Canadian Canal Society | Société des Canaux du Canada

CANALS CANADA/CANAUX DU CANADA

Newsletter of The Canadian Canal Society/Société des Canaux du Canada

ISSN 0824 – 1954 Spring 2003 Vol. 21 Issue 1

President's Message

First, let me apologize for the lack of Christmas and New Year's wishes in my last message! As I hope you will have realized, that it was written for what had been intended as a late October/early November publishing date, but due to a variety of circumstances, that did not prove possible. Needless to say, I do hope you all had a good holiday season, and that your gifts included some canal-related items!

As you will see elsewhere in this issue, plans are evolving on a number of fronts: a Spring Social and AGM, the Summer Tour, and a Fall Tour. These events will be chiefly for CCS members and their friends, but the CCS will also be involved in a presentation to be made at the World Canals Conference to be held in Edinburgh, Scotland, on 24 - 26 September. This will include an invitation to delegates to attend the WCC to be held in St. Catharines 2 - 4 June 2004 (I will have more to say on WCC 2004 in a separate article). Unfortunately, there were not enough participants signed up to warrant a CCS tour to Scotland, but we will try to arrange one for WCC 2005, to be held in Sweden in August. More on that anon!

On the home front, those of you who have access to the St. Catharines Standard will have noticed your un-blushing Pres. (she was nearly frozen!) in a front-page article back in December. I was given an opportunity to talk about the work **Rob Taylor** and I have been doing on the history of the Welland Canals, and to publicize the CCS and WCC 2004. Rob and I gave a talk to the St. Catharines Rotary Club on 24 February, and just a few days before (21 and 22 Feb.) **Jim Purdie** and I represented the Society at a Heritage Week display held at Niagara Square in Niagara Falls. CCS brochures as well as those advertising WCC 2004 were distributed. **George Hume**, **Bob Sears** and **Ken Mackenzie** have also been assiduous in "spreading the word" of our activities. Any member, who plans to address a group interested in canal activities, should contact a member of the Executive for a supply of brochures!

I hope to see as many of you as possible at the Spring Social and AGM! **Bobbie Styran**

Spring Social and Annual General Meeting

A Spring Social will be held at the Port Dalhouse Legion, 57 Lakeport Road, on Sunday, 25 May 2003. Our Annual General Meeting will also be held at that time. The meeting will commence at 2:00 p.m., following the meeting a presentation will be made by David Oakes on the World Canals Conference 2004. As always we invite members to share their knowledge with their fellow members.

New Members

Donna Barnett
RR#1
Shubanacadie, NS
B0N 2H0

Thomas X Grasso
18 Summit Oaks
Pittsford, NY
14534

Steve Hinchliffe
PO Box 20051
St Catharines, ON
L2M 7W7

John Kaler
220 Bond Street North
Hamilton, ON
L8S 3W9

Tom and Geraldine Logan
RR#4
Stirling, ON
K0K 3E0

Derek Miller
21 Amelia Street
Port Colborne, ON
L3K 2K8

Paul Pattison
24 Wolseley Avenue
St Catharines, ON
L2R 4T5

Ross Taylor
48 Flatt Road
Burlington , ON
L7R 3X5

D Bruce Timms
1204 Lakeshore Road
St. Catharines, ON
L2R 6P9

Welcome Back

Grant E Black
PO Box 24022
St Catharines, ON
L2R 7P7

Bill Trout III
35 Towana Road
Richmond, VA
23226

Membership Renewal

If a blue membership renewal form is included with your copy of *Canals Canada* it means that, at the time of mailing, we had not received your renewal. If you have renewed recently, thank you.

Fall Social

A Fall Social is being planned for 9 November 2003. It will be held at the St Catharines Historical Museum at Lock 3 in St Catharines; mark your calendar.

Fall Field Trip to Trent-Severn – Sparrow Lake

The members of the Canadian Canal Society convened the Fall meeting and trip on Saturday, October 5, 2002.

