From the President
by David G. Barber

Canal wise, this has been a very interesting summer. In July, I went on a tour of various Midwestern canal sites. The trip began with a visit to Delphi, IN, and a ride on the new replica boat, Delphi, then only in service for a couple of weeks. I also saw their new boathouse/warehouse and the new, masonry guard gate structure. This is a great, volunteer-run canal park.

A couple of days later, I toured the Illinois and Michigan Canal and concluded the visit with a ride on the boat Volunteer at LaSalle, IL. This boat is less than a year old and is enjoying good patronage. At present, the Volunteer can only go from Lock 14 at LaSalle to just short of the Little Vermilion aqueduct, but there are plans to extend dredging eastward. The boat can’t cross the aqueduct either because of the lack of dredging or because the state wants a structural inspection of the ten-year-old aqueduct. Maybe someone doesn’t know that a floating boat puts no additional load on an aqueduct.

The following day, which was very wet, I toured the Hennepin Canal. The Hennepin is watered throughout and retains all of its locks and many moveable bridges of interesting designs. Prior to my visit, I had heard little about the bridges. Both the I & M and the Hennepin are Illinois state parks and very impressive for their preservation and for the as yet unrealized potential. The state doesn’t seem to realize the tourist draw that these canals could be, especially if navigation were restored.

I then went north, visiting the lock at McHenry, IL, and the three locks on the Yahara River near Madison, WI. This was followed by a tour of the Fox-Wisconsin Waterway in Wisconsin about which I’ll write in more detail in a future issue. Included was a visit to the intact Eureka lock on the Upper Fox River. This lock was operated for a few decades by the Berlin Boat Club after the Upper Fox was closed by the Corps of Engineers in the 1950s. But, it has been out of service for four years. There is hope that the gates will be replaced and the lock returned to service in 2010. Restoration will reconnect Berlin, WI, to Lake Winnebago.

(continued on page 23)
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BULLETIN OF THE
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The objectives of the American Canal Society are to encourage the preservation, restoration, interpretation, and use of the historical navigational canals of the Americas; to save threatened canals; and to provide an exchange of canal information. Manuscripts and other correspondence consistent with these objectives are welcome.
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DEADLINE: Material for our next issue must be on the editor's desk no later than December 15, 2009. 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.
CLEVELAND: HISTORY OF A CANAL CITY
By Larry Turner and Boone Triplette
(reprinted with permission of the author and of the Canal Society of Ohio)

Part II
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 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.

Two years before Marietta was established, Moravian missionaries John Heckewelder and David Zeisberger led a band of Christianized Indians into the Cuyahoga Valley. Having sought refuge in the Detroit area after the brutal massacre of women and children by Pennsylvania militia, Gnadenhutten in 1782, this group was returning to its native lands along the Tuscarawas and upper Muskingum. Founded on a former Ottawa village site, this Pilgrerruh or Pilgrim’s Rest community was located near the mouth of Tinkers Creek, about a dozen miles south of Lake Erie.

With the exception of some nomadic traders, the months spent by Heckewelder and Zeisberger’s group from June 1786 to April 1787 represented the first white settlement of any kind in the Cuyahoga region. Heckewelder was particularly impressed with what he termed a “Land of first Quality.” Like Lewis Evans in 1755 (whose map was published in Philadelphia by Benjamin Franklin), Heckewelder would also map the region.

About the same time as the Moravian Indians were wandering across what would later become Northern Ohio, most of the former colonies were in the process of ceding great tracts of western territory to the United States government, then under the Articles of Confederation. But some of the states were striking deals. Virginia, for example, was allowed to establish a military district in what is now South Central Ohio in exchange for its cession of western lands. These Virginia Military Lands were awarded to Revolutionary War veterans in gratitude for services rendered to the newly formed country, just as Washington had received lands in western Virginia as compensation from the British in 1770. One state that refused to budge, however, was tiny Connecticut.

Connecticut held to the legality of the Royal Charter of 1662, which stated that its claims extended all the way to the “great western sea.” Resolution finally came on September 14, 1786, when Connecticut was allowed to reserve a 120-mile strip of land west of Pennsylvania and south of Lake Erie. This piece of land north of the 41st parallel became known as the Connecticut Western Reserve and comprised of some 3,500,000 acres, with the westernmost 500,000 acres, or Firelands, set aside as compensation for Connecticut residents who had homes burned down by British soldiers during the Revolution. Sold to a group of forty-nine shareholders representing the Connecticut Land Company for $1,200,000, or 40 cents an acre (the money was used to fund a public school system), the company appointed General Moses Cleaveland as chief surveyor. One wonders if President George Washington, who made his first surveying venture into the western wilderness as a boy of sixteen, wished he could have joined Cleaveland’s 44-man expedition in 1796.

A decade passed from the time the Western Reserve was established until Cleaveland met his destiny at the mouth of the Cuyahoga River. This was because Indians still lived in the area. The Treaty of Fort McIntosh had established the Cuyahoga River as the western boundary of the United States in 1785, but the Ohio Country was clearly ruled by the Native Americans. Washington himself did not dare to venture this far west on his 1784 expedition, as his good friend William Crawford has been recently tortured and roasted at the stake.

After a series of embarrassing defeats, most notably by territorial governor Arthur St. Clair in 1791 along the upper Wabash River where over 600 Americans were killed in battle, President Washington was finished with incompetent political commanders. Gen. Anthony Wayne, who spent the brutal winter of 1777-78 with Washington at Valley Forge and was regarded by his Commander-
in-Chief as a fighter, was placed in command of military forces in the Northwest Territories. After a victory over an Indian confederation at the Battle of Fallen Timbers on August 20, 1794, the subsequent Treaty of Greenville in 1795 affirmed the Fort McIntosh boundary line and opened the floodgates for American settlement into the region.

Moses Cleaveland departed New York for the Western Reserve in June 1796. A prominent citizen of Connecticut, lawyer, legislator, and general of Connecticut militia, Cleaveland was described as wearing such a serious look that “strangers often took him for a clergyman.” He was a gifted administrator whose skills were as an organizer. Traveling along the lakeshore by bateau, Cleaveland arrived at the “capital” of New Connecticut on July 22, 1796. Cleaveland’s party, which included Job Phelps Stiles and his 17-year old wife Tabitha Cumi, ascended the mouth of the Cuyahoga and landed near the foot of modern-day St. Clair Avenue at what is now the Settler’s Landing Station of the Cleveland Rapid Transit Authority. In 1796, the view from the top of the bluff yielded only the vast expanse of the lake, endless woods, and the swampy river bottomlands. Cleaveland planned to call the town “Cuyahoga,” but was convinced by his fellow surveyors to name it after himself.

Three log structures were erected in Cleaveland that first summer of 1796. Two were for the surveyors, one called “Pease’s Hotel” near the landing site and a modest supply warehouse. The third was “above the hill” for the Stiles. The Stiles cabin was on Lot #53 on Superior Street. Seth Pease, a surveyor for whom the hotel was named, and Amos Spafford platted the town in characteristic New England style with a prominent Public Square. Dated October 1, 1796, Spafford’s map was first and is essentially the modern downtown Cleveland of today. These original maps contain 220 lots. Streets were 99’ wide except for the main cast-west thoroughfare which was 134’ wide. This main drag, which still intersects Public Square, is Superior Street. Ontario Street crossing Superior perpendicularly at Public Square, is also shown on the Spafford and Pease maps. A significant omission is Euclid Avenue, which was not formally laid out until 1815. Curiously, the names Broad Street and Court Street are crossed out on the Spafford map, replaced by Superior and Ontario respectively. Also, Spafford spelled Cleaveland without the first “a.”

On October 18, 1796, Moses Cleaveland and his surveying party left Cleaveland. Only the Stiles family and Joseph Landon remained behind. Landon left a few weeks later and the Stiles couple would soon be joined by Edward Paine, founder of Painesville. This party of three endured their first Cleveland winter 1796-97. Another resident would be added when Charles Phelps
Stiles was born on January 23, 1797. Cleveland himself would never return, but his statue stands at the southwest corner of Public Square, surveyor’s rod in one hand and compass in the other. His report to the Connecticut Land Company would state, “While I was in New Connecticut I laid out a town on the bank of Lake Erie, which was called by my name, and I believe the child is now born that may live to see that place as large as Old Windham.” The population of Windham, CT, in 1790 was 2,700. Found among Cleveland’s possessions after his death in 1806 was a copy John Heckewelder’s map on which the missionary himself had scribbled a prophecy: “Cuyahaga will hereafter be a place of great importance.”

