

# AMERICAN CANALS

BULLETIN OF  
THE AMERICAN CANAL SOCIETY

BULLETIN NUMBER 86

Editorial Address—968 Chapel Road, Monaca, PA 15061

AUGUST 1993

## President's Message

Don't forget to register now for the 1993 International Conference on Historic Canals on October 12-15, organized by the Shubenacadie Canal Commission, 54 Locks Road, Dartmouth, Nova Scotia B2X 2W7, Canada, (902) 462-1826. You'll see a fascinating canal park (complete with inclined planes) and meet people like Peter White, recently retired Chief Architect and planner for British Waterways. This is the canal high point of the year, when canal professionals and amateurs get together from all over the world. If your local planners and officials don't have "canal fever" yet, send them here!

As at the last two Conferences, we plan to have an informal get-together of ACS members and friends, to meet each other and discuss society affairs. So make a mental note of anything you would like to bring up, or send it to me or an appropriate committee member or to Denver Walton for *American Canals*.

Let me know if you would like to do a section of the society's *American Canal Guide*. The Canal Society of Ohio is considering working up the State of Ohio section, and Dan Mahrer in Pittsburgh would like to work up the western part of Pennsylvania, from Hollidaysburg west. Who would like to work up the rest of Pennsylvania?

I'm trying to learn more about early boats which carried cargo down rivers, and were taken apart at their destinations, sold as lumber, and made into houses. There are a number of buildings made of boat parts in Harper's Ferry, where we are getting close to working out the structure of the "gundalows" which once ran down the Shenandoah River. What other river towns had such buildings? Is anyone studying them?

Has a canal buff tried out the "lock" for swimmers in the Grand Hyatt Wailea on Maui? We need a canaller's impressions for a future article on "the world's only water elevator," with a 24-foot lift!

I read in the *Waterways Journal* that Huntington, West Virginia planned to kick off "Safe Boating Week" back in June, with a barge/pleasure boat collision and a pleasure boat explosion and fire. Something like this would be a great safety message to spice up canal festivals, although it would be hard to beat the "simulated nuclear explosion" on the Tenn-Tom Waterway some years ago.

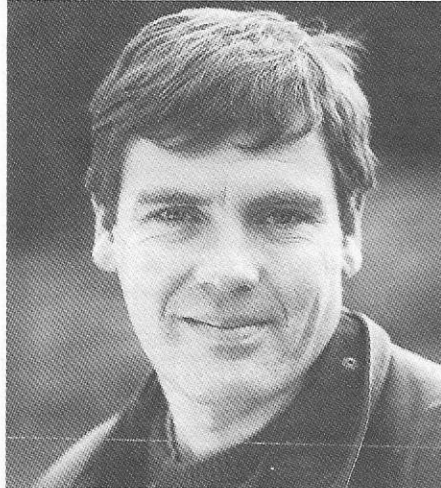
See you in Nova Scotia!

Bill Trout

## ACS LIFE MEMBERS

You can become a life member of the AMERICAN CANAL SOCIETY with a one-time payment of \$150. We now have 70 members in this category.

## THE LAST WORD



Tom Brock

One of the most stirring presentations at the 1992 International Conference on Historic Canals was our final after-dinner speech, by Tom Brock, Waterway Manager for the Stratford and Grand Union Canals in England. We asked him to record his concluding statement for posterity, and here it is:

"There is so much we can learn from each other. Throughout the world, canals have similar opportunities and problems. The similarities are greater than the differences. There is no point in us all re-inventing the wheel—we must learn from each other. This conference has been excellent in helping to achieve this aim. It has brought together both professionals and enthusiasts—but with canals, these are not mutually exclusive terms—there are plenty of enthusiastic professionals! We've all got the same aim and vision: to conserve this wonderful asset called a canal for leisure, recreation, tourism, education, local history, natural history and so on. We want to make more people aware of the existence of canals and to encourage them to use and enjoy them."



British Waterways Logo

## New Canal Boat Construction Index

The Canal Boat Committee of ACS, Chairman William J. McKelvey, Jr., is pleased to announce the publication of the 1993 Canal Boat Construction Index, Third Edition. Previously published in 1975 and 1979, the Index has been edited by Carroll Gantz, to provide a comprehensive reference for the design and construction of canal boats authentic to their time and place in American History.

The Index contains all known information relating to the design and construction of canal boats, including books, descriptions, photographs, drawings, remains, models, plans, re-constructions, planned re-constructions, and potential sites.

Visitors to Williamsburg, Plimoth Plantation, The U.S.S. Constitution, Ft. McHenry, Kitty Hawk, Greenfield Village, or any other well known restoration of American historical sites or artifacts; would be understandably disappointed to find a "Pilgrim" wearing Reeboks, plywood interiors in sailing vessels, or plastic replicas of barrels in a "forge". Yet we see replicas of canal boats with fiberglass hulls, wood trim in 2" X 4"s, plywood "decking", plastic "canvas", outboard motors, hardware from Builder's Square, and other examples of insensitivity to the authentic materials, construction techniques, finishing, and operations of the Canal era.

When questioned about these anomalies, well-intentioned people often cite the extra cost, time, or difficulty in obtaining authentic traditional materials or craftsmanship. Often they are concerned with the time and cost of maintenance of traditional materials, and sometimes they just feel that the "boat ride" is the main thing, and that the details of the actual materials, construction, and operation are not of interest to the public.

Carroll Gantz, an ACS member who is also a professional Industrial Designer, responds to these issues by reminding planners that any historical reconstructions are not only recreational, but also educational and emotional in nature. The design objective is to re-create an emotionally and educationally meaningful total historical *experience* for the visitor. This is accomplished by the sights, sounds, facts, and feel of mid-nineteenth century technology; created by many small details reinforcing each other. The design of the boat and its operation should be appropriate for that particular geographic location and history. Each site is unique. There could be nothing more ridiculous than putting an Ohio canalboat design on the C&O canal in Maryland, for example. Most people in-

(Concluded on Page Two)

# American Canals

BULLETIN OF THE AMERICAN CANAL SOCIETY

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AMERICAN CANALS is issued quarterly by the American Canal Society, Inc. Objectives of the society are to encourage the preservation, restoration, interpretation, and use of the historic navigational canals of the Americas; to save threatened canals; and to provide an exchange of canal information.

Annual subscription to AMERICAN CANALS is automatic with A.C.S. membership. Send dues payment (\$14 minimum) to Sec'y/Treas. Charles W. Derr, 117 Main St., Freemansburg, PA 18017. Single copies may be purchased at \$3.00 from the publisher.

Manuscripts on subjects consistent with the objectives of the A.C.S. are welcome. They should be sent to the editor.

## NEW CANAL BOAT CONSTRUCTION INDEX

(Concluded from Page One)

stinctively know if a design is authentic or not, because unconscious images from historical photographs of boats are etched in our minds. Further, while visitors may not be familiar with the specific technological characteristics of the 1850's, they know that wood was worked by hand, and that metal parts were fabricated by hand. They surely know that plywood and plastic were not used. Period costumes for crew and hosts are always advised, for the same reasons. To assume that visitors don't care, or don't recognize authenticity when they see it, is to insult their intelligence and sensitivity. Details are not just important—they are everything!

Even watching the necessary repair and maintenance of traditional materials and artifacts provides the visitor with the drama of activity and the sense of authenticity, in the same way that blacksmiths at a forge in Williamsburg or weavers at a loom in Plimoth Plantation provide historic credibility to otherwise static and pristine museum exhibits. The visitor enjoys pretending that they are transported back in time to another age, and imagining what it was like to live then, in that place. As a matter of fact, they expect this appropriate sense of time and place in any exhibit which is self-described as "historical", and are disappointed if the character of the details, or the experience of the visit, do not support this historical promise of authenticity. On the other hand, they are generally willing to pay more if they find the experience authentic and rewarding emotionally.

So, those who view the "details" of canal reconstructions as unimportant, or who favor "modern" materials because they are "easier to maintain", are shortsighted because they do not

## LETTER TO THE EDITOR

Dear Mr. Walton, July 12, 1993

As editor of "American Canals", I thought you may be interested in a note of historical information.

I read in Bulletin #85, "Early Inland Navigation in England", with great interest about the overall content of the book and its comments concerning canal construction, lock size, tow paths, soil conditions for building canals, etc.

It may be of interest to Mr. Postle that my great-great-grandfather, Canvass White went to England and over a two year period of walking their canals, making drawings, studying canal boats, arches, aqueducts and all necessary features of canal construction Canvass decided that one very necessary material for construction of canals and locks was a "water proof" cement. Upon return to this country at his own expense, Canvass not only found the correct minerals but how to use them to produce such a cement. He went on to patent two formulas for it. It has been said that his cement was the turning point of canal construction, but it created an industry in itself. Canvass also brought back model canal boats, and surveying instruments which were not available in this country.

Mr. Phillip's book referred to in the article, must be a fine work, but at closer look Mr. Postle's first paragraph is the total heart of the matter: . . . . . no engineering schools, no true discipline of engineers, no real knowledge in earth science, structures . . . . . these too . . . Canvass brought back to this country . . . in the period of his life . . . . 1790-1834. Canvass, with meager schooling, had "written" the book on canal construction; . . . yes . . . waterproof cement was the "magic" ingredient.

Appreciate your noble efforts in helping to produce the best over-all bulletin on "canalling" in this country. KEEP IT UP!!!!

Sincerely,

Robert Sayre White II  
23 Laurie Terrace  
Hackettstown, N.J.  
07840

understand the emotional nature of an individual visitor experience, or the obligation to portray our heritage with sensitivity and respect. In many cases they are also wrong in assuming that modern materials are "easier to maintain", or "more durable" than traditional materials. The experience of others has shown that the opposite is often true. Those who favor "modern" materials are the same people who would "restore" canal locks with cinder blocks and molded fiberglass gates! We really don't need these kind of "historical" exhibits.