Once again, through the services of Farr Coach Lines, we boarded the bus at St. Catharines, Burlington and King Side Road and were delivered in time to board the "Island Princess" near Washago. Despite cool, damp, dull weather, 38 members eagerly roamed the "ship" to find the best vantage points. We boarded in Lock 42 and immediately descended to the Severn River level. Along the route we passed many homes and cottages with docks and boats on the River. The railway pivot bridge was swung open for us to pass, as was the road bridge at Hamlet. We arrived at Sparrow Lake and as lunch was served, Captain Tom narrated a tour of the lake, both historical and anecdotal.

The Trent-Severn Waterway stretches from Lake Ontario to Georgian Bay by a series of lakes, rivers and canal cuts. In 1997 we explored the area from Port Severn to Sparrow Lake. This year we completed our tour of the Severn portion of the Waterway; i.e. from Sparrow Lake through Lake Couchiching.

Early settlers transported merchandise through the lakes and rivers of Central Ontario and to facilitate this navigation, tenders for the first lock at Bobcaygeon were opened in 1833. There followed years of wrangling and dispute over the route, each change of

Government brought new changes in funding and not until 1915 did the lock at Port Severn open. Delayed by World War I, lack of funding and political indecision, the Lock 42 at Couchiching was the last area to be completed. The first boat traversed the waterway in 1920. A full description of the "History of The Trent-Severn Waterway 1833 - 1920" may be found in the book "A Respectable Ditch" by James T. Angus.
After our lunch, we returned to the Lock and ascended the 6.4 m lift to the straight canal cut through to Lake Couchiching. As we passed under the bridge at Highway 11, the sun came out to shine on the waters of Lake Couchiching. We watched loons on the lake and Captain Tom directed us to sights such as Casino Rama and the Town dock of Orillia where we landed to reboard the bus. **Barb Macdonald**

