It is generally known that the modern Welland Canal in Ontario, Canada connects Lake Erie with Lake Ontario, to provide an essential link in the St. Lawrence Seaway System of navigation, and direct access from the St. Lawrence-Lake Ontario section to the Upper Great Lakes and the heart of the North American continent. This route of navigation was designed to avoid the falls, gorge and rapids of the Niagara River, and has taken shipping across the severe slopes of the Niagara Escarpment from 1829 onwards up to the present day.

Loss well-known must be the numerous features of interest which exist along the waterway and its predecessors, the intense cultural heritage that is involved, the great historical significance of a major Canadian achievement, the plentiful nature of surviving relics from the past, plus the fascination of passing ships, and the operation of the locks. A much greater positive and constructive advance could be taken of such man-made resources in the future than at present.

There was thought about a canal across the peninsula during the French regime, and again during the early days of pioneer British settlement, but progress towards its successful achievement really stems from after the War of 1812-1814. Business leadership was provided by a country merchant in St. Catharines, William Hamilton Merritt. Born an American, Merritt was only three years old when he came to Canada with his parents in 1796. With the outbreak of the War of 1812, Merritt joined the Niagara Dragoons. He was taken prisoner in 1814 and held in the United States for eighteen months. Transportation had been a real problem during the war and the Niagara Portage Road had fallen into enemy hands on a regular basis. Merritt could see a need for a canal system that would bypass Niagara Falls at a safe distance from the border. Moreover, the Erie Canal was under construction and Canada could not afford to lose its commerce to a more progressive neighbor.

In 1816, Merritt made his first survey, and in 1824, the Welland Canal Company, as a private enterprise endeavor, was formed for the construction of the canal. Though the original plan called for a combined rail and canal route, the company changed its plans and decided on a canal alone, making the ascent of the escarpment by a series of locks.

The first vessels to pass between the two lakes on 30 November 1829 was the Canadian schooner Ann and Jane and the R.H. Boughton of New York. The route at that time was the lower length of Twelve Mile Creek, a canal cut across the blow of the escarpment, the Welland River, and up the Niagara River to Buffalo. A direct route of 27½ miles from Port Dalhousie on Lake Ontario to Port Cleveland on Lake Erie was achieved in 1833. At this time transit through the canal was accomplished by a series of 40 wooden locks with a total lift of 258½.

With a canal between the two Great Lakes now existing, this in turn provided a significant new resource for the Niagara Peninsula. (Concluded on Page Four)
American Canals
BULLETIN OF THE AMERICAN CANAL SOCIETY

AMERICAN CANALS is issued quarterly by the American Canal Society, with headquarters at Box 542, Shepherdstown, W.Va. 25443. Objectives of the Society are to encourage the preservation, restoration, interpretation, and use of the historic canals of the Americas; save threatened canals; and to provide an exchange of canal information.

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Chairman, Canal Bibliography Committee, ACS Director, Harry L. Rinker, 30 West Spring Ave., York, Pa. 17403. Chairman, Canal Board Committee, ACS Director, 7100 Oxford Road, Baltimore, Md. 21214.

Can You Top This One?

Readers might like to check the latest edition of the Guinness Book of World Records to see if they have any record-breaking canals and locks to offer. According to the 1975 edition (Rantam paperback, $1.50) the oldest canal remains date back to 5000 B.C. in Iraq, the longest canalized system is the Volga-Baltic Canal (1,850 miles, opened in 1965) the longest canals are the Grand Canal of China (1,107 miles, 341 B.C. - 13th Century); the longest big ship canal, the Suez Canal (100.6 mi., begun in 1859); the longest artificial seaway, the St. Lawrence Seaway (189 mi.); the longest irrigation canal, the Karakum in Russia, expected to be 870 mi. long by 1975, and navigable for at least 260 miles.

The largest lock system is the Miraflores Locks on the Panama Canal, two locks each 1,090 x 110 (1914), the largest single lock is the one connecting the Schelde with the Kanaalsys in Westland (1,060 x 187) the deepest lock is at Wilson Dam on the Tennessee River (100' lift, 1959); the highest lock elevator is the Arnprior - Saint Louis in France (146', replacing 17 locks in 1980).

The largest cut is the Gaillard Cut on the Panama Canal, 270' deep and 300' wide at the bottom, the longest canal-tunnel is on the Panama Canal in France, 4.53 miles long (1927).

Any disagreements or new world records? Send them to Guinnette Superstive Ltd., 2 Ceci Close, Cheltenham Ffdrd, Enfield, Middlesex, England (Bill Tecro).

