

# AmericanCanals

Bulletin of the American Canal Society

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Dedicated to Historic Canal Research, Preservation, and Parks

Summer 2010

## From the President

by David G. Barber

Recently, I was able to attend the spring field trips of both the Pennsylvania Canal Society and the Canal Society of Ohio. Both of these trips were interesting in that they involved sections of canal that are not easily accessible, especially for groups. On the PCS tour, we visited the Upper Lehigh Canal, which runs through the Lehigh Gorge. As in a prior tour of this area many years ago, vans were used to follow the former Lehigh & Susquehanna Railroad grade, now a state park bike trail, through the deep gorge. The few access points make this the only way to show a group the canal remains. It was most interesting to see the many bicyclists using the trail and the many signboards that have been added since my last visit.

The CSO tour involved the Ohio & Erie Canal in Tuscarawas County and included the use of a fleet of gasoline-powered golf carts. This new innovation to canal touring solved the problem of showing multiple sites along a three-mile section of canal with a good, but narrow towpath that is away from roads. While each cart only carried four people and required recruiting drivers from among the participants, they were very quick to load and unload and very suitable to the towpath. They might have been less fun if it rained, but we only got a couple of drops. The tour committee is to be congratulated for thinking outside the usual box. I was also impressed with the improvements to the trail, locks, and other structures along the way and



This picture is a combination of three elements: the single remaining arch of the Catoctin Creek Aqueduct, on the right (the missing two arches collapsed in 1973); behind it an arch of the B&O railroad bridge; and on top of them both is the steel and wood foot bridge NPS built after the collapse. <http://canal.mcmullans.org/participate.htm>.

especially with the bridge across Interstate 77 at Fort Laurens that was opened in 2009, improving public access to the towpath. On May 22nd, several ACS directors and I joined the festivities in Camillus, NY, where in the town's Canal Park they held a day-long dedication of the restored and rewatered Nine Mile Creek Aqueduct. This wood trunk on masonry pier (continued on page twenty-one)

### EMAIL ADDRESSES REQUESTED

Please send your email address to [barths@att.net](mailto:barths@att.net) so that we may send information in a timely manner between issues of the newsletter.

Thank you so much.

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# American Canals

BULLETIN OF THE  
AMERICAN CANAL SOCIETY

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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  
correspondence consistent with these  
objectives are welcome.

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08876; [barths@att.net](mailto:barths@att.net).

Material submitted to *AMERICAN  
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# Symposium on Chesapeake & Ohio Canal Engineering: The Early Years 1828-1830

Saturday, July 24, 2010  
1 p.m. to 4:45 p.m.

Shepherd University  
The Auditorium of the Byrd  
Center for Legislative Studies  
Shepherdstown, West Virginia

## Program

**Benjamin Wright, C&O Canal Chief Engineer  
June 1828-Fall 1830**  
Steve Pennington, PE, PLS

**Charles Ellet, Jr., Assistant Engineer, 5th Residency, C&O  
Canal Nov. 1828 - Apr. 1830**  
Emory Kemp, Ph.D.

**C&O Canal Engineers and Engineering in the First Years of  
Canal Construction**  
Robert J. Kapsch, PE, PhD; and Denis McMullen, PE

**Panel Discussion Moderated by Sam Tamburro (NPS):**  
Robert Kapsch, Emory Kemp, Denis McMullen, Steve Pennington  
followed by Q & A from the audience

**Note:** There will be a **FREE INTERPRETIVE WALK**  
AT 10 A.M. AT LOCK 38 on the Canal across from  
Shepherdstown. The walk will include discussion  
of the lift and river locks and the importance of  
this location to the C&O Canal.

### Sponsoring Organizations:

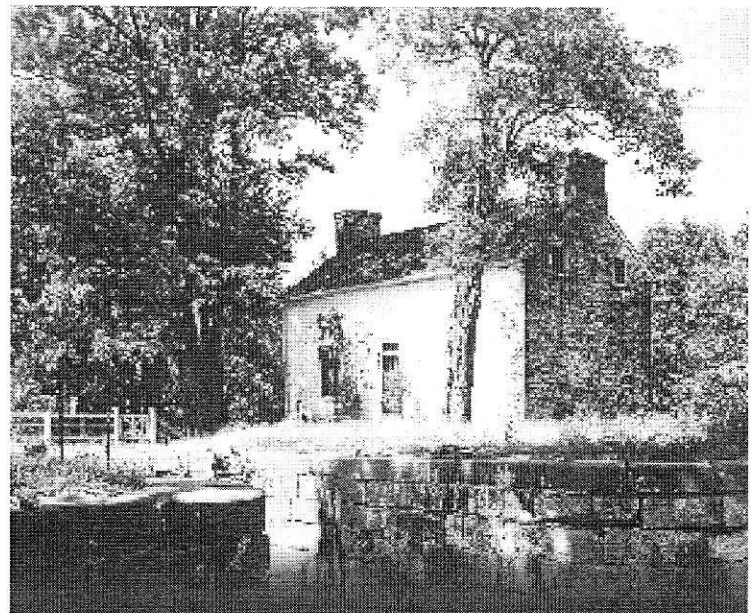
Chesapeake & Ohio Canal Association,  
Chesapeake & Ohio Canal National Historical Park,  
and Shepherd University



### Symposium fee:

General registration: \$15  
Members of sponsoring organizations: \$10

Register with the C&O Canal Association ( [candocanal.org](http://candocanal.org) )  
Registration form at [candocanal.org/news/symp\\_reg.html](http://candocanal.org/news/symp_reg.html)



## background...

The idea of a symposium open to the general public on the C&O Canal's early engineering grew naturally out of the recognition that this year is the 200th anniversary of Charles Ellet Jr.'s birth—a young assistant engineer who would become a major figure in America's mid-19th century engineering achievements. The new transcriptions of the Ellet papers from his time on the C&O provide a remarkable picture of the C&O's engineering corps under Benjamin Wright at the beginning of the canal. Scheduled for the afternoon of July 24th at Shepherd University in Shepherdstown, WV, this event brings together a unique collection of experts who will share their expertise and insight on Wright and Ellet as well as the complexities of the construction and engineering that the new company experienced as it began building the first third of the canal.

In a project that began last summer, the large collection of Charles Ellet's personal papers held by the Special Collections Library of the University of Michigan are being catalogued for the first time. Those from Ellet's time on the C&O Canal, until he left in April 1830 to study engineering abroad, have been made available to the C&O Canal National Historical Park where volunteers have transcribed them. The documents include letters from Chief Engineer Wright, C&O Canal Company president Charles Fenton Mercer, Inspector of Masonry W. Robert LECTIE, company clerk John P. Ingle, and Resident Engineers Herman Boye and Alfred Cruger. They contain detailed specifications for the Monocacy Aqueduct and provide an astonishing window on the function of the engineers, changes to the engineering corps, and developing difficulties with building materials, workmanship, and contractors.

### For further information:

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[www.candocanal.org](http://www.candocanal.org)  
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## ACS DIRECTOR ROBERTA STYRAN WINS PRESTIGIOUS CANADIAN AWARD

Congratulations to ACS Director Roberta Styran on receiving the 2009 W. Gordon Plewes Award from the Civil Society for Civil Engineering. A council member of the Inland Waterways International (IWI), Bobbie was chosen for her "contribution to the study of civil engineering in Canada."

The award is given to someone who has made particularly noteworthy contributions to the study of Canadian engineering in Canada or in the engineering achievements of Canadians elsewhere in the world. In Bobbie's case, "the award is not just for her books, but also for her contribution and participation in the various organizations to which she belonged, including a Canadian Canal Society trip to the UK way back in 1996, when IWI was formed."

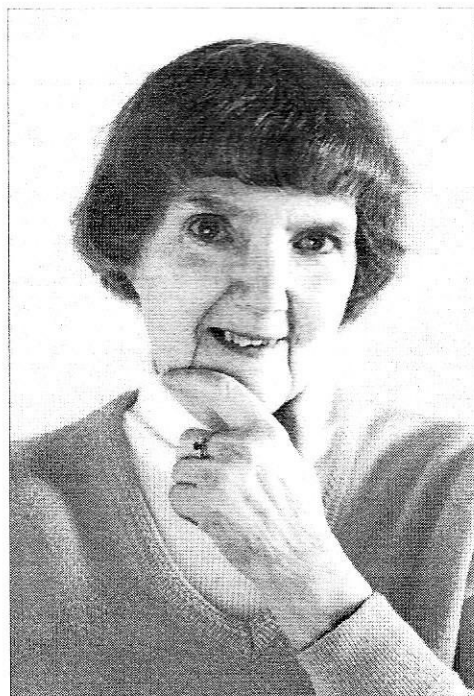
The award was presented at the CSCE annual general meeting in St. John's, Newfoundland, last year. Congratulations!

Roberta Styran received her B.A. and M.A. degrees from McMaster University in 1962 and 1964 respectively, and her Ph.D. in Medieval Studies from the University of Toronto in 1971. While teaching medieval history at Brock University from 1967 to 1978, she received a number of pre- and post-degree scholarships.

With Dr. R. R. Taylor of the History Department at Brock University, Dr. Styran co-authored four volumes: *The Welland Canals: The Growth of Mr. Merritt's Ditch* and *Mr. Merritt's Ditch: A Welland Canals Album* (Boston Mills, 1988, 1992); *The "Great Swivel Link": Canada's Welland Canal* (The Champlain Society, 2001); *The Welland Canals Corridor: Then and Now* (Vanwell, 2004). A two-volume study of construction of all four Welland Canals is in progress.

Styran & Taylor co-authored three papers published in Proceedings of the Niagara Peninsula History Conferences: "The Past and Future of the Welland Canals," "Purges, Prosperity and Doorian's Pizzeria: Immigration to St. Catharines," and "From Merritt to Multinationalism: Industry in the Niagara Peninsula," (Brock University 1979, 1981, 1989). They also published "Thorold: Creation of the Welland Canal," *Thorold News*, August 7, 1990; "Water, Water Everywhere: The Welland Canals," in Proceedings of the Two Days of Canada Conference, Brock University, 1991; "The Welland Canal: Creator of a Landscape," in *Ontario History* (December 1980); "The Welland Canals," in *Ontario Engineering Heritage*, which Dr. Styran compiled for the Ontario Engineering Heritage Records Foundation, Toronto 1987 (she authored several entries). She has compiled several aids-for-researchers on the basis of her own work.

Dr. Styran is past president of the Canadian Canal Society. She was a director and editor of the society's newsletter from 1989-2001; vice-president from 2000-02; president from 2002-04; and has been an honorary life member since 2005. She has been associated with most of the local heritage organizations, is a director of the American Canal Society, is on the governing Council of Inland Waterways International, was chair of the World Canals Conference held in St. Catharines (2004), and remains on the W.C.C. Steering Committee.



In 1996 she organized and conducted a fortnight tour of canal and Industrial Revolution sites in Great Britain for members of the Canadian Canal Society. She was inducted into the McMaster Alumni Gallery in 1990.

### ORIGINS OF A CANAL BOAT

By Kenneth C. Vliet

I am a retired wood arts teacher from New Jersey. Interest in the development of canals started over 40 years ago when my wife and I lived very close to the Delaware & Raritan Canal in Kingston, New Jersey.

In 1980 we purchased an older house located next to the site of the canal boatyard in Washington, New Jersey. Examining the construction of an early addition to this house leads one to believe that it may have been built with materials from the docks and structures around the boat basin. James Lee's book on the Morris Canal shows my house as a small structure next to the canal.