The Burlington Canal Lift Bridge Closed to Traffic

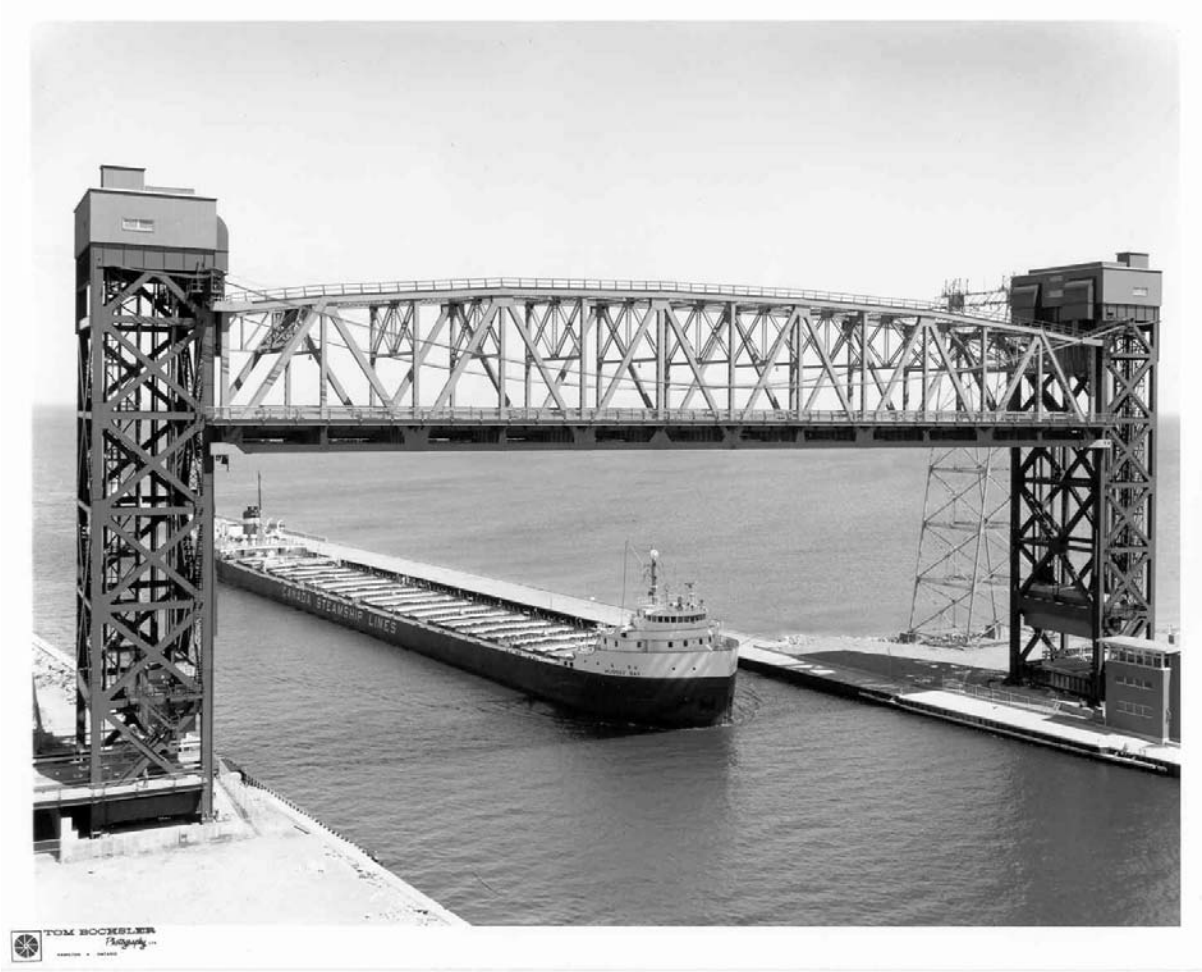
The Burlington Canal vertical lift bridge was closed to highway traffic from the end of December, 2002 to the end of March this year. The wire ropes which suspend the 370 ft. long lift span/were replaced. The rope replacement was a major maintenance operation which could not be done without closing four lane Beach Boulevard. There was no interference with shipping because the navigation season had ended.

The movable span is suspended from two towers, by 80 steel wire ropes each 2-1/4 inches in diameter. The ropes pass over 15 ft. diameter sheaves and connect the span to concrete counterweights. The span weight is 2,000 tons and the maximum load on each rope is about 25 tons.

The bridge was completed in 1962. It opens about 3,800 times a year. The ropes have been inspected at least once a year since the bridge was built. They have been kept lubricated, and the rope tension has been adjusted periodically so each one carries close to the same load. The wear of the wires making up each rope has been measured and calculations made for the loss of area.

A contract to replace the ropes was awarded in June, 2002; the cost of the work was over $3,000,000. The work period was cold and windy, but there was no freezing rain to coat the steel and stop the work and the deadline for opening to navigation was met.

The Burlington Canal was opened in 1827 and was in full use in 1832. This cut, through the Burlington Beach sand strip, permitted the development of Hamilton's harbour. It replaced a small natural outlet which was several hundred feet to the north. The Canal was crossed only by ferry until a railway swing bridge was built in 1876. A second swing bridge to carry a road and an electric railway was built in 1897. This bridge was replaced in 1922 by a single leaf bascule bridge. A second bascule bridge was built in 1931 when the Canal was widened. The north bascule bridge was destroyed in 1952. Both the road bridge and the railway swing bridge were replaced in 1962 by the present vertical lift bridge which carried both road and rail traffic. The railway track was removed in 1983 and the roadway was widened to four lanes. **David Cramm**



The Canadian Society of Civil Engineering – www.csce.ca

Congratulations to The Canadian Society of Civil Engineering who were last year's winner of the Pierre Berton Award for popularizing Canadian history.

