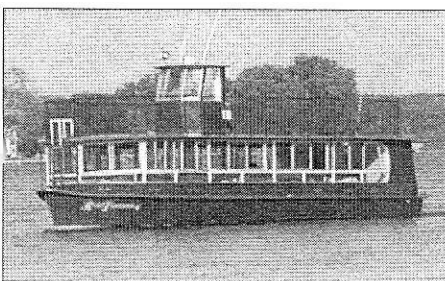
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NEW YORK STATE

Experience Lockport's unique 2-hour cruise which includes "locking through" and being raised the 49 ft. elevation of the Niagara Escarpment in the only double set of locks on the Erie Canal. Pass under bridges that raise straight up, see water cascade over Lockport's famous "Flight of Five" 1840s locks, and travel through the solid walls of the "rock cut." You can cruise one of the regularly scheduled cruise times available daily from early May to mid October. You can also arrange special private charter times for your groups of 25 or more. Charter cruises can travel east for a relaxing canal cruise or choose our regular cruise route which includes 'locking through.' Call us to schedule a cruise! 1-800-378-0352; 716-433-6155. www.lockportlocks.com.



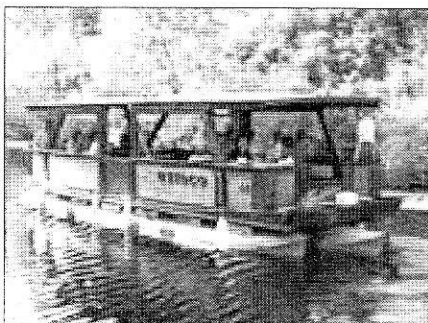
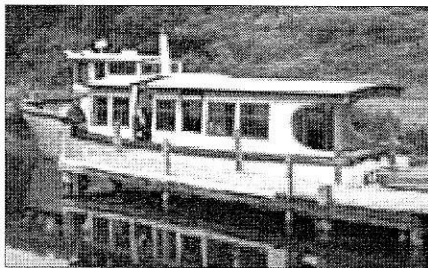
The *Rose Lummis* dinner and tour boat will cruise daily from Wooden Duck by the Gazebo at the Port of Spencerport. See the beauty of the Erie Canal from the dinner boat as you hear the amazing history of this waterway. Bon Voyage Adventures, 558 Gillette Road, Spencerport, NY 14559; 716-830-7555; www.roselummis.com.



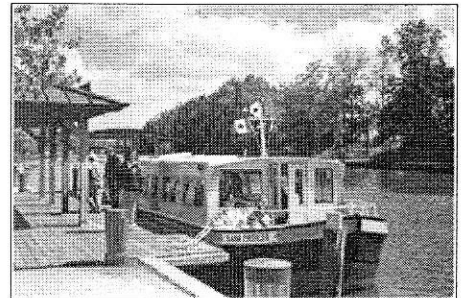
The *Colonial Belle* has been providing Erie Canal tour boat cruises from mid-May through October for 20+ years. Come aboard in Fairport, NY, just 20 minutes from Rochester, New York. Erie Canal Boat Tour, 400 Packett's Landing, Fairport, NY 14450. For more information, call 585-223-9470. 3 tours daily, Tues-Sat.; 2 tours on Sun. www.colonialbelle.com



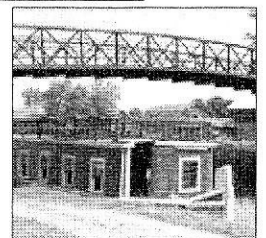
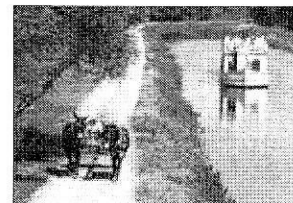
At Camillus Erie Canal Park, from May to October, board our turn-of-the-century excursion boat, *Ontario*, or the pontoon boat *Camillus Erie*, for a 2-mile, 45-minute trip across the newly-restored Nine Mile Creek Aqueduct. Dinner cruises leave from Devoe Road aboard the spacious *Otisco*. 5750 Devoe Road, Camillus, NY 13031; 315-488-3409; www.eriecanalcamillus.com; dwbecbe@verizon.net.



Corn Hill Navigation provides authentic canal cruising for visitors. We travel the Erie Canal, showcasing its historical significance, environment, and beauty. Each cruise aboard *Sam Patch* or *May Jemison* features a live, onboard narrative. 75- and 90-minute cruises leave daily from Corn Hill Landing in downtown Rochester and from Schoen Place in Pittsford from early May through late October. Corn Hill Navigation, P.O. Box 18417, Rochester, NY 14618; 585-262-5661; info@samandmary.org; www.samandmary.org.



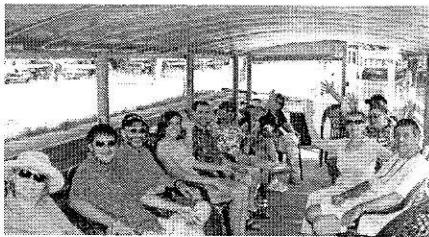
At Rome Erie Canal Village, board the *Chief Engineer of Rome* for a 40-minute cruise on the Enlarged Erie Canal. Late May through Labor Day. 5789 Rome-New London Road (Routes 46 & 49), Rome, NY 13440; www.eriecanalvillage.net; 315-337-3999; mandm2000@twcnv.nyrr.com;



PENNSYLVANIA

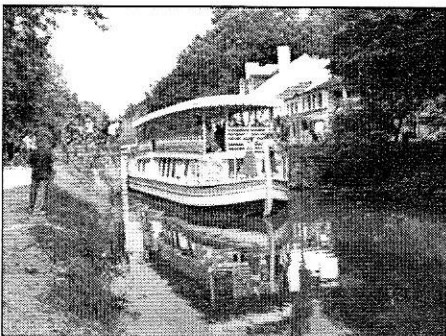


Josiah White II operates on the **Lehigh Canal** in Hugh Moore Park, Easton, PA. Open Memorial Day through Labor Day and weekends in May and September. Closed Mondays, except holidays. 40-minute rides begin at 11:30 AM. Last ride at 4 pm. Sunday rides start at 1 pm. Admission includes the Emrick Technology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



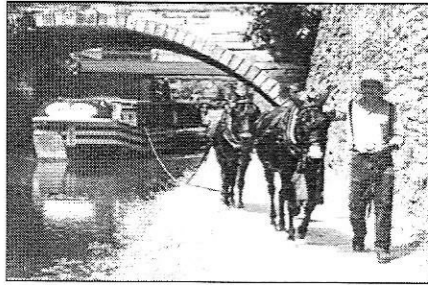
The New Hope Historic Canal Ride gives daily rides on the hour, from 11-4. For more information, call 215-862-0758 or visit www.newhopehistoriccanalride.com. May to October. 145 South Main Street, New Hope, PA 18938.