Page Two

CAPTAIN'S CORNER

Another round was recently lost in the fight to retain the ruins of the Delaware & Raritan Canal in New Brunswick, New Jersey. The issue is not a question of parties concerned not considering alternatives which would permit a bridge to span the river, but saving the end of the canal. The question is a very involved one, but if I think the situation facing historic preservationists is well put by one speaker in the fight for the preservation of the Delaware & Raritan Capt. Cooper F. Bright, USN (Ret), who said in a letter to the Chairman of the Advisory Council that the following important lessons have been learned from previous controversies involving historical places:

1. Private agencies and individuals must be involved early and deeply in planning and throughout in compliance with administrative processes and procedures. Experience has established that laymen can make valuable contributions which professionals might overlook.

2. Citizens must alert to bureaucracies that will not automatically move to comply with existing laws. Having a low and its supporting guidelines, in itself, is not enough.

3. The Advisory Council on Historic Preservation cannot alone halt the irreversible and irreversible destruction of historic places.

It needs friends and the help they can provide. It also needs to know and understand the very real everyday concerns and problems encountered by those friends in assisting to preserve historic places.

I agree with this position. When it comes to experts on the significance of historic canals, the best judges are the people who talk with the history of a canal, its engineering and architecture, and its relationship to other historic canals and waterways. I would hesitate to question the destruction or lack of construction of historic structures, if we do, they will be gone forever. Before we must have a chance to think about it. It is up to each of you to know the canal structures in your area and to take a stand when they are threatened. Turn to your local or state historical society, to your national congressmen or state legislators, to the newspapers. If federal funds are involved, and the structure is on the National Register of Historic Places, inform the Advisory Council on Historic Preservation, Washington, D.C. Our voices must be heard and our views made known, otherwise the written destruction of historic canals and other structures in the United States will continue without due consideration of such as its significance and meaning within the total context of our history and our culture.

William Ettel, 325 Donniston Avenue, Pittsburgh, PA 15206, a member of the American Canal Society, has commissioned a former Pennsylvania boat model builder whose models were featured in the Pittsburgh Press in the 1940s. Mr. Ettel is a retired U.S. Steel worker.

AASLH LISTINGS

One of the small projects of ACS has been to see that canal societies are listed in the Directory of Historical Societies in the United States and Canada, published by the American Association for State and Local History (AASLH), of which ACS is an institutional member. The 1975-76 edition has 4,539 societies in its 434 pages and a separate listing by special interest - the canal societies are under "Transportation Societies". Unfortunately, of 14 societies in the same listing, none did not return the questionnaire sent by AASLH so were not listed under specialty, and if they don't return the questionnaire for the next mailing at all, they will be left off entirely! This directory is the reference work on historical societies, available in any good library, so if your society was or is about to be left out, be sure you make the needful contact, then be published by AASLH, 1400 Eighth Avenue South, Nashville, TN 37203, at $20 pp., $15 for members of AASLH. Be sure it gets on this reference shelf of your library.

A New Jersey Canal Never Finished

On February 21, 1860, the New Jersey Legislature passed an Act incorporating the Morris-Raritan and Raritan Valley Canals Company with authority to "make, construct and operate a canal or artificial navigation, commencing at or near Morristown and Morris and running through the townships of Hanover and Pequannock, to the Morris Canal, so as to intersect the same at the most convenient and accessible point in the township of Pequannock." The Act stated: "It shall be lawful for said Company, by means of a railroad or canal, to connect the water of the Rockaway River with said canal, provided that the waters taken from the Rockaway River or any of its tributaries, be discharged into or combined with the Morris Canal, but it shall be returned into said tributaries or into the Passaic River, above the Great Falls of the Passaic." A capital stock of $200,000 was authorized and George T. Cobb, William G. Baker, William G. Lathrop, Ephraim Marsh, William H. Taft, and Augustus C. Fuller were named commissioners. Among these names are those of men active in the Morris Canal and the New Jersey iron mines and iron works. The Company was authorized to charge no more than three cents per ton mile, on the passage of coal, lime, gyp- sum, iron and steel with a proportionate charge on other materials. Permission was given to employ all kinds of people to conduct the affairs of the Company and to construct, such locks, piers, works, devices, wharves, toll houses and offices necessary for the use of said canal.