It is unusual for an organization to win the award rather than an individual. The Society has a voluntary project to place historical plaques on railway trestles, bridges, canals, etc.

They have recognized a number of sites as being of national importance. The canal related sites are: Chambly Canal, Chigenecto Marine Transport Railway, Lachine Canal, Ottawa River Canals, Shubenacadie Canal, St Andrew's Lock and Dam, and the Trent-Severn Waterway.

American Soo Locks

Michigan and other Great Lakes states were disappointed that the 2004 US Federal Budget did not include funding for a new lock at the Soo. The plan is to construct another 1,000 foot lock to compliment the existing Poe Lock.

World Canals Conference 2004 (Niagara) Inc.

As Chair of both the Canadian Canal Society and the Planning Committee for the World Canals Conference to be held in St. Catharines 2-4 June 2004 I am pleased to announce the incorporation as a not-for-profit organization in the Province of Ontario of “World Canals Conference 2004 (Niagara) Inc." The purpose of the organization is to “organize and conduct a conference” marking the 175th anniversary of the opening of the First Welland Canal in 1829, and to “act as host to the World Canals Conference 2004.” Brock University will be the host site, and members of the CCS, representatives of Niagara municipalities, Regional Niagara, Parks Canada and Niagara's educational institutions, museums and libraries, as well as interested individuals, are involved in the planning process.

Upwards of 300 delegates are expected from Great Britain, Europe, the United States and Canada. The Conference will consist of morning sessions at Brock featuring speakers from both sides of the Atlantic, and afternoon tours of Welland Canal sites both historic and present day: Wednesday, 2 June, Port Colborne, Welland, Port Robinson, Allanburg; Thursday, 3 June, Thorold and St. Catharines (including an optional tour of the Port Weller Dry Docks); Friday, 4 June, Port Dalhousie. There will be a reception and dinner each evening. Single-day as well as full registration will be available for local residents, who will also be able to sign up for some of the pre- and post-Conference tours.

An invitation-only world premiere of a film on the Welland Canals is scheduled for the evening of Tuesday, 1 June. Further details will be announced as they become available.

World Canals Conference 2004 - Volunteers Needed!

Needless to say, such an undertaking will require the help of as many volunteers as we can enlist. Below is a partial list of "positions" we shall need to fill. And while "tour guides" are obviously high on the list, the "backstage" hands are equally important - in some ways, even more so! So, any CCS member living in or around the Peninsula, who can offer their services (and/or those of their friends and relatives!) will be most welcome.

1) Tour Guides - if we get the expected 300+ delegates, which means at least 6 busloads of 50+ each for each of the three afternoons of the Conference. (There will be separate requirements for the pre-and-post Conference tours). As noted previously, these will be: Wednesday, 2 June - Port Colborne, Welland, Port Robinson, Allanburg. There will be two groups for this tour, one starting at Port Colborne, the other at Allanburg. Thursday, 3 June - Thorold and St. Catharines. There will be three groups, one or two concentrating on the "heritage" canals, the other one on the modern canal, including an optional tour of the Port Weller Dry Docks. Friday, 4 June - Port Dalhousie, where the final Reception and Dinner will be held.

2) Pre- and Post-Conference tours - see separate list on the volunteer form.

3) Campus guides and general "runners" with cell phones, from Tuesday through Friday, possibly Saturday.

4) Residence "hosts" for delegates staying in Brock residences, transport coordinators for those staying in area hotels.
5) Registration Desk - from Tuesday through Friday morning.
6) "Greeters" (must have own transport + cell phone) at Buffalo & Toronto airports, train and bus stations in Toronto and St. Catharines.
7) Liaison staff to assist local staff at all sites to be visited, to direct people from their bus to site, and back on to the CORRECT bus; possibly shepherd people from one site to another. These people too will need their own transport and phone.
8) "Traffic cops" at Brock parking lots and Schmon Tower bus stop, for "day visitors".
9) "Hosts" for those delegates who may wish to opt out of scheduled program and take off on their own.
10) People with own transport and car/cell phones to act as liaison/ runners, especially in the afternoons and early evening.
11) Any other skills/services you might have which could be useful.