WASHINGTON, D.C., MARYLAND, VIRGINIA

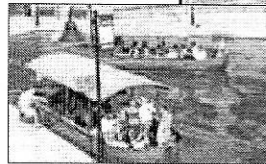


Ride the National Park Service's mule-drawn excursion boat *Charles F. Mercer*, Chesapeake and Ohio

Canal NHP, 11710 MacArthur Blvd, Potomac MD 20854, near Great Falls. Apr: Thu-Sat and May-Oct: Wed-Sun. Ranger-led, 1-hour rides @ 11, 1:30 & 3. \$5 for everyone aged 4 and over. To reserve space for 10 or more, call 301-767-3714. www.nps.gov/choh



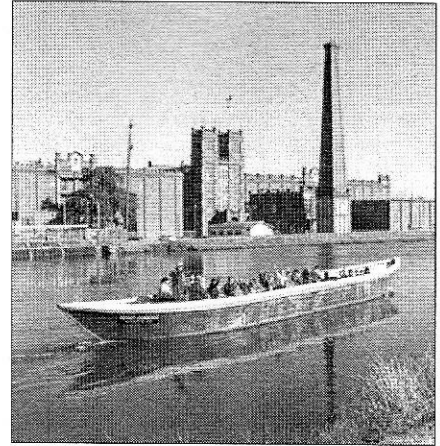
Ride the National Park Service's mule-drawn freighter *Georgetown* on the **Chesapeake & Ohio Canal NHP**, 1057 Thomas Jefferson St NW, Washington, DC 20007. Apr: Wed & Sun and May-Oct: Wed-Sun. Ranger-led, 1-hour rides @ 11, 1:30 & 3. \$5 for everyone aged 4 and over. Reserve space for 10 or more @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



Join Richmond Canal Cruises for an informative, 40-minute, historically narrated tour of the James River and Kanawha Canal along Richmond's historic Canal Walk. Our covered boats depart on the hour from the Turning Basin between 14th and Dock streets, on Virginia Street. Early May to mid-November. For details, call 800-649-2800 or 804-788-6466.

GEORGIA

Enjoy a guided tour on a Petersburg replica canal cargo boat along the Augusta Canal. One-hour tours several times daily (\$12); three-hour sunset cruises (\$20). Daily, April—November; Tuesday-Saturday, December—March. Contact Augusta Canal Boat Tours, 1450 Greene Street, Augusta, Georgia 30901; 706-823-0440; www.augustacanal.com.



Dear Readers,

If you know of any canal boat rides that we have omitted, please send the information to me at 214 North Bridge Street, Somerville, New Jersey 08876 or barths@att.net. Or call me at 908-722-7428. Thanks so much.

On another topic, we are looking for verification as to the first canal lock. Many sources say that it was built in China, but what do our members say?

If you have news of any canal anywhere, please send it to me at barths@att.net or 214 North Bridge Street, Somerville, New Jersey 08876.

Thanks so much.

Sincerely,
Linda J. Barth

ALBEMARLE AND CHESAPEAKE CANAL 150 YEARS OLD IN 2009

Courtesy Amy Waters Yarsinske, *The Elizabeth River* and the U.S. Army Corps of Engineers

First authorized in 1772, fifteen years prior to the Dismal Swamp Canal, the Albemarle and Chesapeake Canal began as all "acts" and no action. No less than ten acts were passed in both Virginia and North Carolina over a period of eighty-three years before construction finally began in 1855.

By that time, however, the Dismal Swamp Canal was firmly established. The state of Virginia owned quite a bit of stock in the canal company, and a new canal was viewed as a competitive threat. The man who carefully put the pieces together to begin the canal was Tidewater Virginian Marshall Parks, Jr., whose father had been superintendent and chief engineer of the Dismal Swamp Canal during its first major period of reconstruction in the late 1820s. The younger Parks had also been an official with the Dismal Swamp Company and was thoroughly familiar with the canal's problems. He visualized the Albemarle and Chesapeake Canal as the answer to more efficient commercial trade between the two regions.

The new canal would be wider and deeper than most of others of its day. Parks planned for it to handle the larger steamers. It would also have only one lock, instead of the Dismal's then seven, considerably reducing passage time.

Construction of the Albemarle and Chesapeake Canal was accomplished by seven steam dredges on floating platforms. Had an attempt been made to dig the canal prior to steam-powered technology, it would have failed. The

dredges had to gouge the canal out of low-lying mucky ground, scooping up huge tree trunks and petrified logs that lay beneath the surface.

When the canal was finished in 1859, it was an engineering marvel. It consisted of only one lock and two relatively short man-made channels, the Virginia Cut and the North Carolina Cut. The single lock, which balanced lunar tides of the southern branch of the Elizabeth River with the wind-driven ones of the North Landing River and Currituck Sound, was 40 feet wide and 220 feet long, the longest along the Atlantic coast* and the second largest in the entire U.S. The reversible gate heads, allowing ships to lock up or down depending on water levels, were probably the first of their kind. In addition, four times a day when the levels were equal and the winds favorable, the gates were left open to permit clear passage.

The opening of the Albemarle and Chesapeake Canal gave the Dismal Swamp Canal serious competition. The two coexisted for fifty-four years, with the A&C carrying most of the traffic. There was only a short period when the older canal stole away a significant amount of the commercial shipping. This occurred in the years following 1899 when the Dismal reopened after being entirely rebuilt at a cost of over one million dollars.

The triumph was short-lived, however. The final blow was delivered when the U.S. government chose to buy the Albemarle and Chesapeake in 1913. Both canals were considered for purchase, along with building one

of the two new routes, as part of the government's plan to establish a continuous inland waterway as provided for in the River and Harbor Act of 1910. The Albemarle and Chesapeake Canal had defaulted on a bank loan and was sold at foreclosure in 1910. Three years later it sold for only half a million dollars.

Following the sale, the U.S. Army Corps of Engineers went to work making improvements, and the Albemarle and Chesapeake was made toll-free. For the next sixteen years, in a reversal of roles, the Dismal Swamp Canal wavered on the edge of bankruptcy. Finally, in 1929, the government also purchased the Dismal in an act of fairness.

Today, the Albemarle and Chesapeake Canal is traveled mostly by commercial craft while the Dismal Swamp Canal is frequented by recreational boaters. As a suggestion, try making a two-day trip: up one canal and down the other with an overnight stay in Elizabeth City. This friendly city on the narrows of the Pasquotank River is also an historical treasure. Its location near the Dismal Swamp Canal makes it the major southern trans-shipment point for cargoes heading to and from the Chesapeake Bay along the canal. While there, be sure to stop at the Mariner's Wharf city docks for a visit with the famous Rose Buddies, the town's self-appointed welcoming committee for visiting cruisers. The city's historical district is a short walk from the docks.

More information can be found by contacting the Currituck Historical Society at 252-232-2311.

*Editor's note: New Jersey's Delaware & Raritan Canal also had locks that were 220 feet in length.