Vermonter Lorenzo Carter intended to stay, arriving in May 1797. He constructed a sturdy log cabin on the Flats a short distance upstream from Pease’s Hotel. (A reproduction of Carter’s cabin may be found today along Merwin Avenue on the west bank of the Flats. The location is just west of the former terminus of the Ohio Canal into the Cuyahoga River.) Carter was joined that same year by James Kingsbury. Kingsbury was the permanent European settler on the Western Reserve, having established a home near Conneaut a year earlier. Not liking the swamps along the river, Kingsbury left for Newburgh (about 6 miles to the southeast and on much higher ground) before the end of the year and there established the first mill in the area by 1799. Nathaniel Doan arrived in 1798 only to fall deathly ill. Upon recovery, Doan promptly moved out the Buffalo Road (Euclid Avenue) and established Doan’s Corners on the road to Newburgh. The Stiles family also left, first to Newburgh and then back East. Lorenzo Carter, Cleveland’s first permanent settler, persevered. He was almost alone. The population of Cleaveland in 1800 was seven.

Not to be deterred, Carter held a “grand ball” at his cabin on July 4, 1801. Thirty-two attended. Fiddle music and whiskey were the attractions, while the ballroom was decorated like an armory. Carter and Amos Spafford purchased a $4 license from the court in Warren (at the time, 1802, Cleaveland was part of Trumbull County) to operate Cleveland’s first tavern in the back room of Carter’s cabin. Spafford’s daughter taught school in the front room. Carter Tavern was soon established, and became the first hotel in Cleveland. Another prominent early resident, Samuel Huntington from Connecticut, would be named to the Ohio State Supreme Court after statehood was obtained in 1803 and became elected governor in 1808. For Cleveland, statehood meant that duties would be collected on trade with Canada and a federal port of entry was established at the site. Sounds prestigious, but the total value of goods taxed at the “Port of Cuyahoga” was only $50 in 1809. John Walworth was the collector. Walworth was also named postmaster on January 1, 1806, succeeding the original appointee, Elisha Norton. The first post office had been established in 1805.

A total eclipse of the sun on June 16, 1805, was said to be an expression of displeasure by the Great Spirit, and it was certainly a harbinger after the Treaty of Fort Industry was signed two weeks later. In that agreement, Native Americans ceded their claims to the land west of the Cuyahoga River. Indians would no longer be threatening from bluffs across the river. Still, the settlement struggled as illustrated by the following description given by Judge Earl Hoover of Cleveland:

“Let’s face it—an engraved invitation to settle in the Western Reserve then was almost an invitation to settle in one’s grave. It was an invitation to fight one’s...
way through a wilderness to arrive in a wilderness surrounded by a wilderness. It was infested with forests, swamps, intense heat, bitter cold, rain, snow, blizzards, loneliness, foot shortage, 'clouds of mosquitoes so thick that they looked like the forewarning of an August thunderstorm,' vermin, varmint, nightmare, cramps, bears, wolves, snakes, germs, fever, disease, and dysentery. It was an invitation to hardship and helplessness."

Lorenzo Carter achieved a significant milestone in 1808 by building the Zephyr, Cleveland's first boat. The Zephyr was a flat-bottomed, relatively light (30 ton) boat so constructed as to get over the sandbar at the mouth of the river, which was about a half-mile west of where it is located today. The launching of the Zephyr initiated Cleveland's first commercial trade venture. Prolific builder Levi Johnston came to Cleveland in 1809. He promptly built the first frame building in town, a collections office for John Walworth. When Cuyahoga County was organized in 1810, Cleveland was named the county seat (in what would have to be considered an upset over the larger and more prosperous Newburgh) and Johnston built the first court house. Cuyahoga County was Ohio’s smallest in 1810, numbering 1,457 persons. Cleveland counted only fifty-seven residents by the same census, but in that year of 1810 may have added its most influential citizen ever. The nephew of Joshua Stow, General Cleveland’s commissary, the newcomer boarded in Walworth’s office and passed the bar on his 21st birthday to become the first lawyer in Cuyahoga County. Alfred Kelley had arrived.

During this first decade of the nineteenth-century, there was growing support for internal improvements at both the federal and local levels of government. Thomas Jefferson had cooled somewhat on the idea—politics of the day had turned him into rival of Washington’s party or an Anti-Federalist who believed in a weak and decentralized national government—but nonetheless he approved construction of the National Road from Cumberland, Maryland, in 1806. Progress was slow. Construction did not begin until 1811; the road did not cross into Ohio from Wheeling, (now West) Virginia, until 1825; and it would be another thirteen years before the National Road was completed across Ohio.

Jefferson also authorized Albert Gallatin's Report of the Secretary of Treasury on the Subject of Roads and Canals, which was published in 1808. This remarkable document provided the blueprint for the national transportation network that George Washington had first envisioned. Gallatin was doubtless influenced by Washington, for it was young Gallatin who rashly interrupted the legendary leader on his 1784 expedition, insisting to Washington that he knew the way across the Potomac-Cheat divide. After a long silence, Washington told Gallatin, "You are right, sir." But little action was taken by the Federal government on Gallatin’s 1808 report.

The new state of Ohio was also looking to fund internal improvements. In 1807, the first state lottery commission was formed for improving navigation along the Cuyahoga and Muskingum rivers. This water route would connect Lake Erie with the Ohio River on the same line that Washington had proposed nearly quarter-century before. Several prominent Cleveland area residents were on the board: Lorenzo Carter, James Kingsbury, Amos Spafford, Samuel Huntington, and John Walworth. But few tickets were sold, and the project fizzled. The state also began to build roads. Just as a primitive Indian trail led east out of Cleveland (the Buffalo Road which later became Euclid Avenue), there was another road to the west. Lorenzo Carter, among others, was able to gain an appropriation from the Legislature to improve this highway. This was known as the Detroit Road or Milan State Road.

All talk of internal improvements was halted by the War of 1812. The first U.S. Army regulars arrived in Cleveland on May 10, 1813, and promptly erected Fort Huntington, named for the former governor. This 40' x 20' all-wood stockade was commanded by a Major Jessup and was used primarily as a lockup for arrested soldiers. There was some anxiety in the town when British ships sailed to within 1½ miles of Cleveland on June 19, 1813, but these were driven off by a violent storm. General William Henry Harrison, commander of American Forces in the Northwest, visited the fort at Cleveland in July to confer with former Governor Huntington, now an army paymaster. A few months later, Levi Johnson knew from the sound of the guns seventy miles away that Admiral Oliver Hazard Perry had won the Battle of Lake Erie on Sept. 10, 1813. After this decisive victory, both Perry and
Harrison were hosted at the home of James Kingsbury in Newburgh. Kingsbury had advised Admiral Perry to fight before the battle and had also taken General Harrison to counsel.

to be continued in the winter issue

ELEVEN-CANAL ADVENTURE IN UPSTATE NEW YORK
by S. David Phraner

(This is the fifth and last in a series about the Canal Society of NJ’s trip to the New York State canals in 2007. We conclude with the Chenango Canal.)

After breakfast we bade farewell to Rome, boarded our bus, Minnie, and traveled north to see the Delta Dam and Reservoir that we had bypassed the previous day. This is an impressive site with a large dam, a canal aqueduct (now dry) crossing the Mohawk River outlet below the dam, and a flight three or four abandoned, but intact Black River Canal locks on the east side of dam and one or two south of the dam. An employee responsible for the water level and maintenance stopped by. He was very genial, answered a lot of questions, and allowed us to take photographs. Indeed the water level of the reservoir was very depleted.

Our objective for the morning was to visit the remnants of the Chenango Canal. This waterway was one of the early casualties among the Erie Canal’s lateral feeders. Constructed between Utica and Binghamton, it was projected to continue on to the vicinity of Waverly, PA, to connect with the canal system there. Work was begun on this connecting canal, but never completed. Had it been finished, one could have traveled between Utica, Binghamton, Waverly, Harrisburg and Havre de Grace, or made a round trip from Utica, via Watkins Glen, Seneca Lake and the Cayuga-Seneca Canal back to the Erie where they intersect at the great Montezuma Swamp.

The 97-mile, 116-lock waterway began construction in 1834 with John B. Jervis (again) as the chief engineer. Completed in October 1836 (imagine building anything half that long in two years today!), it opened the following spring. Abandoned in 1878, the canal was well-constructed, but did not last very long as far as canals go. Portions of the Chenango Canal locks and works around Utica were scavenged to rebuild the locks on the Black River Canal. We spent all of this, our last day, inspecting what remains of the Chenango Canal. Having been abandoned early, there are few traces of the canal, but being well built, those that survive are in remarkably good condition. We got turned around in Clinton, a pleasant village and home to Hamilton College, not to be confused with nearby Hamilton, NY, home to Colgate University. We traveled along Route 12, which parallels the canal and paused near Madison to examine an aqueduct, watered portion of the canal, and ruins of a lock. Elaine and I had passed this spot earlier in the year, and had no clue to its existence; it was so overgrown with foliage. We ate at the Solsville Hotel, a place that provided very pleasant, if Spartan dining. We were hustled off into the back room in this old hotel that existed back in canal days. Like many vintage hotels and restaurants, it has a nice selection of historic photos. After interrogating a local at the former GLF-Agway mill/store, I found where the railroad and canal passed through town. No trace of either remains.