A 2003 trip to Holland and a tour of Amsterdam also provided

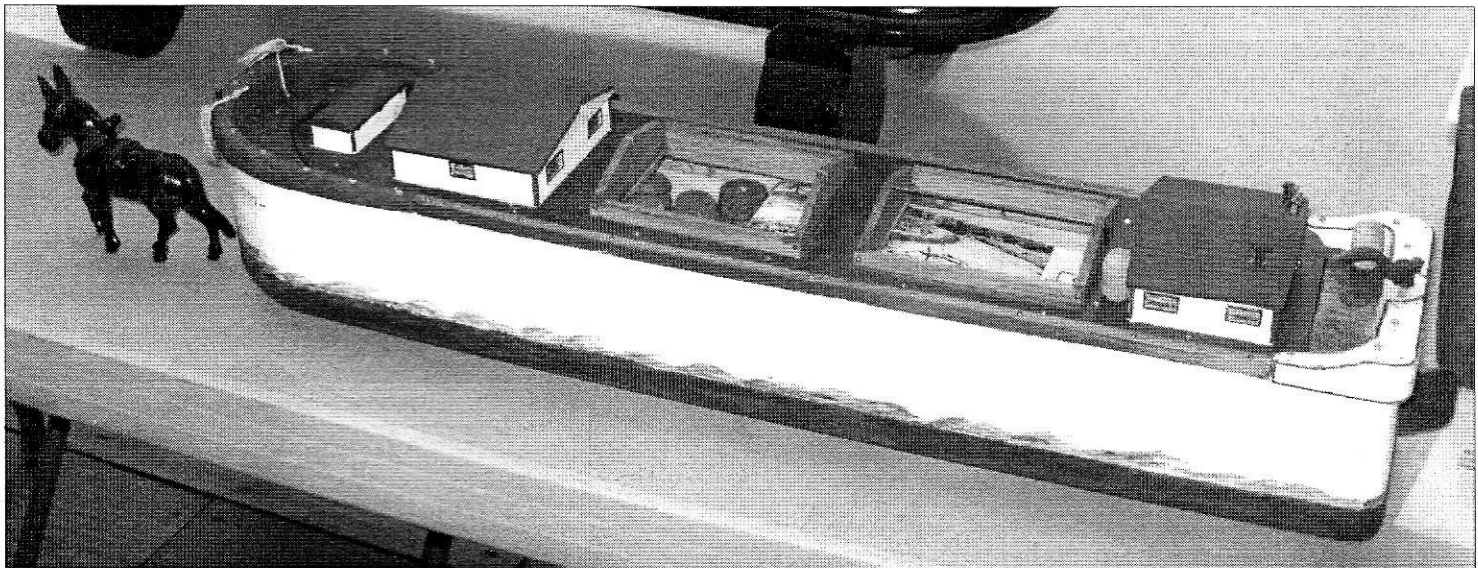
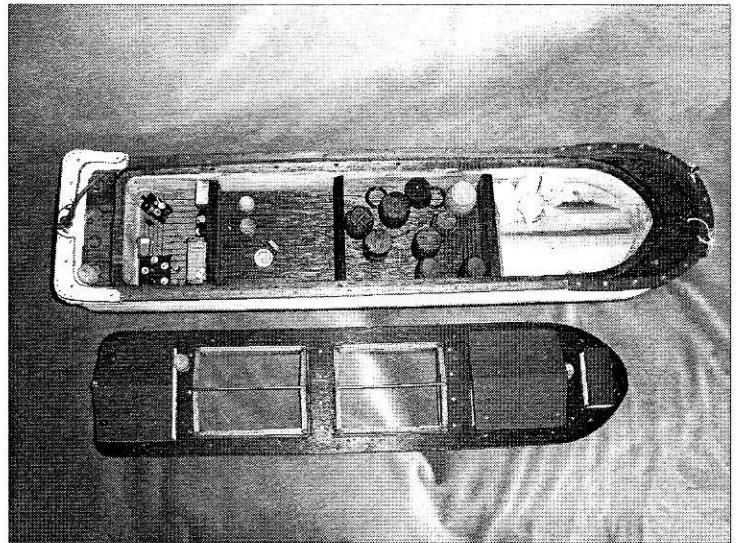
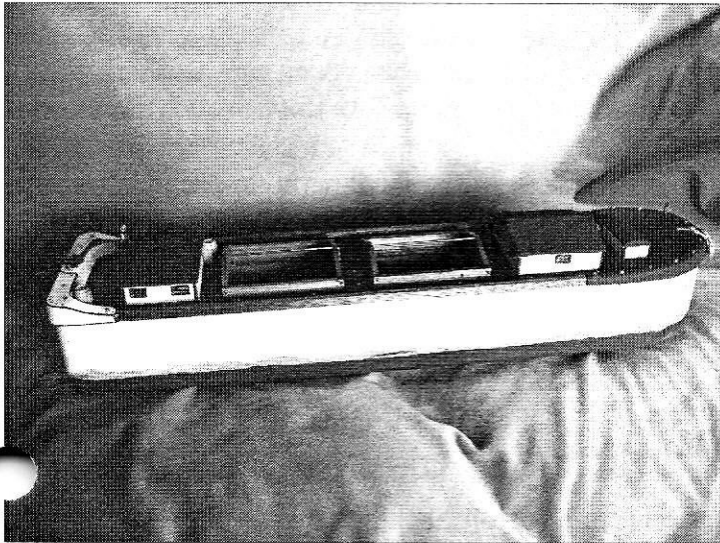
insight into canal construction. Now living near Easton, Pennsylvania puts us in close proximity to the National Canal Museum on the square in Easton.

Constructing my Lehigh Coal and Navigation Co. canal boat was made using pictures of many different barges. The 24-inch hull is built up with layers of  $\frac{3}{4}$  inch pine carefully band sawed with a  $\frac{1}{2}$  inch wall thickness remaining. The bottom is one solid piece of  $\frac{3}{4}$  inch pine with cutouts for small wood wheels. A lip was routed along the inner wall providing a ledge for the  $\frac{1}{4}$  inch deck with cutouts for access to the hold.

A cabin is provided near the rear for living area with table, stove, bunk and storage cabinets. Small wooden barrels are on deck for a water source. Tow ropes are provided up front to be pulled by a cast iron mule from an early toy.

The deck is stained brown, the cabin and hull are off-white, and the roof is green. A slight wave action is painted in blue along the hull bottom. It was fun to build and gives one a model of a canal boat not available in the style that I wanted.

IF MEMBERS KNOW OF OTHER BOAT MODELS, PLEASE LET US KNOW.



## EVENTS AT THE ALLEGHENY PORTAGE RAILROAD

The Allegheny Portage Railroad announces its heritage hikes on inclines 6-10, August 8 and September 19; walking tour of Hollidaysburg canal basin, October 24; a bike trip on the West Penn Trail, August 22; and van tours of the 36-mile route, July 24, August 7, August 21, September 18, October 16, and November 6. Call 814-886-6150 to register and get details.



## MORE ON THE CANAL TROLLEY SYSTEM

John Frye, our friend from the C&O Canal, saw the item in the last issue about the canal trolley and sent along an article from the Hagerstown, Maryland *Daily Mail*, dated July 13, 1893:

“The MAIL has already noted the fact that the State of New York is to experiment with the use of electricity as a motive power on the canals with a view of cheapening the rate of transportation, and that there has been talk of doing something like it on the C.&O. canal. The trial is to be made with a trolley system. This will differ from the ordinary arrangement in use on street railways. The trolley-wire there is fixed; as the cars are guided by tracks. This, of course, would not do over the water, on which the boats take various movements. The difficulty, however, is overcome by the revival of a patent covering a laterally moving trolley wire, one of which moves sideways in accordance with the movement of the boat and permits the trolley wheel to be kept constantly in electric contact with the conductor.

“In the practical operation of the invention the laterally moving wires are supported on transverse guy wire by travelers which permit the trolley wire to move sideways as required by the amount of slack to be given the trolley wire, the distance between guy wires and the amount of lateral movement which can be obtained, are all questions settled by calculation and experiment. The use of the laterally moveable conduction wires permits a fast boat to pass a slow one going in the same direction, and enables the boatmen to run their boats to a dock on either side of the canal, and to turn the boats around where the width of the canal permits. The details of the system have been carefully worked out and seem to be entirely practical and complete.

“It sounds the death knell of the faithful mule, who has these many years, with others of his kind, been engaged in toiling at the long rope down the tow-path. Perhaps if he should lift up his voice at the approaching desecration, it would fall away like the walls of Jericho.”

## TROUBLE AND TRIUMPH FOR THE C&O CANAL

Thanks to the efforts of many dedicated volunteers, the interior of Lockhouse 6 was spared damage from the floods brought on by the March 13-14 rains. A large crew of volunteers heeded the call for help and spent their Saturday afternoon placing 600 sandbags around the base of the historic lockhouse, which is one of three now available for overnight stays through the [Canal Quarters](#) program.

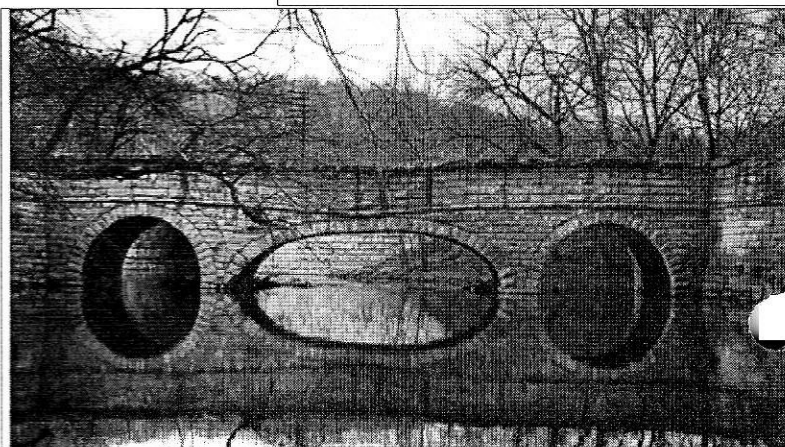
Volunteers were again needed at Lockhouse 6 after the water subsided, this time to remove the sandbags and restore the area to its usual state of natural and historical beauty.

### In better news for the C&O...

On Saturday, April 24, a groundbreaking ceremony for the Catoctin Aqueduct restoration was held at the aqueduct at mile 51.5, near Lander Lock (Lock 29). The event marked the final phase of a major undertaking by the C&O Canal National Historical Park, with grassroots support from the Catoctin Aqueduct Project in partnership with the C&O Canal Association and others.

The Catoctin Aqueduct Project is a grassroots partnership to fund the restoration of a magnificent historic icon in the C&O Canal National Historical Park. Restoration design is now 60% complete. Funding from individuals, corporations, private and government funds is desperately needed to save this historic structure. The total cost is about \$3.4 million, of which 90% has been raised. They need to raise \$340,000. You can make a tax-deductible donation, an in-kind donation, or volunteer; contact George Lewis at 301-834-4044 or [lewisdvm@aol.com](mailto:lewisdvm@aol.com).

Photo courtesy of [www.catoctinaqueduct.org](http://www.catoctinaqueduct.org)



# HISTORIC SOUTH HADLEY CANAL MODEL GETS UPGRADE

By Judy Van Handle

South Hadley, MA. is a small town that has left a big mark on the history of travel by water in the United States.

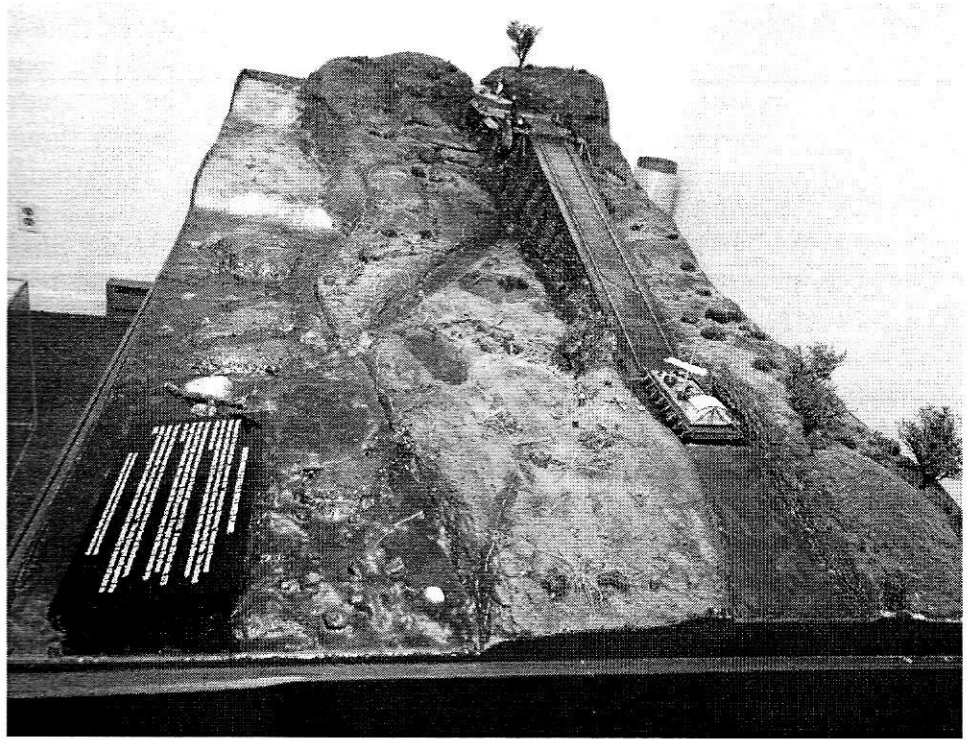
Specifically, the first navigable canal went into use more than 200 years ago in South Hadley, highlighted by a novel system of raising boats for safe passage through the waterway. The canal and attendant historical items will be in the spotlight when the town's Old Firehouse Museum opens its doors for the season.

The aptly named Canal Village Potpourri will serve as the backdrop for the unveiling of the Connecticut River/South Hadley Canal Room, the newest permanent display at the museum. The novated room houses "lots of memorabilia," according to Ted Belsky, who served as a longtime Canal Park Committee co-chairman, and items related to the canal and the community that sprang up around it.

Models of boats from that era on the Connecticut River, maps of the canal area, and many other items are on display, along with a model of an innovational mode of transport for vessels on the river.

The canal began operations in 1795, predating such wonders as the Erie Canal in New York by several decades. It was constructed over a three-year span and was intended to allow vessels to bypass the Great Falls, which dropped 53 feet. To send the boats safely past the falls, the canal builders constructed the inclined plane.

The first-of-its-kind invention raised boats attached to a large



cart over a huge stone ramp, then lowered the vessels safely over the falls to continue their trip. The designer of the inclined plane is lost to history, though its construction was overseen by Benjamin Prescott, a local resident.

The inclined plane was in operation for about 10 years before it was replaced by the more common lock system, which was used by the canal until it ceased operations in 1862.

"People came for hundreds of miles to see the canal and inclined plane," said Belsky. "It was an amazing achievement."