THE CANAL THAT BISECTED BOSTON

by David Dettinger

This account was originally presented on November 5, 2000 at the Boston National Park in the Charlestown Navy Yard by its author, David Dettinger. It was the eighth in a series of events celebrating the Bicentennial Decade of the Middlesex Canal, and was titled "On to Boston: Extending the Middlesex Canal." Mr. Dettinger is a director and a proprietor of the Middlesex Canal Association. He has incorporated some minor changes based on information received since that presentation.

For someone exploring present-day Boston it may be hard to believe that at one time a sea-level canal passed through the center, connecting the Charles River with the waterfront. Construction began in 1810, such a canal operated for about 25 years, finally giving way to a railway, also gone. To trace its origin we must revisit some of the significant events in the early history of Boston.

Boston was established by the English in 1630 as a base for the Massachusetts Bay Colony. The determining factor was its fine harbor, one of the finest on the Atlantic coast, protected by offshore islands, deep enough for any ship, and offering a waterfront with ample locations for docks.

A navigational map dated 1781 shows at its center the Shawmut Peninsula (renamed Boston by the British), attached on the south by a neck of land to Roxbury. On the east is the Town Cove with its waterfront on the harbor. On the west is the Back Bay, formed as part of the Charles River estuary. The North Cove at the top of the pen-

insula faces the Charlestown Peninsula across the Charles. To the north of Charlestown lies the Mystic River, which turns to enter the harbor beside the Charles.

The little settlement of Boston prospered, so much so that a wealthy merchant class arose. Commerce with other colonies was minor; in fact, it was actively discouraged by the Crown. Boston could be thought of as a "tight little island."

The American Revolution brought significant changes for Boston. The new republic faced a fresh challenge: how to build a viable unified country out of thirteen former British colonies. As insisted by the Federalists, notably Alexander Hamilton, this demanded close connections among the states plus greatly improved access to the interior.

This urgent requirement for better transportation came at a time before railroads and when roads were notoriously poor, often little more than dirt tracks through the wilderness. The preferred solution was waterways. In this respect, Boston found itself at a disadvantage relative to other Atlantic ports. For example, New York had the Hudson River, Philadelphia the Delaware, Baltimore the Susquehanna. Boston had but the Charles River, navigable only as far as Watertown, and the Mystic River, navigable only as far as Medford. The only sizable river near Boston was the Merrimack, coming down out of New Hampshire. However, as it reaches the Massachusetts line it turns due east, emptying into the ocean at Newburyport; it is 25 miles north of Boston at its nearest.

In Europe the need had been met with networks of canals, and the technology had become quite

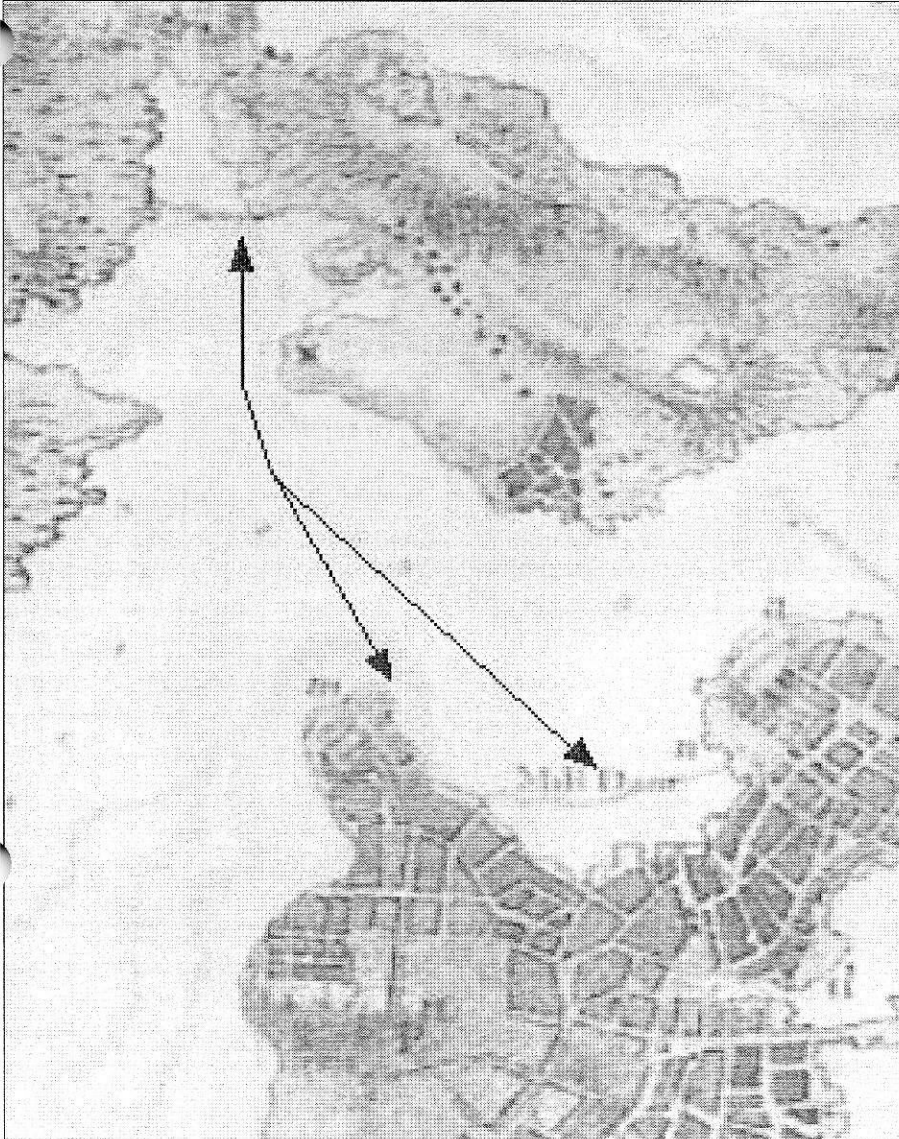
advanced. In Boston many canal proposals were floated, most of them totally unreasonable. One scheme caught the attention of an enterprising lawyer, James Sullivan, later to become governor of the Commonwealth, and for whom Sullivan Square is named. Its objective was to construct a waterway all the way from Boston to Concord, New Hampshire, thereby opening up the "North Country" with its rich resources.

The specific concept was to construct a canal towpath through Middlesex County, thereby connecting the Mystic River at Medford with the Merrimack River just above the formidable Pawtucket Falls at present-day Lowell; the southern terminus was subsequently changed to the Charles River at Charlestown. From its northern terminus the waterway would continue up the Merrimack to Concord. (Some effort had already gone into overcoming the main obstacles along the river, but further improvement would be necessary.) From the southern terminus in Charlestown boats could be drawn across the Charles to the Boston peninsula.