It is the purpose of the Index to provide references of factual authenticity, so that canal boat reconstructions can effectively communicate the visual and tactile characteristics and details so important to historical exhibits. In particular, because canal boat design varied enormously from region to region, the Index categorizes information state by state. For those attempting such a reconstruction project for the first time, there are references to other successful projects and experienced people who can be of much help. Most of all, the Index encourages the careful research and design necessary to high quality and successful recreations of our own heritage, so that we may be enriched in appreciation of those who came before us.

A copy of the Index is being mailed to all members of ACS, and additional copies are available from Keith Kroon, ACS Sales, 2240 Ridgeway Ave., Rochester, NY 14626.

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## ACS MAILING LIST

We have frequent inquiries from people wanting to buy our mailing list of over 800 canal buffs. Our subscription list is NOT FOR SALE! However, arrangements can be made with the secretary to mail your materials, for a fee, to our ACS members, with our quarterly bulletin.

AMERICAN CANALS, NO. 86 - August 1993



# MONTECH WATER SLOPE REVISITED

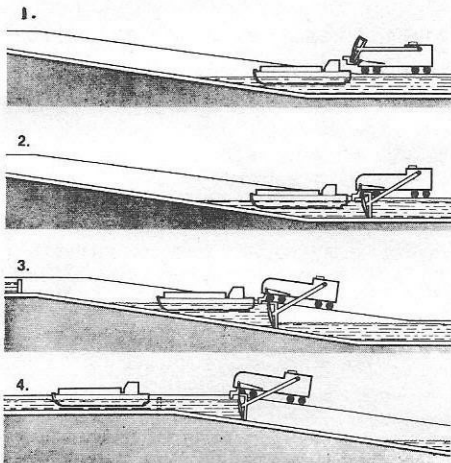
By Roger Squires

From the earliest times man has sought ways of moving boats uphill. The ancient Egyptians and later the Chinese used mud covered inclines as a means of moving boats between two levels. However, it was finally the French who devised a method whereby a boat could actually float in a channel whilst going uphill.

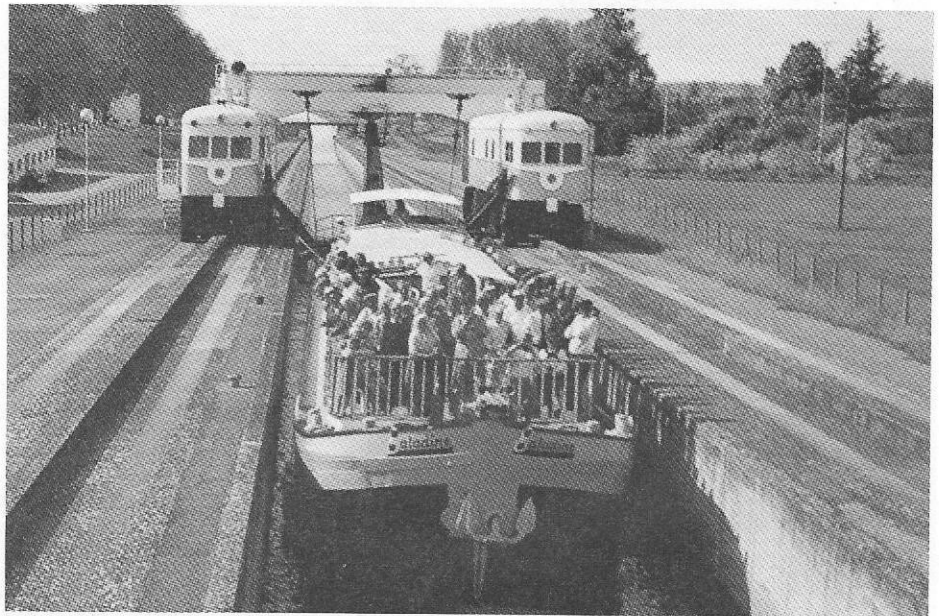
The idea of the true 'water slope' was developed by two French Waterways Engineers at the Chatou Laboratory in the mid-1960s. They built a one tenth scale model at Venissieux near Lyons in 1967 and after extensive trials were given the go ahead to build a full size prototype at Montech on the Canal Lateral a la Garonne in 1969. (Near Toulouse in southwestern France.) This was part of an upgrading scheme for the canal so that it could pass 38.5 m barges. The site was chosen because it offered an economical way of replacing 5 closely spaced shorter locks. The construction was undertaken by SPIE Batignolles under the supervision of the French Ministry of Equipment, Navigation Service. The works were completed at the end of 1972 and after extensive trials the Montech "Water Slope" was opened to navigation in 1974.

The concept is very simple, but relies on modern technology in two respects. One is the roller seals that enable a large ram to fit snugly into the flume channel, yet move along it without leaking water. The other is the electrical synchronisation between the two drive motors situated either side of the flume channel that are used to push the ram up or down the water slope. At Montech the chosen method of propulsion was a matched pair of 1000 horse power diesel engines each mounted separately on four rubber tyred traction axles. These axles straddle raised concrete guide rails on concrete road beds either side of the flume trough. The boat floats on a wedge of water in front of the ram which is itself cantilevered between the two traction motors. Both the motors are also interlinked with a beam structure through which the synchronisation cableducts pass.

The system of operating is quite simple. Apart from the moving ram only one stop gate is required



**Uphill sequence at Montech "waterslope":**  
**(1) Boat on lower level passes beneath raised push-plate and enters approach basin. (2) Push-plate is lowered behind boat. Rolls covered with Du Pont Neoprene rubber seal three edges of plate against leakage. (3) Wedge of water thus created is pushed forward by parallel locomotives on each bank. (4) At top of slope, retaining gate topples to allow rising wedge of water to merge with upper water level. Boat moves forward under its own power and push-plate returns to its initial, raised position.**



A tour boat being shoved up the Water Slope.

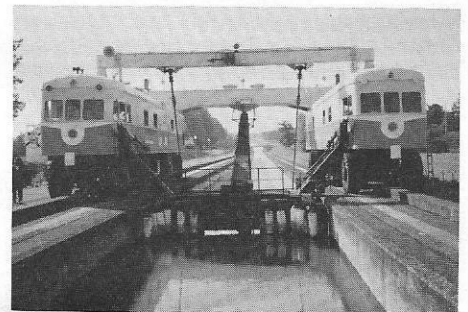
at the upper level to retain the water in the higher pound. On the basis that the craft wishes to transit up the slope, it enters the lower section of the flume channel on the level. Once it has passed under the raised traction ram, the ram is lowered and the boat secured fast to bollards on either side of the ram platform. Pressure rollers on both the ram sides and the base make a watertight seal. On a signal from the Engineer the boat, now secured to the ram, goes into forward gear and the traction engines start to move the ram with its wedge of water up hill. The boat floats on this wedge with its forward drive keeping its rudder clear of the ram. When the upper level is reached the ram automatically halts. The stop gate in front of the boat is lowered. The boat casts off and proceeds along the upper level of the canal. At Montech this whole process is completed in seven minutes for the vertical rise of 13.3 metres. For a boat descending much the same drill applies. In this instance the bow of the boat is secured by two side bow ropes to the padded front of the ram. The stop gate is raised behind the boat to seal off the upper level. Once this is done the ram, with boat in forward drive to keep it snug against the ram fenders, proceeds down the slope floating on its wedge of water. At the bottom of the slope, the boat is untied. The ram is raised and the boat sails off along the lower level. The whole process is controlled by a single engineer who rides on one of the traction units in a railway loco style cab.

For the technically minded the flume channel of the water slope at Montech is six metres wide and four hundred and forty three metres long and rises on a 3 degree slope. The traction drives move at 4.5 kms per hour. Because of the nature of the ram/boat connection, the slope at Montech can only pass full width peniches. This is because the ram to boat links are limited to two side ropes. A narrower boat could twist in the channel and this could cause distortion to the ram and thereby create a water leak. I travelled the slope in a peniche twice in mid 1993 and the water seals were very sound. I saw no deterioration from when I previously visited the slope in 1981. Such is the reliability of the modern materials used is the ram. However, commercial traffic has now ceased on this section of canal and this itself could place in question in the longer term future of the Water Slope.

The early success of the Montech water slope prompted the French to build a more sophisticated electrically powered version at Beziers on the Canal du Midi to bypass the staircase of six locks of Fonserannes as part of a scheme to open up the canal to 38.5 metre craft. Work was started here in 1981 and completed in 1983 at a cost of some £3 million. At this site the moving ram system was provided with long side mooring bars so that it could pass pleasure craft as well as the 38.5 metre barges. The unit was designed with a capacity of transporting up to 14 peniches and 200 pleasure craft in a 13 hour day. Sadly that capacity was never achieved due to the decline in commercial traffic. Various technical faults, including a 'runaway', also have meant that the slope seems to be more often under repair than in operation. This was the case when I visited it in June 1993. However, when it does work it gives pleasure and commercial craft alike a very speedy transit over the 15.5 metres lift. This is most valuable at what often becomes a bottleneck on the canal.

Even if the modern electronics at Fonserannes do create problems, the Water Slope is a very novel way of moving boats uphill. The speed of the operation of the Montech Slope has much to commend it even today. It is certainly well worth a visit if only because of its novelty value. A ride on it is in my view a 'canalliers' dream.