The Civil War put a halt to such expansion schemes and by the war's end the Morris and Essex Canal had been completely abandoned. New Jersey starting the Morris Canal on its side toward extinction. Since the men ran as canal commissioners were replaced in canals and iron works it would be interesting to know it the route was surveyed and any plans proposed. (Submitted by ACS Monitor, F. W. Ward, 53 Wood Road, Scotch Plains, N.J. 07076.)
THE HIWASSEE CANAL

by L. W. RICHARDSON

Tennessee escaped the “canal fever” that infected nearly all of the country in the early 19th century, yet reasons for its inactivity in that state are numerous. The most important of these was the section known as the “East Tennessee,” the rich coves and valleys of the upper Tennessee River and its many tributaries, from the Virginia line down to the border of the Cherokee Nation, below present Athens.

The East Tennessee counties were effectively cut off from the outside world. To the north there was the long, expensive haul by wagon up the Valley of Virginia and on to the eastern markets, to the east was the endless wall of the Blue Ridge mountains; to the west an almost impassable plateau. The obvious solution was the river, flowing southwest into Alabama, then north to the Ohio and down to the Mississippi and the port of New Orleans. This was not only a long trip (it normally took about as long as five months), but it was a very dangerous journey. Below the site of present Chattanooga, boatsmen would be tossed against a hundred shoals, rapids and whirlpools. Only when the river was full could these obstacles be passed with any certainty. Upstream navigation was nearly impossible at any level of the river.

Sometime after 1806, a partial solution to this difficult problem was found. In that part of the Cherokee country that is now Polk County, Tennessee, an old portage came into the attention of the men. The way was from the Tennessee, southeast up the Hiwassee and the Ocoee Rivers to the head of navigation on the latter stream. From this point, a portage path of less than a dozen miles over a moderate height of land, led south to the Conasauga River. Once in the Conasauga, a boatman could voyage safely into the Oostanaula, the Ocoee and the Alabama Rivers to the Gulf coast at Mobile. Except for the laborious unloading, hauling and reloading at the portage, the travel was quicker, easier and possibly less expensive.

Traffic became brisk over the portage and it soon attracted the attention of two Cherokee entrepreneurs. John Hildosbrand, a German with a Cherokee wife (by tribal law, this made him a Cherokee), opened a boatyard and trading post at the northern, Ocoee end of the portage. About the same time, David McNair opened a similar enterprise on the Conasauga. McNair had half Ocoee and half Cherokee. These men built boats, traded in boats and cargoes and together, supplied the teams and wagons needed on the portage. The teamsmen and other employees of the two firms were largely, if not entirely, Cherokee Indians.

Sometimes in 1820-1821, an unknown frontier genius conceived the idea of building the running gear of a wagon of a size and strength to haul loads, with cargo, over the portage road. Hamps were built at the boatyards and the wagons were pulled by teams of oxen or larger mules. A direct route for motor boat trailers is today. These rigs usually demanded the power of six oxen to move them but they worked. It must have been the first such commercial operation in this country! Examining the portage, the history of which no doubt will seem almost incredible to travelers today, is a keel boat 50 feet long, 8 feet deep, and capable of carrying near 100 barrels. She was built at West Point (Kingston) in East Tennessee, where she was loaded for this trip, and proceeded down the Tennessee River a hundred miles to the mouth of the Hiwassee, thence 65 miles to the entrance of the Waccamaw (Ocoee) and up the latter a certain distance, whence she was transported, with her cargo, 10 miles by land to the Conasauga (Ocoee), thence to and down the Eastonula (Oostanaula) through the Coosa into the Alabama River, a distance of near 1,300 miles from the interior.

The activity on the portage and the prosperity of the Indians who controlled it, brought to it the attention of the white power structure of the state. It was inevitable that charges of monopoly and high fees would surface. Responding to the complaints, in 1826 the Tennessee Assembly granted a charter to the Hiwassee Canal Co. Federal assistance was requested to obtain permission from the Cherokee Council to build a canal at the portage and to assure the right of free passage for white boatmen through the Indian country. As this would be a trans-state project, the Governors of Alabama and Georgia were asked to help promote the project and to improve the rivers within their jurisdiction. Alabama responded and stated that a program was then under way to improve the Coosa. Georgia, at the time more interested in her own Northwest Territories plans, expressed no interest.