Our next stop was Bouckville, another stop on the railroad and on the canal. This place is notable for
the antique shops stretched between Bouckville and Madison along Route 12. It is also the home of the Chenango Canal Association in a tiny (former barber-shop) building. Next to the canal museum is a mill still blending and selling grains to local farmers. The place has all the characteristics of an old mill.....the aroma of grains, the cobwebs with powdery particles of grain clinging to the delicate webs and little pyramids of granules and dust everywhere.

We left Bouckville heading farther south along Route 12, still paralleling the canal and the O&W Railroad.

The summit level of the Chenango Canal is at Hamilton, our next stop. The canal originally went right through town, a block away from the lovely green. We also visited two of the reservoirs constructed at the summit level to feed the canal. Leland Pond is now a summer colony, while Woodman Pond appears publicly owned and is undisturbed.

Our next and last stop would be just south of Greene, another very attractive village. On the way, we passed through Norwich with its excellent auto museum, the Chenango County Historical Society Museum, the former DL&W station, and the increasingly rare elevated gateman/crossing guard shanty. Candidly, I think these might have been better historical opportunities than the summit level reservoir system, but time had become a premium and our canal enthusiasts were becoming fatigued and less curious about canal remnants. Our objective in Greene was the point where the canal crossed the Chenango River on a 4- or 5-span aqueduct. The few remains of the stone piers were still evident in the bed of the river and the abutments were quite apparent.

These historical remains are located at the rear of a supermarket parking lot. While there, an ice cream truck pulled in and made a delivery; the driver took his break, or so he intended. He was immediately mobbed by the canalers in quest of refreshment. Someone hosted a Popsicle feast, so we all got a fudge Popsicle to enjoy as we continued to on Binghamton (no further stops) and east to the Quickway/17 and home. We arrived back at the Ramapo College parking lot, after a very successful, well planned, and well-executed trip.

I hope that the Canal Society or New Jersey continues to run these affordable and interesting trips, but I fear that interest in such trips is diminishing even among our aging membership. Last year the trip was cancelled because of insufficient patronage. We are still over 700 members. In any case, it is unlikely that my wife and I will be around to enjoy any of these trips. We will have to explore if there is a canal society in Georgia. Cumming (the town in which we will soon be living) has no canal and no railroad, but does have a nice lake (Lanier) that’s running dry, a nice river (Chattohoochee, also running dry) and a state transportation museum within 30 minutes that’s growing and is successful...Oh yes, Cumming Georgia, also has two quilt guilds and a very active historical society.

Dave Phreran
HENNEPIN CANAL PLANS RESTORATION

The Hennepin Canal is a 105-mile-long state park that spans five counties in Illinois. The Friends of the Hennepin Canal has proposed restoring the canal to working condition.

On May 19, the Friends of the Hennepin Canal presented to community leaders their proposal to restore a portion of the canal to its original working condition. About forty people from communities near the canal attended. Friends President Gary Wagle and Director Cathy Foes shared their concept of restoring the Hennepin Canal so that boats could travel its length through working locks, much like the canals of Europe.

Wagle presented slides that included a trip on the Shropshire Canal near Birmingham, England, to demonstrate the popularity of canal cruising in Europe. Wagle said, "We have a treasure in our own backyard, unique to the entire U.S.* We have a one-hundred-mile, fully-watered canal flowing through picturesque central Illinois. If locks were restored to working order, the tourism potential would be significant, and we would save our canal for future generations." The proposal was met with enthusiastic support.

Wagle and Foes presented a plan with short- and long-range phases. Plans are underway to organize the communities for Phase I, to transform the Hennepin Canal into a navigable waterway, with working locks, from the Guard Lock at Rock Falls through Lock 24 Genesee.

The plan is called Renaissance Hennepin Canal. Phase I would result in 50-mile waterway connecting Rock Falls and Genesee. "Phase I will require restoring only three locks, numbers 22, 23 and 24. The culverts that have replaced bridges on this section are twelve feet in diameter, easily wide enough for leisure boats," Wagle said.

The Friends of the Hennepin Canal arranged for future meetings of Renaissance Hennepin Canal (RHC) to organize and decide on an action plan. Citizens interested in joining RHC should contact either Cathy Foes or Gary Wagle or visit the Friends of the Hennepin Canal website: http://fhcanal.home.mchsi.com.

*Ed. note: It is not unique to the U.S., but very similar to the Delaware &Raritan Canal in New Jersey.

REQUEST FOR INFORMATION

I’m seeking tall tales, folk lore, and downright lies about canal days in your area. I’d like to write a paper, tentatively titled, “Canal Legend, Lore, & Lies,” to present at a future World Canals Conference or the Annual Symposium on Canal History & Technology.

I’ve recently heard of extensive research in the east that ‘proves’ the term hoggee was never used on US canals, but made up by inventive writers. There’s the tale of President Garfield eating lunch in a southern Ohio bar, six miles from the canal, when he never traveled farther south on the canal as a boatman than Akron. There is the ‘true story’ of the people of Canton turning down the offer to run the canal through their town due to ‘moral’ reasons, in spite of the fact that the nearest proposed route was eight miles to the west.

I’d like to hear of similar tales, the wilder the better. If you also know of the nugget of truth that prompted the tales, and there always is one, I’d like to hear that, too.

Terry K. Woods, 1-330-832-4621 WoodsCanalone@aol.com
GENERAL GRANT’S CANAL AT VICKSBURG: KEY TO VICTORY OR USELESS FOLLY

Photos and story by Bruce J. Russell

The American Civil War, which lasted from 1861 until 1865, claimed over 600,000 lives and saw the destruction of millions of dollars worth of property, especially in the southern states. It represented a transitional period during which the Canal Era, which had begun in the 1830s and had witnessed the construction of hundreds of miles of artificial waterways, was quickly eclipsed by railroads. When the war began, both the Union and Confederate forces used canals and river navigations to move men and supplies. In the North, entire regiments were raised in cities in upstate New York State and used the Erie and Champlain canals for the first portion of their journey to the southern battlefields. In the South, units of the Confederate Army, formed in rural Virginia, traveled east to Richmond on the James River & Kanawha Canal. As the vessels proceeded from one town to another at a speed no greater than five mph, crowds cheered them. A couple of years later, they often traveled in the opposite direction, transporting the wounded as well as the bodies of the dead back home.

In Maryland, a “border state” with divided loyalties, the Chesapeake & Ohio Canal was a frequent target of Confederate raiders, whose tactics included blowing up its stone aqueducts and earthen banks, causing water to escape, resulting in a halt to all navigation pending costly repairs. In spite of the use of inland waterways by both sides, by 1862 it became obvious that railroads, rather than slow-moving canal vessels, were the strategic key to victory. Beginning in the late 1820s with short sections of track of various gauges, America’s railroad network greatly expanded during the late 1840s and during the entire decade of the 1850s. Meanwhile, the planning for and digging of new canals ceased. Instead of being used to haul cargo and people between inland points and coastal ports, railroads quickly evolved into a means of intercity travel. By 1861, generals on both sides began moving men and supplies on trains pulled by primitive steam locomotives whose speeds averaged 20 mph, four times faster than that of canal boats. Furthermore, troop and supply trains didn’t lose valuable time going through locks. The first major use of trains to bring soldiers to the field of battle occurred on July 21, 1861, at the first Battle of Manassas or Bull Run in northern Virginia. General Thomas “Stonewall” Jackson’s army traveled from Winchester in the northern part of the Shenandoah Valley to Manassas aboard freight cars remodeled as troop carriers. From this point, the strategic role of railroads increased rapidly, while that of canals declined. Nevertheless, throughout the Civil War, inland waterways, especially in the North, continued to transport men and material, as well as coal and iron ore for foundries and munitions factories.

In 1863 the Civil War was at its approximate mid-point, with neither side able to claim victory. Nevertheless, the basic game plan of the Union remained unchanged: slowly strangle the Confederacy by preventing inbound and outbound shipments from its Atlantic and Gulf Coast ports and by severing its internal transport links. This strategy was often referred to as the “Anaconda Plan.” The most important link was the Mississippi River, which bisected the western Confederate states on a north-south axis. Until 1863, the South was able to freely move Texas cattle, Arkansas grain, and other supplies across the Mississippi to its armies in the eastern theater of the war.