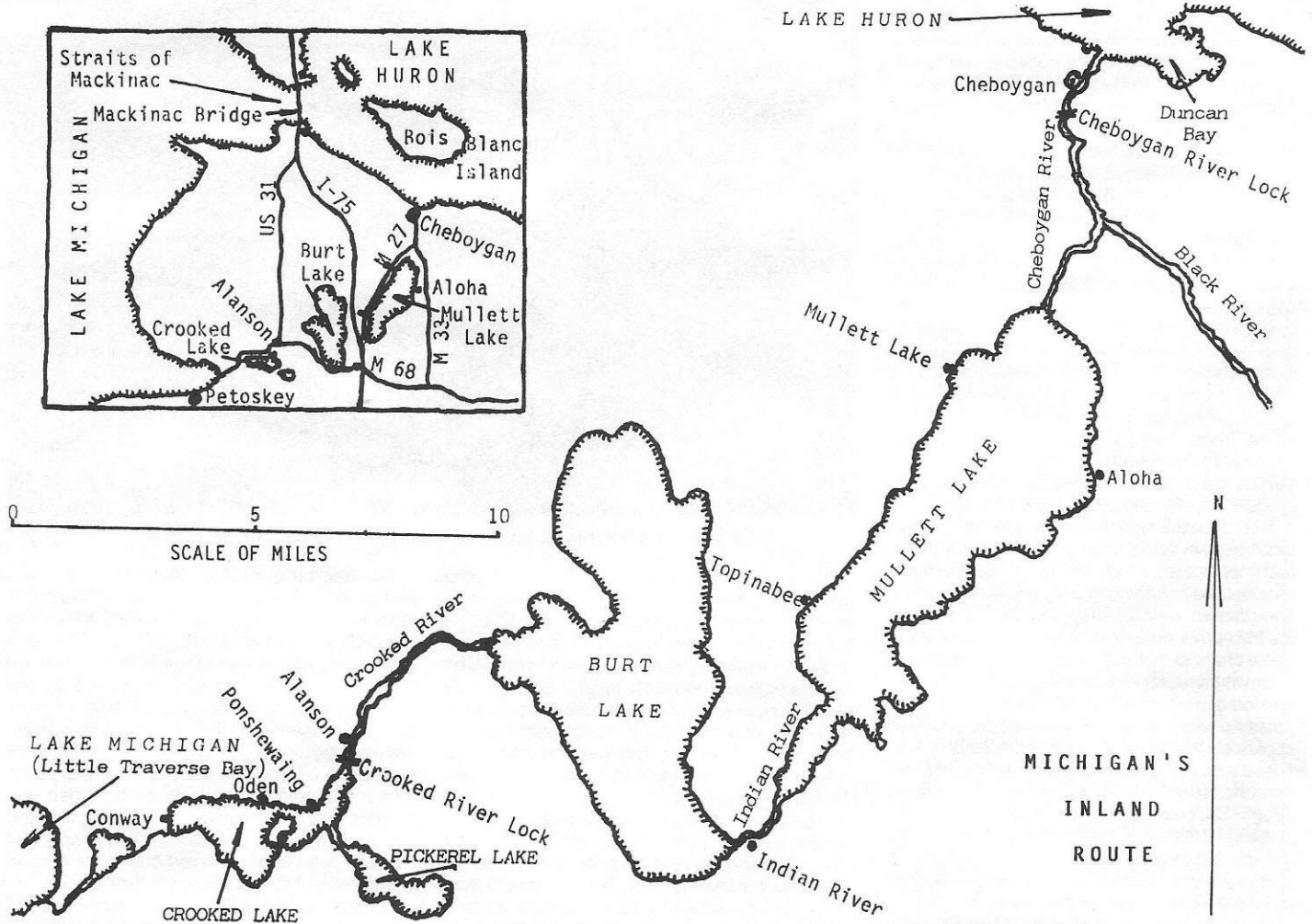
*(Passenger trips at Montech can be organized through the owners of 'Baladine', 2788, Chemin Du Quart, VERLHAGUET, 82000 MONTAUBAN, FRANCE. Phone: 63 64 76 64.*



The cars control the push-plate and water wedge.

# A CRUISE ACROSS MICHIGAN

By David F. Ross



Once upon a time, perhaps about 12,000 years ago, during a period of glacial retreat, what are now lakes Michigan and Huron were connected by a strait considerably to the south of the present Straits of Mackinac. When everything was eventually sorted out, with the ice gone and the water level in equilibrium well below what it had been then, dry land once more predominated where that channel had run. A remnant remained, however, in the form of a chain of lakes and rivers. The highest elevation of the water in this chain is in Crooked Lake, whose western tip is less than two-and-a-half miles from Little Traverse Bay on Michigan's Lake Michigan coast. The outlet from Crooked Lake to Lake Michigan, however, is severely constrained, so that the bulk of the water flows eastward to Lake Huron. Its course is from Crooked Lake via the Crooked River to Burt Lake, thence via the Indian River to Mullett Lake, and finally via the Cheboygan River to the Lake Huron port of Cheboygan. This is a much shorter route from Little Traverse Bay and points south than the coastal route via the Straits of Mackinac; it is also a much more placid and safer route for small craft, especially canoes. For people traveling by canoe, moreover, the short portage at the western end is only a minor hindrance. As a consequence, this Inland Route (as it is now known) was an important commercial waterway for the Native Americans who inhabited this region before the



The icebreaker Mackinaw in port.

advent of missionaries, soldiers, and settlers of European origin.

The first significant use of the Inland Route by the new inhabitants was related to the 19th century clear-cutting of Michigan's vast pine forests. Sawmills established at Cheboygan and elsewhere could be fed a seemingly limitless supply of raw material at trivial cost by floating logs along the waterway. Before this could happen, however, the logging industry's development required the opening up of the interior to settlement, and the waterway was also the best means to this end. In the 1840s, the Cheboygan River had been perceived primarily as a source of water power for the coastal village of Cheboygan, and it had been dammed. When it came to be seen also as a gate way to the wealth of the interior, the dam became an obstacle as well as an asset. The Cheboygan River Slack Water Navigation Company was formed, and in 1869 it constructed a lock, 18 feet wide and 75 feet long. This is a very small lock for a waterway intended to be used by steamboats, probably limiting access to vessels of less than 50 tons. Perhaps the limitation was dictated by the capacity of the sometimes narrow and tortuous Crooked River. In any case, the Cheboygan River Lock was evidently adequate for the purpose—although operating parts have been replaced as needed, and the gates are now operated electrically rather than manually, the present lock is still basically the original one.

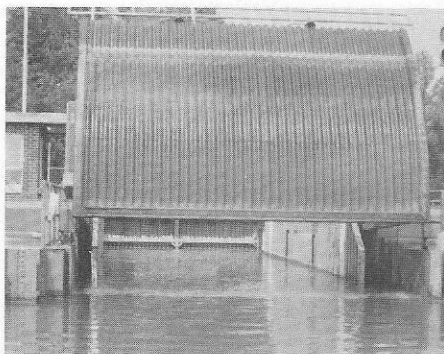


The Cheboygan River Slack Water Navigation Company provided freight, mail, and passenger service to settlements which grew up along the Inland Route from Cheboygan to Conway, at the farthest end of Crooked Lake, and via land connections to Petosky and other communities along the Lake Michigan shore. Its lock also admitted tugs which were used to maneuver the rafts of logs that soon began to fill the waterway, though the logs themselves completed their journey to Cheboygan via a sluice around the dam rather than through the lock. The railroad finally penetrated the northern tip of Michigan's Lower Peninsula in 1881, but, running north and south, it was complementary to rather than competitive with the waterway. Steamboat service continued well into the 1920s, when the automobile and the growing network of public roads made water transport a lark rather than a necessity of life. By this time, the region's economic base was rapidly shifting from lumbering to tourism, and some of the last steamboats in operation were excursion boats based at resort hotels.

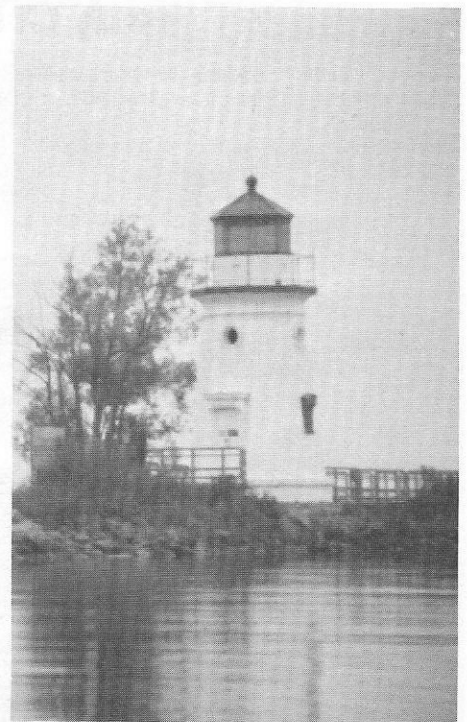
The federal government took an interest in the improvements wrought by the navigation company and its successors, especially because of their role in carrying the mail. Financial assistance for channel improvement and maintenance, apparently limited to dredging, was provided. As elsewhere, the gradual conversion of the waterway from commercial to recreational use was accompanied by a decline in federal interest. The difference was that whereas in the typical case the federal government was to a degree wedded to the waterway through its function as the proprietor and operator of the locks and dams, there was no such sacrament of its link to the Inland Route, where the only lock and dam were private artifacts. It took an overt act to break the connection elsewhere, and bureaucratic inertia delayed the inevitable separations until the 1950s or later. On the Inland Route, the government could simply drift away without the trauma of divorce, a much easier process, and accordingly it did so considerably earlier.