Now patrons will have the chance to view all of the museum's materials relating to the canal's history in a permanent home. Since the museum closed for the season in 2008, historical society members Brian Duncan and Gerry Lacasse were instrumental in renovating the room, applying fresh paint and new rugs to the space, which had previously housed a children's exhibit.

Sure to be the most eye-catching exhibit-within-the-exhibit is the working replica of the inclined plane. The expansive model, which duplicates the trip a boat took over the falls, was built about a dozen years ago and has taken up residence in schools and the second floor of the museum before finding its permanent niche.

The Old Firehouse Museum in South Hadley is located at 4 North Main St. and is open May through September on Sundays, adding Wednesdays in July and August, from 1:30 to 4 p.m. each day. Admission is free; donations are welcome. Judy Van Handle is a member of the South Hadley Historical Society.

For more information, please contact the museum at 413-536-4970.

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## The Black Warrior and Tombigbee River Basin

By Linda J. Barth

While visiting friends in Alabama, my husband, Bob and I noticed on the map the Holt Lock and Dam. Of course, we had to stop for a visit. Park Ranger Mark Meador, of the Army Corps of Engineers, greeted us warmly and offered to stay a while longer so we could tour the site.

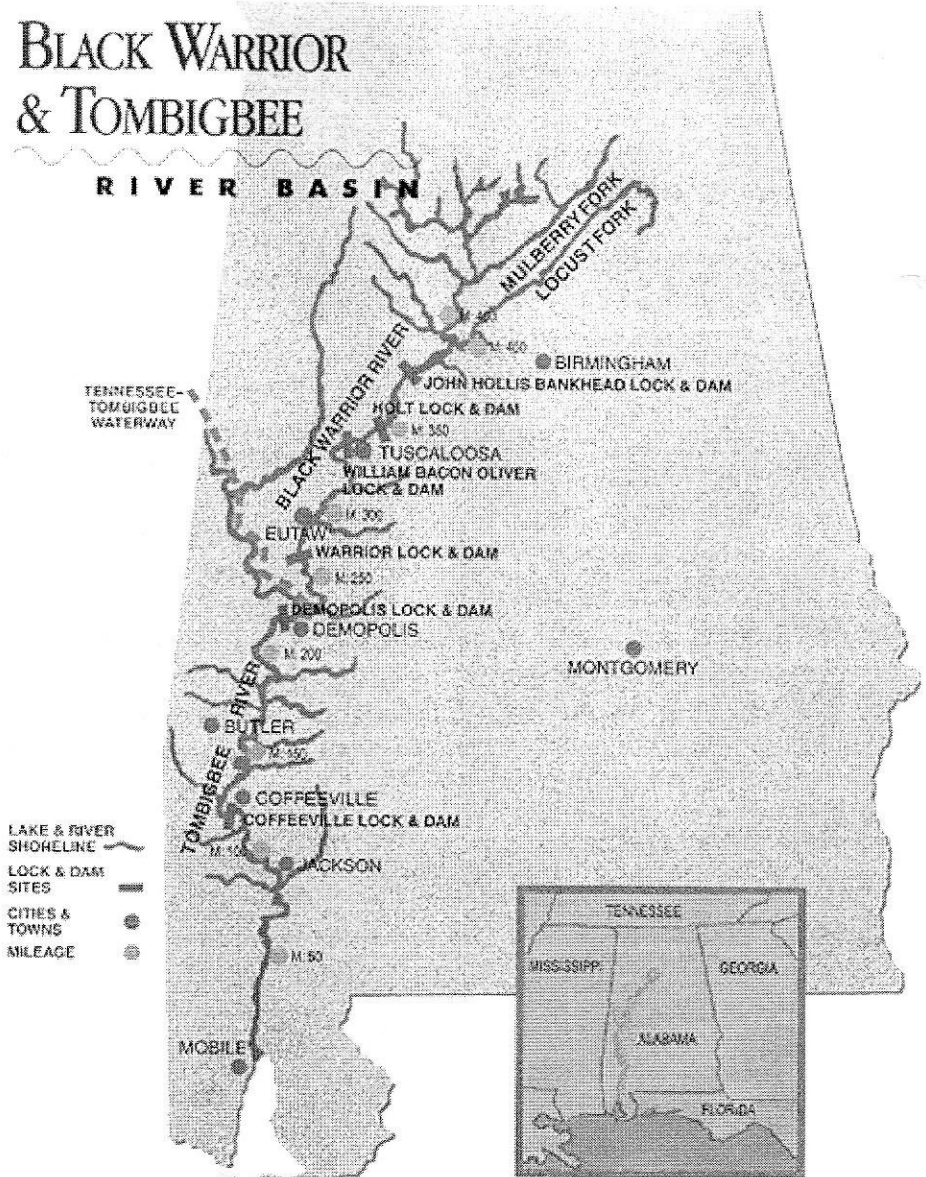
We saw a floating crane attached to a tugboat; it could lift the gates on the dam and the gates on the lock for repair or removal.

According to the Army Corps, Mobile district website, the Black Warrior-Tombigbee Lake system is home to six lakes: Bankhead, Holt, Oliver, Warrior, Demopolis, and Coffeerville. The lakes stretch from the headwaters near Birmingham, AL, south through Tuscaloosa and Demopolis to the southernmost facility below Coffeerville. The system serves commercial navigation and provides hydroelectric power, water supply, water quality, flood control, and recreational opportunities, including boating, fishing, camping, hunting, and hiking. The river system ends at the confluence with the Gulf of Mexico in Mobile.

Prior to human efforts to improve navigation on the Black Warrior River, it was made up of a series of waterfalls and shoals ranging in size from 700 to 1,000 feet wide and over 1,000 feet long. The two largest and most impressive shoals were the Tuscaloosa and Squaw shoals. Located directly above the city of Tuscaloosa, the Tuscaloosa Shoals dropped about thirty feet in a two-mile stretch of the river. The

Squaw Shoals, twenty-six miles above Tuscaloosa, stretched for about three miles and dropped around forty feet during low water periods. The average depth of the shoals was only two feet. Behind all of the shoals, the Black Warrior River expanded into a series lakes or calm water 500 to 700 feet in width. The river was surrounded by rock bluffs 100 to 200 feet high, with a small margin of land 100 to 500 feet wide between the banks of the river and the bluffs, leaving only a small strip of land that was tillable for farming.

The Black Warrior basin has abundant natural resources and is one of the most highly industrialized areas in the Southeast. Fish explorers, then traders and settlers used the rivers as water highways. The settlement of Mobile was successful largely because of its ideal location to serve as a port for the inland river system. In the nineteenth century, cultivation of cotton and the invention of the paddlewheel steamboat stimulated trade on the rivers. But hazards such as sandbars, fallen trees, and shoals impeded navigation. In 1875, the first plans to improve





the rivers for navigation were approved. Between 1895 and 1915, a system of seventeen locks and dams was constructed between Mobile and Birmingham. In those days, waterway construction was a slow and laborious task. Dams were built by hand of stone and mortar. Locks were walled with stone-filled timber cribs, and hauling was done by mule-power.

The original locks and dams were built to provide a six-foot-deep channel, adequate for the steam-powered tow boats and packets of the era. The corps undertook a program to modernize the system in 1937. The seventeen low-lift locks were replaced by six high-lift locks to expedite the passage of present-day towboats and barges. The locks vary in maximum lift from twenty-two to seventy-two feet. With chamber dimensions of 110 feet by 600 feet long, the locks can accommodate tows of up to eight standard barges. The nine-foot navigation channel is maintained to a width of 200 feet.

The waterway is now approximately 457 miles long with a lift of 257 feet. All of the original locks and dams have been replaced except for John Hollis Bankhead Dam on the Black Warrior near Birmingham. The structures at Bankhead were the last of the original locks and dams built on the system. Bankhead dam has been modernized and a new lock has been constructed to make it comparable in efficiency to the other locks and dams in the system.

Thanks to Mark L. Meador, Park Ranger, Holt Resource Office, BW&T Lakes, Mobile District; 205-553-9373, for all of his help. Visit the South Atlantic Division at [www.sam.usace.army.mil](http://www.sam.usace.army.mil).

### Lock and Dams on the Black Warrior-Tombigbee Waterway

#### Lower

<u>Lock No.</u>	<u>Construction Dates</u>	<u>Location/Nearest Town</u>	<u>Lift</u>	<u>Size</u>	<u>Cost</u>
1	1909	St. Stephens	10.0'	52X281.9	\$560,290.29
2	1915	Penningon	10.0'	52X286	\$560,114.09
3	1915	Oakchia	10.0'	52X285.6	\$609,622.80
4	1908	Demopolis	10.0'	52X285.6	\$479,000.00
	1908	Cedarville	10.0'	52X285.6	\$501,000.00
6	1908	Sawyer ville	10.0'	52X285.6	\$443,000.00
7	1903	Wedgworth	10.0'	52X284.7	\$225,600.00
8	1903	Akron	10.0'	51.6X284.7	\$212,400.00
9	1902	Powers	10.0'	52X284.7	\$202,404.00
Coffeeville L&D	1956	Replaced 1,2,3	34.0'	110X600	Unavailable
Demopolis L&D	1954	Replaced 4,5,6,7	40.0'	110X600	Unavailable
Warrior L&D	1954	Replaced 8,9	22.0'	110X600	Unavailable

#### Upper

<u>Lock No.</u>	<u>Construction Dates</u>	<u>Location</u>	<u>Lift</u>	<u>Size</u>	<u>Cost</u>
10 (originally 1)	1888 - 1895	Tuscaloosa	9.86'	52X286.6	\$244,500.00
11 (originally 2)	1888 - 1895	Tuscaloosa	8.5'	52X286	\$170,000.00
12 (originally 3)	1888 - 1895	Tuscaloosa	10.5'	52X286.2	\$160,500.00
13 (originally 4)	1905	Wards Shoals/Tidewater	12.4'	52X285.5	\$203,700.00
14	1910	Arnold Shoals/Searles	14.0'	52X282.1	\$414,714.89
15	1910	Rose Shoals/Kellerman	14.0'	52X282.1	\$430,233.87
16	1909 - 1915	Below Squaw Shoals	21.0'	52X285.5	\$520,853.68
17&18	1911 - 1915	Squaw Shoals/Kellerman	72.0'	52X285.5	\$3,115,520.36
Oliver L&D	1940	Replaced 10,11,12	30.0'	95X460	Unavailable
Holt L&D	1969	Replaced 13,14,15,16	63.6'	110X600	Unavailable
Bankhead	1975	Replaced 17,18	72.0'	110X600	Unavailable
New Oliver L&D	198#	Replaced Oliver L&D	30.0'	110X600	Unavailable

## Historical Overview of the Black Warrior River Holt Lake Area

### 1816-1865

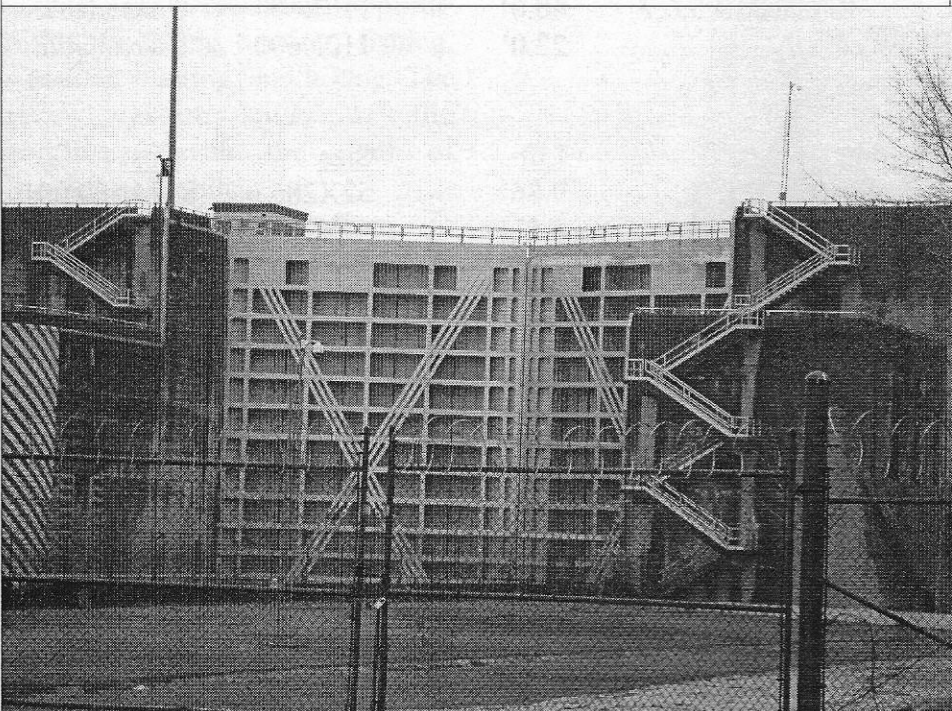
A few Europeans settled on the bluffs overlooking the Black Warrior River at Tuscaloosa Falls in 1816. In 1818, Tuscaloosa County was created by territorial legislature and in 1819 Alabama became a state. The town of Tuscaloosa was incorporated in 1820, at the location of the settlement on the Tuscaloosa Falls. Most of the settlers in Tuscaloosa County were farmers and settled in the flat bottom lands below Tuscaloosa. Only a few people chose to live in the rugged and hilly mineral lands of the lower Appalachian Mountain Chain north of Tuscaloosa. Some people settled in these hills because they could not afford the expensive bottoms lands, or because they preferred the area due to the similarities of the land to that from which they had migrated in Kentucky, Tennessee and the Carolinas. As early as 1834 there were reports of coal brought to Mobile from the Tuscaloosa Area by flatboat. The flat-bottomed boats were loaded in the summer months, and then floated over the shoals during the winter and spring rainy season. Some of the coal was believed to have been brought to Tuscaloosa by the settlers who lived in the hills. This coal was traded for items they could not raise themselves; however, Alabama's first state geologist recorded coal mining near the State University near Tuscaloosa in the 1840s. Throughout the first half of the nineteenth century and the Civil War period, the Black Warrior River remained the major route for transportation and communication. Prior to the Civil War period in the 1850s, attempts were made to improve overland roads by the construction of plank roads; however, their maintenance proved too expensive. The only early maps of the area were the LaTourette Map from 1838 which shows very little settlement on either side of the river north of Tuscaloosa. In 1879 a map by Smith, the state geologist, supports the 1839 map and also shows all the shoals on the river with them named.