Sullivan recruited a group of "Proprietors", drafted an Act, and shepherded it through the Massachusetts General Court in early 1793. The Act authorized such a private venture; the canal was to be completed in ten years. He proceeded to form the Middlesex Canal Company to implement it, and served as its President for the rest of his life.

Under the supervision of Col. Loammi Baldwin of Woburn the canal was completed on schedule and began operation in 1804. It was a marvel of its day, hand dug for 27 miles with 20 locks and numerous aqueducts, culverts,

Figure 1: Approximate Routes of the Fixed Warp Lines.



bridges and landings.

At Charlestown the Canal entered a tidal millpond formed by walling off a bay of the Charles River estuary, which had been constructed in the years 1670-75 to furnish power for mills along the western shore to grind corn and saw lumber. Building the wall for the milldam was no mean feat. Its overall length was over a half a mile, and its height great enough to extend above high tide. It must have been a communal effort, since there appear to have been only about 200 able-bodied men in Charlestown at the time. The

wall was probably constructed by laying rocks and adding fill out from the shore, perhaps on a footing of timber. However it was done, the wall lasted 150 years with occasional repairs.

Interrupting this wall was a platform of mills plus a gate permitting the pond to be filled at high tide and held at that level. The water could then be directed onto the mill wheels when the tide was out; boats could enter or leave by the gate at flood tide. The mill might operate several hours out of the 12-hour tide cycle each day. Unfortunately,

there are no explicit records to support this scenario, only various clues. Later the gate was replaced by a lock to permit boats to pass at other times.

With foresight the Middlesex Canal Company purchased the entire millpond complex and set about improving all its features. For example, to cross the pond a floating towpath had been introduced between the Canal entry and the existing lock; this was replaced by a permanent embankment. The lock itself was improved; the mills were renovated and access improved; the dam was reinforced where needed.

From the millpond Boston destinations could be reached by either of two options, that is, by loading cargo onto wagons and hauling them across Charlestown to the bridge which had opened in 1786; incidentally, Col. Baldwin had been active in its design and construction. Alternatively, canal boats could be pulled across the Charles River to a wharf and warehouse rented on the northern tip of the Shawmut Peninsula. From here it was about a mile to the center of Boston on a rough road.

Crossing the Charles River was not a trivial matter. Canal boats, long and narrow, were designed to be towed, not navigated in open water with current, wind, and along a curving route, as shown in Figure 1. Rather, they must be hauled hand-by-hand along a cable called a "warp". However, such a cable must not interfere with traffic on the river itself.

Col. Baldwin's solution, shown in Figure 2, was ingenious. He placed buoys along the route tethered to anchors below. A heavy iron ring was slipped over each tether, and the cable was attached

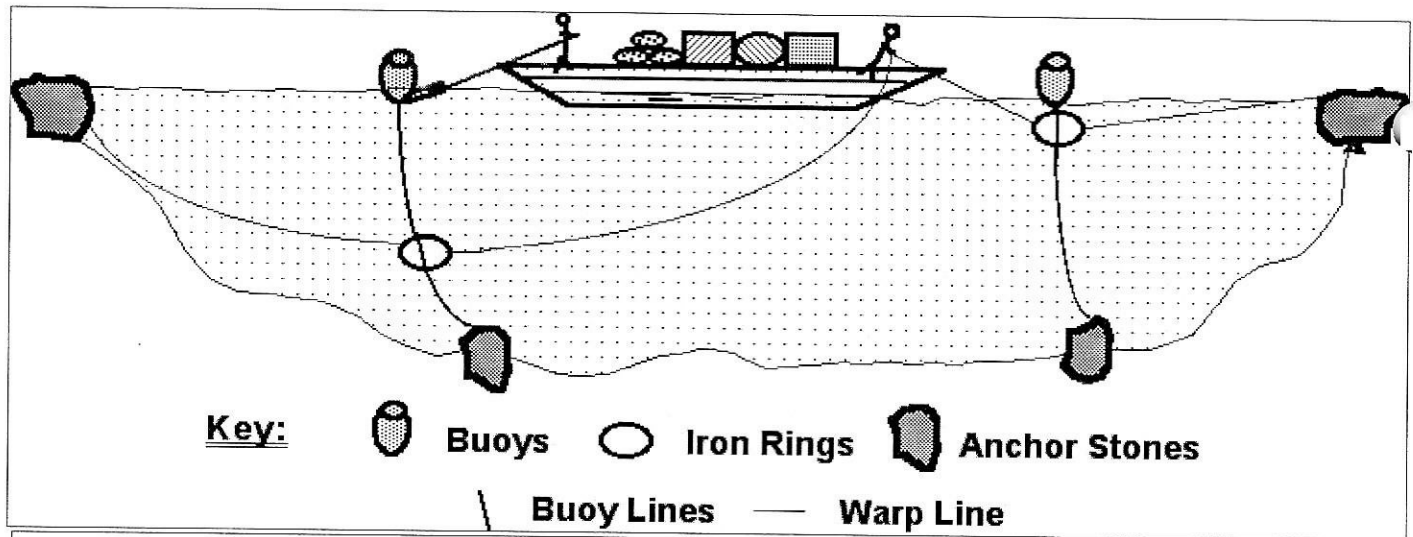


Figure 2 - Editor's Concept of Baldwin's Warp Line Arrangement

to each ring in turn. With this arrangement the cable would rise as it was being pulled, bringing the ring with it; after passing a buoy the ring would pull the cable to the bottom, again, out of the way of passing boats.

The Canal Company had a standing offer to supply a "pilot" for each passage at the price of one dollar. Presumably the pilot did not actually pull the boat, but was responsible for controlling the warp, adjusting for current, tidal flow and wind, and assuring that the boat never went adrift.

Either of the above options had the serious disadvantage of requiring cargo to be loaded on wagons and hauled to their final destination in Boston. Fortunately, a third option appeared a few years later. This option is the feature of this account; once again an historical review is in order.

First, some topography: Let us examine a map of Boston as it appeared in 1635, see Figure 3/1a, page 19. Beside the North End lies the North Cove. Within the Cove is shown a swampy island which extends almost across the opening. A trail ran through it apparently used by the Indians. As early as

1630 a settler named Crabtree observed that this island could be extended on both ends to form a tidal millpond such as the one previously described, and he set about doing it. However, as you can imagine it was far too much for an individual and he had to give up.

Thirteen years later the project was taken up by Henry Symons and five associates. They secured the grant of this cove from the town on the condition that they construct a Mill Pond and erect one or more mills. They were to provide a floodgate ten feet wide for the passage of boats, and had the right to cut a channel through the marshy portion of the pond to a creek leading southeast to the Town Cove, providing they erected passable ways for crossing by horse and cart. The group proceeded to complete the dam and to dig out what became known as Mill Creek leading to the waterfronts. They erected three mills, one at the western end of the dam, one at the northeast end, and one at the junction of the Mill Pond with Mill Creek.