Then, in 1954, an astonishing and unprecedented thing occurred. The U.S. Army Corps of Engineers, which was contemporaneously engaged in declaring waterways "obsolete" and abandoning them if they had only recreational use, undertook the restoration and improvement of the Inland Route expressly "to meet the recreational needs of the area." Of course, the corps does not get into waterway projects on its own initiative. Members of Congress from this former lumbering region must have been adept at logrolling. Undoubtedly they were assisted by the expectation that the expense, viewed as a federal budget item, would be insignificant. Little more than dredging was anticipated although jetties were constructed to guard the entrance to the Indian River from Burt Lake. To insure against the possibility that the corps might become involved in the much larger and more binding financial commitments associated with locks and dams, the project was defined as extending from Conway on Crooked Lake to "the upstream end of the lock in the Cheboygan River," even though this meant excluding the last mile-and-a-half of the river as well.

The objective of the project was to establish and maintain a channel with a minimum width of 30



**The guillotine gate going up at the Crooked River Lock.**



**Cheboygan Crib Light, on Lake Huron at the mouth of the Cheboygan River.**

feet and a minimum depth of 5 feet over the 35 miles from Conway to the lock, plus a side channel to Pickerel Lake, which adjoins Crooked Lake. This was evidently a somewhat more generously dimensioned channel than that which had been created in the earlier (19th century) improvement. After the project as originally conceived had been completed, in 1958, it was found that water was being released from Crooked and Pickerel Lakes at too fast a rate, drawing them down to unacceptable levels. To correct this "design error," the corps was obliged to build a weir, and hence a lock, at Alanson, near the head of the Crooked River. This is probably the only lock ever built by the Corps of Engineers expressly for recreational use. It nearly tripled the annual operating and maintenance cost of the waterway (from \$28,000 and \$80,000, using 1988 data), and has generated chronic controversy and uncertainty over whether the waterway should continue to be maintained, and if so, by whom. The new lock is somewhat smaller than the one at Cheboygan, 16 by 60 feet, and now sets the size limit for boats cruising to Conway. (A still tighter constraint applies to boats going on to Lake Michigan—a marina on Crooked Lake offers portage service, but only for boats up to 30 feet.)

In 1988, the corps undertook a cost-and-benefit study of the Inland Route. These exercises play a major role in waterway development, and people who care about waterways need to understand them. They are, in a nutshell, a means of stating nonsense with precision, and the Inland Route study is an excellent case in point. Benefit data were obtained from a survey of boaters, who were asked what they would be willing to pay for lockage. They were not told what use was to be made of their answers, and many of them naturally assumed that there was to be a lockage fee and that their advice on the amount was being solicited. Everything conspired to produce a downward bias in the responses. Self interest obviously counseled naming a low figure, to save boaters money. On the other hand, a public-spirited boater wishing



**A placid stretch on the Cheboygan River.**

*(Continued on Page Six)*

# A CRUISE ACROSS MICHIGAN



**The Cheboygan River lock, open to receive upbound traffic.**

*(Continued from Page Five)*

to show enthusiastic support for the project by stating a high figure would be influenced by the knowledge that the charge for passing through the Cheboygan lock is \$3.50. A "high" figure, in that context, might be \$5.00, or \$7.00, or at the extreme, \$10.00. We know that people will pay many times these amounts for the use of ski lifts and golf courses, when the alternative is to forego skiing or golfing, so we may be sure that dedicated boaters would actually pay pretty stiff lockage fees if they had to. They don't really know themselves how high they would go until confronted with the choice in a real-life situation, however, and in any case, the question was not phrased to generate a response in those terms. The result was a finding that the waterway exclusive of the Crooked River Lock generated a benefit-to-cost ratio of 11.4, but that the lock exclusive of the rest of the waterway produced benefits amounting to only 78 per-

cent of its operating and maintenance cost. In their stated terms, these figures are clearly utter and complete nonsense—picture, for example, recreational boaters utilizing a lock while eschewing the waterway of which it is an essential part. What they really mean, however, is not nonsense at all. It is that the corps wished it had never gotten involved with that silly little lock and wanted an excuse to get out of it. At present, both the Cheboygan and the Crooked River locks are being operated by the Michigan Department of Natural Resources, and there is still no user charge at the latter.

If you are trailering your boat to the waterway, there are a great many places where it can be launched. Having tried only three of them, we have settled on Aloha State Park, on the eastern shore of Mullett Lake. The launching ramp is on a protected harbor, and there is no time limit on parking a car and trailer. There is also no charge for either launching or parking, although you must have an official sticker on your car to enter any

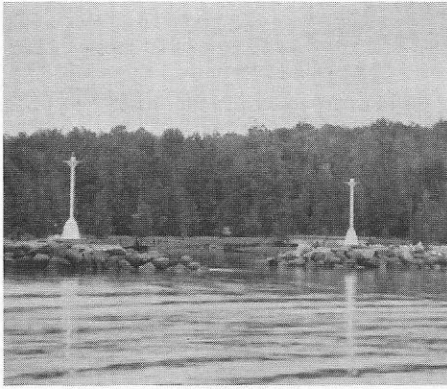
Michigan state park—about \$10 a year, good at all parks. From Aloha it is about four miles north to the start of the Cheboygan River, or about seven miles southwest to the mouth of the Indian River. Mullett Lake is clear and, with depths up to 120 feet, refreshingly cool even at the height of the summer. The entire Cheboygan River, about five miles, is subject to a no-wake speed limit. It is joined at about midpoint by the Black River, navigable for about two-and-a-half miles (farther with good local knowledge of river conditions). A rustic inn, the Hack-ma-tack, provides dockage for diners just after you leave Mullett Lake, as do three other restaurants at the Cheboygan end of the river, two above the lock and the most elegant one below it. There is also a municipal dock below the lock in Cheboygan, from which you can reach all urban services and attractions. Cheboygan harbor is the home port of the 290-foot Coast Guard icebreaker, *Mackinaw*, as well as of ferries to Bois Blanc Island, in Lake Huron. Depending on the weather and the size of your boat, you may or may not want to take yourself out onto Lake Huron. Duncan Bay, just east of the river mouth, offers fairly protected water for those desiring just a taste of Great Lakes cruising. If possible, on a clear day you should at least try to get far enough out on the lake to see the middle of the Mackinaw Bridge, to the west—the ends of it are below the horizon from here.

In the other direction, there are also no-wake zones on the Indian and Crooked Rivers, although not for their entire lengths. You need to enter into the spirit of this, keeping in mind that with a round-trip distance of only about 80 miles, there is no need to hurry, and that a leisurely pace allows you to appreciate the scenery and commune with the swans and ducks. At 30 miles an hour, you might see a great blue heron, but you'd never be able to watch her catch a fish, toss it to get it lined up with her throat, and swallow it. Half way along the Indian River you can particularly appreciate the joys of an unhurried cruise as you pass under the frenetic traffic of I-75. Just west of the bridge is the village of Indian River, with several marinas and a public dock at the foot of the principal business street, in case you want to go ashore. Unlike the much longer one in Cheboygan, however, the Indian River dock is likely to be full



**Swans grazing on the Indian River.**



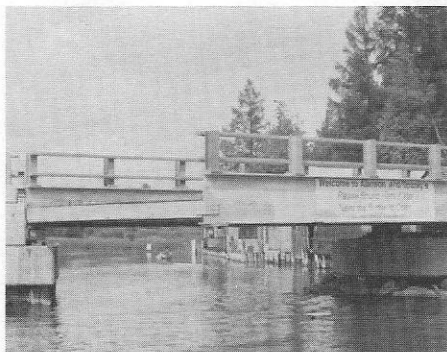


The harbor entrance at Aloha State Park, Mullett Lake.

on a summer weekend. The village extends to the shore of Burt Lake.

Burt is similar in size and shape to Mullett Lake, but less than half as deep. The crossing here is about six-and-a-half miles, from the southeast corner to a bay halfway up the west shore. The Crooked River, which empties into the bay, is where you will find most nearly wilderness conditions, although there is one cluster of weekend cottages partway along and, when you are nearly to Crooked Lake, the village of Alanson. Alanson features not only the unique lock already mentioned, but also what it claims is "America's shortest swing bridge." It also offers public dockage, with space nearly always available and all urban attractions within easy walking distance. Soon after Alanson, you enter Crooked Lake, with the village of Conway at its western end. A Conway restaurant provides dockage for diners, and there are two marinas on the north shore of the lake. The channel to Pickerel Lake is on the south shore about a mile from the eastern end. There are no public facilities on Pickerel Lake, but we have found it a more peaceful place to anchor overnight than Crooked Lake, which tends to be fairly rough.

One problem with the Inland Route is its popularity—the effect of a wilderness cruise is somewhat degraded if you meet another boat around every bend in the river. One of our most enjoyable visits was after Labor Day, when the weather was still good and we had the waterway practically to ourselves. A few marinas were closed for the season, but not enough to constitute a problem. At such times, the Cheboygan lock is likely to be unmanned. The locktender, when not at the lock, is at the Department of Natural Resources office nearby. You can go ashore and summon him or her by phone, but more conveniently you can call the Cheboygan harbormaster on channel 16 and ask to have a message relayed. The



"America's shortest swing bridge," in Alanson.

Inland Route is far enough north so that a September visit will be brightened by autumn foliage. It is also far enough north so that cold weather is possible even in July, so what have you got to lose?

A book of navigation charts for the Inland Route is published as "Chart number 14886" by the National Oceanic and Atmospheric Administration, on sale for \$13.25 from the National Ocean Service, Riverdale, Maryland 20737-1199. The route is described in the *United States Coast Pilot*, Great Lakes edition, and *Waterway Guide*, Great Lakes edition. For current information on lockage operations, consult the Michigan Department of Natural Resources, Region II, P.O. Box 128, Roscommon, Michigan 48653, phone 517 275 5151. For information about the portage to Lake Michigan, consult Lake Harbor Marina, Oden, Michigan 49764, phone 616 347 3918.