### 1865-1888

Tuscaloosa area did not experience much action during the Civil War until the final days, when Union forces marched across the Black Warrior River on the bridge from Northport to Tuscaloosa, burned the Military Institute (the University), the industrial factories and foundries, and then returned across the bridge and burned it behind them. After the Civil War, the Tuscaloosa area began to recover. For the settlers who lived above Tuscaloosa in the coal hills, the area did not change until the building of the railroads, which increased populations, especially in the coal regions around 1871 when the first railroad reached Tuscaloosa.

A railroad-building spree lasted until 1873 when an economic panic struck the nation and depression followed. This depression exemplified the need of the state to diversify the economy from a strict agriculture base. Early in the 1870s the Louisville and Nashville Railroad Company realized the potential of the mineral

Holt Lock and Dam, near Tuscaloosa, Alabama. Photo by Robert H. Barth



region near Birmingham, but because of the depression, development slowed the expansion into this area. A new process for coking coal to produce iron was developed and induced growth in the coal and iron industries around the Birmingham area. This quickly became the industry center, and the Tuscaloosa County development was tied to that of Birmingham.

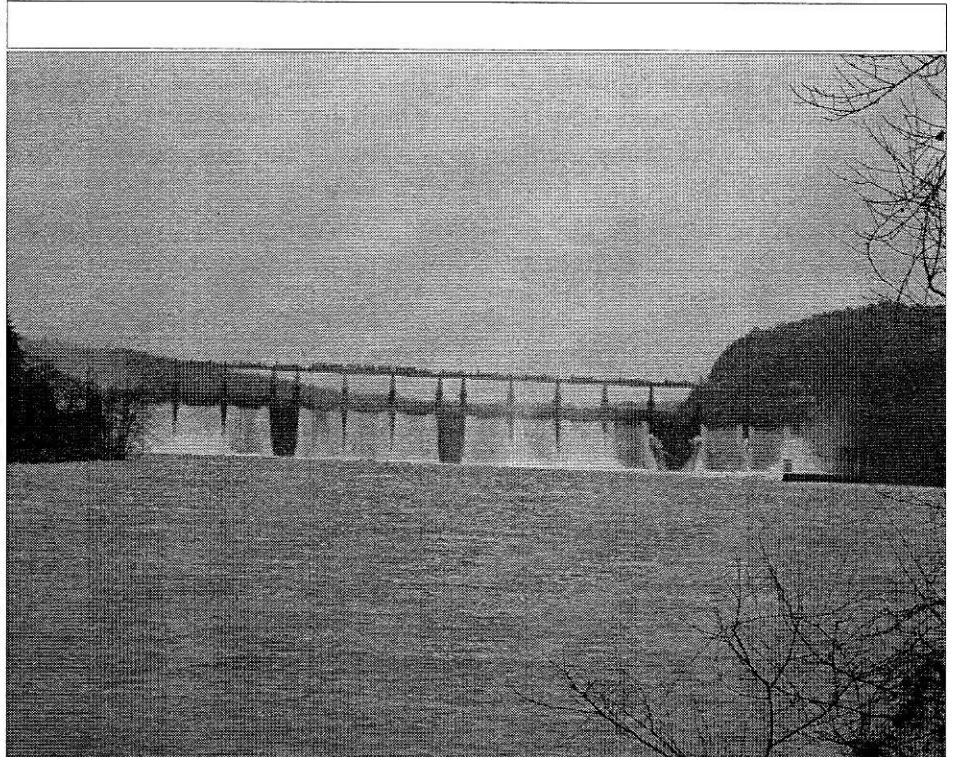
The improvements of the Black Warrior River were just as important as the railroads for Tuscaloosa County. Since the founding of Tuscaloosa, the need to remove obstructions in the river to allow for year-round travel had been discussed. The numerous shoals, especially the Tuscaloosa and Squaw Shoals, were

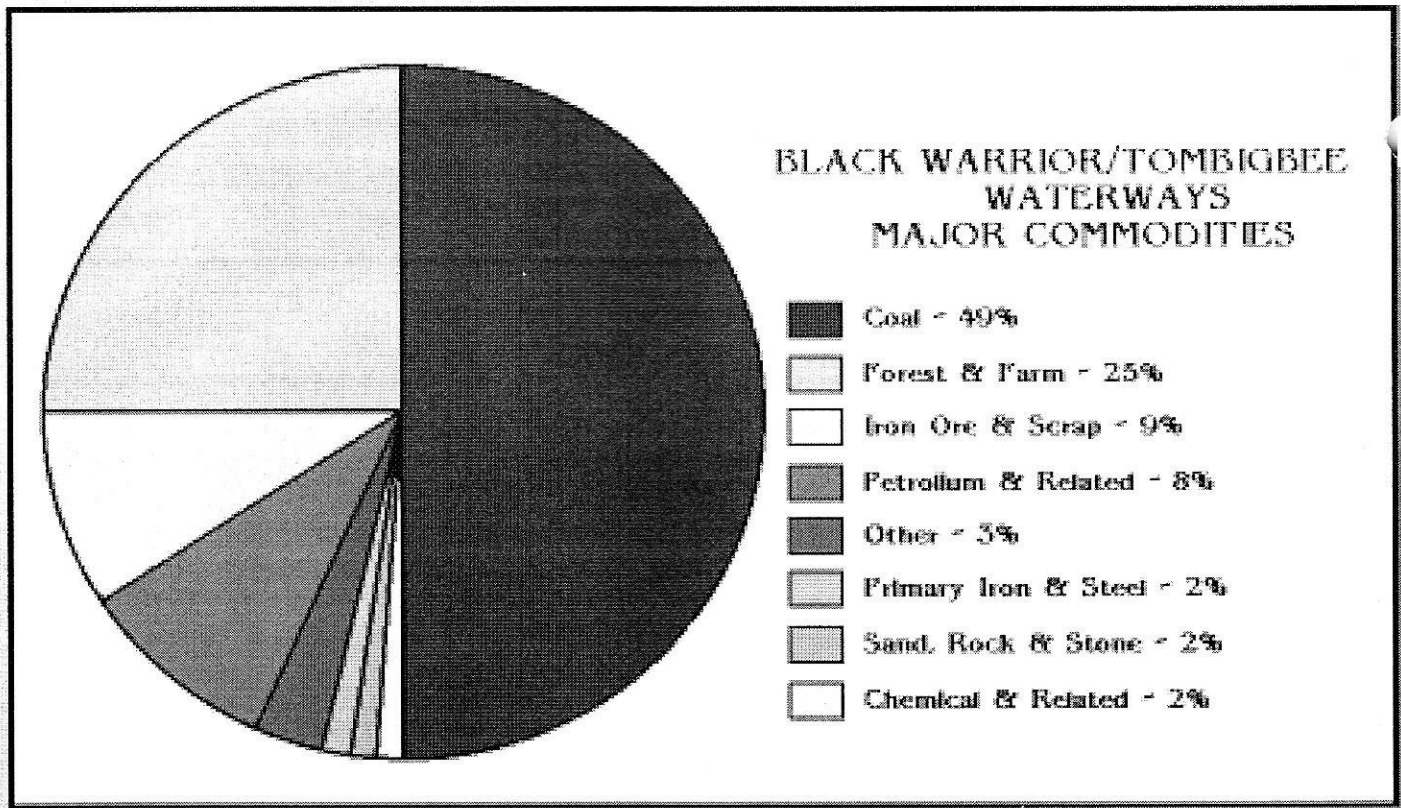
the most dangerous. In 1874 Congress approved a survey of the Black Warrior River from the Locust Fork to the mouth of the river, including the upper and lower Warrior River with Tuscaloosa as the dividing point. In the "Annual Report of the Chief of Engineers" (Annual Report), the Lower Warrior is referred to as the "Warrior River" and the Upper Warrior is referred to as the "Black Warrior River." This division was supposedly made in an attempt to acquire Congressional funding for two different rivers. The 1874 Annual Report noted the Alabama Coal and Navigation Company, a private company, had plans to make the river navigable above Tuscaloosa. Most of the land on the Warrior River above Tuscaloosa was owned by the Alabama Coal and Navigation Company, which would have exclusive right of navigation from the State for twenty years. The 1875 Annual Report noted the river was only navigable to Tuscaloosa about four to six months a year. This report also stated the Alabama Coal and Navigation Company had already been chartered by the State of Alabama with authority to construct lock and dams on the Upper Warrior with an assurance the Lower Warrior would be made navigable. No other mention of the Alabama Coal and Navigation Company is made; likely the company was a speculative enterprise formed during the early 1870s and the depression led to the demise of the company. In 1884, Congress granted funding for the improvement of the Black Warrior River as part of the Rivers and Harbor Act, which had been approved in 1875. In 1887 the Secretary of War approved plans for five locks and dams to be constructed between Daniels Creek and Tuscaloosa. Construction began in 1888 on three locks at Tuscaloosa,

### 1895-1915

The Rivers and Harbors Act allowed for the construction of these first lock and dam improvements on the Black Warrior River. Originally numbered Lock 1, 2, and 3, they were at Tuscaloosa Falls, near Tuscaloosa and opened in 1895. These three locks were the first on the Black Warrior-Tombigbee River system and resulted in the river system being the first in Alabama to have improvements for navigation. After the completion of the three locks in Tuscaloosa in 1895, work began to remove logs and snags from the Lower Warrior, although no locks and dams had been constructed on the Lower Warrior at that time. By 1896 Congress had become aware of the two names referring to the same river and explained the difference in names in the 1896 Annual Report of the Chief of Engineers. Locks 1, 2 and 3 later became Locks 10, 11 and 12; plans were already underway for a fourth lock at Ward's Shoal with five more planned above there. In 1902 Congress merged the various authorizations of the river system into one authorization act covering the whole Black Warrior, Warrior and Tombigbee Rivers in Alabama. In the 1905 Lock 4 (later Lock 13) was completed.

In 1910 Lock 14 at Arnold Shoals and Lock 15 at Rose Shoals were completed. Work on Lock 16 near the bottom of Squaw Shoals began in 1909. In 1911 the work on Lock 17 and 18 began. This would be the most complicated of the locks, since it would require "double lift" gates to have enough lift to go over the remainder of Squaw Shoals. Lock 17 and 18 were completed and opened to navigation in 1915, making the Upper Warrior River navigable above Tuscaloosa to reach the Warrior Coal fields near Birmingham. The original improvements to the entire Warrior River, including the Lower Warrior, the Upper Warrior and the Tombigbee River navigation process were completed in 1915. They consisted of 18 locks and 17 dams costing \$9,112,039.35, and allowed for a six-foot deep navigation channel from Mobile to Birmingham.





### 1915-Present

The replacement of obsolete structures was authorized by the 1909 River and Harbor Act. As the original locks and dams became worn and obsolete, replacements were implemented to make the waterway more efficient. The original locks and dams were built to provide a six-foot-deep channel, adequate for the steam-powered towboats of the era. The U.S. Army Corps of Engineers undertook a program to modernize the system in 1937 to provide for a nine-foot-deep channel. The first major improvement to the waterway was the installation of flood gates on top of the 17 dam. In 1940, the three original locks and dams (Locks 10, 11 and 12) near Tuscaloosa were replaced by the original William Bacon Oliver Lock and Dam. In 1969 Holt Lock and Dam was completed. It replaced old locks and dams 13, 14, 15 and 16 that had been in service since 1910. In 1975, John Hollis Bankhead Lock and Dam was completed with a 5,000-foot-long excavated approach channel above the lock. It replaced the old "double lift" gates of Lock 17 and 18 with a single lift lock. A new William Bacon Oliver Lock and Dam was built just down river of the original Oliver Lock and Dam. The new lock and dam were completed in 1991. This is the newest lock and dam on the Black Warrior-Tombigbee Waterway. All the original low-lift locks were replaced by six high-lift locks, capable of expediting present-day towboats and barges. The locks vary in maximum lift from 22 to 72 feet. A nine-foot navigation channel is maintained to a width of 200 feet. Tows of up to eight standard barges can now be accommodated at all locks.

### TERRY WOODS RECOVERING FROM FALL

ACS Past President and Director Terry Woods is recovering at home from a serious fall early in May. He slipped on the stairs and broke his neck and was hospitalized in critical condition. After an operation in which the doctors fused vertebrae in his neck, his recovery has been better than expected. Terry spent several weeks in the Aultman Rehabilitation Facility in Canton, Ohio, and is now recuperating at home.