If you are interested, please fill in the enclosed form.

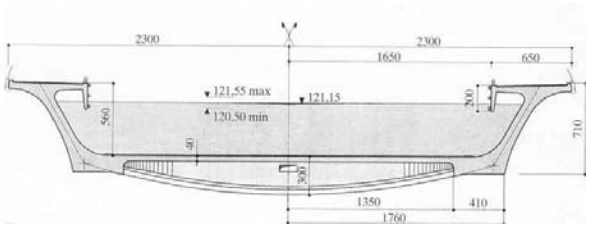
Belgian Aqueduct Crosses Major Road Junction

In Belgium, the 100 year old Central Canal links the north end of the Escaut River basin and the south end of the Meuse River basin. The Sart Canal-Bridge, completed in 2002, is part of up-grading the Canal to meet European standards for modern barges.

The Sart Canal- Bridge is an aqueduct which allows the canal to span a major road junction, at the entrance to the town of La Louviere near the Brussels-Paris highway.

The bridge structure is 46m wide, of prestressed concrete continuous for thirteen 36m spans. The total length is 498m, the minimum waterway clearance is 33m wide by 4.15m deep. The deck width includes a 6m service road on each side.

The bridge was launched from one end by pushing with hydraulic jacks, so it was possible to cross the highways without detours, falsework, or other interference with highway traffic Launching was at the rate of 12m per week and the weight of the structure as it reached final position was 65,000 tonnes. The columns supporting the deck are 3m diameter. The bearings at the top of the columns were fitted with stainless steel sheets which enabled the launching skids to slide with a coefficient of friction of 3%.
Dave Cramm



Waterfront Center Awards – www.waterfrontcenter.org

The Waterfront Center was founded twenty-one years ago, in 1981, as a non-profit, educational organization based in Washington, D.C. with members through the world. The Centre strives through its conferences, workshops, publications, awards program and community consulting work to assist cities and towns on all kinds of water bodies to make the wisest long-term use of their urban waterfront resources.

There were two Canadian winners in this year's entries. A Top Honour Award – Projects, went to 'Making Waves – Principles for Building Toronto's Waterfront', Toronto, Ontario. An Honour Award for Parks, Walkways and Recreation went to Bayshore, Vancouver, British Columbia.

Welland Junction Lock

Thanks to the efforts of the Welland Historical Society, and their receipt of a Trillium Grant, there is now a plaque to commemorate the Welland Junction Lock.

When the 1st Welland Canal was dug more water was needed. To meet that demand a feeder canal was dug bringing water from the Grand River. Near the site of the present Broadway Bridge a junction lock was built to join the feeder and the canal.

Stromness Lock

At meeting was held on 30 April to discuss the possibility of restoring the lock on the feeder canal at Stromness, Ontario.

Canals – Part One

Ken Mackenzie, FCSCE

(This article originally appeared in History Notes of the Canadian Civil Engineer. a publication of the History Committee of the Canadian Society of Civil Engineers, and is reproduced here with the permission of the author)

Canada is favoured with an inland waterways and canal system which is second to none in the world. The present St.Lawrence system by itself dwarfs all other inland waterway systems, however assessed. The system accommodates vessels up to 30,000 tons over a distance of about 3,800 km from the Atlantic.

Most of the large works were built in the 20th century and this note pays particular attention to those, but it is instructive to put these very large works in their historical perspective.