## BOOK REVIEW

ST. CATHERINES: CANADA'S CANAL CITY. John N. JACKSON and Sheila M. WILSON. 414 pp, 320x235mm, profusely illustrated in b & w, maps and diagrams, colour on dust jacket, boards. The St. Catherines Standard Limited. 17 Queen Street, St. Catherines, ONTARIO. L2R 5G5. CANADA. 1992. ISBN 0-919549-24-1. Hard Cover \$42.75. Soft Cover \$32.05. Mail Orders \$2 extra.

The English canal towns of Stourport and Shardlow bear no relation to the Canadian Canal City of St. Catherines. Yet each in their own way started as sites where a local creek offered access to a major waterway. The history of the development of St. Catherines, Canada's Canal City, is carefully detailed in John Jackson and Sheila Wilson's latest book which was sponsored by The St. Catherines Standard to commemorate its centennial. The authors are ideally placed to exploit the local archives as Professor Jackson is Head of the local University Geography Department, whilst Sheila Wilson runs the Local History section of St. Catherines Public Library. These and the paper provided the source for many of the splendid drawings and photographs that make the book a delight for the specialist and the lay reader.

The book is set out in five sections, each of which deal with one era of the town's growth. Waterway enthusiasts will find the section on the founding of the First Welland Canal by William Hamilton Merritt as quite remarkable. He was a man of vision who made things happen. The opening of the canal in 1829 was a triumph indeed. The more so because the water power it brought to St. Catherines provided the basis for a range of industries that provided the backbone of the growth of the City as seen today.

The book details the way in which the pressures to improve the Welland Canal led to the second, third and fourth Welland Canals and how these in turn affected the shape and growth of the town. Surprisingly, little mention is made of the Fifth Welland (By Pass Canal) which has helped the waterway retain its place as a major transport route to the present day.

The life of St. Catherines is set into context as is the way that first the railway and then the Street Cars improved the facilities of the town.

The student of Waterways will find the book most helpful through the selective list of sources arranged by subject that completes this comprehensive book. Others will enjoy it through its readable format which makes the development of the whole area come to life. It is a fitting tribute to Canada's Canal City.

Roger W. Squires

## CANAL CALENDAR

**September 19, October 3, 1993**—Delaware and Raritan Canal Tours. Contact Linda House (908) 722-7428.

**September 24, 1993**—Hike on the Ohio and Erie Canal (Harvard to the Flats). Contact: Pat Campbell (216) 932-3563.

**September 25, 1993**—Chesapeake and Ohio Canal Levelwalker Hike. Level 38. Meet at 10:30 AM at Lock 44 in Williamsport, MD. Contact: Keith Kridenoff (410) 661-8285.

**September 26, 1993**—Delaware Canal Hike, Easton to Raubsville, PA. Meet at 10:00 AM at the Canal Museum in Easton. The six mile hike will end at the Ground Hog Lock.

**October 8-10, 1993**—PA Canal Society Field Trip on the Delaware and Hudson Canal.

**October 12-15, 1993**—International Canal Conference in Nova Scotia (on the Shubenacadie Canal). Register by September 24. Contact: Shubenacadie Canal Commission, 54 Loucks Road, Dartmouth, Nova Scotia B2X2W7. Contact: (219) 432-0279.

**October 15-17, 1993**—Canal Society of New York Field Trip. Erie Canal around Rome.

**October 22-24, 1993**—Canal Society of Indiana Fall Tour on the Whitewater Canal, Cambridge City, Indiana. Contact: Robert Schmidt (219) 432-0279.

**November 6, 1993**—Morris Canal Hike, Boonton to Rockaway, NJ. Contact: Al Frost (201) 696-9379.

**November 20, 1993**—Landsford Canal Hike. Bring a picnic lunch and enjoy a day on the banks of the Catawba River. Contact: Landsford Canal State Park, Catawba, SC (803) 789-5800.

**November 21, 1993**—Delaware Canal Hike, Raubsville to Kintersville, PA. Meet at the Ground Hog Lock at 10:00 AM (5.8 miles south of the Canal Museum in Easton).

**December 11, 1993**—"Frostbite" Hike on the Chesapeake and Ohio. Fletcher's to Dam #1. Contact: Ken Rollins (804) 448-2934.

**December 18, 1993**—Morris Canal Hike, Hackettstown to Port Murray, NJ. Contact: Bob Baith (201) 875-1508.

## CANAL STAMPS



Colorful British Canal Stamps are now available in connection with the Brits' celebration of "CANALS 200". Write the British Philatelic Bureau, 20 Brandon St., Edinburgh, EH3 5TT, United Kingdom, for information.

# ENCOUNTERING THE CHAMPLAIN



**The EMITA II, which has recently been completely reconditioned, docks at the Skenesborough Museum in Whitehall, NY at the foot of Lake Champlain.**

By Mary Cassai  
(Photos by Bill Shank)

Everyone has heard of the Erie Canal—once irreverently dubbed "Clinton's Ditch" after the New York governor who spearheaded the drive to build it. But how many people have ever heard of the Champlain Canal? And of those who have heard it, how many know why it was built?

I was to discover both answers for myself during my first canal adventures ever during July of 1993. Doing the Champlain was a kind of afterthought. I had been asked by an editor to do an article on the Erie Canal. How could I do an article on the Erie, I reasoned, without cruising all 341 miles of it? So I promptly called the Mid-Lakes Navigation Company at Skaneateles, New York, to book a reservation on their canal boat, the *Emita II*. But the available bookings on the Company scheduled determined that I would have a week



**As we left Troy, the following lined up for their photo: John Hulchanski of Latham, NY; Malcolm Horton of Schenectady; Lillian Alvord of Casenovia, NY; and Kay Stevens of Schenectady. All are members of the Canal Society of New York State and all but John are members of the Hudson Valley Chapter of the Steamship Historical Society of America. Lillian is a "Star-Customer" on the *Emita II*.**



**Mary Cassai (the author of this article) on the upper deck of the *Emita II*.**

free between the two segments of the Erie trip. Rather than fly home to Chicago and back, I decided to use the July 5-7 Champlain Canal trip as a kind of "layover."

It was a lucky thing for me. The eighty-mile Champlain Canal has a charm all its own—its tempo, its lush, unspoiled woodlands, even the passengers on board—were in marked contrast to the Erie. The Champlain, I discovered, was born of a political move. Happily for us, De Witt Clinton and the New York State Legislature had to guarantee internal improvements to the people of the north country, to win their support for the Erie Canal. The prize was a canal of their own.

Without so much as a breath in between, I was picked up on Monday morning, the fifth of July, by crew member Chris Banks, and driven to the floating docks of Troy (an experience in itself: since the Atlantic Ocean tides sweep 150 miles north up the Hudson as far as Troy, the dock level rises and falls six feet between tides). Not always surefooted on a city sidewalk, I was a bit dubious about a floating dock. But the crew members handed me comfortably on board.

Thirty dedicated canallers were on the trip with me—members of the American Canal Society, some of whom love the Champlain trip so much they do it every year—and first timers like myself. Following a continental breakfast and an orientation lecture by Captain Dan Wiles, we were on our way through the Federal Lock at Troy and on to the north Hudson River.

What a difference from my Syracuse to Troy passage! I had watched the *Emita II* negotiating the twenty-two locks of the Erie, churning through those locks in the company of barges and pleasure craft bound for Fourth of July celebrations, and finally dropping an amazing 420 feet to sea level at the Hudson.

There was something wonderful about having truckers and drivers of the New York Thruway yelling and honking their horns at us—roaring by at 5 or 60 miles an hour—tickled to see us sailing along at a stress-free eight or ten miles an hour and waving wildly back at them. All the honking and hollering and waving created for us a kind of camaraderie among the great brotherhood of American travellers.

Now the *Emita II* eased her way like a lady of leisure along the peaceful stretches of the northern Hudson. A good stretch of the Champlain Canal uses the natural waterway of the Hudson River.



**At Troy we found two of the Mid-Lakes boats tied up to the floating dock—the "Emita II" and the recently-built "Canvass White", one of a fleet of hire-boats patterned after the English "Narrow-Boats".**



Gone were the historic towns of Mohawk Valley like Herkimer, Oriskany, Amsterdam and Little Falls. Instead of busy towns; miles of lush green forest lined the canal.

And of course there was some development along the canal—beautiful homes and boat launches and dock-divers so close you felt a part of them. I remember one occasion when a mother dog and her puppy ran down to meet us, not a bark out of them, tails wagging frantically. They urged their bodies so close to the edge of the canal I was afraid they might make a flying leap for our deck. But they never did—just ran alongside our boat to the end of some invisible territorial demarcation.