Anyone wishing to send him a card or an email message can do so at 6939 Eastham Circle, Canton OH 44708; [woodscanalone@aol.com](mailto:woodscanalone@aol.com).

## *We've moved!*

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The Canal Society of New York State on the web has a new look and a new address with much better curb appeal!

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**[www.newyorkcanals.org](http://www.newyorkcanals.org)**

### **OKLAHOMA CITY—A TALE OF TWO WATERWAYS**

by Don Whitney

Being an inland city without a major river, it would surprise many to learn that Oklahoma City (OKC) has not one but two canal systems: the Oklahoma River and the Bricktown Canal. Admittedly these are both recreational waterways, but it is further testament to the wonderful attraction that such water development has for most people and for economic potential. Both developments are about ten years old and were created specifically to enhance the attractiveness of downtown OKC. Fair to say that both have been wildly successful and have led directly to substantial development of restaurants, night spots, hotels, housing, and office spaces.

The Oklahoma River contains thirteen miles of multiuse, asphalt trails, which are located on the north and south banks of the river. Most of the length of the river is known as the North Fork of the Canadian River. The portion through OKC, however, was recently renamed the

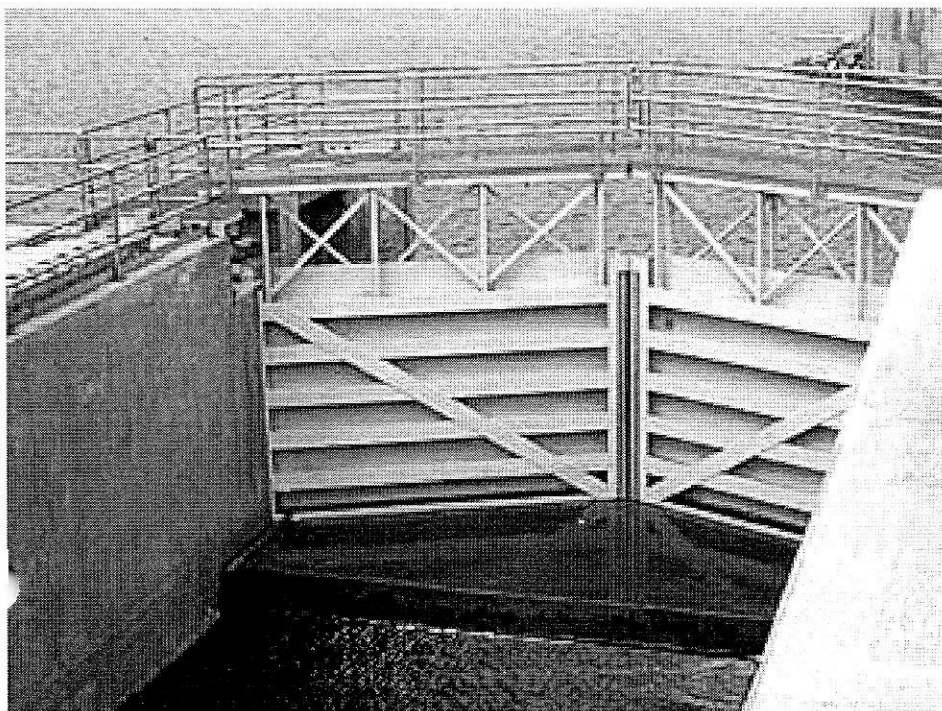
Oklahoma River. The urban section of the river was channelized in the 1950s for flood control. This resulted in low-flow most of the year and twice a year mowing of the empty and wasted stream bed. A unique feature of this development is that it was created by three low dams to produce long stretches of flat water with locks to allow the passage of boats from one level to another. Usable dimensions of the locks are 90 feet by 25 feet.

Perhaps the best feature of the river's trail system is that it's free of motorized vehicle crossings. Walkers, runners, rollerbladers, skateboarders, cyclists, and those using disability mobility aids are welcome to use the trails. Swimming is currently prohibited due to a lack of lifeguard services; however, boating in the form of different sizes of rowing vessels is hugely popular. A striking new boathouse, donated by the Chesapeake Energy Company hosts collegiate and recreational rowing clubs. A second boathouse, funded by Devon Energy, is under construction. Among the other activities on the river are power boat racing and triathlon events.

The Bricktown Canal extends about one mile along old brick streets and brick warehouses, hence the name Bricktown. Formerly derelict and rundown, the area is now the vibrant heart of downtown OKC. In 1993, Oklahoma City voters approved the Metropolitan Area Projects (MAPS). Funded with a 1 percent addition to the sales tax for five years, the program added major attractions to the downtown area, including new or improved fair-

(continued on next page)

Lock on the Oklahoma River



grounds, sports/concert arena, library, performing arts center, art museum, ball park, the canal, and riverwalk. The vision for the canal may have been the Paseo del Rio in San Antonio, TX. For OKC, however, it required a total conversion of dusty brick streets that were excavated down 30 feet and then a channel created and landscaped. The Bricktown Canal does not physically connect with the river section since there is an elevation difference of about 18 feet; however, the two trail systems will eventually connect after a relocation of railroad tracks and Interstate 40. The success of the canal over the first ten years has led to plans to extend the canal farther into downtown as part of the "Core to Shore" redevelopment.



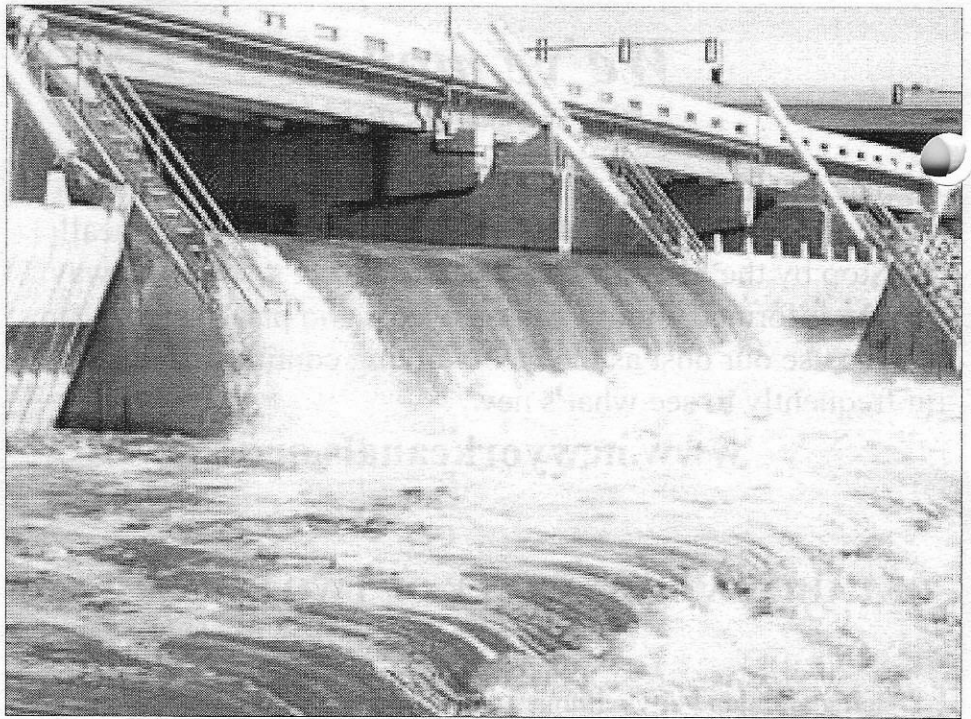
And here is another viewpoint on the wonders of the Oklahoma waterways:

## RIVER CRUISES IN OKLAHOMA CITY

by Jakob Franke

When the summer 2009 issue of *American Canals* featured a nice story on the canal in Bricktown, Oklahoma City, I also expected a mention of the river cruises on the Oklahoma River. However, it did not happen.

The water taxi, once outside Bricktown, passes the Oklahoma Land Rush Monument, a collection of life-sized, bronze statues depicting the land run history of Oklahoma. The canal ends near Regatta Park on the Oklahoma River, formerly known as the North Canadian River. From here it is only a short walk



Completed dam on the Oklahoma River

to the river where one can board a cruise boat with a capacity of thirty-five people. They are nicely built boats.

A seven-mile portion of the river flowing through Oklahoma City was renamed the Oklahoma River in 2004. This portion has several locks and dams, constructed by the Army Corps of Engineers, that have created a series of lakes in which rowing, kayaking, and canoeing regattas take place, in addition to the river cruises.

The captains of the cruise boats operate the locks with radio signals, and it is an interesting experience to boat in Oklahoma. A bicycle trail has been built along the banks of the river, and I understand one can

actually take a bicycle on the boat, get off at the end, and bike back.

We did the one-way cruise from Regatta Park to Meridian Avenue landing at 15th Street in April of last year and enjoyed it tremendously. The scenery is not spectacular but interesting, and it is always fun to be locked through, even if there is no lockmaster in sight. The one-way cruise takes one hour and fifteen minutes and is well worth the \$9 per person charge. A shuttle bus brought us back to Regatta Park.

For more information, visit:

**[www.okrivercruises.com](http://www.okrivercruises.com)**

Cruise aboard the *Devon Discovery*, Oklahoma River Cruises, 405-702-7755.



## MONTREAL'S SHORT LACHINE CANAL- FORERUNNER TO THE ST.LAWRENCE SEAWAY

By Bruce J. Russell

During the early to mid-19<sup>th</sup> century, at a time when railroads as we know them today did not exist, both Canada and the United States invested heavily in artificial waterways, but often for different reasons. In the US, these included a desire to open up interior regions such as upstate New York and central Pennsylvania, a need to move anthracite coal from where it was mined to where it was burned for fuel, and a means for immigrants to reach newly acquired territories west of the Allegheny Mountains.

In Canada, on the other hand, the early inland waterways were built for somewhat different reasons. A major one was for defense against the United States, which in the early 1800s retained the hope of absorbing Canada. Consequently, following the War of 1812, the British, who still controlled Canada, planned and later constructed an inland water route from Ottawa to Kingston, a major port and naval base on Lake Ontario. In the event of an American invasion, troops and supplies could be quickly moved from the interior to the lakeshore. Furthermore, instead of coal, the principle raw material carried on the Canadian waterways was lumber. Once all of the excellent timber in the eastern United States had been harvested, wood from Quebec and Ontario found a market in states such as New York, New Jersey, and Pennsylvania. Both countries, however, employed similar methods of inland waterway construction. These included man-

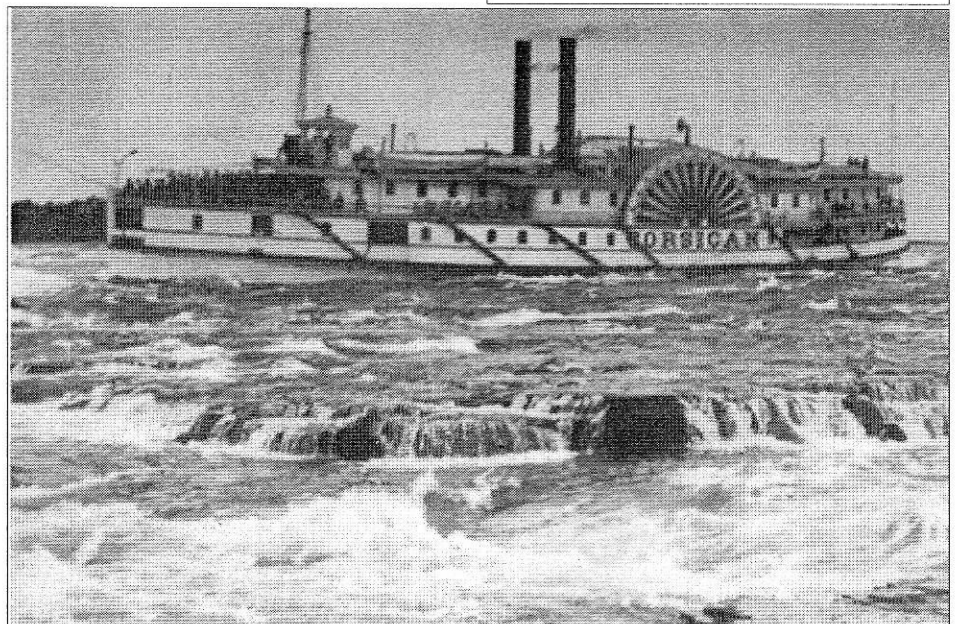
made, excavated channels with a depth of between 5 and 9 feet, canalized rivers relying on locks, dams, and slack water pools to maintain a uniform depth, and combinations of both. Examples include the Schuylkill Navigation in the US and the Rideau Canal in Canada.

In the early years of inland navigation in both nations, passengers as well as freight were carried on the canals and canalized rivers, but once the railroads arrived in the 1850s virtually all passengers deserted the canals in favor of faster trains. Nevertheless, the movement of cargo persisted well into the 20<sup>th</sup> century. Both Canada and the United States initially looked to England for engineers capable of surveying and constructing canals and canalized rivers. In Britain, the Canal Era had begun earlier, in the late 1700s, and the English knew how to construct locks, as well as the best means of insuring a water supply to a canal's summit level. And finally, in both nations, immigrant labor, much of it from Ireland where famine was a frequent occurrence, did

the hard, physical labor. Fortunately, in both Canada and the United States, today friendly neighbors, there are active canal societies composed of people interested in the history of inland navigation. Their major goal has been the preservation of as much as possible of that great and fascinating epoch, that witnessed the building of many canals and waterways.