The plea of the Tennesseans for Federal help was answered in April, 1827, when Lt. Jefferson Vail and civilian engineer James Swift arrived in Knoxville. In the next few months the two surveyed and mapped the canal route. Lt. Vail's report to General Bernard, March 22, 1828, states that three possible routes were examined and that it was found that the portage highway was the shorter, slightly less than ten miles. He proposed a canal 60' wide and 6' deep with ten locks on the Ocoee side of the summit level and five locks down to the Conasauga. This difference in lift was occasioned when the Ocoee was found to be 46'-6" lower than the Conasauga. Vail could foresee no difficulty with the excavation of the canal, the only real problem was in obtaining the right-of-way. He resolved this by running a line for a feeder five miles up the valley of the Ocoee to Round Mountain. Here, the river passed through a narrow mountain gap and Vail proposed a dam: 134' high! This was the most vulnerable part of his report, a dam of that height would have strained the engineering skills of the time. Today, however, the Parkville (Ocoee) Dam of the TVA, only a little higher than Vail proposed, stands in the gap. Their work on the Hiwassee completed, Vail and Swift went down the river into Alabama, where they began the first Federal surveys of the Muscle Shoals region.

After the surveys were made public, Federal Commissioners were sent to talk with the Cherokees. The Indian Council refused to grant any rights of canal construction or to stop collecting toll on boats passing through the Nation. It is said that Vail and McNair had become wealthy from the portage trade and both men could exert considerable influence on Indian affairs. They did not want to lose a profitable business. Just how profitable is evident from a remark by McNair to one of the Commissioners. He stated that in one year, over 12,000 galons of whiskey had been taken over the portage! And that was only one of many products being shipped.

(Concluded on Page Six)

Landsford Canal Park Dedicated

The Landsford Canal State Park, located on the Rocky Mount Canal at Great Falls, SC, was dedicated on 18 November 1973. A part of it is Superintendence A.C.S. (Superintendent) at Catawba, SC, was dedicated on 18 November 1973. A part of the dedication ceremony was the laying of the cornerstone on the Rocky Mount Canal at Great Falls, SC, to this site. The photo above, (taken by Joel Nichols and provided by E.T. Crowson, ACS), shows the lock house in place at the new park.

Text of the commemorative plaque (shown above) is as follows: "Landsford Canal State Park.....Program of the 1925's, the canal stands as a monument to the following men who typed the South Carolina page during this first great era of public works building."

"William R. Davie, distinguished lawyer, educator, and statesman, who dreamed of the canal and donated the land for it."

"Robert Locke, engineer, and master stonemason, who designed the canal and supervised its building."

"Robert Mills, Joel Poinsett, and Abram Blanding, who were planners and builders for the establishment of a proper water supply for the summit this significant period of the state's growth."

"A Bicentennial Project, erected November 18, 1975, by The South Carolina State Society, Daughters of the American Revolution."
Seaway Sailing

For those canal watchers who will be visiting the many parts of the St. Lawrence Seaway connected to Welland to Sault St. Marie, there is a new brochure that shows where all the observation platforms are. It is called "Welcome to the Seaway." Among the things you will receive is information about the engineering of the St. Lawrence Seaway. It is obtained from Nassa, NY. All publications named are free.

There is no cost to take a pleasure boat through any of the locks at Sault St. Marie. The cost through the Welland Canal is $24.00. The cost for the locks on the St. Lawrence River port of the Seaway is $2.00 per lock.

There are two ways of going through the Iroquois Lock at the Western end. At the St. Lawrence Canal, there are two ways to go through the lock in the normal manner by waiting for the lock master to call you in and make your passage so that you can go through the chute. You say, what is a chute? Well, in this case it means that one of the gates in the dam is lifted and you may go over the dam. It is as bad as or better than a second one does run through the dam pretty fast. When you arrive at this dam, dock your boat and use the transmission telephone for instructions. There are two gates, each for downstream traffic and one for upstream traffic. Each gate is marked: black for downstream and red for upstream.

The lock master for dimensions of the chute. I do not recommend that a large boat get stuck in this gateway!

Mr. W. M. Moss, Chairman, Navigable Canals Committee, 61 W. Bond, St. Louis, MO 63104. Canal navigation information is welcomed.

The First Canal, organizing the supplies, attracting the labor force, and overcoming the difficulties of terrain, is a pioneer saga of great renown.

The bridges and tunnels that cross the canal are also of great interest. The First, Second and Third Canals were taken over the Welland Canal, with a series of projects that were completed during the period, and with the Seaway aqueduct now serving as a unique and distinctive municipal swimming pool. There is even a delightful canal railway tunnel (now abandoned) under the Second Canal (now abandoned) east of St. Catharines. Only one village existed on the line at the canal before its inception, namely St. Catharines. The shallow passage of the canal, its associated canyons, the opportunity for lads and the development of powerhouse for mills transformed the small village to an important industrial town. In addition, a recent report identified 6 of 15 sites having a high cultural potential in St. Catharines. Of all the towns along the present or earlier versions of the Welland Canal, St. Catharines is one which should be the most proud of its canal history and its present-day cultural, historical and recreational national treasures, and the canals is truly the focal point for the evolution of the area in its past and present credentials.