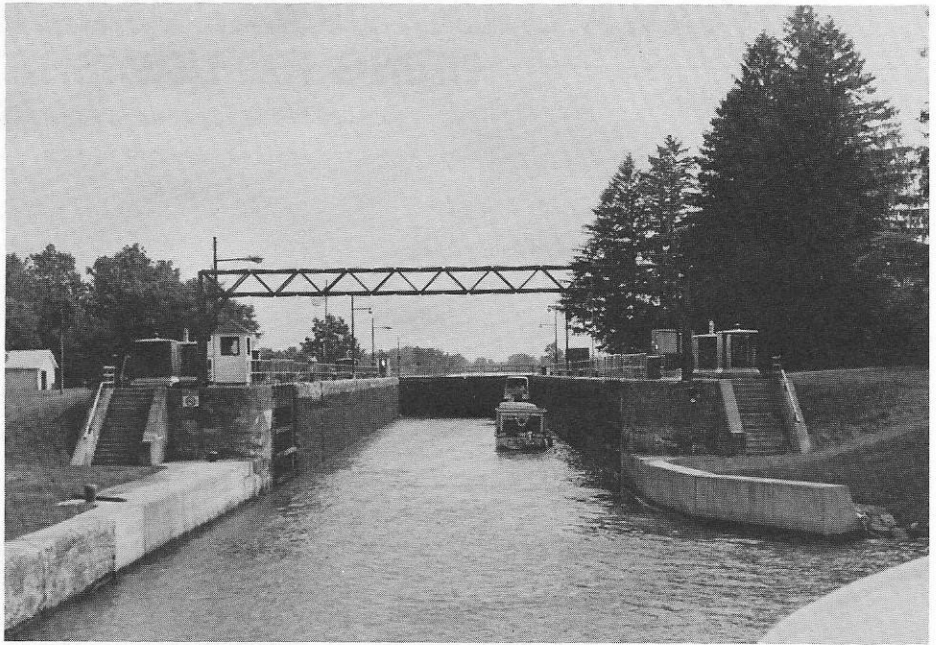
Just like the Erie, the Champlain boasts lovely locktenders' gardens—marigolds, begonias, petunias, and daylilies everywhere—and with beautifully maintained locks, bright with the blue and gold of New York State's official colors and bordered by landscaped picnic grounds. The locks are a feast for the eyes and a credit to New York State maintenance, and the lock-tenders.

It was at one of these locks that I felt most touched by a hand from the past.

I had heard over and over again about the old canal locks and the beams the lockmaster had to push against with all his bodily strength to open the gates and let the larges and packets enter the locks. I had visited the marvelous Erie Canal Museum in Syracuse, and then seen some of the beautiful old photographs and daguerrotypes of the lockmaster in action. I finally got a close-up look at one of the old locks.

It happened during a brief layover in Schuylerville. Dan Wiles, Captain of the *Emita II*, docked at this lovely spot in the Champlain Valley and offered us the opportunity to see an eighty-year-old canal powerhouse still operating beautifully—huge gears meshing with each other—works of art, really—and the powerful cables black and shiny with grease, and the water current flowing first one way then another as the boat was locked in and then released to the next level of the canal.

But as impressed as I was with the workmanship of the powerhouse, I discovered something that was for me even more striking. I happened to fall in step with Paul Mattice, an avid canaller and marvellous conversationalist, on a stretch of



**A typical lock on the Champlain Canal, as we entered from the south end. Several small boats were ahead of us, and we locked through together.**



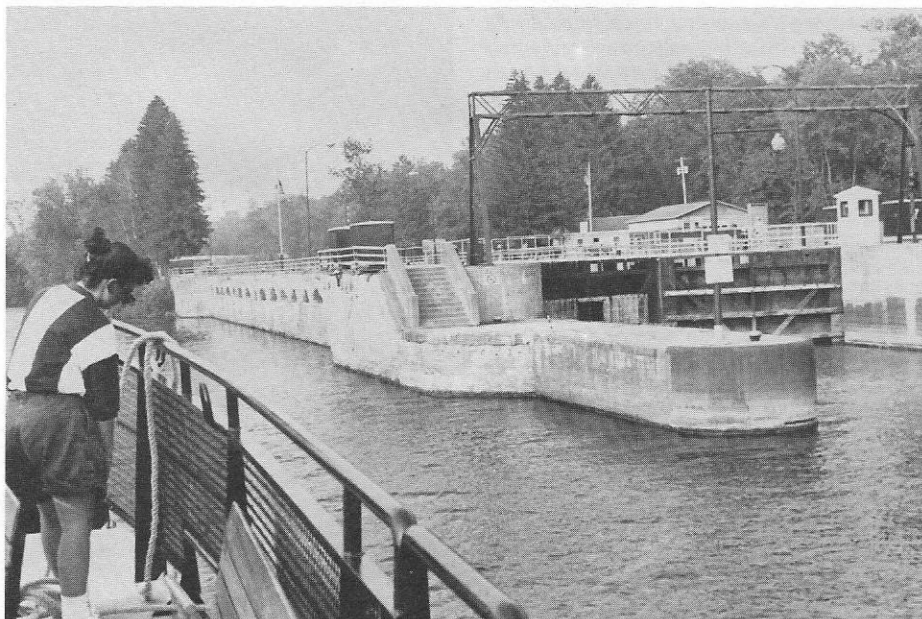
**Captain Dan Wiles, with three of his crew-members.**

picnic ground some distance from our captain and his passenger audience. Suddenly, I became aware of something remarkable just ahead: a section of the 19th-Century Champlain Canal!

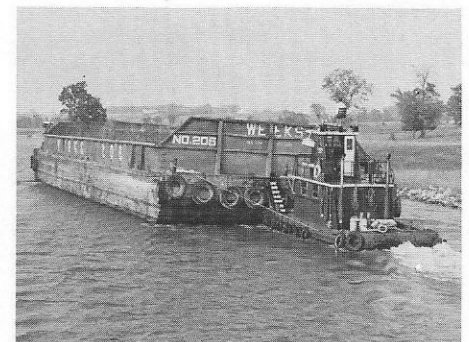
The old canal was left exposed. A film of bracken coated the surface of the narrow waterway. Her eastern shore was carefully manicured and splashed here and there with brilliant tiger lillies and marigolds like the rest of the parkgrounds of the 20th-Century lock. But her western shore was lined with ancient trees that must have been tender shoots when the original canal was finished in 1823. Best of all, an old wooden lock gate had been left untouched. Its west side lay broken and in ruins, but the east gate was intact, the beam poised as if waiting for the hand of the lockmaster, silently calling for the master's little ones to ride the "wooden horse" as their papa braced his feet on the ridged towpath and then threw the full weight of his body against the beam, opening the lock to the next boat passing through.

To me that old lock was a thing of beauty. It told the story of the country's first great transportation system: a ditch dug only four feet deep and forty feet wide, with boats lazing through a mile and a half an hour, and passengers clustered on the roof listening for the cry: "Low Bridge!" It spoke of a

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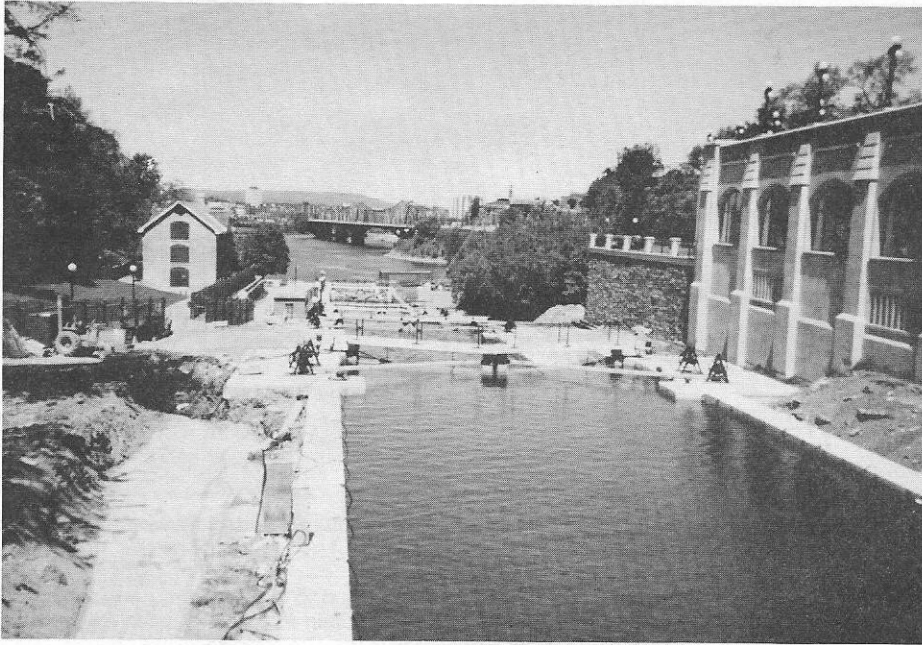
**Here is the Fort Edwards lock where we left the Hudson River and began our journey overland, via the cut-canal, to the foot of Lake Champlain. After traveling the summit level, our last locks took us down-hill.**



**Who said there was no commercial traffic on the Erie Canal System? Here we passed an industrial barge and its tug-boat, carrying plate-glass and other commodities to a port along the upper Champlain.**

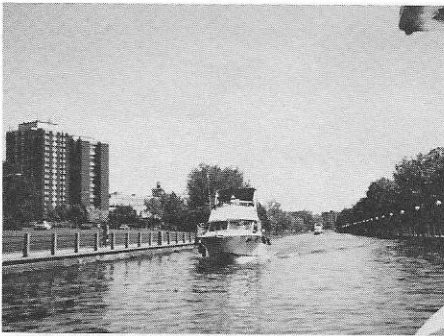
# OTTAWA LOCKS OF CANADA'S RIDEAU CANAL BEING REFURBISHED

By Bruce Russell - Contributing Editor



**View of the 8 lock flight of the Rideau Canal at Ottawa, Ontario undergoing rehabilitation. May 30, 1993. (Russell photo)**

The series of 8 locks at the Ottawa end of Canada's historic Rideau Canal is being extensively rehabilitated so that it will be able to function effectively for the remainder of this century and into the 21st. These lock chambers, arranged in a "flight" or sequence, provide a total lift of 80 feet so vessels can get from the Ottawa River into the canal situated at the top of the bluffs overlooking the body of water separating Canada's federal capital from Hull, Quebec. Constructed between 1826 and 1830, these locks fabricated from local limestone are the longest and highest in the Rideau Canal/Waterway system which opened for navigation in 1832. The Rideau Canal was the first artificial waterway in North America to be designed WITHOUT a towpath since steam power had been invented and use of mules to tow barges was considered redundant. Hence the Rideau was different than the well known American Canals such as the Erie, the C&O, and the Delaware & Hudson. The principle engineer in charge of building the Rideau Canal which connects Ottawa with