One of them is the nine-mile-long Lachine Canal, located entirely in Montreal and today a major tourist attraction owned and maintained by Parks Canada, an agency of the federal government. The Lachine Canal was opened in 1825, the same year as New York State's much longer Erie, and following several enlargements and improvements, remained a viable waterway until 1959, when it was replaced by the St. Lawrence Seaway. Starting in the 1960s, portions of the Lachine Canal were filled in, ending the possibility of end-to-end naviga-

Old view of the side paddlewheel steamboat *Corsican* working its way through the treacherous Lachine Rapids. It was too large to pass through the 45-foot-wide locks of the Lachine Canal.



tion. In 1970 it was officially abandoned and closed to all boat traffic, commercial as well as recreational. Furthermore, bridges spanning it were permanently welded into the closed position, its locks became dysfunctional, and many politicians favored its complete obliteration. One reason was that the stagnant water remaining in its unfilled portions stank, creating a health hazard for the people of Montreal. Furthermore, local residents had begun throwing garbage and other items into it, which further supported the case for elimination.

Fortunately, this scenario didn't happen, and today the revitalized Lachine Canal, all of it manmade, is a major tourist attraction for those visiting the French-speaking metropolis. In the summer of 2008 I spent a week in Montreal, with the intention of exploring both the Lachine and other nearby Quebec canals including the Chambly. Prior to my departure aboard Amtrak's train, the Adirondack, from New York City, I did as much reading and research as possible about these waterways, all of which played a significant role in Quebec's and Canada's history.

Beginning in the late 1780s, following the end of the American Revolution and the signing of peace treaties between the US government and Britain, which still controlled Canada, trade between Montreal and the area surrounding Lake Ontario began to increase. Because there were no decent roads, and since railroads hadn't been invented, most of this commerce moved on small boats and rafts using the St. Lawrence River. From the Gulf of St. Lawrence, which empties into the Atlantic Ocean, as far west as

Montreal, the St. Lawrence River is a deep water, tidal estuary, upon which vessels of any size can travel. Upstream of Montreal, however, it becomes narrower and contains dangerous rapids. These occur at various locations, both in Quebec and Ontario, and constitute a hazard for all kinds of boats. Although some vessels were successful in shooting the rapids, others capsized in the turbulent waters, losing both their cargos and the lives of their crew. Because of this serious obstacle to the use of the St. Lawrence River, a natural route for trade and commerce within British North America, as Canada was still called, plans were formulated to construct a series of short bypass canals around the various rapids and other hazardous portions of the river. In the early 1800s, the technology of building canals, including locks, was well known. Once these channels were finished, the St. Lawrence River would be transformed into a vital artery for Canadian commerce, as well as a method of travel for passengers. Many of these were English, Welsh, and Scottish immigrants, headed for destinations along the northern shore of Lake Ontario, including the cities of Kingston and Toronto, the latter still called York. The War of 1812 had convinced the British and subsequently Canadian authorities that an increase in population, especially in the border regions, represented their best defense against renewed attempts by the United States to absorb Canada. Consequently, the improvement of the approximately 275-mile-long stretch of the St. Lawrence River from Kingston, where is

leaves Lake Ontario to Montreal, where the first rapids occur, became government policy. Furthermore, although the St. Lawrence River forms the boundary between Ontario and New York State, its upgrading and use by Canadian vessels would hopefully deter American thoughts of future invasion.

The first section of rapids along the St. Lawrence River are found opposite the city of Montreal, founded by Samuel de Champlain in 1611, initially as a trading post and later as a permanent French settlement. In 1760 control of the city, as well as the entire province of Quebec, passed to Britain following a series of battles known as the French and Indian War. The dangerous portion of the river, filled with churning water and hidden rocks capable of tearing open a ship's hull, occurs at the point where it sharply turns from south to west. Known as the Lachine Rapids, they create a barrier for vessels wishing to travel beyond Montreal into the upper St. Lawrence River, the Ottawa River, its most important tributary, and ultimately the Great Lakes region. Today, it's possible to pass through the Lachine Rapids in high-powered speedboats, but in the early part of the 19<sup>th</sup> century most vessels depended upon sails. Although steam propulsion was in its early stages of development, there was no steamboat with a propeller capable of moving it safely through the Lachine Rapids. Consequently, in order to avoid passage through this dangerous area, land portage of ships' cargo was necessary—a costly, time-consuming process.

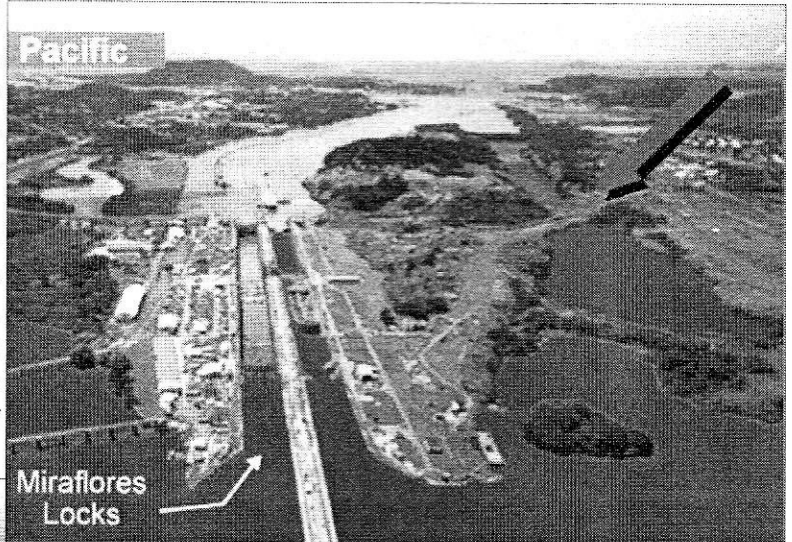
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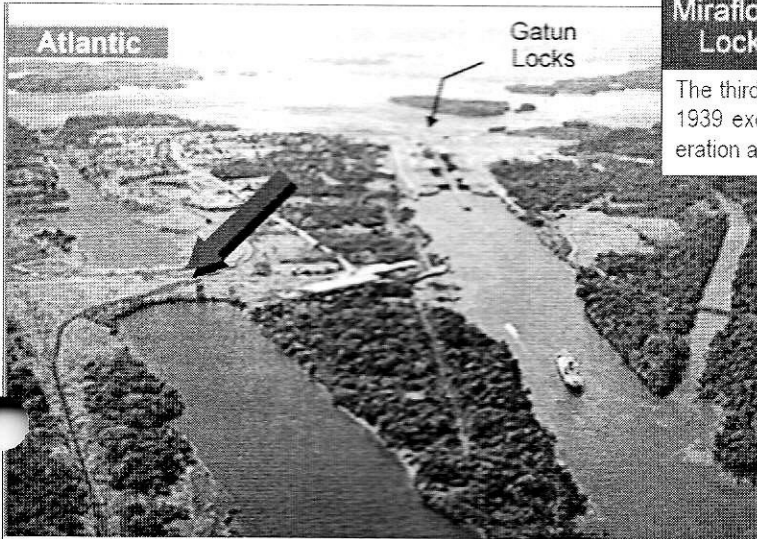
## PANAMA CANAL ADMINISTRATOR UPDATES PIANC ON EXPANSION

The Panama Canal expansion is moving ahead in time and on budget. Alberto Alemán Zubieta, chief executive officer/administrator of the Panama Canal Authority (ACP) told participants at this year's International Navigation Organization (PIANC) 32nd Congress in Liverpool, U.K.

During his May 11 keynote address, Alemán Zubieta spoke about the Panama Canal Expansion Program and briefed the audience on the project. To date, 100 percent of the excavation work has been completed for the first two phases of the Pacific access channel, and close to 30 percent of



The third set of locks project will be built in the 1939 excavation site inside current Canal operation areas.



The third set of locks project will be built in the 1939 excavation site inside current Canal operation areas.

work has been completed on the deepening and widening of Gatun Lake and the Gaillard Cut (the narrowest stretch in the Panama Canal), he said.

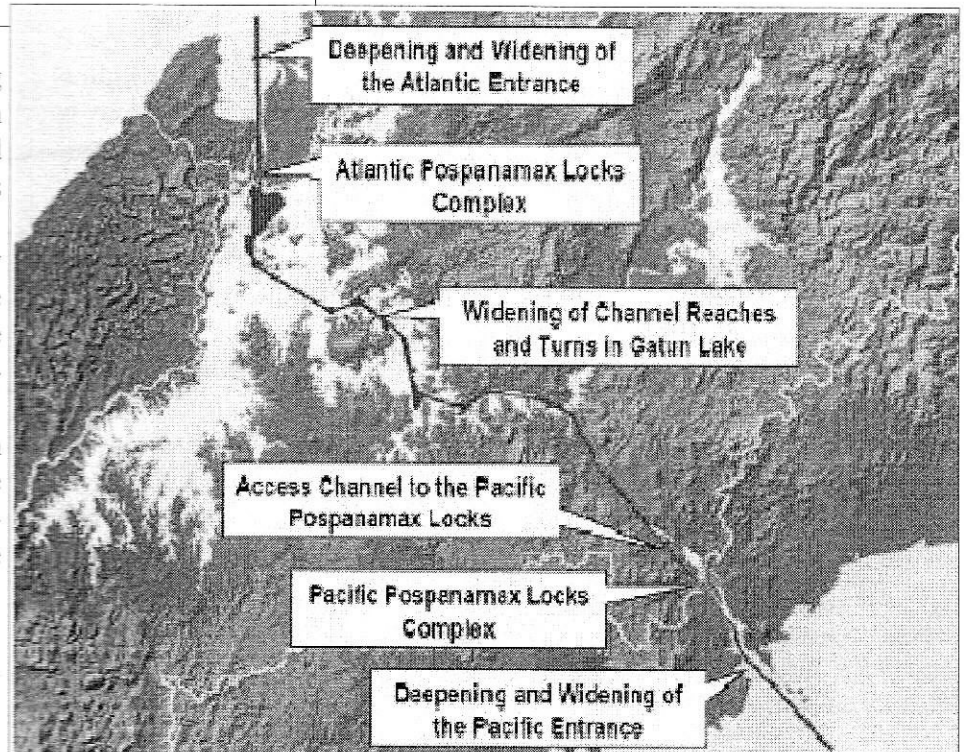
“Forums such as PIANC’s congress are a great opportunity to connect with industry insiders and the maritime public at large. We have a long-standing partnership with this organization and look forward to our continued collaboration,” said Alemán Zubieta. “In the early stages of the Panama Canal expansion studies, PIANC’s re-

ports were instrumental in helping the ACP in its search for proven locks technologies used around the world, such as rolling gates and water-saving basins.”

The Panama Canal Authority is the autonomous agency of the government of Panama in charge of managing, operating, and maintaining the Panama Canal.

PIANC is a global organization providing guidance for sustainable water-borne transport infrastructure for ports and waterways. The congress is held every four years.

(Credit: The Waterways Journal Weekly, May 24, 2010)



## THE TUXEDO-RINGWOOD CANAL

ACS and Canal Society of New Jersey member Jakob Franke, who is a resident of northern Bergen County (near the New York State line), learned about the Tuxedo-Ringwood Canal. Here is his story.

My curiosity was piqued this past winter when I received an e-link from fellow canal buff Ron Rice: <http://njedl.rutgers.edu/ftp/PDFs/5789.pdf>. This link showed an issue of the journal of the New Jersey Geological Survey of the NJ Department of Environmental Protection (Unearthing New Jersey, Vol. 5, No. 1).

The article contains a map showing the canals and water raceways of New Jersey, and on the map was a canal in northern New Jersey that I had never heard of: the Tuxedo-Ringwood Canal. As I live in Bergen County, I usually have to drive quite a distance to see remnants of canals, but this one was relatively close. The map of canals and waterways can be found at [www.njgeology.org/geodata/dgs08-1.htm](http://www.njgeology.org/geodata/dgs08-1.htm).

In addition, the article contained the following: "The first major canal known to have been constructed was the Tuxedo-Ringwood Canal in Passaic County and Orange County, New York. It was built in the 1760s to move timber from the Tuxedo Lake area to iron forges near the Ringwood Creek in New Jersey (Lenik, E.T., "The Tuxedo-Ringwood Canal." Unpublished manuscript on file with the North Jersey Highlands Historical Society. 1965)..."