On the other hand, farmers in Minnesota and Iowa were unable to send their grain south to the Port of New Orleans, where it could be loaded onto ocean-going ships destined for Europe. Once northern vessels reached St. Louis, they were forced to stop, because southern Missouri and points south were within Confederate territory and risked seizure of their cargo. Although the Confederates lacked heavily armed gunboats, they did possess small, wooden vessels fitted with cannon powerful enough to sink unarmed steamers. It became absolutely essential, therefore, for the Union to gain control of the entire Mississippi River if it wished to end the war quickly. Doing so would sever what was known as the “Trans-Mississippi” from the eastern portion of the Confederacy, which depended upon it for much of its food. Patience was growing thin with the Lincoln administration, and many in the North advocated a negotiated settlement that would have recognized the independence of those southern states.

The key to assuming control of the entire Mississippi River was
the city of Vicksburg, situated atop a high bluff where the river makes a horseshoe-shaped bend. Founded in the late 1700s as a trading post, Vicksburg is located in Mississippi, directly opposite Louisiana, close to its northern border with Arkansas. When the Civil War began, the Confederates placed large numbers of cannon along the bluff, arranged in batteries manned by experienced gunners. These weapons could be trained on vessels attempting to travel past Vicksburg heading either north or south. Although lacking the accuracy of rifled guns using explosive-laden shells, these cannons could still sink a wooden-hulled riverboat. Any Union force attempting to capture the city from the river faced a severe mauling. Furthermore, the city was surrounded on its other three sides by a dense maze of alligator- and snake-infested swamps and yous, as well as land-based fortifications. In late 1862, from October 16 until December 31, Union forces under General Ulysses Grant attempted to capture Vicksburg by means of a land invasion, but failed. The battle at Chickasaw Bayou, north of Vicksburg, resulted in a severe defeat for the Union forces. The Confederate commander at Vicksburg, John C. Pemberton, was West Point-trained and able to defend his city. One of his tactics was to place mines in the Mississippi River, as well as in the Yazoo, a major tributary north of Vicksburg. On December 12 of 1862 a flotilla of flat-bottomed, ironclad, Federal gunboats departed from St. Louis and proceeded south to the junction of the Mississippi and Yazoo rivers. Here they entered the narrow Yazoo and continued east with the goal of reaching the Confederate fortifications protecting Vicksburg’s rear. One of them, the USS Cairo, struck one of Pemberton’s mines, detonated it, and sank into the mud. Here it remained until its discovery and later recovery in 1964. Today it’s on permanent exhibition in a park near Vicksburg.

In early 1863, General Grant, aware of Lincoln’s displeasure at Vicksburg remaining in Confederate hands, renewed his efforts to capture the well-fortified city, considered by some military experts to be as impregnable as Gibraltar. He knew that an amphibious landing below the bluffs would be suicidal, with most of the landing craft destroyed while still in the water. He was likewise aware that getting gunboats into position opposite the city in order to bombard and knock out as many of Vicksburg’s shore defenses as possible wasn’t practical either. Before they could begin firing, many would probably be destroyed by Confederate gunners.

Since the 1860s, the river has altered its course many times, and today most of Vicksburg is not along the river. But at the time of Grant’s planned invasion, it made a gigantic loop in front of the city, going completely around a peninsula, the end of which was called DeSoto Point. Any vessel passing the point was in firing range of the shore batteries. Grant’s plan, therefore, was to construct a five-mile-long, river-level canal through the base of this finger of land, wide and deep enough for his transports, as well as the ironclad, flat-bottomed gunboats escorting them. Use of this waterway would permit his forces to position themselves south of Vicksburg, where a safe landing, free of bombardment, could take place. The Yankees could then
maneuver to the city's rear, and begin a siege. It was Grant's belief that since Vicksburg's guns were facing the river, by the time they could be turned in the opposite direction, the city's defenses would have been breached and the town captured.

As a young man growing up in Ohio, Grant was familiar with canals and saw the ease with which they could move heavy cargo. Perhaps this is why he chose to bisect the peninsula with a canal, rather than build a short stretch of portage railroad. Although the latter would have worked, it would have required the transfer of men and material from boat to train, and then from train back to boat, a time-consuming, labor-intensive process. Furthermore, he had at his disposal the Army Corps of Engineers, which may have included men who had designed and built canals. Last but not least, his supply of labor was inexhaustible, consisting of soldiers as well as slaves who had gained their freedom when the Union Army arrived in Mississippi. And so, canal boats won out over trains.

Surveying and preliminary work on the canal began in the spring of 1862 under the direction of General Thomas Williams. Although plans were being made to capture Vicksburg by means of a land invasion, Grant wisely decided to have an alternative strategy in place in case his assault was unsuccessful. General Thomas and his staff designed a river-level, navigable waterway without locks. On June 27, 1862, work commenced. Union soldiers cut down trees and removed shrubbery in the path of the waterway. Once a five-mile strip had been cleared, excavation of the channel began, using picks, shovels, hand-drawn scrapers, and wagons. Its intended depth was thirteen feet, sufficient to permit passage of the gunboats.

Due to the high temperatures and humidity in Mississippi, men quickly succumbed to heat exhaustion and sun stroke. On rare occasions, alligators and snakes were responsible for loss of life. Mercifully, on July 24, work on the unfinished canal ceased, and the soldiers were reassigned to other duties.

After the failure of his overland invasion against the northern defenses of Vicksburg, Grant decided to resume work on the waterway in early January. If it could be finished by April or May, he could safely move his entire army to a location several miles south of Vicksburg. Here his troops could disembark and mount another attack against the Confederate stronghold. Because General Williams had been killed in battle, Grant took charge of the work. Perhaps realizing the severe hardship manual labor caused his troops, he assembled a 1500-man labor force composed almost exclusively of recently freed slaves. Although some joined the work parties voluntarily, others had to be coerced. Armed cavalry detachments scoured the countryside looking for former slaves who had fled the plantations and brought them to the work site, sometimes in chains. With each passing day, the excavation of the artificial water-
The U.S.S. Cairo, a Civil War era gunboat that would have passed through Grant’s canal, had it not been destroyed by a Confederate mine in the Yazoo River. The ship was raised in 1964 and is on display near Vicksburg, Mississippi.

The excavation of a 60-foot wide, 13-foot deep channel through low-lying land, subject to frequent flooding, posed a major challenge. On several occasions, the earthen banks collapsed and slid into the prism, requiring time-consuming remedial action. In an effort to hasten the project’s completion, two large steam-powered dredges were transported on barges to the work site. Unfortunately, they were so big that they became a target for Confederate artillery, which frequently shelled them from Vicksburg’s bluffs.

By the end of March, Grant concluded that continuation of work on the canal and send the flotilla past Vicksburg’s gun emplacements, General Grant knew that there would be loss of life. Nevertheless, he was convinced that to continue digging the canal would cause even more men to die. In his memoirs, published in 1887 after his death, an entire chapter is devoted to the battle for Vicksburg. Within this chapter, the general devotes several paragraphs to the futile attempt to dig a bypass canal, citing the difficulties of tropical sickness and swampy soil. As part of his revised strategy, Grant marched his entire army down the west side of the Mississippi River, through territory considered by many to be impassable, to an assembly point many miles south of their objective. Here, they were met by the gunboats that had successfully steamed past Vicksburg’s defenses. Using them as ferries, the troops crossed the river and reassembled on the eastern shore. For Confederate General Pemberton, it was now just a matter of time before the city he vowed would never surrender to the Yankees capitulated. Grant’s forces initially moved east, capturing Jackson, after a series of bloody battles. The army then proceeded directly west to Vicksburg, where its advance was temporarily halted by the extensive fortifications the rebels had erected in anticipation of an eventual land-based invasion. Rather than attempt to overrun them, Grant decided to conduct a siege. By preventing food and supplies from reaching the city of over 50,000 people, starvation was inevitable. By the end of June, 1863, residents were reduced to catching and eating rats. Finally, on July 4th
General Pemberton sent his emissary to Grant with an offer to surrender his city. Ironically, the fall of Vicksburg occurred at the same time Union forces were winning an equally important victory at Gettysburg. The Mississippi River was now open to navigation by Union vessels for its entire length.

The concept of a short canal permitting federal vessels to avoid Vicksburg’s guns was both logical and sound, but difficult to achieve because of local topographic and climatic factors. Nevertheless, “Grant’s Canal” deserves a place in the history of America’s inland waterways. Today, only a half-mile-long portion of the prism remains. Historical markers inform visitors exactly why the canal was built and the reasons it failed.

During my trip to Vicksburg, I spent an hour walking along what’s left of Grant’s canal and could clearly discern its prism. I visited the restored Union gunboat Cairo, raised from the bottom of the Yazoo River in 1964. It’s exactly the type of vessel for which Grant’s canal was intended. For anyone interested in the Civil War and fascinated by canals, a trip to Vicksburg is highly recommended.