**View of traffic in the Rideau Canal along the segment through Ottawa. This part of the canal was constructed through swamp and marshlands. Runners and walkers use the paths parallel to the canal to get exercise. (Russell photo)**

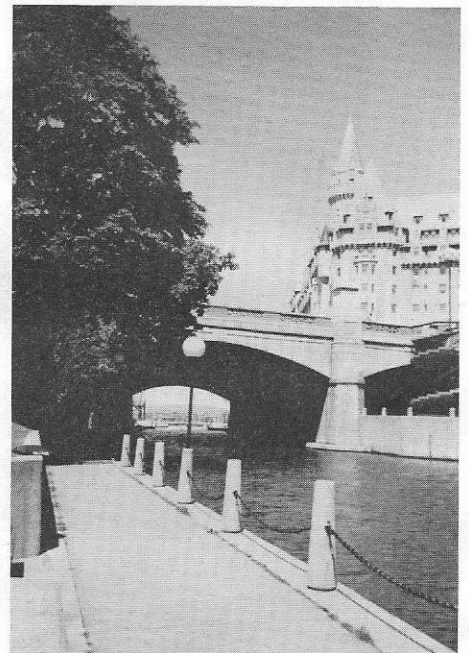
Kingston on Lake Ontario, a distance of 124 miles, was Lt. Col. John By of the Royal Engineers of the British Army. Canada was then still considered "British North America" and wouldn't become a separate nation until 1867. The British at the time the canal was planned were still afraid that the newly independent American colonies to the south intended to invade Canada and forcibly join it with their country. Hence defense was a major consideration. The Rideau Canal, to be built along the route of an old Indian canoe passage from Ottawa to Lake Ontario, would permit waterborne goods to be transported safely without the need to travel on the St. Lawrence River and through Lake Ontario where the US Navy might attack. As finally built the Rideau Canal is a waterway system which incorporates both man made channels as well as existing segments of the Rideau River which have been improved and converted into a navigable passage for vessels. It has 47 locks plus 22 blockhouses or mini forts for defense. However, Canada's fear of invasion by the Americans proved to be unfounded and in 1856 the British Army turned it over to the local Canadian authorities. It was used to move various commercial cargos including lumber until World War I when competition from railways made it superfluous. However it gradually became popular as a recreational waterway, a role it continues to fulfil.

The flight of 8 locks in Ottawa are not anchored in bedrock as are, for instance, the locks of the Erie Canal at Lockport, N.Y. At the time Col. By and his team of engineers were constructing them an attempt was made to dig into the sloping hillside deep enough to encounter solid stone upon which to place the sequence of 8 chambers. Unfortunately, the topography and geography of this particular location was such that bedrock was situated very deep, well below where the canal builders could reach using the tools at their disposal. Consequently they had to compromise and construct the lock flight on a less than solid rock foundation. In the 20th Century a problem such as this would

be solved by driving piles into the ground deep enough to encounter solid material. Upon the piles the chamber would be erected. But in 1829 the powerful pile drivers of today didn't exist. Hence use of less efficient methods of stabilization were resorted to. Although Col. By probably knew what pile driving was, he was unable to drive piles deep enough to reach bedrock. Thus the 8 locks were constructed on existing surfaces.

On account of the lack of truly firm grounding, plus the effects of the harsh Canadian winters, by 1980 the flight of locks at Ottawa was in need of major repair and rehabilitation. Stones were cracked and each year fissures had to be filled. Original masonry had reached the end of its useful life. The Canadian government, aware that waterways such as the Rideau Canal and the Trent-Severn Canal were major national resources which brought tourist dollars to the Province of Ontario, authorized funding to do a major restoration on all eight locks. Beginning in 1983 local contractors, working under supervision of PARKS CANADA which operates and oversees all of the country's surviving 19th Century man made waterways, started the process of tearing apart the 150 year old locks. Worn and misaligned stones were discarded and replaced with new ones. Where lock floors had buckled or cracked new material was installed. In certain instances concrete was utilized to fill in spaces behind reconstructed lock walls, while leaving the visible surfaces cut and dressed stone. Hence nothing was changed outwardly. The restored chambers look as good as the originals but are from a structural viewpoint probably sounder and better equipped to deal with extremes in temperature. Col. By and his team of Royal Engineers would be gratified.

*(Concluded on Page Twelve)*



**View of the Rideau Canal just beyond the top of the 8 lock flight in Ottawa, Ontario. The classic looking building on the right is the Hotel Chateau Laurier, a local landmark. (Russell photo)**



# LOUISIANA'S B&L CANAL

By William Dzombak

A recent book [1], reviewed here, details the three-part history of an east-west canal, across the Mississippi delta, that was begun in 1829 and eventually became part of the Gulf Intracoastal Waterway, started in 1925 by the U.S. Army Corps of Engineers.

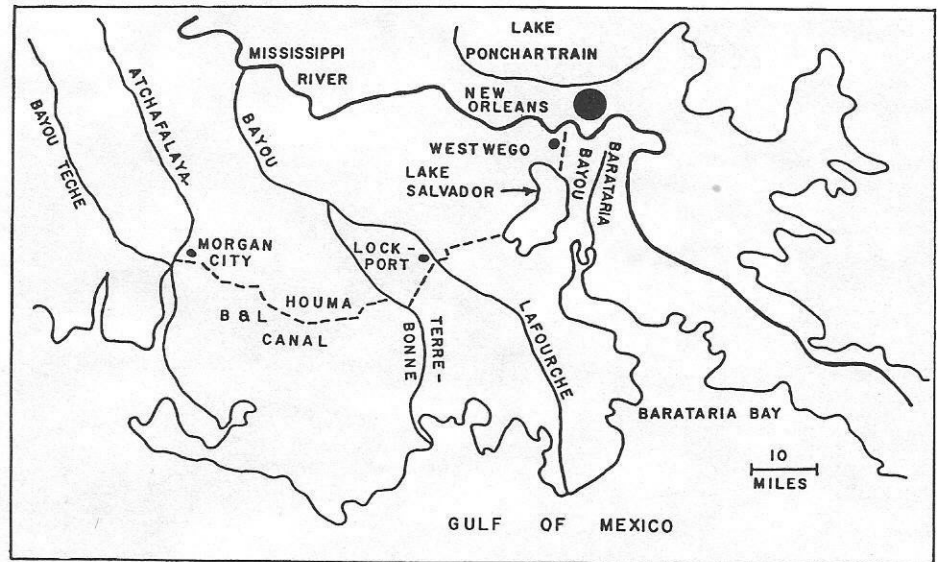
By 1830, many large cotton and sugar cane plantations had been established in southern Louisiana, west of New Orleans, on the rich alluvial soil deposited by Mississippi River floods, but transportation of crops to market—to New Orleans, that is—was restricted to limited navigation in a north or south direction on the major distributaries of the Mississippi River, particularly these: the Bayou Lafourche, Bayou Terrebonne and, further west, the Atchafalaya River and the Bayou Teche. There was no direct route eastward, to New Orleans, across the swamps and marshes that lay between adjacent north-to-south bayous. The only alternative was to boat down a bayou to the Gulf, then boat up an adjacent bayou to reach a neighbor or settlement situated only a few miles east or west from the point of departure. A flatboat journey onto the Gulf of Mexico was too risky to attempt.

The first east-west canals on the delta were mere ditches, or trails, scooped out of the swamp muck and just wide enough and deep enough for small boats. The first navigation canal was dug in 1740, by Claude Dubreuil, to connect New Orleans directly southward to the Gulf via the Bayou Barataria. This canal brought building materials to New Orleans—cypress timbers and clam shells (lime) found on middens left by Indians. Before the Battle of New Orleans, in 1815, pirate Jean Lafitte used this canal to smuggle prizes into and out of New Orleans by avoiding the guarded Mississippi River route to the city. Dubreuil's canal later was known as the Gardere Canal.

Parallel to the Gardere Canal, Nicholas Destrehan dug another canal southward to the Bayou Barataria. Destrehan's son-in-law, Joseph Harvey, developed the channel as the Harvey Canal that eventually was to become part of the Intracoastal Waterway, in 1925.

The only way to get to the plantations in the west, near the Bayou Teche, was to go 50 miles or more up the Mississippi River above New Orleans, then to venture onto one of the bayous—Plaquemine, for example—that headed westward, more or less. That roundabout way was not only long, but also dangerous because it could be used only at times of flood and never could accommodate steam boats. At most other times of the year, the water was too low for navigation, and was made hazardous by submerged logs.

The Erie Canal was opened, and began to return large revenues, at a time when sugar plantations were being created on the Louisiana delta. Success on the Erie must have spread canal fever to Louisiana because the much needed west-to-east navigation canal, called the "Barataria and Lafourche Canal," was started in 1829 by Dr. Walter Brashear, who operated a plantation in the Teche country, and Judge Charles Derbigny, of New Orleans, who was the son of the Louisiana governor. Their plan was to dig short east-east canals to link natural waterways—major bayous—that flowed in the right direction, more or less. A major part of the route they proposed was to follow the Bayou Black, which ran westward from Houma. Locks would be needed only where the east-west canal crossed the major bayous, which generally flow from north to south and empty into the Gulf. Periodic floods on the bayous filled the canal segments with deposits of mud and debris; dredging, and clearing snags, proved to be an



endless maintenance headache.