(Collaborated largely from an article by Muny Killman in the Buffalo Courier Express and the "Recreational Potential of the Welland Canal System. It's a Story of "Sapphire South Ontario" by John N. Jackson, Ph.D.)

The Welland Canal, connecting Lake Ontario with Lake Erie, is an essential part of the St. Lawrence Seaway. (W. Killman, ACS)

(Concluded from Page One)

and attracted mills, industry and towns to its banks. In 1841 the canal was purchased from its private stock-holders by the government which made improvements in the canal. The canal (case) the Second Welland Canal) was widened, deepened and straightened, being completed in 1846. In the process the number of locks was reduced from 62 to 27, the wooden locks being replaced by cut stone locks of a larger capacity. Ships carrying 750 tons of merchandise (previously 165 tons) were now able to pass through the canal system.

These modifications, in turn, became redundant. Steam ships had begun to replace the old wooden sailing vessels and an 1870 Royal Commission determined that ¼ of the traffic on the canal could not go through the existing locks. Consequently, a Third Welland Canal was constructed during the 1870s and the 1880s. Port Dalhousie remained as the northern entrance, but the previous opening was forsaken in favor of a diagonal approach and a new canal cut to cross the escarpment. The locks were again increased in size and reduced in number from 27 to 10, and the depth of the canal was increased from 9 to 14 feet. The route above the escarpment (south of it) was straightened and the Ontario Lakeshore Plata to the escarpment, forking Port Dalhousie and the Twelve Mile Creek for a new entrance at Fort Weller, now following an almost direct north-south route. These locks were initiated in 1915, suspended during the First World War, and became operational in 1932.

The Fourth Canal included seven new locks and a new guard lock at Port Colborne. The latter is 1,360 feet long and, until recently, the largest in the world. The canal now had a controlled depth of 27 feet and the lock dimensions became the standard for the entire Seaway. This in effect made the Welland Canal the first link in the St. Lawrence Seaway. The entire cost of the first Seaway lock was borne by the people of Canada.

The latest event in this intriguing succession of improvements to modify and increase the capacity of the system was the building of a new canal by-pass between 1956 and 1972. The bypass sped up transit by approximately 48 hours. Included in a 1956 proposal for the enlargement of the system was a new alignment at the replacement of all lift locks at the escarpment with locks of larger lift and dimensions. While these were the workers were initiated for a brief period of time prior to the lock's opening, there has been a complete series of offices to re-design, widen, deepen and re-align the canal. The signal importance of such alignments is that many of the earlier locks of the canal were originally designed into the landscape. They provide visible, and often highly attractive reminders, of former canal circumstances. They are capable of re-use and constructive use in the recreational circumstances today, as both historical-cultural assets and in terms of passive and active recreational pursuits, for both Canadians and visitors from the United States, the latter of whom visit nearby Niagara Falls in numbers of approximately 15 million annually. Already over 300,000 people annually visit the Lock 3 Park at St. Catharines.

In terms of engineering and technological achievements, some significant stretches of the Second and Third Canal lock systems survive. Some of the First Canal locks have been buried or perhaps could be unearthed or reconstructed. Locks are often the most exciting of canal structures, but the most interesting engineering feature should not be ignored. For example, the sheer task of digging...
San Antonio’s Spanish Aqueduct

The Espada Acueduct (a c/e kya) which still carries water for two miles from the San Antonio River to the Mission San Francisco de la Espada, was constructed between 1731 and 1746 and is the best preserved of its kind in Texas. Take Loop 16 on the southern outskirts of San Antonio, turn south immediately west of the bridge over the San Antonio River, and stop at the dam. The smaller Espada Dam is on the right, built of flagstones which over the years have been cemented together by calcium deposition from the water. There is no trail along the dam or aqueduct, but if the drive across the river on the low-water bridge and follow it south to the next road (Ashley) turn right on it to re-cross the river and then the aqueduct, then down Espada Road a few yards to the Espada Aqueduct (UTM 14 552230 3244730, Southern Texas 7° quad). The Spanish built so well two and a half centuries ago that one can still walk across the 3-arched stone aqueduct, and it still carries water — clearly one of the most important early water engineering structures in North America. All of the aqueducts around San Antonio have been declared a National Historic Civil Engineering Landmark by the ASCF, and the aqueduct has been placed on the National Register of Historic Places. Now what we need is a map clearly showing where all these aqueducts were and how to get to the remaining ones.