Mill operations continued for

almost 150 years during which there were various changes in the mills. The mills at the western end of the dam, which had its own floodgate was the first to cease operation. The mill at the northeast end of the dam burned about the time of the Revolution and was replaced by three others. Two mills were located near the entrance to Mill Creek, also later replaced.

Over time, the Mill Pond itself began to become polluted. When the western mill closed, its gate remained closed, and that corner of the pond began to develop a stench due to debris that was carelessly dumped in, including dead animals and local privy runoff. Likewise other parts of the pond became filthy, bringing complaints from neighboring settlers. This unhealthy condition joined with another factor to force a significant change to this segment of the route in the early 1800s. With the steady growth of Boston, land was becoming scarce. On all sides land making was in progress. The Mill Pond inevitably became a target both because of its central location and because of its stench, which in those days was presumed to breed disease. Resistance came from those who felt that the mills

were an asset, as well as from those who thought open bodies of water should be preserved as a source of cooling breezes.

In 1804, a town committee was appointed to investigate the possibility and desirability of filling the Millpond. Before the committee was ready to report, the mill owners, who were the successors of the pond's original proprietors, obtained an Act of the legislature incorporating them as the Boston Mill Corporation (BMC), with the clear intention of filling the pond. Spirited discussion at meetings and articles in the press followed, debating the desirability of filling and the constraints that should apply. A fresh element that entered into consideration was the completion in 1803 of the Middlesex Canal. It became evident a canal through Boston would constitute a logical extension, providing direct access to the waterfront and to businesses along the way.

Finally in 1807, an agreement was reached between the town and the BMC on filling, subject to various restrictions, such as requiring the BMC to pay the cost of filling, reserving some land for town use, providing proper sewers, streets, etc. One special provision was that Mill Creek would be kept open and extended through the (filled) pond to the Charles River. According to Dr. Nancy Seasholes, an archeologist who specializes in the topographical history of Boston, this latter provision was directly attributable to the recent completion of the Middlesex Canal and the desire to extend its benefits all the way to the Boston waterfront and intermediate locations, notably Haymarket Square.

A street plan was laid out by Charles Bulfinch, a member of the

committee of selectmen, to include the canal; a sketch shows his concept superimposed on the boundaries of the pond. The plan is basically a triangle with the canal at its center, its base on Causeway Street, and its apex at Haymarket Square. Note that the Mill Creek continues through to the waterfront thereby completing the bisection of Boston. A later map, see Figure 3/1b, page 20, shows the plan as it was implemented.

Completion of the project, including filling the entire area and adding bridges, etc., took almost 21 years; that is a story in itself. However, the canal was a priority, and the first contract for its construction was let in 1809; other contracts followed. The walls were built free-standing across the Mill Pond, 40 feet apart over most of the 1,000 foot length, narrower at Causeway Street; the width was later increased to 60 feet.

As to the structure of the canal walls, my information comes from Dr. Seasholes' dissertation at Boston University, dealing with land making in Boston. Typically, such walls were built of stone on a footing of timbers. The footing consisted of "grillages", that is, latticed rafts of pine pinned together with oak treenails, or trunnels as they were called, and floated into position. These were set into the bottom except where the clay was sufficiently firm to support the wall. On top was a "battered" wall of rock laced with horizontal and vertical timbers. Presumably the grillages, never being exposed to the air, last indefinitely and prevent individual rocks from sinking into the mud; the weight of the rocks holds

them in place.

The level of water in the canal was a matter of concern. It would be convenient for users if the water were constantly held at a few feet below the top of the walls; this would require a guard lock at each end to adjust for the variation of tide level. However, a source of water at the highest level is required to replenish the water released during each locking operation. No such source existed in mid-Boston. The result is clear: the canal must operate at sea level. In short, the water level is governed by the rise and fall of the tide, and the walls must be high enough to contain high tide.

The contract for the walls called for them to be 8 feet high. Considering that the average range of height of tide is 9 feet in Boston harbor and often more, it is evident that boats will be stranded at low tide. However, they can be moved half of the time or more, which is not unreasonable since the process of loading takes time, and boats can be left for another cycle.

At its eastern end this canal was joined to Mill Creek, already deepened and improved. Together these two segments provided a waterway from the Charles River to the Boston waterfront. In so doing they actually bisected Boston during their active years, about 25 in all. Crossing the canal required bridges, half a dozen or so. Three were drawbridges; the others were permanent or make-shift.

The completion of the canal through Boston brought immediate benefits to Boston merchants. It also lifted the spirits of the investors of the Middlesex Canal as it multiplied the traffic and increased revenues. In 1819 for the

first time the Canal Company was able to pay a dividend; this continued for almost 20 years. Unfortunately, this revenue never fully recovered the full cost of construction, maintenance, and operation.

Traffic on Mill Creek was never great. Besides being constrained by tide level, it reached the harbor at a single location from which most of its cargo must be transported to other wharves. Finally, increasingly business was principally transacted near Haymarket. As the creek became polluted and fell into disuse there came pressure to fill it and use its land for other purposes. When Faneuil Market (later renamed Quincy Market) was begun in 1824 under Mayor Josiah Quincy, it was necessary to relocate the end of Mill Creek to another wharf; see Figure 3/1c, page 20. A few years later the entire creek was filled in. Incidentally, the granite for the market was transported down the Middlesex Canal and through Mill Creek. The main portion of the Boston Canal ceased operation twenty years later, losing its traffic to that nemesis of canals, the railroad. In 1845, the Boston and Maine Railroad acquired the right of way, built a depot at Haymarket Square, filled the Canal, and laid track in its place, thus bringing our saga to an end, though Middlesex Canal itself hung on for several more years before its demise.

By the middle of the 19th century the Cross Boston Canal had passed into history almost forgotten. Nevertheless, together with bridges across the Charles River, it had broken the image of Boston as a "tight little island", and played an instrumental role in building a thriving commercial