The prism of Grant’s 1863 canal is still visible after almost 150 years. Photo by Bruce Russell.

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THE GREAT CANAL SCRIP FRAUD
By John M. Lamb

In the first half of the 19th century a major problem in the young state of Illinois was a workable paper money system to supplement the constant shortage of specie, or gold and silver coins. There was no national paper money at the time, so state banks were started up whenever there appeared to be a good chance for rapid economic expansion.

In the 1830s, when the State launched an expensive program of internal improvements, it was only natural that it should also create a State Bank system to help finance the canal, railroad and river improvement projects. The construction program was beyond the means of the State, and the State Bank system was never really capitalized by the State. The internal improvement scheme would be in a state of collapse by 1839, and the State Bank would struggle on until 1842 when it, too, went under. Of all the programs for internal improvement launched in the 1830s, the only one to be brought to a successful conclusion was the Illinois and Michigan Canal. This artificial waterway had been advocated since 1673 to provide a water link between Lake Michigan and the Illinois River.

The project was an eminently practical one. When it was completed in 1848 it would provide northern Illinois with a transportation system that would be of primary importance in the development of the state. The canal was financed by loans negotiated by the Canal Commission, who were a state body separate from the Internal Improvements Commission and were more successful in obtaining loans in the East. Their success was due to the obvious fact that it was a practical project, not a political boondoggle as were most of the other internal improvement projects, and also because the canal commission had a large tract of land that could be offered as collateral. Fortunately, the capital thus obtained could only be used for construction of the canal and could not be diverted to other internal improvement schemes.

As the 1830s advanced, the internal improvement program wandered deeper and deeper into financial difficulties. The State Bank system was hardly better off. In 1837 the State Bank had to suspend specie payment on its notes. In order not to tie up the large amount of canal funds in the branch State Bank at Chicago by a bankruptcy, a special session of the legislature allowed the State Bank to indefinitely suspend
By 1839 work had slowed even on the canal, for this depression had hit not only Illinois, but all of the western world. As a result, a major problem facing the canal commissioners was in paying the contractors and the laborers. In 1839 a loan was negotiated in the East by the State for the canal, but it would be paid only in monthly installments of $100,000. That was insufficient to pay the contractors, so it was decided to pay with scrip redeemable in 90 days issued through the Branch State Bank at Chicago. The scrip was issued in $1, $2, $5, $10, $50 and $100 denominations in May and August of that year. This was the first canal scrip that was issued, and these notes would resurface in the 1850s as part of the Great Canal Scrip Fraud. Most of it had been redeemed by 1840.

In 1840 the legislature, angered at some officers in the State Branch Bank at Chicago had been using bank funds to speculate in pork, decided to move the bank out of the sinful city to Lockport. The bank was established at the canal office building in Lockport. The canal commission, through the State Bank, now issued the second set of canal scrip. These were issued in a variety of denominations from $1 to $150. Most of the money was engraved and printed by Rawden, Wright and Holcomb of New York, who printed notes for a number of canals and other types of commercial enterprises that used paper money. The intent of the canal commissioners was that this scrip would be used for money throughout northern Illinois. If this scrip was accepted, then the problem of short-term financing would be solved.

At an auction of canal lands in 1840 most of the land was paid for with this 1840 scrip, which was honored at par. In fact, many contractors were paying their workers with this 1840 canal scrip. The Irish canal workers found to their sorrow that about the only thing they could buy with the scrip was canal land. As a result many bought farm land and town lots and settled down to become farmers, merchants and residents in northern Illinois.

The businessmen of Chicago were not, however, enthusiastic about notes issued by the State Banks even if backed by the Illinois and Michigan Canal fund. They preferred paper from Buffalo banks, which were secured by something more tangible than the promises of the notoriously underfinanced Illinois State Bank System.

Not only was the issuance of 1840 a flop in creating a usable currency for Illinois, the canal was finding it increasingly more difficult to raise funds from out-of-state bankers for the construction of the canal. The state was by now deeply in debt, and had little means of paying off its debt. Some politicians openly talked of repudiating all or part of the state debt. The branch State Bank was moved back to Chicago in 1841, and in 1842 the system went into bankruptcy.

In an effort to keep the work going along the line of the canal, the canal commissioners in 1842 issued the third scrip issue. This was in the form of certificates of canal indebtedness, which, in a show of tightfistedness, were printed on the back of the fancy 1840 notes, which had to be cut down for that purpose. These were issued between 1842 and 1844, but were never really accepted. As a result, canal construction gradually slowed to a halt. There was no more canal scrip issued.

In 1845 the troubles over canal financing came to an end when the canal was taken out from under the exclusive control of the state. State creditors in New York, Boston, and London insisted that if they were to lend sufficient money to finance the canal’s completion, about $4 million, the canal would have to be placed under the control of three trustees, two chosen by the out-of-state creditors and one chosen by the governor. Also, the state had to promise to levy a property tax to retire its debt. The canal remained under the trusteeship until 1871. Now the canal had access to money directly from New York, and it could pay the contractors without going through any state institution.
By 1848 the canal was finished and open for business. In 1871 it had paid off the debt and the interest, and for some years after that continued to pay a profit to the state over and above its expenses. It was one of the few canals in America to pay its own way.

Returning to that first issue of canal scrip in 1839, it is now necessary to trace its various travels, which started in 1840. In that year all but about $300 of this scrip had been redeemed. The canal commission treasurer, Col. Jacob Fry, and the secretary of the canal sealed most of the redeemed notes in a wooden box; many of these were of the $50 and $100 denomination and most had not been hammer canceled. In addition to this well-sealed box, the remainder of the scrip was put into an old candle box. These two boxes were taken to the Branch State Bank at Chicago. In 1848 the State Trustee of the Canal ordered these two boxes to be taken from the old state bank building to the canal offices in Chicago. There they remained, still sealed, but much battered about evidently, until 1853. In that year the newly appointed State Trustee, Josiah McRoberts, asked newly-elected Governor Joel Matteson to take them to Springfield so that they could be deposited with the state treasurer.

McRoberts had to re-pack the scrip that was in the old candle box, which was falling apart. This scrip he unwisely put into a shoebox. If only McRoberts had known that shoe boxes bring out the worst, the most illegal avariciousness, in the make-up of Illinois politicians! How many otherwise ordinary Illinois statesmen would have gone down in the great book of Illinois politics for their probity but for a strange desire to put state funds in the proximity of shoe boxes?

It appears that the obscure McRoberts was the first to put together these two seemingly innocent things to produce the state’s first financial scandal. The shoebox and the sealed wooden boxes were placed together in a trunk by McRoberts one early January day in 1853. McRoberts met the new governor, Joel Matteson, in Joliet, and rode with him to LaSalle. There he helped the governor transfer the trunk to the Illinois Central station for the trip to Springfield. McRoberts returned to Chicago, and no more was heard of the trunk with its scrip for some years.

In 1858 it became known that a large amount of this scrip was being redeemed. This had been going on since 1856, and the person redeeming it was none other than Governor Matteson. As soon as this was discovered, the cry of fraud was heard in the land.

Matteson, who had garnered over $200,000, was quick to declare his innocence having, he said, purchased the scrip from a number of speculators. He said he had not seen the trunk since he had deposited it in the basement of the Statehouse. Indeed the trunk was found in a dusty corner of the Statehouse basement, but not as it had been given to the governor in 1853. First of all, the shoebox was gone, along with its contents. The sealed box had evidently been broken into and an attempt had been made to reseal it. The elusive shoebox was never found, not even after Matteson’s death. So, in the continuing Saga of the Shoe Box in Springfield, sometimes they are found, sometimes they disappear forever.

Naturally, an investigation was in order. The legislative inquiry got as far as calling Matteson to be a witness. He, to foretell that, paid back to the state $224,182.66, which he raised by selling his Springfield mansion and a house in Quincy. As soon as the money was paid, the legislative investigation was closed.

Next, a grand jury was convened at Springfield in April 1859. It gathered a lot of testimony about how the scrip was packed, how it was handed over to the Governor in Joliet, what had been canceled, and what hadn’t; however, Matteson was not called upon to testify, nor were any of the individuals from whom he said he had purchased the scrip.

The grand jury moved to indict, 16 – 7; the next day it voted to reconsider, but again the vote, by a narrow margin, was for indictment. The next day there was another vote to reconsider, but this time the vote was 12 – 10 not to indict. There was much grumbling over this, and it was pointed out that when the jury was chosen, many of its members were taken not from the voting lists but from hangers-on about the court house, a select group of individuals very favorable to the former governor. The grand jury ordered its transcripts printed and the case was closed.