Espada Aqueduct, San Antonio, Texas. (Photo by Bill Trout)

Locks and Canals Corporation

LOCKS AND CANALS CORPORATION

Plan of CANAL SYSTEM

Lowell, Mass.

The forest-covered shores of the Merrimack River in Massachusetts gave rise in the 18th century to the rafting of logs downriver to Newburyport for the shipbuilding industry and for shipment to other ports. However, the Pawtucket Falls and the rapids below made an overland journey necessary. To overcome this obstacle, a canal was proposed and planned around the falls. An act was passed on June 27, 1792 incorporating a group of prominent residents into “a body politic and corporate forever, by the name of the Proprietors of Locks and Canals on Merrimack River.”

The Pawtucket Canal was “cut on the side of Chelmsford beginning near the Great Landing Place thence running by Lily Pond from thence by Sopen & Brook to Concord River.” Four sets of locks were involved — the Guard Locks (at Broadway), the Minx Locks (near Joan Fublages), the Swamp Locks (just below the Thomston Bridge) and the Concord River Locks (at the rear of the old Mill of Prescott Mill Property on East Merrimack Street). A canal bridge passes directly over the latter and permits an excellent view of the lock construction.

The canal was completed in 1797 and was the first in the country. But the opening ceremonies would today be a press agent’s nightmare. As the first boat passed through the first lock, the locks gave way and officials, passengers and spectators found themselves in the water. Fortunately, no lives were lost and the canal was put into use. But even before the canal was opened, another nearby construction project, the Middlesex Canal was sounding the death knell for the floating waterway. The Middlesex canal soon found itself in the same position with the construction of the Boston and Lowell Railroad.

One of the dramatic points of interest is a dam known as the Francis Gate on Broadway Street. It is a guard lock consisting of a massive timber gate 57 feet wide, 25 feet deep and two feet thick, built in 1846. James B. Francis, then chief engineer of Locks and Canals, built this dam to prevent recurrence of damage caused by floods in 1785. Unfortunately, many of his contemporaries did not appreciate the wisdom and foresight of their local genius and his dam was greeted with scorn and derision and was long regarded as a monumental waste. During the many years that the gate remained suspended, it was known as “Francis folly.” Then in March 1936, the treacherous Merrimack went on a rampage. The massive gate was at last erected, dropped and together with a sand-bag reinforcement, it held back a 28-foot wall of water and saved the City. (By Joseph V. Kopycinski, Librarian, Lowell Technical Institute.)

Cape Cod Canal Collection

The Massachusetts Maritime Academy has established an historical collection of information and artifacts on the Cape Cod Canal. The Academy is at the east end of the Cape Cod Canal in Buzzards Bay, an ideal location. So far, it has included a variety of documents and publications obtained from the National Archives and Record Service, such as “Operation of the Cape Cod Canal, 1905,” “Atlantic Intracoastal Canals, 1916.” “Notes on the Cape Cod Canal, Dec. 14, 1921” by Charles Mass, Secretary, Boston, Cape Cod and New York Canal Company, and numerous reports and correspondence from 1907-17. For information contact Richard D. Polese, Massachusetts Maritime Academy, Buzzards Bay, Mass. 02532 (Information supplied by Barbara Ann Holley, Lippincott Library, Philadelphia.)

Francis Folly at Lowell, Massachusetts, built in 1848 and reconstructed in 1870 was built to hold back flood waters. Lowered in 1936, it now has a 24-foot wall of water, saving the city of Lowell. (Photo by Alden Gould)
The Union Mills Lock, built for mule-drawn canal boats in the 1850's, was primarily of cut stone, but incorporated bedrock as well, and part of one wall was of wood. (Drawing by Bill Trout)

The twenty miles of the Rivanna River in Fluvanna County, Virginia — from 16½ miles below Charlottesville to the mouth on the James River at Columbia — has been declared Virginia's First Scenic River by the state legislature.

Navigation improvements on the Rivanna date back to Thomas Jefferson, whose future Monticello, is near Charlottesville. When Jefferson completed his education at William and Mary and returned to Albemarle County, he set about plans to make the Rivanna navigable. In 1768 he and some of his friends collected 500 pounds to clear the river of obstacles and build small boats. This effort in 1800. This early project won him a seat in the Virginia legislature, the beginning of his political career. Before he became president he made a list of his "under-takings" that had benefited his country, and making the Rivanna navigable topped the list. He was also interested in plans to make the James River navigable, and while in France he placed his campaign on a canalboat for awhile and explored the Canal du Midi.