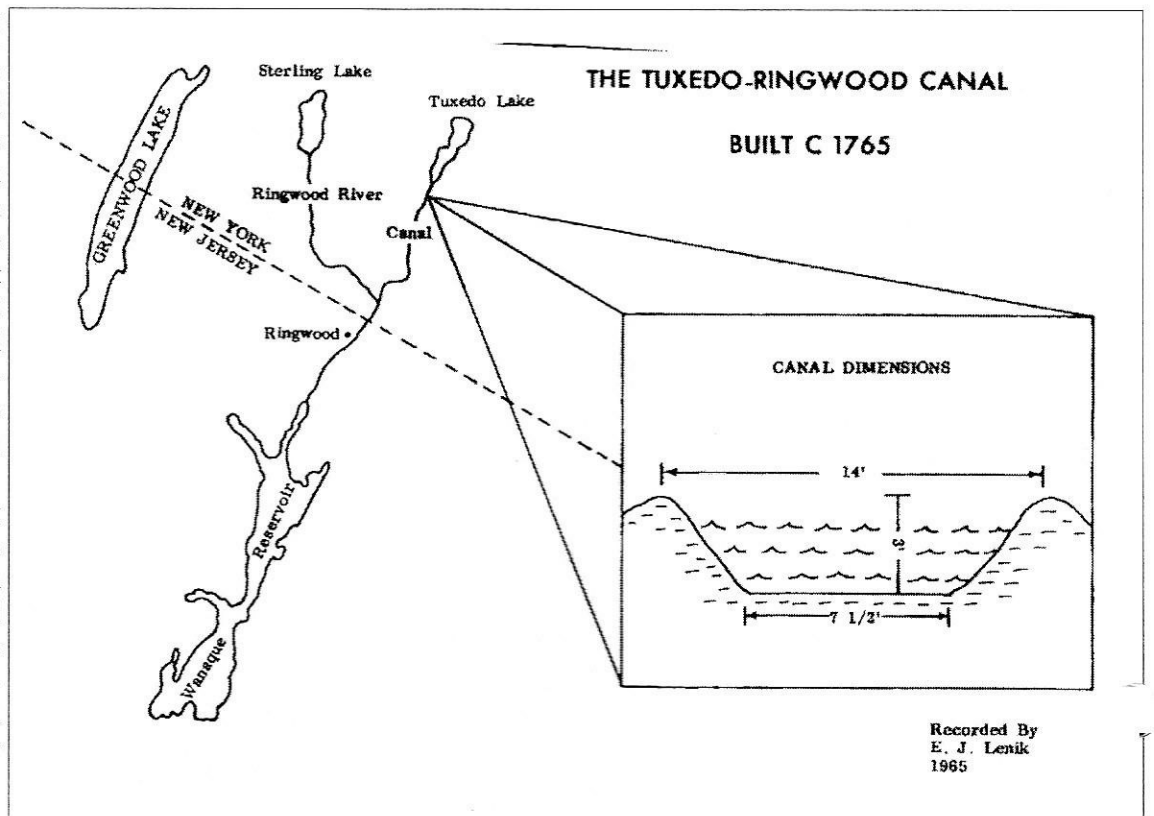
The first thing I did was some research and, indeed, there is mention of such a canal. It is actually claimed to be the first canal in the country, although it may not have been a transportation canal in the sense that boats used it. It was a diversion of water from the Ramapo River to the Ringwood River.

Hasenclever, who built an iron-making empire in the Ramapo Mountains in the 1760s, constructed in 1765 a dam across the northern part of Lake Tuxedo. The water that was diverted was used to power one of the waterwheels in Ringwood, and the most complete reference I found was an excerpt from *Ringwood Manor, Home of the Hewitts*, by Edward Ringwood Hewitt, Trenton Printing Co., Inc., 1946.

"...His work did, however, establish Ringwood as the most complete economic unit in America at that time. One of his contributions was the construction of a dam across the end of Tuxedo Lake, 860 feet long and 12 to 22 feet high, in order to run the water from the lake down to Ringwood so that there would be enough water to run the waterwheel at the furnace for driving the blast at all times. The water from the lake was led by a ditch from the south end of the lake into a brook flowing into the Ringwood River. This ditch can still be seen to the East of the wagon road near the south gate of Tuxedo Park. Water flowed to the Ringwood River in this way for over one hundred years before it again reached the Ramapo, as it does now..."

Visiting the history section of the public library in Ringwood and talking to the curator at Ringwood Manor did not yield additional information, but I finally did manage to contact Ed Lenik, and found out that his article had been published in 1967 in "The Bulletin." In the article, he reports that no evidence was found that the ditch was used to float logs downstream, even if that was one of the original intentions.

It was very exciting to stand at the south gate of Tuxedo Park (a gated community) and see the ditch that was dug 245 years ago to provide power, and maybe logs, for an early industrial empire.



## CLEVELAND: HISTORY OF A CANAL CITY

By Larry Turner and Boone  
Triplett

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authors and of the Canal Society of Ohio)

### Conclusion

Another important episode in the early history of Cleveland which relates to the canal is the "Bridge War" of 1836. Ohio City scored a coup over its larger neighbor to the east when it was incorporated as a city on March 3, 1836, two days before Cleveland. Ohio City leaders, already concerned over losing so much canal commerce to Cleveland, became even more alarmed after the Columbus Street Bridge was constructed. Entering downtown Cleveland from the west, this new structure by-passed Ohio City altogether. Clevelanders aggravated the situation by destroying the eastern end of the floating Main Street Bridge, thus isolating Ohio City even further. "Two Bridges or None!" became the battle cry in Ohio City. Tempers boiled over on the night of October 27, 1836. A charge was detonated on the western approach of the Columbus City Bridge and about 1,000 citizens from Ohio City began attacking the bridge with whatever implements of destruction were on hand. That brought out the Clevelanders which precipitated a gory fistfight. (Someone even rolled out a cannon but thankfully it was spiked before anyone was killed.) Authorities were able to restore order but hard feelings remained for years. Since the bridge was not repaired for years, Ohio City could claim victory in the battle it not the war since the smaller community was eventually annexed by Cleveland in 1854.

Like Newburgh, another rival community had been vanquished.

Ohio City, however, would build its own canal. Directly opposite the outlet of the Ohio Canal in Cleveland, the tiny Ohio City Canal was authorized shortly after incorporation in 1836. The Ohio City Canal was able to draw a fair amount of lake, river, and canal commerce to warehouses located on the west side of the river. It ran along the line of modern Sycamore Street into the old river bed. A small 500 foot or so portion of this canal remains and is the only tangible canal remnant left in downtown Cleveland today.

Cleveland had already developed into a major transportation hub by 1837. Advertisements declared "Daily Line of Ohio Canal Packets between Cleveland & Portsmouth, Distance 309 Miles—Through in 80 Hours". A southbound passenger boat left Cleveland every day at 4 p.m. along the canal and also carried mail. The "Pioneer Fast Stage Line" was claiming arrival within 30 hours at Pittsburgh and at one of the three regular stage lines to that place also carried mail. There were also regular stages from Cleveland to Cincinnati via Columbus, Detroit, and Buffalo. In the fall of 1837, the passenger steamer *Cleveland* was open for lake traffic as steam was already beginning to surpass sail on the lake.

Besides the growing passenger trade, lake and canal commerce had made Cleveland the undisputed king of the Western grain trade. But the economic Panic of 1837, which precipitated closing of the bank in

Cleveland, brought a brief halt to the economic prosperity.

Still there were some bright spots during these hard times. Clevelanders enjoyed their first fireworks display on Perry Victory Day in 1838. And African-American leaders were emerging. Foremost among these was John Malvin. Besides being Ohio's first African-American canal boat captain, Malvin was also a preacher, engineer, and opened the first school for African-Americans in Cleveland. While the African-American population in the city was relatively small at this time, it was described in 1839 as "industrious, peaceable, intelligent, and ambitious for improvement"

The economic malaise would begin to lift in 1840 with the opening of the Pennsylvania & Ohio Canal which opened a water route between Cleveland and Pittsburgh via Akron. Although the first shipment of coal had arrived in 1828 from Tallmadge, hundreds of thousands of bushels began to arrive from the Mahoning Valley after the P&O Canal was completed. This signified the dawn of industrial era. Population had increased to 6,071 by in 1840 (Ohio City 1,577), a six fold increase in ten years. Just two decades earlier before the canal, Cleveland had only ranked 14<sup>th</sup> in population among villages on the Western Reserve. Now, in 1840, Cleveland was the second largest city in Ohio and 45<sup>th</sup> in the United States. War or 1812 hero William Henry Harrison revisited the city on June 13, 1840, during the boisterous "Tippecanoe & Tyler Too" presidential campaign. Think the place had changed much since his stopover at Fort Huntington twenty-seven years before?

The 1840's were a good decade for Cleveland and the canal in general. The *Cleveland Plain Dealer* newspaper was established in 1842, the city celebrated its 50<sup>th</sup> birthday in 1846, and a telegraph line was strung to Pittsburgh by 1847. And Alfred Kelley was still performing acts of outstanding public service. This time, Kelley staked a half million dollars of his own assets to guarantee interest payments on Ohio Canal bonds since the state treasury was broke. He also championed the 1845 Kelley Bank Bill which stabilized the state banking system, saving Ohio from further economic chaos and helping to prevent a repeat of the 1837 crisis. The Ohio Canal remained prosperous. Except for an "off" year in 1845, receipts remained fairly steady at between \$322,755 and \$452,531 throughout the decade. (For comparison, receipts surpassed \$100,000 for the first time in 1833, \$200,000 in 1836, and \$300,000 in 1838.) But an ominous sign for the canals appeared in Cleveland at the tail end of the decade on November 3, 1849. On that date, a locomotive from the Cleveland, Columbus & Cincinnati Railroad rolled into town.

Hailed as the decade of "Rails and Red Gold" in Cleveland, the period from 1850-59 marked the effective end of the canal era. This is apparent from a table of receipts for selected years during this time:

<u>Year</u>	<u>Receipts</u>
1851	\$432,711
1853	\$258,793
1855	\$196,194
1857	\$155,598
1859	\$88,296

The cause of the decline is obvious. In 1851, the Cleveland, Columbus & Cincinnati RR

opened to Columbus. Both the Cleveland & Pittsburgh Railroad and Cleveland, Painesville & Ashtabula RR (to Erie, PA) were open by 1852. (In what might be considered a traitorous act to a dedicated canaller, Alfred Kelley would become a railroad president.) Other rail lines would soon follow. A record 6.3 million bushels of coal still shipped by 1855 but this soon dried up as well when the Cleveland & Mahoning Railroad opened in 1857. The appetite for coal was being fueled by the opening of another canal almost 500 miles away. When the Soo Canal in 1855 made it possible for iron ore to be shipped by lake freighter from the Superior region to the mills at Cleveland where coal was abundant, the steel industry was born. Ohio coal deposits, and a mere 6.3 million bushels by canal boat at that, were not nearly enough to satisfy demand. Hereafter, the coal came by rail from other states, mostly from the mines of Kentucky and (later West) Virginia.

Canals lost money for the first time in 1856. Realizing that the trend from the above table was irreversible, the state leased out its canal system to private interests in 1861. Nobody paid much attention then as troops were being raised to put down the Southern rebellion. Headlines were filled with items about Abraham Lincoln, Fort Sumter, the Confederate States, Bull Run, and so forth. The Ohio Canal continued to perform yeoman's work. Enough flour, oats, and gunpowder were shipped along the canal to make a significant contribution to the victorious Union war effort. Just four years later on April 28, 1865, the

black draped funeral train of the martyred President rolled into Euclid Street Station and Abraham Lincoln's body would lay state on Public Square.

By the 1870's, the canal was considered stagnant, disease filled, and "old foggyish". Industry chugged along. In addition to steel, chemicals manufacturing and oil refining were thrown into the mix. (The biggest oilman of them all, John D. Rockefeller, had started his business career as a clerk for Hewitt & Tuttle on Merwin Street. Part of his responsibilities included logging canal transactions.) The city worked out a deal to purchase the northern 2½ miles of canal from the state for \$125,000 with the condition that at new terminus would be constructed at what was then the southern edge of town at the foot of Dille Street. Lock #44 was obliterated when the Detroit-Superior Viaduct was constructed from 1875-78 and Lock #43 was wiped out by the necessary realignment of a railroad underneath the bridge. This 3,211' long, 72' high ten-stone arch structure represented Cleveland's first "high bridge". It was replaced by the Veterans Memorial Bridge in 1918 although some of the original arches still remain on the west side of the river. The canal bed itself from Merwin Street to Dille Street was filled by the tracks of the Valley Railway in 1879-80.

The canal retained some usefulness after the terminus was relocated to Dille Street in 1878 (the state retained control of the canal system from the lessees that same year) but was never again close to being profitable. Some local industries such as the Grasse Chemical Company, which supplied acid to Rockefeller's refiner-



Cleveland today.

ies, and the Austin Powder Works still shipped and received goods by canal during this time. There was also some limited Sunday picnic boat excursion boat trade. Harry Heidloff, who lived as a child in the lock tender's house at "new" Lock #42 from 1910-15 describes the Industrial Flats during the late canal era as being choked with "dirty red iron dust... fumes from sulfuric acid and zinc chloride manufacturing" but fondly recalls "fishing for minnows" in the weigh lock sluice and "playing baseball on the mud flats which were once part of the Cuyahoga River". Nothing remains of the canal at the Dille Street terminus.

There was one final gasp for the canals. Public sentiment was running in favor of saving these great public works at the beginning of the Twentieth Century so beginning in 1905, the state began appropriating millions of dollars to upgrade the system. Nearly 160 miles of the Ohio Canal from Dresden to Portsmouth would be formally abandoned, thus this modified and shorter canal would connect to the Ohio River by way of the Muskingum as originally

envisioned by George Washington on October 10, 1784. Stone from 41 of the remaining 42 locks between Cleveland and Akron (with the singular exception of Lock #29 at Peninsula), another 16 locks south of the summit, and the outlet lock into the Muskingum River at Dresden was chipped away and resurfaced with a new experimental waterproofing material called concrete. Funds ran out in 1909 and the project was not resumed. It did not matter. Devastating floods in March 1913 destroyed the Ohio canal system as an effective transportation network for all eternity. And that was that.