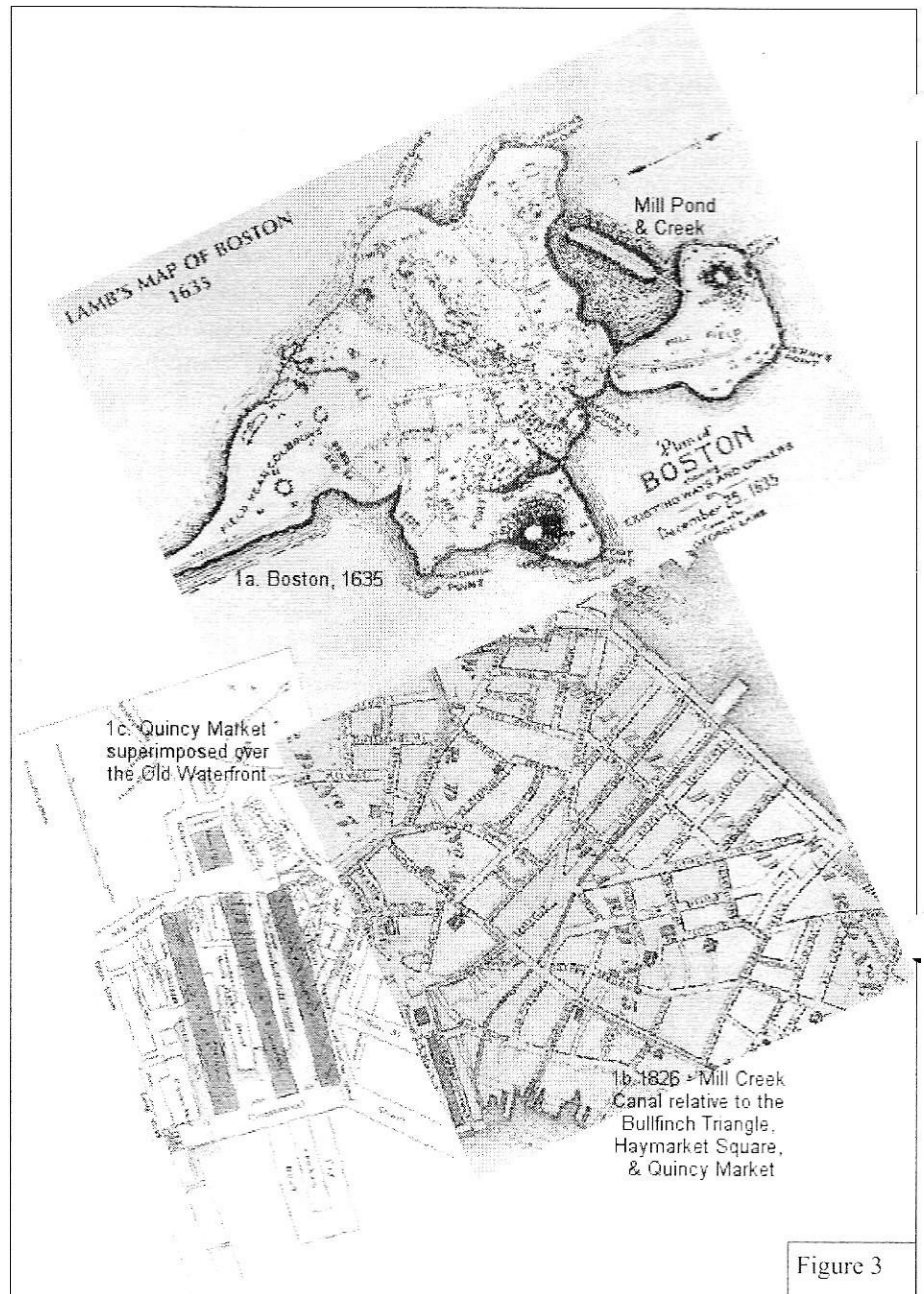


Figure 3

hub at its center. Furthermore, in enabling a continuous waterway from Boston to central New Hampshire, it established a corridor that fostered healthy development all along its route.

What can one find today? Gone is the Millpond. Gone is the canal that crossed it. Gone is Mill Creek. All that remains to remind us of that early period are street names: Causeway Street, the boundary of the Millpond; Traverse Street, the loca-

tion of one of the three drawbridges that crossed the canal; and Canal Street, once the towpath of the Cross Boston canal.

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RESTORED NINE-MILE CREEK AQUEDUCT OPENS IN CAMILLUS, Grand celebration planned in New York on May 22

by David Beebe

After 38 years, the Camillus Erie Canal Park's plan of restoring the 1844 Nine Mile Creek Aqueduct has come to fruition.

The following is a sequence of events leading to the completion of the aqueduct.

In the late 1990s, we held a capital campaign and received support from local government officials. When we made our application for ISTE A funding,

we based the cost upon our plans to restore the aqueduct with concrete and steel. Because the aqueduct was on the National Registry of Historical Places, we learned that this plan was unacceptable, and we needed to raise more money for wood restoration.

July 22, 2008 - Again we requested bids for the aqueduct

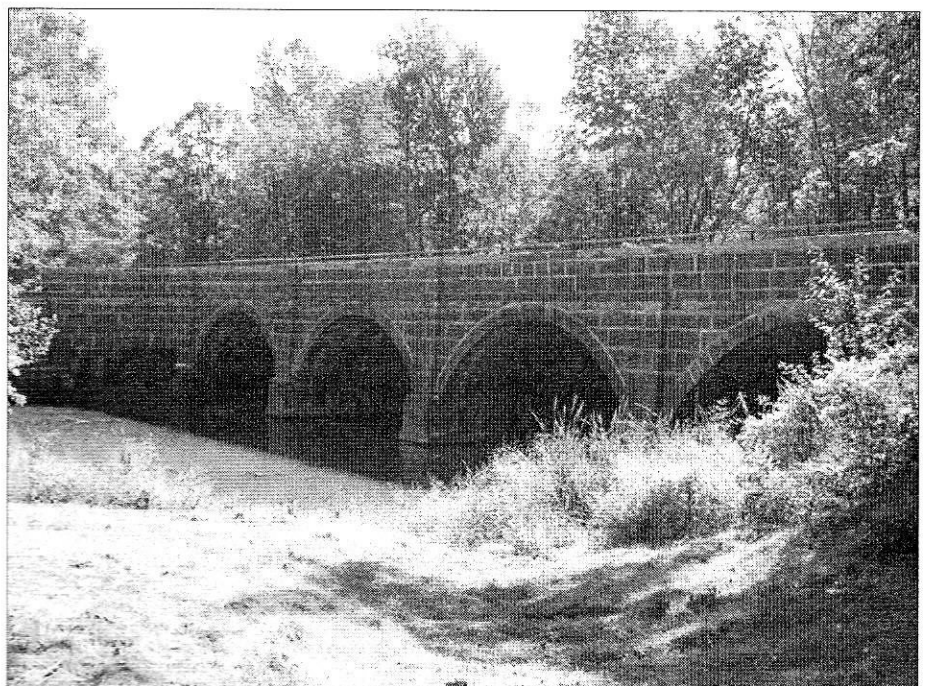
August 19, 2008 - four bids were opened and the contract awarded to the Vector Construction Company, Cicero, New York

September 15, 2008 - Pre-construction meeting

February 12, 2009 - Aqueduct committee visited Una-Lam at Unadilla, New York, to view the construction of glulam timbers. They were sent to South Carolina for chemical treatment.

April 6, 2009 - Vector Construction started laying main support timbers 72 feet long, 8" wide, by 18" high and weighing 2 tons.

(continued on next page)



July 16, 2009 - Earthen dams were removed and water started to fill the aqueduct trunk. Liz Beebe paddled the first boat over the aqueduct since it was abandoned in 1917.

August 15, 2009, 10:32 a.m. - The *Ontario* and *Camillus-Erie* were the first two passenger boats to cross the aqueduct since its closing in 1917.