PIONEERING 19th CENTURY CANAL WORKS

The earliest notable canal works in Canada were built by the British Royal Engineers on the Rideau and Cataraqui Rivers and the intervening lakes system. This is now known as the Rideau Canal. The Royal Engineers at that time were officered by men who had received a thorough education in what is now termed civil engineering. Their engineering works can be seen around the world, in roads, irrigation, canals, harbours and of course in fortifications. Many of them were accomplished watercolour artists whose paintings are now collected for their historic and technical interest. In the late 1700s they had been involved in navigation improvements on the St.Lawrence River to facilitate the movement of troops and matériel to Upper Canada. The British military staff was concerned that the Americans might entertain ideas of a further attempt to extend their hegemony northward. If they did, there was a vulnerable stretch of international border along the St.Lawrence River approximately between Kingston and Cornwall. A British army engineering unit unrelated to the Royal Engineers had, in the period 1819 to 1834, constructed a series of small canals to bypass rapids in the lower Ottawa River. The British government decided to provide a more easily defended east-west route by using this partly tamed length of the Ottawa River together with a new canal to be constructed from Ottawa south-west to Kingston. The Rideau Canal was constructed under the command of Lieutenant Colonel John By between the years 1827 and 1832. The waterway is an ingenious combination of excavated canal bed and the natural lake system. It was one of the largest construction projects in North America at the time. Thankfully, it was never used for its military purposes, but helped to peacefully open up Eastern Ontario to agriculture and industry. It passes through beautiful wooded country and is now a popular recreational linear park, beautifully maintained by Parks Canada. One of the beauty spots is at Jones Falls, where a remarkably innovative masonry dam was constructed to impound one of the lock head ponds. The horizontal arch of the dam

gently curves 107 m along its crest and has a maximum height of 19 m. It has been visited and admired by generations of engineers.

The Rideau Canal was constructed by both direct labour and by tendered contract. Most of the other 19th century canals were built by contractors, and were constructed for government agencies, sometimes after private company promoters had foundered. A good example of government being obliged to assume ownership occurred later with the First Welland Canal. Even before the military navigations there were much smaller commercial works in various parts of the country. In 1797 a canoe lock was built at Sault Ste. Marie by the North West Company. Probably the first "real" canal in Canada was the early Lachine canal, built between the years 1821 and 1825.

The first short canal in Upper Canada, known as the Desjardins Canal, had been completed in Burlington Bay in 1826. Its remnants can still be seen. This was the beginning of Canada's period of "canal fever", a phenomenon also seen in many European countries and the United States. Promoters launched schemes which in many cases lacked both technical and economic viability.

Residents of the Niagara peninsula had keenly observed the progress and tribulations of the Erie Canal in neighbouring New York State. It was feared that if nothing was done in Canada the enterprising Americans would next build a canal in New York State to provide navigation around Niagara Falls from Lake Ontario. A group was formed in St. Catharines, Ontario, to promote the construction of a Canadian canal between Lake Ontario and Lake Erie. The first of the four Welland Canals was largely the result of the foresight and persistence of William Hamilton Merritt. He had returned to St. Catharines from captivity as an American prisoner-of-war in 1815 to set up in business and to operate mills on Twelve Mile Creek. Merritt, like his fellow millers, was frustrated by the erratic creek flow, and he concluded that it would be economically feasible to construct a canal which would include controlled stream flow. The initial canal route would be from Port Dalhousie on Lake Ontario, up the face of the Niagara escarpment and then to meet with the Chippawa Creek which flowed into the Niagara River some distance above Niagara Falls.

The Welland Canal Company, with George Keefer as president, was incorporated and started on its turbulent three-decade course. The first Welland canal opened in 1829 after five years of financial travail, internecine strife in the work force, and epidemics of cholera, "swamp fever", plague and dysentery. There, were 40 wooden locks which could take vessels of up to about 180 tons. Adding to Merritt's problems, particularly as he attempted to attract more investors, was the threatened arrival of the railroad, the nemesis of many canal projects. The Canal Company attempted to improve its operation by extending the canal alignment south directly to Lake Erie. It became even more financially extended and was glad to have the government buy shares. Finally, in 1839, the Upper Canada Legislature decided it had to take over the company.