In 1860 the Rivanna Navigation Company was organized, and by the 1870's there was a series of some eighteen wooden locks and thirteen dams for lake creation for bateaux, powered by pole and oar. This navigation system extended to Charlottesville and above, for there were several wooden locks at the mill dams on the Rivanna above Charlottesville. In the 1850's the navigation system in Fluvanna was rebuilt for mule-drawn canal boats, with the following long canals, the Union Mills Canal at the upper end and the Rivanna Connection at the other — the latter connecting with the James River and Kanawha Canal at Columbia. There was another short canal below the dam at Broken Island. The Scenic River section includes all of the three remaining, including some good sites from the old bateau navigation, and they have been written up for the National Historical Register.

At the lower end of the navigation, the 4½-mile-long Rivanna Connection Canal was opened by State route 6 west of Columbia, just before the road crosses the river. This canal is private ownership at this time, but would make a perfect trail, park or even a restoration, greatly benefiting the small canal town of Columbia. The last one-half mile of the canal near Columbia can be seen from route 6. Further details of the canal at Columbia will appear in a future edition of the American Canal Guide.

The citizens of Fluvanna County are to be congratulated for their foresightfulness in supporting the Scenic River designation. To commemorate them and their unselfish and future development, the Editor, The Daily Progress, Charlottesville, Virginia 22901, Bill Trout and Minnie Lee McGonigle, Box 193, Palmyra, VA 22963.

The Albermarle and Chesapeake Canal at Great Bridge, Virginia, showing the now retired Lock Mount Hope, which is now renamed to the Arkansas Explorer, which lies in the Arkansas River. (Photo by Alexander C. Brown, ACS)
FORT FRANCES CANAL

To the uninitiated, the rivers on the international border between Canada and the United States are an enigma. A casual map inspection of the area between the Lake of the Woods and Lake Superior near Grand Portage, Minnesota, gives the impression that the Lake of the Woods drains eastward and discharges into Lake Superior. Close examination shows just the opposite to be true: Rainy Lake, Rainy River and the Lake of the Woods all drain north into the Arctic Ocean!

While attempting to locate vestiges of the little-known Fort Frances Canal, I was confronted with a topography in which everything was reversed. The Rainy River between Fort Frances, Ontario, and International Falls, Minnesota, was flowing in the wrong direction. However, after getting oriented on the Canadian bank of the river, the pursuit of a canal prism began in earnest, but with little results.

In a city park on the banks of the Rainy River, is a plaque placed by The Archaeology and Historical Sites Board of Ontario which reads as follows:

"Fort Frances Canal 1875. Constructed 1875-1879 during Alexander Mackenzie administration, as part of a larger project intended to improve communication with the West, the Fort Frances Canals provided unbroken communication between Rainy Lake and the Lake of the Woods. In conjunction with land and water stretches of the Dawson Road between Lake Shebandowan and the Lake of the Woods, it provided temporary waterway connection with completed sections of the C.P.R. (Canadian Pacific Railroad). The importance of the canal diminished when the C.P.R. route was altered to follow a more northerly direction. The nearby waterway was incorporated into the adjacent dam and power development."

A search of the general area of the plaque showed no evidence of a canal. The open spaces in the park and in a nearby cemetery revealed no traces of a canal prism. A small railroad yard upstream from the burial grounds could have obliterated any canal facility there. The hydro power plant and tower have finished the job. Judging from the rapids in the Rainy River, canal locks would have been necessary to overcome the swift water encountered at this point. The American city across the river from Fort Frances is named International Falls. The elevation of Rainy Lake at Fort Frances is 1108 feet above sea level; the lake of the Woods, about 88 miles downstream, is 1060 feet above sea level; thus the two lakes have a difference in elevation of 48 feet. If there were locks in the canal, they would have to be opposite the rapids at Fort Frances.

From the wording of the historical plaque, it is safe to infer that a canal was completed and used for 30 years. How long the canal was and how many locks it contained are mysteries that will require additional research to determine. A map entitled "Historical Canals of Canada" compiled by W. R. Piffl and L. Friend and produced by the Survey and Mapping Branch, Ottawa, shows the Fort Frances Lock (singular) as being abandoned, unfinished. Thus we have contradictory information about the "lock" or "canal" on the case might be.

(Submitted by Herb O'Hallan (AGS). 1983 Fairview St., Aurora, Ont. Additional information concerning this canal would be welcomed by the Editor, American Canals.)