Thus ended the Great Canal Scrip Fraud, a product of the voracious Illinois shoebox. As in subsequent shoebox cases, the principal got off practically scot-free. In 1873 Governor Matteson died, somewhat besmirched but still well thought of, and rather wealthy.
PIQUA CANAL BOAT RECEIVES ACS PLAQUE

On Saturday, August 15, American Canal Society Vice President and Canal Society of Ohio President Mike Morthorst (right) presented a plaque recognizing the Piqua Historical Area’s canal boat General Harrison of Piqua as an authentic replica of a canal boat that would have operated on the Miami and Erie Canal in the nineteenth century.

The American Canal Society has instituted this award to congratulate and encourage organizations that work to preserve and interpret the importance of America’s canals to her early economic growth.

Accepting the plaque is Andy Hite (left), Piqua Historical Site Manager and Canal Society of Ohio Trustee.

CASCADE LOCKS PARK ASSOCIATION CELEBRATES 20TH ANNIVERSARY

The Cascade Locks Park Association (CLPA) in Akron, Ohio, celebrates its 20th anniversary this year. To understand the significance of this grassroots organization, it’s important to look beyond its “official” inception.

Walter Sheppe arrived in Akron by way of Zambia, where he was an authority on the ecology of African rodents. He was impressed with all the potential parkland in the Akron area and, while exploring his new surroundings, he discovered the deteriorated locks of the Ohio & Erie Canal. At Lock 15 he became interested in a couple of dilapidated structures owned by Pete Ramnytz.

When Mr. Ramnytz put the properties on the market in the late 1980s, Sheppe recognized an opportunity to preserve these historic remnants. At a meeting of the American Civil Liberties Union, he met Virginia Wojno-Forney, a dynamic woman who was discussing her involvement with Progress Through Preservation (PTP). Sheppe told her about the extraordinary canal structures. After checking them out, she was convinced that the properties should be preserved.

A “Save the Mustill Store” Committee was established under the aegis of PTP. When it became evident that PTP didn’t have the funding to purchase and renovate the derelict properties, Chairman Stan Martin suggested to the other committee members. “Why don’t we all kick in $5000?”

(continued on page sixteen)
James Alkire, a committee member and the city planning commissioner, approached Mayor Don Plusquellec about the Mustill properties. Recognizing the significance of these historic assets, the mayor publicly announced his support. The city purchased the properties, and the group was renamed the Cascade Locks Park Association. The late Congressman John Seiberling said, “From a historical standpoint, there is no more significant relic of Akron’s past. But for the cascade of locks, Akron as we know it today would not exist. Through its restoration, the cascade can and undoubtedly will play a key role in building a new future for Akron.”

Editor’s note: In June my husband and I visited the Cascade Locks with Larry Turner and Jim Guest and attended a talk by Boone Triplett in the beautifully restored Mustill Store. The CLPA is realizing its goal!

A MAN, A PLAN, A CANAL: NICARAGUA
by Jeanne Leblance
The Hartford Courant, 2007

Before the construction of the Panama Canal, there was a vigorous lobby that argued in favor of a canal farther north, in Nicaragua. Amazingly, this idea is back.

The Nicaraguan government is backing a proposal to create a shipping route from the Atlantic coast following one of three rivers into Lake Nicaragua and then building a short canal from the lake into the Pacific. Cost estimates are at least $20 billion.

I took a ferry ride across part of Lake Nicaragua nearly 20 years ago to the beautiful island of Ometepe. The idea of a cruise ship passing through that region raises some internal conflict for me. It would be a beautiful area to see and the shipping traffic would be good for the local economy, but I’d hate to see the plastic development that would come with it. (“Let’s ruin the only thing we have left: nature,” one opponent of this proposal wrote online.)

This route was followed, after a fashion, during the California gold rush 150 years ago. Miners came down the Atlantic coast on ships from the eastern United States, took small boats along the San Juan River into the lake and then took a mule train to the Pacific and got on another ship. It was a lot faster than the alternative, a wagon train across the northern continent.

The construction of the canal across Panama didn’t entirely kill the Nicaraguan plan, which resurfaced in the United States as recently as the 1960s, when concern was growing that the existing canal wouldn’t be able to handle increases in shipping traffic. In 2004, the Nicaraguan government officially revived the idea of a canal and continues to back it despite a project approved in 2006 to widen the existing canal in Panama. An article in the Nicaraguan newspaper, El Nuevo Diario argues that the widened canal in Panama still won’t be big enough for the very largest ships, including massive bulk carriers and oil tankers.

Nicaragua first announced the latest version of the plan more than two years ago, and it remains to be seen how vigorously the current administration will push it. There are alternate proposals involving rail transit across the country, and the worldwide economic crisis is not likely to help in financing either one.
It is clear from many documents that John Mackey was a man driven by self-interest, because despite knowing that it would be too expensive to retain James, he placed two local merchants in charge of supervising the canal works (a canal and dam to power the manufacturing processes at Harpers Ferry). Apart from being friends and men of local influence, they held no qualifications whatsoever for the job. Not surprisingly, both men received the same amount of compensation as James had requested, thereby doubling costs. Although James provided elaborate instructions for the pair, neither man possessed any engineering knowledge or expertise whatsoever, so they were completely incapable of supervising the project.

The canal construction floundered almost immediately; long hours, backbreaking toil, inadequate housing, poor conditions, and disease resulted in a stream of itinerant workers staying for a few days and then moving on. Mackey compiled several conflicting progress reports to his superiors, at one time stating, “We have at this time finished full ½ of the canal” and a week later “about 1/3rd of the canal is now dug, and should we be able to collect & retain 100 men” for three months, there is little reason to fear for the completion of this business this year.” The result of six months work was dismal, and Mackey created intense friction with everyone connected to the project, at one point describing himself in a letter as follows: “Never was a man more universally hated than I am at this moment throughout the whole country.”

In January 1800, and with a full-scale investigation pending, Mackey submitted his resignation. Shortly beforehand, and as the project closed for the winter, he wrote to a friend, “the Bank and Walls of the canal on the land ¼ in length are nearly done, but ¼ of the whole is yet to be puddled. A third of the dam is done… 100 men in 3 months will complete the whole ….If I should continue here (which is very doubtful) I shall renew our operations in the spring, so that we may have the business done about the middle of July.”

Technical Note: The process of “puddling” was used extensively by James Brindley Senior (1712-1776). It was the technique of lining the channel with puddle, a watertight material like clay. Clay or heavy loam is chopped with a spade and mixed into a plastic state with water and sometimes coarse sand or grit to discourage excavation by moles. The puddle is laid about 25 cm. thick at the sides and nearly a meter thick at the bottom of a canal, built up in layers. Puddle has to be kept wet in order to remain waterproof. The clay is laid down with a tool called a punner, or pun, a large rectangular block on a handle about 5 feet long, or trodden down, or compacted by some other means (e.g. by an excavator using the convex outside of its scoop, or, historically, by driving cattle across the area).

Even on his deathbed, Brindley was in constant demand by other canal engineers seeking his advice. One group called to see him and was given a few minutes with the dying man. The engineers stated that their canal would not hold water. “Then puddle it,” was Brindley’s reply. When the group explained that they had already done this, Brindley retorted, “Then puddle it again, and again, and again!”

By April, a former comrade of McHenry, Samuel Annin, took over as new paymaster for Harpers Ferry and shortly after taking control, suggested that army volunteers should take over the canal construction project as George Washington had originally suggested; however, Washington was now dead, and there was strong opposition to the idea of using soldiers in this way. Regardless, the army did take over and by June 1st they had made significant progress. Unfortunately, the provisional army was disbanded later that month and again work slowed down considerably. Private workers were engaged once more and the canal was eventually in operation by 1801.

Equipment for the armory was complex and needed a water mill for heavy forging. James had planned for the water wheels that were of a “breast type” design and averaged 4’2” in breadth. The largest was an 8’ wheel at the forging mill, supplying power to a tile hammer for working iron and preparing barrel skelps for hand welders. The wheels were called “prime movers” and a series of belts and pulleys would have distributed
this power around the arsenal to multiple lathes and drills. Later, waterpower would be replaced by steam power and then electric power.

Some water wheel drawings by James are said to have survived, but have yet to be located; however, we have an earlier example of a water wheel (see below) built by his uncle, that is still operable and can be found at the Brindley Mill in Leek, Staffordshire, England.

The production of Harpers Ferry relied heavily on the construction and efficiency of the canal for bringing power to the forge hammers, grinding wheels and other equipment, but in the early years, the canal leaked so badly, that full production could not be met.

Surprisingly, although the Baltimore and Ohio Railroad was thought to have obliterated all trace, the canal bed at Harpers Ferry can still be seen today. Unfortunately, the quality of the construction work, for all the reasons explained here, bares little reflection of the knowledge and experience of its original creator.