During the 1840s there was a great deal of canal activity in various parts of the country. On the Welland the prohibitive cost of maintaining the wooden locks drove the government to build the second Welland Canal of cut-stone masonry locks. The

improved construction methods of the new canal, which opened in 1845, reduced the number of locks from 40 to 27. In Quebec the nine lock Chambly Canal and the single lock Ste. Anne's canals were built, the former to connect with U.S. canals and the latter, between Ile Perrot and Montreal, as part of the Ottawa River improvements. The Chambly gave the Americans their first direct water navigation connection to the St. Lawrence River. The Ste. Anne's, with improvements in 1878 and 1886, is still functional.

There was more activity in the 1870s, on the Trent River system in the Muskokas in Ontario, and on the third Welland Canal starting in 1875. In the Maritimes there were the Chignecto canal/railway project which was stopped when partially completed, the St. Peter's at the Great Bras d'Or channel and the Shubenacadie.

At the end of the century, work continued on the St. Lawrence River system at the Lachine Canal and its enlargements, the Beauharnois and its successor the Soulanges Canal, and the Cornwall system around the Long Sault. The Canadian Sault Ste. Marie canal opened in 1895 with the impressive lock dimensions 273 m by 18 m, and a sill depth of 5.5 m.

When the century began, the science and art of canal building was new to the Continent. Construction methods were primitive and based almost entirely on human and animal effort. By the end of the century Canada had developed navigation capability into the heart of the continent. Complex heavy construction equipment and techniques were available. The civil engineering profession was soundly established and experienced for the demands of the 1900s.

To be continued.

Port Maitland – Festival of History

The Canadian Canal Society will be one of many exhibitors at the Festival of History. It will be presented at the Dunnville Airport located on Regional Road #11 between Dunnville and Port Maitland, on Saturday, 26 July 2003 between 10:00 and 4:00, admission is by donation.

The Welland Canal Company, A Study in Canadian Enterprise

The CCS has reprinted **The Welland Canal Company, A Study in Canadian Enterprise**, by Hugh J.G. Aitken (Cambridge, MA, Harvard University Press, 1954). The original TEXT is reproduced in its entirety with the permission of the author and publisher. A note on Sources, and an Errata list, has been compiled by Society member Roberta M. Styran.

Paper-bound only; retail price ** new price ** $15.00 (+ $2.50 postage and handling if appropriate). Niagara Peninsula book stores and museums will carry the book, or it may be ordered directly from The Canadian Canal Society

Year Round Delivery

This winter, Algoma Steel in Sault Ste Marie, shipped steel to Detroit via barge. Each barge carried 200 coils of steel weighing 20 to 30 tons, and four trips were planned to test the feasibility. A truck moving this steel would carry only two or three coils. In spite of the heavy ice conditions this winter the trips were completed.

The Canadian Canal Society

Executive Officers for 2002-2003

Past President:	George Hume
President:	Bobbie Styran
Vice-President:	Tom Whitelaw
Secretary:	Ken Mckenzie
Treasurer:	Carol Gaspari

Send correspondence for the Canadian Canal Society to:

Secretary
Canadian Canal Society
PO Box 23016, Mid-Town Post Office
124 Welland Avenue
St. Catharines, Ontario
L2R 7P6

Contributions for Canals Canada to:

Bob Sears, Editor
Canals Canada
248 Tower Drive
Toronto, Ontario
M1R 3R1

Phone: 416-285-7254
Email: dawnofdestiny@sympatico.ca

Website: http://people.becon.org/~ccs/

Contents

The Editor's Desk

Thank you to those members who contributed to this edition of *Canals Canada*.

In the next issue, those of us who are traveling to Scotland for the World Canals Conference will give you an account of our visit there. But, if in your travels this summer you do some canalling please share it with other members by writing about it for *Canals Canada* and/or attending one of our Socials.
Bob Sears