OHIO CANAL BOAT TRIPS

The summer schedule for the Monticello II canal boat operating near Coshocton, Ohio will be each afternoon on the hour. Rates are: Adult $1.55; Student $0.80; pre-schoolers, no charge. (Photo above by Bill Shank). The summer schedule for the St. Helena II at Canal Fulton, Ohio, is on the half hour in the afternoon. Fare: Adult $1.00; Children 3-16, 75¢.

LETTERS TO THE EDITOR

A brief note regarding the CHAMBLY, pictured in AMERICAN CANALS, Nov. 75, issue, p. 4. I did a little digging in Canadian registers, and the vessel shown is almost certainly CHAMBLY, built 1950 at Sorel, QC. 154' x 24' x 8', 647 tons. Old down to barge, 1910.

Now the registered boast of a vessel is of the hull, and does not include the sidewheels and the overhang of the guards. So this boat would not clear the Chambly canal locks either in length or width. She would, however, pass the larger St. Quay lock, and her run was probably from Montreal or other St. Lawrence ports to the town of Chambly, which is below the canal locks. What little detail shows in the picture appears to be the town of Chambly. (James Wispo, ACS, 414 Patton Ave, Staten Island, NY 10310)

I received a letter from a friend Mr. Warren Allen of Penticville that there was a move to reconstruct the old canal at Portage. Well, I would like to be counted as one much in favor of its being rebuilt, because as a child I started going up and down the canal with a canoe, and I was raised at Cornia Station, we moved there in 1902. My folks ran the store there from 1902 to 1915, and in 1908 I started the government bend locks. A Mr. John Johnson was the lock tender. I was a 13 year old kid that worked for him for fifty cents a day, and when a boat blew the horn I had to run like a rabbit a quarter of a mile and open locks and let boat through.

Then in 1918 Byron Fritz and I grew cucumbers and had a small launch and we hauled the pickles up the river from Governors Bend to the Helen pickle station that used to be not far from the canal, and we would lug them, or get a wheel barrow and get them over to the Helen pickle station. (Burt J. Lang, 1917 Crystal Lake, Sun Prairie, wisconsin)

Errata for the canal and structure listing included with this mailing: Mohican Canal should be Mohican Canal. In the tunnel completion, Sandy & Beaver Big Tunnel, last sentence, change to read “steam engines and endless chain were proposed to move…”

CLASSIFIED ADVERTISEMENTS

Roy Mann Associates, Inc., landscape architects and waterfront planners, of 180 Franklin St., Cambridge, Mass. 02139 provide planning and design services for restoration of canalsides, riversides, and related areas for recreation facilities, open space network, and urban revitalization.

Cruise the English Canals this summer in PHOTOS. Genuine on-water boat, comfortably converted for family living. Reasonable terms. Details from East Whippy Farm, Shantley Green, near Guildford, Surrey, England.

AMERICAN CANAL AND TRANSPORTATION CENTER

Summer Special to ACS Members: Each $5 or over order will bring you a copy of England’s Waterways News. Each $10 order, a copy of Waterways of the World. Offer expires 31 August.

March & April Waterways World, 60 pp., $1.00. Back issues (our choice), 6 for $5.

I drove Mules – the Chesapeake & Ohio Canal old favorite by Mule Tender “Hoofer” Wolfe is now out of print. Remaining copies available at 25.

Hey-vy Lock, the Chesapeake and Ohio Canal Adventure Story by Morris Fradie, is now nearly out-of-print. Price is $4.50, while the supply lasts.

Mitchell’s Compendium of Canals and Railroads, Reprint of 1855, Canada and the U.S., 85 pages. Last offer at $1.75.

Chesapeake and Ohio Canal Old Picture Album with 100 historic photos @ $4.95, and George Washington’s Canal at Great Falls @ $2.50 are available and selling briskly.

Only three copies of the now out-of-print and becoming rare Morris Canal – a Photographic History by Lee are available first come, first served @ $15.

Six copy York Can Club Commemorative Canal Models @ $5 each. Last offer.

Van Aalten Map of the Canals and Navigable Rivers of the U.S. and Canada, Reprint of 1905, Excellent reference. $3.50.

Send for our listing of canal and related publications and our new 1st of European Canal Publications.

(American Canal & Transportation Center, Box 482, Shepherdstown, W. 25443. Add $1.50 shipping over $5.)

Interested in building either a large model of the boat or maybe even building a full sized replica for the museum.

Can you give us any help on the authenticity of the gun boat conversion or any other history of the barges which might help us in some other aspect of information? (Richard E. Elliott, Box 207, Bridgeport, VA 22812)

Send any info to Editor, American Canals, Box 842, Shepherdstown, W. 25443

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