On behalf of the Town of Camillus and the Camillus Erie Canal Park, you are cordially invited to attend the Grand Aqueduct Celebration on Saturday, May 22, 2010.

A fun-filled day is planned, beginning with a canal parade at 10:30 a.m. from Sims' Store Museum.

At 11:00 a.m. the main ceremony will be held at the aqueduct, followed by activities on the towpath at 12 noon. Evening activities will include fireworks, food, and music.

Photos courtesy of David G. Barber

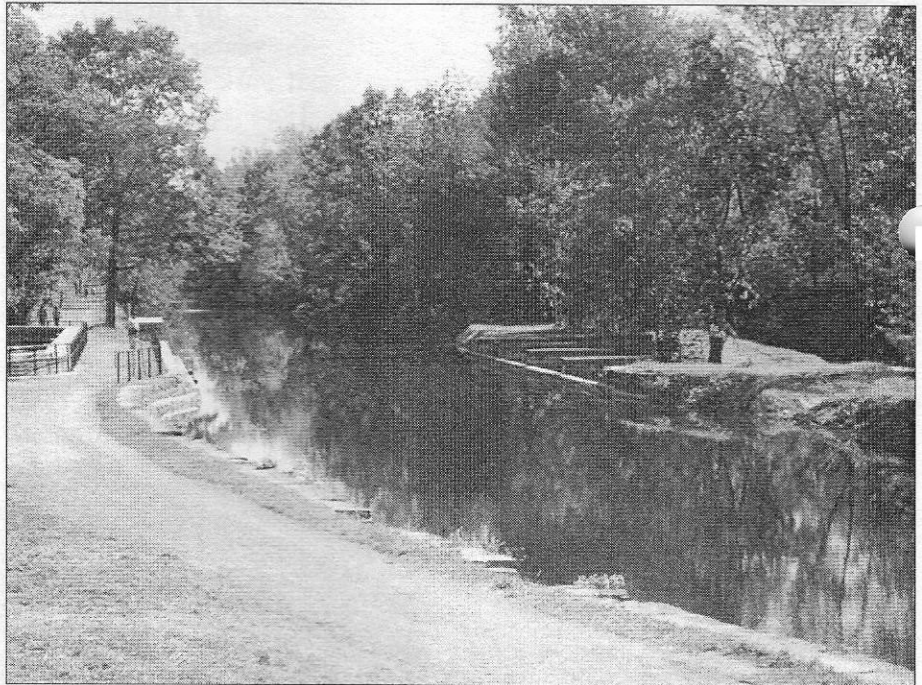
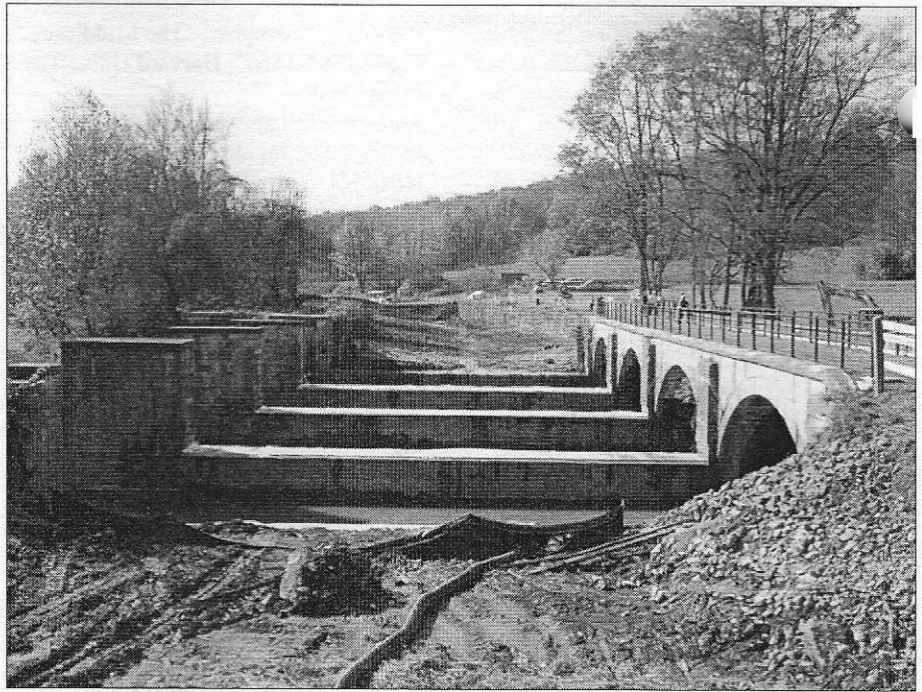
Cops: Ex-State Ed Employee Tried to Sink Vessel

March 9, 2010

A Waterford (NY) man has been arrested for trying to sink the historic vessel *Day Peckinpaugh*, which is moored at the Erie Canal locks in Waterford by the state Education Department.

Guy Pucci, 35, of Waterford, a former employee of the state Education Department who had worked on the ship until late last month, had allegedly entered onto the ship Sunday and opened the valves to flood it. The state reported the vandalism on Monday after closing the valves, using pumps and a private tug to keep the ship from sinking.

State Police said Pucci also stole a 1973 Chevrolet Blazer from the



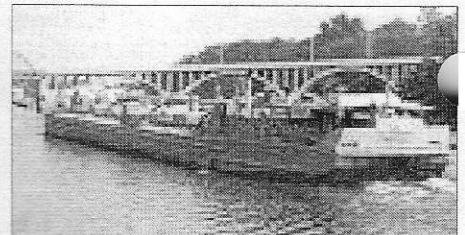
site which he abandoned and was later recovered in Waterford.

He has been charged with second degree criminal mischief and fourth degree grand larceny.

The vessel sustained extensive damage due to the flooding, and repairs are expected to be in excess of \$10,000, but the exact amount of damage has not been determined.

Pucci was arraigned in the Village of Waterford Court and remanded to the Saratoga County Jail on \$5,000 bail pending further court action.

Editor's note: The *Day Peckinpaugh* is owned by the New York State Museum.



DITCH OF DREAMS

The Cross Florida Barge Canal and the Struggle for Florida's Future

By Steven Noll and David Tegeuder

Reviewed by David G. Barber

This is an extensive history of the long story of the dream to build a canal across the upper end of the Florida peninsula from Spanish times to the present day. It mainly focuses on the political story, both for and against the project. It particularly discusses the opposing forces during the two periods, the 1930s and the 1960s, where actual construction occurred.