Building locks founded on river sediments posed problems. The marshy terrain, called "trembling prairies" by the early settlers, thwarted railroad construction and so explains how it was possible for the B&L Canal to continue to operate profitably into the 20th century. The first locks built were made of cypress timbers—at Lockport, for example, where the B&L Canal crossed Bayou Lafourche. At each such crossing, a set of two locks was needed, one lock on each side of the stream. Seasonal floods scoured away the foundations of the locks. Decades later, the state assisted with the construction of more substantial locks built with bricks and hydraulic cement. On those masonry locks, the gate sills were cypress, but the gate post quoins were cast iron. At the Mississippi River end of the canal, where Westwago now stands, the lock was to be 25 feet wide and the gates 130 feet apart; at low water, there was to be at least 6 feet of depth over the gate sills; the locks were made high enough to be at least 2 feet above the high water level in 1849.

In 1852, when the masonry locks at Lockport were being built, it was necessary to finish the high walls and gates on the Bayou Lafourche while the water level was low. To assist the ninety-six slaves who were working on the job, extra laborers were hired—white men, but it was found that they could not do half the work done by the same number of Negroes. Occasional floods caused suspension of the work. Mismanagement compounded the difficulties associated with marshy terrain, floods, sedimentation, and fluctuating water levels.

Taxpayers objected to state subsidies for a private enterprise that charged tolls on natural waterways, and the state engineers realized that building and maintaining waterways on the delta was an enormous, never-ending task that perhaps required the resources of the United States Government. In 1859, Louisiana withdrew its support for the B&L Canal project and transferred its stock and debt responsibility to a new company that would be formed. After 30 years of effort, the original Barataria and Lafourche Canal Company had failed to complete the canal. The bankrupt "Company Canal", as it was called, was picked up by Robert Barrow, a wealthy planter who owned several plantations and worked 700 slaves.

Barrow took over the canal project in 1859 and formed the Barataria and Lafourche Canal Company No. 2. His intention to complete the canal was interrupted by the Civil War and the disrup-

tion of plantation work and production. The slaves had departed. After the war, Barrow tried various schemes and ploys designed to further the canal project, but his efforts did not succeed. When he died in 1875, the B&L Canal still had not been completed, although some sections had been navigable for a time.

Robert Barrow, Jr., at age 17, took over the B&L Canal project that his father had tried to complete. At the same time, the Corps of Engineers began a program of clearing and dredging all navigable streams, including Bayou Lafourche, Terrebonne, and Bayou Black. Barrow's son sought to capitalize on that indirect federal assistance. He would restore the B&L Canal links to the bayou channels dredged by the Corps. He succeeded. In 1911, he was able to say that the entire length of the B&L Canal was in operation, from Westwago, on the Mississippi River opposite New Orleans, as far west as the Atchafalaya River.

By then, railroad spurs had been built to run southward from the northern edge of the swampy region. Those spurs siphoned freight away from the B&L Canal. The future of the canal looked bleak. Added to the usual maintenance problems was the growth of water hyacinth plants that spread throughout the region and choked the canals. Robert Barrow, Jr. had long been looking for someone who would buy the B&L Canal. The federal government became that buyer, in 1925, when the Corps incorporated the B&L Canal into the Gulf Intracoastal Waterway.

Thomas Becnel's book on the Barrow family and the Bayou Barataria-to-Bayou Lafourche canal is replete with details pertaining to the political and financial machinations of the Barrows, as they pursued a canal vision that had begun with short ditches scratched for Frenchmen in pirogues. There is not much in this book about canal engineering because B&L was essentially a water-level route from end to end. Maintenance was the main concern, dealing with floods, flotsam, snags, mud slides and sedimentation. Engineering was limited to the problem of building locks on wet soil, without bedrock. The story of the B&L is interesting because that canal was built on "difficult" terrain, where water supply was a problem of a different kind.

[1] Becnel, Thomas A.

*The Barrow Family and the Barataria and Lafourche Canal* (The Transportation Revolution in Louisiana, 1829-1925) Louisiana State University Press, Baton Rouge, 1989.

# ENCOUNTERING THE CHAMPLAIN

# Rideau Canal

(Concluded from Page Ten)



At the Schuylerville Lock, we docked the *Emita II* and Captain Dan Wiles explained the working of the lock machinery. Here Dan signals to the lock-tender to put the upper gates in motion.



At Schuylerville, we discovered one of the locks of the old Erie Canal in fair state of preservation. One of the old wooden, hand-operated lock gates was still in place.

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young country opening up in every direction, and of the American "Can do!" spirit that believed itself capable of solving whatever problems lay ahead.

Nor are natural beauty and travel fellowship all the Champlain Canal has to offer. For the Champlain Valley witnessed some of the most dramatic moments of early American history. The Champlain Canal bore us past Bemis Heights, true site of the famous Battle of Saratoga and the surrender of British General Burgoyne. And as for American literary history—just imagine docking, as we did, at historic Fort Edward. Then imagine sailing into the pages of James Fenimore Cooper's *Last of the Mohicans*, with the action surrounding Fort Edward and Fort William Henry. Then imagine riding through the same territory where the French commander Montcalm defeated Colonel Munro; where the beautiful mulatto heroine Cora defied the evil Magua during the struggles of the French and Indian War. Luckily we spent the night, not at a fort, but at the elegant Landmark Motor Inn (Glens Falls) during the round trip to Whitehall, New York and back to Troy.

I had heard of Whitehall—a brochure on New York's new system of Urban Cultural Parks listed

Whitehall as the "birthplace of the United States Navy." It's one thing to read this in print. It's quite another to sail into the storybook harbor of the real-life Whitehall, to walk down the *Emita's* gangplank and into the old Skenesborough Museum, then to sit down before a wonderful sound-and-light diorama production of the history of Whitehall and of the birth of the United States Navy.

It was the crisis point of the American Revolution. The British fleet was amassed to the north—and the colonials had no navy. So they commandeered the woodlands and resources, including the sawmill and forge, of an absent landowner and Tory named Philip Skene, and whipped up a navy inside of three months—just enough naval power to keep the British forces to the north from linking up with British armies to the south and strangling New York and New England.

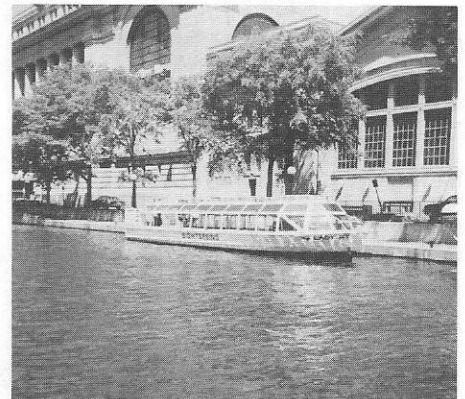
With its many landmarks the Champlain Canal is indeed a passageway into colonial history, into Revolutionary War history, even into the literary history of great American classics. It is a passageway into a world of natural wilderness and unspoiled beauty. But for me, the heart of the Champlain Canal beats in the old wooden lock at Schuylerville.

## ERIE CANAL BASIN AT ALBANY

Such is the extent of business at Albany, arising from the Canals, that a "Basin Company" has erected, upon the Hudson, a pier 4400 feet in length, 80 feet wide, and 20 feet high, running in front of the old dock and forming a basin, the area of which is thirty-two acres, capable of containing about 1000 canal boats and 50 or 60 of the largest sized vessels employed in the navigation of the Hudson River. This basin will form a most perfect harbor for the canal craft and the packet vessels in the most severe storms. The pier has been divided into lots or sections of about 33 feet each, which are to be offered at public sale, early in June. United States Gazette, May 11, 1825.

\*Submitted by William Dzombak

Because the 8 lock "staircase" at Ottawa is not positioned directly over and anchored into bedrock it actually floats atop clay and gravel. Furthermore it's best to think of it as a series of inverted arches joined with one another. The restoration work took these factors into consideration and attempts were made to increase their stability by installing hidden stonework. Hopefully these improvements will prevent the locks from shifting position and developing cracks and fissures. The Ottawa flight is classic in appearance and is one of the most impressive examples of British and European lock design. Its setting in the heart of Canada's Parliament District adjacent to the Hotel Chateau Laurier adds to its appeal. Overlooking it is a bridge which allows passersby to observe vessels climbing the 80 feet from the Ottawa River to the upper level where an artificial channel begins. This passes through the heart of the city for approximately 3 miles before reaching Dow Lake. At the opposite end of this body of water another set of locks permits vessels to enter the next segment of the 124 mile long waterway. This portion of the Rideau Canal, from Lock #8 at the top of the flight, to the beginning of Dow Lake, was built at great cost in human life. The area was swampy and many of the laborers contracted malaria as they attempted to dig a channel through marsh. Eventually the Royal Engineers simply flooded the swamps and built retaining walls on either side of the water logged area.



One of the excursion boats which travels the section of the Rideau Canal from the top of the 8 lock flight as far as Dow Lake, a 3 mile distance. (Bruce Russell photo)

During the warm summer months the section of the Rideau Canal in and around Ottawa is worth visiting. There are two companies offering short trips from the upper portion of the flight of locks as far as Dow Lake where they turn around. Boat trips are likewise available on the scenic Ottawa River. It's not possible to actually go from river to canal up the flight due to time considerations. If you desire to do this it's necessary to have or rent your own private boat. To negotiate all 8 chambers takes about 2 hours and even longer if there is a waiting line. However by walking alongside the flight on parallel paths it's possible to get the feel of passing through. A museum about the Rideau Canal is located in a historic stone building opposite Lock #4. Definitely worth a visit, it tells the complete story of the Rideau Canal from 1830 to the present, from the time of its military significance to its current role as a recreational waterway administered by PARKS CANADA.