The last professional correspondence found (to date) regarding James was a letter written the year before his death and addressed to Major William Wright and John Haldeman, dated 30th January 1819. James was in the process of planning a canal, 55 miles long, from the Swatara River to the east coast. At the age of 74, he was still active in canal construction.

No will for James has been located, but it is apparent from other evidence that he would have been considered wealthy; with a scarcity of trained engineers, James probably earned around £300-£400 for consulting services on each project. This was an enormous sum of money for a time when labourers earned as little as £2 per month for sixty hours a week working from sunrise to sunset. As other prominent engineers experienced to their disadvantage, however, it was sometimes difficult to collect money due.

In correspondence recently uncovered in the archives of the New York Public Library, James complains of trying to recover money owed and discusses the needs of his large family, stating that he “doesn’t know how he will keep two of his children in school.” He could have just been “pleading poverty,” but one cannot help but draw a parallel between his situation and that of his uncle James who often worked for nothing and was owed money by the Duke of Bridgewater at the time of his early death, leaving his widow to take the duke to court.

Elizabeth died in 1816, aged 76 and James died on November 24th 1820 aged 75. They are buried in what is now Red Clay Creek Presbyterian Church; formerly known as McCannon’s Churchyard, in Wilmington, Delaware. The family plot is in section “S,” the original and oldest part of the churchyard and the only obelisk in the section marks the plot.

Ed, note: The remainder of Yvonne Long and Gordon Brindley’s account consists of information on the James Brindley family tree and extracts from the correspondence of George Washington. We include the Washington correspondence below. Readers interested in the family tree information are asked to contact the editor (see page two). Our thanks to Yvonne Long and Gordon Brindley for permission to publish this biography of an important figure in U.S. canal history.

Extracts From The Writings of George Washington 1745 – 1799.
Confederation Series 3 May 1785- March 1786

Please note that these extracts are reproduced exactly as written and are complete with the spelling of the day and grammatical errors.

From Samuel Purviance, Jnr—Baltimore March 6th 1786

“........I flatter myself that if the Susquehanna Canal is once completed, it will unite the views of Pennsylvania or Maryland in opening a communication between the waters of Susquehanna and the Allegeny, which is generally thought very practicable – The Secretary of our Corporation of the Susqua Canal is now here, and informs me that Mr Brindley our engineer is now completed about two miles of the upper end of the canal, in which distance were in-
cluded all the principal difficulties of that undertaking, and of which three Quarters of a mile were one continued & solid body of rock, tho part of which they had to cut about sixteen feet deep – This being got over, there seems not a remaining doubt of our being able to effect the residue of our undertaking, most of which is not supposed to be not more difficult than an ordinary Mill race – I shall be glad to learn that you find equal hopes of Success in the Potomack Sake-me”.

To William Moultrie—Mount Vernon, May 25th 1786

“Dr. Sir: The letter which your Excellency did me the honor to write to me, of the 7th. Ulto. Came safely to hand; and I should feel very happy if I could render the Company (who are engaged in the laudable and important design of opening a cut between the rivers Cowper and Santee) any services”.

“...Mr Brindley, nephew to the celebrated person of that name who conducted the work of the Duke of Bridgewater and planned many others in England, possesses, I presume, more practical knowledge of Cuts and Locks for the improvement of inland navigation, than any man among us, as he was an executive officer (he says) many years under his uncle in this particular business: but he is, I know, engaged with the Susquehannah company, who are I believe (for I saw Mr. Brindley about six weeks ago) in a critical part of their work. I have, notwithstanding, written to a gentleman of my acquaintance who is not only a member of that company, but one to whom the business is chiefly confided, and near the spot, to know if Mr. Brindley’s services can be dispensed with long enough to answer the purpose mentioned in your letter: his answer shall be forwarded as soon as it comes to my hands”.

[Note: Moultrie wrote “the engineer of the Susquehanna Company in August 1786 asking him to come to South Carolina for consultation, and Brindley went down from Pennsylvania in early 1787, visiting GW at Mount Vernon on route.”]

Diary Entry—Mount Vernon, March 1786.

Rode to all my Plantations and to the fish house at the ferry where my Carpenters were at work. In the afternoon a Mr. Brindley, manager of the Susquehanna canal and Mr. Hanes manager of the James River Navigation came in and stayed all night. [James Brindley was a nephew of James Brindley 1716 – 1772, the talented Englishman who had initiated the dry-land canal era in England in the 1760s under the auspices of the Duke of Bridgewater. Coming from the Susquehanna canal works Brindley and Hare took the great Falls in their way down, & both approve of the present line for our Canal,” wrote GW to John Fitzgerald and George Gilpin, adding, “no person in this country has more practical knowledge than Mr. Brindley” [31 Mar. 1786, DLC:GW]. Brindley was on his way to Richmond to consult and advise on the James River project and GW hoped he would do the same for the Potomac project.] On his way back to the Susquehanna.

Diary Entry—Mount Vernon, March 30th 1786

Mr. Brindley and Mr. Hanes went away after breakfast.

To John Fitzgerald and George Gilpin—Mount Vernon, March 31st, 1786.

“Gentlemen: Yesterday Mr. Brindley, in company with a Mr. Hare, Manager for the James river Company (the latter having been sent for the former, by the Directors thereof) left this on their way to Richmond, from whence Mr. Brindley expects to be returned, as far as Alexandria, in seven days from the date hereof. I have engaged him to call on Colo. Gilpin on his route back. Mr. Brindley and Mr. Hare took the great Falls in their way down and both approve of the present line for our canal: the first very much; he conceives that 9/10ths of the expense of the one fifth proposed, will be saved by this cut; the work altogether as secure, and the entrance into the river by no means unfavourable. He thinks however that a good deal of attention and judgment is required in fixing Locks there; the height of which he observes is always governed by the ground; they frequently run from four to eighteen feet, and some times are as high as twenty four”. The nature and declination of the ground, according to him, is alone to direct, and where this will admit he thinks the larger the Locks are made the better, because more convenient.”

“With respect to this part of the business I feel, and always have confessed an entire incompetence: nor do I conceive that theoretical knowledge alone is adequate to the undertaking. Locks, upon the most judicial plan, will certainly be expensive; and if not properly constructed and judiciously placed, may be altogether useless. It is for these reasons therefore that I have frequently suggested (though no decision has been had) the propriety of employing a professional man. Whether the expense of obtaining one in, and bringing him from Europe has been thought unnecessary, or too burthensome for the advantages, which are to be expected, I know not: but as it is said no person in this country has more practical knowledge than Mr. Brindley, I submit to your consideration the propriety of engaging him to take the Falls in his way back; to examine, level and digest a plan for Locks at that place; if it shall appear good, and his reasons in support of the spots and sizes conclusive it will justify the adoption; if palpably erroneous, there is no obligation upon us to follow him; and the expense in that case is but the only evil which can result from it. This for the chance of a probable benefit, I am not only willing, but desirous of encountering; and if Colo. Gilpin has not already made the trip to that place which he proposed at our last visit, and disappointment there, it would give me great pleasure if it could be so timed as for him to accompany Mr. Brindley. This would not only give countenance to the latter, but afford him aid also; and might be a means of preventing the little jealousies which
otherwise might arise in the minds of our own managers. Taking Mr. Brindley to the works now, may, ultimately, save expense; at the same time, having a plan before us, would enable us at all convenient times, to be providing materials for its execution’

Confederation Series 4 April 1786-January 1787

Letter to Henry Lee—Mount Vernon, April 5th, 1786.
“Dear Sir: …After a thorough investigation of the ground there, we have departed from Ballandine’s route for the Canal (the Great Falls), and marked a fresh cut, which in our judgments will save 4/5ths of the labor time & expense, and in the opinion of Mr. Brindley who has just been to see it, 9/10ths, and be equally good when effected’.

Letter from William Moultrie—Charleston, South Carolina, April 7th 1786.
“…Many of the Gentlemen who compose the Board of Directors for carrying the plan into execution, having the honour of being personally acquainted with you are induced to recommend that, endeavour be made to obtain Mr Brindley to superintend it (Santee Canal), if in your opinion you judged him capable of the undertaking – it is said Mr Brindley was constantly with his Brother, while carrying out the Duke of Bridgewater’s Works & possessed great knowledge and abilities – to begin right, is all in all with us – the practicality of bringing it to perfection cannot admit of a doubt’. However, the engagements that Mr Brindley may now have of the same kind, may possibly prevent him entering into a New One, yet if he could be spared only to inspect into the situation and to give his opinion and directions how to proceed, it may at least prevent us from beginning wrong, and we may be going on until he, or some equal be procured: the Board of Directors will cheerfully pay every expense that Mr. Brindley may be at, by coming here, exclusive of compensation.”