*For years, the state generated a small revenue stream from its canals by selling water rights to local industries. The practice continues to this day Now the canal is embraced as a cherished recreational resource, as evidenced by the Cleveland Metroparks Ohio & Erie Canal Reservation Visitor Center off East 49<sup>th</sup> Street and the exceedingly popular Ohio & Erie Canal Towpath Trail which runs through the park there. This is the newest jewel in Cleveland's*

*famed Emerald Necklace. The Towpath Trail now ends at Harvard Road but will eventually be extended northward to the lake meaning that after a 140 year hiatus, the canal will return to downtown Cleveland. No doubt that George Washington, Moses Cleaveland, De Witt Clinton, and Alfred Kelley would all be pleased.*

#### References

- Achenbach, Joel. *The Grand Idea: George Washington's Potomac and the Race to the West*. New York: Simon & Schuster, 2004.
- Canal Society of Ohio. *Ohio & Erie Canal in Cuyahoga County*. Fall 1999 Tour Guide.
- Drago, Henry Sinclair. *Canal Days in America: The History and Romance of Old Towpaths and Waterways*. New York: Clarkson N. Potter, Inc., 1972.
- Ellis, William D. *The Cuyahoga, Great Rivers of America Series*. Dayton: Landfall Press, 1998. (Revised Edition)
- Gieck, Jack. *A Photo Album of Ohio's Canal Era, 1825-1913*. Kent, OH: Kent State University Press, 1992. (Revised Edition)
- Hagerty, J.E., McClelland, C.P. and Huntington, C.C. *History of the Ohio Canals: Their construction, cost, use, and partial abandonment*. Columbus, OH: Ohio State Archaeological and Historical Society, 1905. (Clarified and Copyrighted 1992 by Arthur W. McGraw).
- Jackson, James S. and Margot. *Cuyahoga Valley Tales*.

Peninsula, OH: Cuyahoga Valley Association, 1985.

\_\_\_\_\_. *Colorful Era of the Ohio Canal: Cleveland to Akron 1827-1913*. Peninsula, OH: Cuyahoga Valley Association, 1988. (Revised Edition)

Johnson, Crisfield. *History of Cuyahoga County*. Cleveland: D.W. Ensign & Company, 1879.

Lawrence, Ann T. and Schattinger, Joan M. *Cleveland's Flats: The Incredible City Under the Hill*. Cleveland: History Associates, 1979.

MariettaOhio.info.

Rose, William Ganson. *Cleveland: Making of a City*. Cleveland: World Publishing Company, 1950.

Shaw, Ronald E. *Canals for a Nation: The Canal Era in the United States 1790-1869*. Lexington, KY: University of Kentucky Press, 1991.

Tamburro, Sam, *Ohio & Erie Canal in Cleveland*. Cleveland State University Library, World Wide Web Edition, March 2002. ([www.clevelandmemory.org/SpecColl/canal/canalhist.html](http://www.clevelandmemory.org/SpecColl/canal/canalhist.html))

TeachingAmericanHistory.org

Trevorrow, Frank. *Ohio's Canals*. Oberlin, OH: Self-published, 1973.

VanTassel, David and Grabowski, John J. *Encyclopedia of Cleveland History*. Case Western Reserve University and Western Reserve Historical Society, World Wide Web Edition. ([ech.case.edu/index.html](http://ech.case.edu/index.html))

Whitlessey, Col Charles A, *Early History of Cleveland, Ohio*. Cleveland, OH:

Fairbanks. Benedict & Co. Printers, 1867.

Woods, Terry K., "The Canal Comes to Cleveland". *American Canals*, Vol. 34 (2005), No. 2, p. 11.

### From the President

(continued from page one)

aqueduct is now the only complete example of the several that once existed in New York State as part of the enlarged Erie Canal. It is also a great example of what a volunteer-run and community-supported park can accomplish.

This September, the World Canals Conference will be held in Rochester, NY. I am very confident that this year's conference will be as worthwhile as that held in Rochester in 2000.

Looking further forward, it will be at least three years before the WCC returns to North America. Your directors feel that there is a continuing need for meetings of canal volunteers, professionals and others interested in canals here, but on a smaller scale. So, we are planning an ACS meeting for September 11-13, 2011 in Delphi and West Lafayette, IN.

Delphi is also a leading, volunteer-run, community-supported park. Further information and a request for feedback are included with this issue of *American Canals*. Please fill out and return the form and the annual ballot for directors to help us plan, and please plan on attending. If you would like to present a talk at this meeting, we would be interested in hearing from you. We will provide further information in future issues as we develop the plan.

### CELL PHONE TRAIL TOUR TRIAL

The Wabash & Erie Canal Park has begun a trial of a cell phone tour along its trails. The park user simply calls 585-797-6310 to be guided through the trails in Delphi, Indiana. Follow the numbered stops when prompted.

Or you can try it by clicking on <http://mycell.mobi/15857976310>.

If you would like more information for your park or historic site, just contact Dan McCain at 3198 North, 700 West, Delphi, IN 46923; 765-564-6297; [mccain@carlnet.org](mailto:mccain@carlnet.org)

### TOUR OF LOCKS AND CANALS IN NEW ORLEANS

On a recent visit to New Orleans for an Elderhostel/Exploritas tour, ACS Directors Bob and Linda Barth saw the repairs to two of the many canals that failed during Hurricane Katrina in 2005. It occurred to them that, with the great presence of the Army Corps of Engineers in Louisiana, perhaps a tour could be arranged.

After much investigation, they reached the public affairs office and learned that, yes, a tour could have been arranged, if they had given thirty days' notice and completed a form.

So, for ACS members planning to visit the Crescent City, the information you will need to arrange a tour of the waterway system can be obtained by contacting Shannon Donner at the Public Affairs Office: 504-862-2201 or [Shannon.R.Donner@usace.army.mil](mailto:Shannon.R.Donner@usace.army.mil).

# HISTORIC CANALS AND WATERWAYS OF SOUTH CAROLINA

by Robert J. Kapsch

South Carolina's first transportation revolution was the development of a network of canals and waterways. From the 1790s to the 1830s, the Palmetto State was a preeminent leader in infrastructure improvements and developed an extensive system of more than two thousand miles of canals and waterways connecting virtually every part of the state with the coast and the port of Charleston. Robert J. Kapsch expertly recounts the complex history of innovation, determination, and improvement that fueled the canal boom in early nineteenth-century South Carolina.

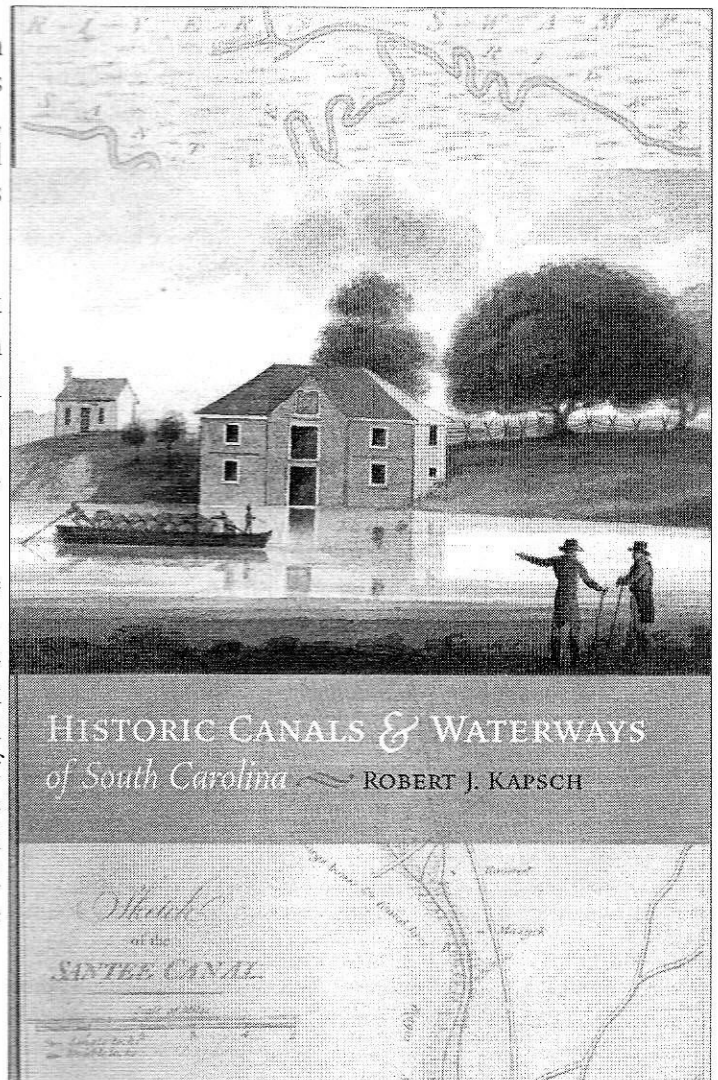
At the center of the state's waterway system was the Santee Canal, constructed between 1793 and 1800 to tie the Santee River and its upcountry watershed with the Cooper River and Charleston Harbor in the south. The Santee Canal was America's first summit-level canal -- the most complex type of canal to plan, design, and build. Following the War of 1812, South Carolina set about building additional canals and improving navigation on the state's rivers to enable downstream commerce with Charleston via the Santee Canal. During this era, South Carolina spent more money per citizen on internal improvements than did any other state. Kapsch chronicles the development and execution of these projects as well as the involvement of major figures in this effort, including John Christian Sent, Robert Mills, Abram Blanding, and Joel R. Poinsett.

As Kapsch notes, the geography of South Carolina dictated the development of its canals and river navigation schemes, but it was cotton, the state's all-important cash crop, that necessitated this mode of transportation. The goal was to transport cotton from plantations across the state to the port of Charleston for shipment. From the first settlement in South Carolina, economic success was, in fact, dependent on waterways. But in the 1830s the canal boom ended when another transportation innovation, the railroad, superseded waterway travel as primary link to the ports.

In this first comprehensive account of South Carolina's canal history, Kapsch relies on his experience as an engineer and historical researcher, as well as on numerous maps and illustrations, to tell a fascinating and forgotten tale from South Carolina's past.

7x10, 296 pages, 15 color and 109 b&w illus. This book may be purchased from the University of South Carolina Press, 718 Devine Street, Columbia, South Carolina 29208; 800-768-2500 • Fax 800-868-0740 • www.sc.edu/uscpres. ISBN 978-1-57003-867-9; cloth, \$44.95.

Robert Kapsch is a researcher and writer for the Center for Historic Engineering and Architecture. Previously he served as senior scholar in historic architecture and engineering for the National Park Service, as project engineer for the Chesapeake and Ohio Canal National Historical Park, and as chief of the Historic American Buildings Survey/Historic American Engineering Record. Kapsch was awarded the Distinguished Service Medal, the highest award of the U.S. Department of Interior, for his work at the National Park Service.



## CANALENDER

**July 3, 2010**—Cascade Locks Park Association in Akron, OH, celebrates the 10th anniversary of the rehab of the Mustill Store on North Street.

**July 24, 2010**—Symposium, "C&O Canal Engineering: The Early Years, 1828-1830," Shepherdstown, W. Va., sponsored by the C&O Canal Association, C&O Canal National Historical Park, and Shepherd University. See page three.

**September 19-24, 2010**—World Canals Conference, Rochester, NY. [www.worldcanalsconference.org](http://www.worldcanalsconference.org).

**October 1-14, 2010**—Study tour of south German waterways. Contact [www.newyorkcanals.org](http://www.newyorkcanals.org)

**October 8-10, 2010**—Pennsylvania Canal Society tour of the North Branch of the Main Line Canal.

**October 15-17, 2010**—Canal Society of Ohio tour of the Ohio & Erie Canal in the Cuyahoga Valley National Park, including the great canal town of Peninsula. Tour leader: Skip Brausch: 440-965-4386; [canawler@centurytel.net](mailto:canawler@centurytel.net).

**October 22-24, 2010**—"*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](mailto:indcanal@aol.com).

**April 29-May 1, 2011**—Pennsylvania Canal Society tour of the Lower Division of the Lehigh Navigation.

**May 20-22, 2011**—The Canal Society of New York State Spring Field Trip: Champlain Canal and the PCB cleanup project at Fort Edward. Headquarters: Queensbury Hotel, Glens Falls, NY. For updates, check the web, [www.newyorkcanals.org](http://www.newyorkcanals.org).

**September 11-14, 2011**—ACS Conference, Delphi, Indiana. See insert for details.

**September 2011**—World Canals Conference in the Netherlands: provinces of Gronigen, Friesland, Drenthe, and Overijssel.

**14-16, 2011**—Pennsylvania Canal Society tour of the Juniata Division of the Main Line Canal.

**September 2012**—World Canals Conference, Yangzhou, China

### 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 #2	published 1984	\$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
American Canal Guide #1: West Coast	published 1974	\$1
American Canal Guide #2: South, NC to FL	published 1975	\$2 (copies only)
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
"Restore 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](mailto:barths@att.net). Please call or email with questions.