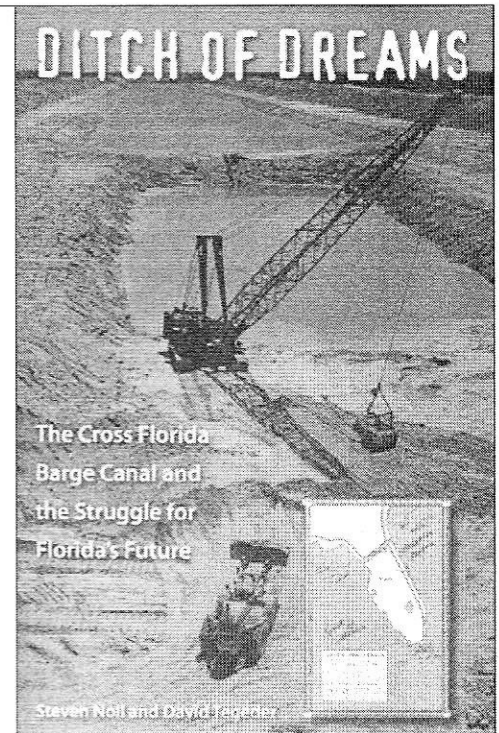
However, being political history, it mostly ignores the actual design and construction of the waterway and its features except where political hay was made of them by the opposition. It does point out the fact that the opposition made use of the reality that all construction looks ugly until it is finished and the landscaping is complete.

Despite the authors being from the nearby University of Florida which was the focus of opposition in the 1960s, I find the discussion to be very neutral. However, I do not think that they give enough credit against the waterway to the differences between the Kennedy – Johnson years with an emphasis on engineering to solve problems and a desire to invest in the south versus the Nixon years with a conservative western president wishing to cut spending in out of the way places such as northern Florida. The book does point out that conservative anti-pork barrel forces financed the local environmental forces while staying out of the spotlight.

Pork-barrel charges tend to be locally based. The other guy's project is pork, not yours. A vocal opponent of the canal in the 1930s and later was Senator Arthur Vandenberg of Michigan. While he fought against this canal and a tidal power project in Maine as pork, the federal government constructed the MacArthur Lock at the Soo in the 1940s. Of course, the Soo is in Michigan and the lock improved the transportation of iron ore to the industries of Detroit. That obviously made it not pork.

I also do not think that the authors or the opposition understand certain realities of engineering projects. These include that all projects have opponents as well as supporters regardless of merit. So naysayers are normal and not a reason for reexamination. Second, that estimates of costs are always based on assumptions and the "rules" established by superiors and cannot include the always present unknowns. Putting in large allowances for unknowns is never allowed, and any estimate of cost will always be considered too high. Third, the role of the U.S. Army Corps of Engineers in civil works is to salute and carry out the legislated will of Congress, not to question that assignment. When Theodore Roosevelt appointed Col. George Washington Goethals as the third project manager for the Panama Canal construction, he remarked that he finally had a project manager who couldn't quit. Congress also approves the rules by which projects are judged. In this country, the military is subordinate to civilian policy makers. Criticizing the Corps for following their orders may make political hay, but it ignores our national policy of government.

The book is published by the University Press of Florida and available from their web site www.upf.com at \$29.95.



From the President (continued from page one)

Elsewhere in this issue, you will find paragraphs on various boat rides you can take on our historic waterways. Do seek them out. There is also information on our ACS web site.

In September, the 2010 World Canals Conference will be held in Rochester, NY. This will probably be one of the biggest canal conferences ever. There will be many interesting people to meet from around the world and much to learn and see. So do plan on attending.

CANALENDER

April 17—Annual Douglas Memorial Hike and Dinner. Hikers will have three different length options with bus transportation provided. Cumberland to Spring Gap area with dinner and evening program at the Orleans Volunteer Fire Dept. Dorothea Malsbary, 301-942-2528; Programs@CandOCanal.org.

April 18—Schuylkill Canal Association invites you to its 1st annual Shad Fest and 4th annual Loop Fest, 10-3; visit www.schuylkillcanal.org for all the details.

April 30-May 2—"Bridging the Tuscarawas Gap" - Canal Society of Ohio. See trail development along the Ohio & Erie Canal, restored toll house, Trenton dam and feeder & Lock 15 Park. Contact Larry Turner, towpath-turner@aol.com; 330-658-8344.

May 1—I & M Canal Walk/Ride. Join the Canal Corridor Association in Morris, IL for the third annual I & M Canal Walk or Ride Celebration. Walk one to five miles or bike ten to twenty-five miles during this fun, family event. Bring a group from your business or invite some friends and make it a team effort! Contact Katie MacKay, 815-220-1848 or reservations@canalcor.org.

May 22—Dedication of restored Nine Mile Creek Aqueduct, Camillus Canal Society, Camillus, NY. Contact Dave and Liz Beebe, dwbeebe@verizon.net.

June 5—Summer Canoe Trip. Join our experienced naturalist on this guided canoe trip which leaves from the Interpretive Center and weaves its way back into the old canal. 10am-12 pm. \$15 per person, Pre-registration required by June 4th. Brad Sale, Old Santee Canal Park, 900 Stony Landing Road, Moncks Corner, SC 29461; 843-899-5200; parkinfo@santecooper.com; www.oldsantecanalpark.org.

June 19-20—Heritage Transportation Festival, Delphi, (IN) Canal Park. 1850 transportation, canal boat rides, high-wheel bicycles, carriage rides, etc.

www.WabashandErieCanal.org.
For more info, call 765-564-2870.

June 26—Waterloo (NJ) Canal Day. Waterloo Village on the Morris Canal, Byram. Canal Society of New Jersey. 11-4. Free admission and boat ride. Food, sales items. Museum open. 908-722-9556. www.canalsocietynj.org.

August 21—Wharton (NJ) Canal Day. Tours along the Morris Canal. Boat rides, canal lecture and tour, vendors. 908-722-9556; www.canalsocietynj.org.

September 19-24—World Canals Conference, Rochester, NY. www.worldcanalsconference.org.

October 1-14—Study tour of south German waterways. Contact www.canalsnys.org.

October 8-10—Pennsylvania Canal Society fall tour. Destination to be announced.

October 8-10—Canal Society of Ohio tour covering the Cuyahoga Valley National Park, from Rockside Road to Deep Lock, including the great canal town of Peninsula.

October 22-24—"Rappites, Riverboats, Pirates"—Headquartered in Evansville, IN. Bus tour of southeastern Illinois, Cave In Rock, Garden of the Gods, Ohio River locks, Paducah, Kentucky flood wall murals (possibly Quilters Hall of Fame and the Civil War Museum) on Saturday. Friday tour of LST in Evansville, Sunday Wabash & Erie Canal in Warrick County, Indiana. Carolyn Schmidt, 260-432-0279; indcanal@aol.com.

"TROLLEY" CANAL BOATS

ACS Director Larry Turner has recommended a recent article on electrically-propelled canal boats, which the article refers to as "trolleyboats," around the world.

The article interestingly reviews various electrical propulsion systems (including propeller systems, cable systems, and electric "mule" systems) used on various canals, particularly in Europe. Somewhat ironically, the article appears in the December 15, 2009, issue of a journal titled, *Low-Tech Magazine*. You can view it online at: www.lowtechmagazine.com. Just scroll down to the Trolley Canal Boats article.