The enclosed letter from William Moultrie to James Brindley reads “by a letter from Mr. Hughes to General Washington, the company for inland navigation are informed that the Susquehannah Company have given you permission to be absent for four months in the next winter, and that you have authorized Mr Hughes to say that you will be in Charlestown in December next. The Board of Directors have requested me to urge your coming, and sooner if possible to South Carolina to take a view and give your opinion on the probability of opening the communication between the Santee and Cooper Rivers, they are perfectly satisfied with the knowledge and abilities you are possessed of in that branch of business and they are therefore unwilling to begin the great work, until you have surveyed and marked out the ground for the carrying of it into execution, and I assure you that every expense attending your coming here shall be paid to you as full compensation for your trouble, etc

Letter from Thomas Johnson—Annapolis, December 7th 1786
“ The Winter is so unpromising that I expect I shall be very still till Spring, but if agreeable to the Gent. Of Virga, it is so to Mr Lee I wish Brindley to assist and advise on the Survey and Tract at the Little Falls from what Col. Gilpin said I think we may expect Brindley is disposed to assist us and what would be liberal for his trouble may be very usefully laid out.”

Letter to Thomas Johnson—Mount Vernon, December 28th, 1786.
We ought undoubted to avail ourselves of all the aids we can derive from experimental knowledge in our search. I concur readily therefore in sentiment with you and Mr. Lee that it would be proper to see what lights Mr. Brindley can afford us in conducting the navigation thro’ the little Falls, and the idea of a model for the Locks at the great Falls, I think good for the reasons you offer, the experience will be trifling and the saving may be great”.

Letter to George Digges—Mount Vernon, December 28th 1786
“…It would be proper to see what lights Mr. Brindley can afford us in conducting the navigation through the little Falls and the idea of a model for the Locks at the great Falls, I think good for the reasons you offer – the expense will be trifling and the saving may be good”

Diary Entry—Mount Vernon, January 10th 1787
Just before dinner, Mr. Brindley Manager of the Susquehanna Works and his Son-in-law came on their way to S. Carolina.

Letter From James Brindley—Havre de Grace (Maryland) April 5th 1787
“…I was detained in Charlestown until the 17th of March and returned for expedition by the Philadelphia Packet-therefore had not time to return by land. If you have any occasion for me on the Potomac Please let me know and I will attend. Have some expectation of visiting James River Canal, but not yet certain. I received a letter with a small packet for you from Coll Washington (William Washington of South Carolina) which comes with this. He and his family was well when I left Charlestown. I am, Sir, your very humble servant Jas. Brindley”.

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FROM THE PRESIDENT (continued from page one)

A visit to the Lower Fox River showed many boats moving through the currently available locks at each end of the waterway and several of the other locks restored and ready for use. Their reopening has been delayed by projects to rebuild or replace bridges over the waterway. Further lock rebuilding is affected by the ability of funding. This is probably the most active waterway restoration in the United States.

I then journeyed to southern Indiana and Ohio, where my attempts to visit two locks were thwarted by inadequate research, a confusing situation on the ground, and not having a GPS receiver. Lack of street signs in rural areas didn’t help either. But, I did get to visit the new and old McAlpine Locks at Louisville. The new lock was completed in 2009.

At the southern end of the Ohio and Erie Canal, I not only visited Lock 50, which has been cleared by local enthusiasts, and got a distant view of Lock 49 (which is in good condition on private property), but found a brand new parking lot next to Lock 48. The parking lot was so new, the paint on the spaces seemed barely dry. Clearance of the canal was also in evidence above and below the chamber.

I then journeyed north to Akron to see the new floating towpath at Summit Lake, the improvements underway at Lock 4 north, and the improved towpath trail at the Cascade Locks. On the way home, I stopped at Lockport, NY where planning is progressing to restore the northern set of five combined locks to operation.

Lastly, one of the biggest canal improvements this year is the completion of the restoration of Nine Mile Creek Aqueduct in Camillus, NY. This structure is now rewatered and boats are travelling over it. Camillus is another great, volunteer run canal park.

REQUEST FOR EMAIL ADDRESSES

Occasionally we want to notify our members about issues that arise between publication dates of American Canals. This can be done electronically, but we need your email address to communicate with you. If you are willing to share it, please send the address to Linda Barth at barths@att.net. Be assured that your address will never be given to any other group.

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
- American Canal Guide #3: Lower MS & Gulf published 1979 $3
- American Canal Guide #4: WV, KY, Ohio River published 1988 $3
- American Canal Guide #5: DE, MD, VA published 1992 $3 (copies only)

- 20 year American Canals Index 1972-1992 published 1992 $2
- Canal Boat Construction Index (12 pages) published 1992 $2
- Canal Terminology (100 pages) Hahn & Kemp published 1998 $15

- A Picture-Journey Along the Penn. Main Line Canal published 1993 $10

- ACS Burgee (blue on white cloth) $15
- ACS cloth sew on patch (2"x3" red, white & blue) $3
- "Save Your Local Canal" bumper sticker $1
- American Canals bulletin—single copies $3 (state volume and date)

Shipping and handling: first two items $4; each additional item $1
Checks payable to: American Canal Society. Send orders to: Robert H. Barth, 214 N. Bridge Street, Somerville, NJ 08876-1637; 908-722-7428. barths@att.net. Please call or email with questions.
December 12—Reenactment of a Civil War skirmish at the Savannah-Ogeechee Canal during Sherman’s March to the Sea, 10:00-2:00, the Savannah-Ogeechee Canal Museum in Savannah, Georgia. Guided towpath walks, period crafts, vendors, children’s activities. For more information, contact us at info@savannahogeechee.canal.com.

April 9-11—"Hoosiers on the Move". Headquarters: Comfort Inn, Richmond, Ind., 765-935-4766; room rate: $61.60 includes tax. Tour will cover the White-water Canal, National Road, Quakers, Politicians, and Underground Railroad in Wayne County, Indiana. Carolyn Schmidt, indcanal@aol.com; 260-432-0279. Canal Society of Indiana.

April 16-18—Pennsylvania Canal Society Spring Field Trip: central/west portion of the Main Line (Philly to Pittsburgh) Canal. Contacts: Bob Keintz or Glenn Wenrich, bobkeintz@gmail.com; gaw31@frontiernet.net.


Burnt Rollways Boat Hoist

By David Barber

When it is necessary to change elevation between two different levels on a waterway, the usual method is a lock. But there are other methods, such as the hydraulic lifts at Peterborough and Kirtfield and the Big Chute Marine Railway on the Trent Severn Waterway in Ontario. Another historic method is the inclined plane, used on the Morris Canal in New Jersey and the Shubenacadie Canal in Nova Scotia; however, these inclined planes are now dismantled.

An additional, unusual approach is the Burnt Rollways Boat Hoist in Three Lakes, Wisconsin. This is the headwaters area of the Wisconsin River, located in the north central part of the state. At Three Lakes, there is an interconnected chain of twenty lakes, all on a level. These discharge northward through the Long Lake outlet into the nine lakes of the Eagle River chain, which are also on a level. When this area was developed as a headwaters reservoir system for power generation in the early twentieth century, the Wisconsin Valley Improvement Company built a dam near the Burnt Rollways.

(From the Wisconsin Valley Improvement Company web site): "Burnt Rollways got its name from an event that took place during the lumbering days of the late 1800s. A group of lumberjacks got mad when a shoestring jobber couldn’t pay them after they’d stacked his timber on a device called a rollway along Ninemile Creek. The logs were to be have been rolled into the melt-swollen creek in spring and floated to a sawmill. Since they didn’t get paid, the lumberjacks burned the logs on the rollway in protest. Hence the name "Burnt Rollways." As the story goes, the men reasoned that if they weren’t going to get paid, neither would the man they worked for. The rollway they burned reportedly lies submerged in the creek about a mile upstream (south) from our present boat hoist."

“Wisconsin Valley Improvement Company built the first hoist in 1911. It was an inclined railway that used mechanical power furnished by the stream. The current turned a water wheel in the dam that pulled boats, resting on a wheeled cradle, over the dam on the tracks. Since 1952, an electric gantry hoist running on a 165 feet long (horizontal) trestleway moves quickly hoists boats of all sizes as they travel this popular thoroughfare.”

While suspended, the boats cross the road over the dam similar to the layout at Big Chute. The change in elevation is sixteen feet. The boat lift is open from Memorial Day weekend to the last weekend in September during listed hours. The capacity is 6,000 pounds. A one way passage is $5.00 per boat. People and pets are not allowed in a boat during passage. Directions and further information can be found on the company’s web site, www.wvic.com, and on the index page for the site on www.americancanals.org. Something similar to this or the Big Chute Marine Railway is proposed on the lower Fox River Rapid Croche, Wisconsin, so the dam there can serve as a barrier to invasive species.