WELLAND CANAL CELEBRATION

The start of the 1979 shipping season through the Welland Canal in late March signalled Canada's most significant annual transportation anniversary and its colorful commemoration.

Elaborate plans are underway to observe the 150th anniversary of the first passages through the original Welland Canal, November 30, 1829. Since then three larger Welland Canals have been built to link Lakes Erie and Ontario. The present 4th canal 24-mile canal last year carried about 70 million tons of cargo. It is one of the world's great waterways, with its series of locks raising and lowering massive ships 255 feet, the sea level difference between the two lakes.

Co-ordinated by the Welland Canal 150th Anniversary Committee, representatives of Niagara Region's local government, St. Lawrence Seaway Authority, the Regional Chamber of Commerce and shipping and business organizations, a series of events are now being arranged to remind local citizens and visitors alike of this pioneering chapter in Canadian history, preceding Confederation by almost 40 years.

One of the events of great interest to our members, will be a week-end tour of the Welland Canals by members of the American Canal Society, in collaboration with the Detroit Marine Historical Society, September 14-16, 1979. Arrangements for this event are being coordinated by Louis Cahill, our ACS Canadian Director, Colin Duquemin and Alex Ormston of the St. Catharines Historical Museum; and Bill Shank, ACS President. The feature of the week-end will be a day-long bus tour of the three historic Welland Canals, as well as the present-day canal, which forms an important part of the St. Lawrence Seaway. Full details of the tour will be mailed to all ACS members around August 1, 1979.

As it was 150 years ago, one of the key figures in the anniversary observances will be William Hamilton Merritt, a name that will demand the attention of a professional actor. In addition to his attendance at many celebrations throughout the region during the next several months, "Mr. Merritt will visit key port communities throughout the international Great Lakes - St. Lawrence Seaway basin, extending formal invitations to the public to attend and participate in the continuing and diversified program.

Merritt was born in Bedford, N.Y., in 1789, and moved to Upper Canada three years later with his United Empire Loyalist family. They settled at what is now St. Catharines on the Twelve Mile Creek, eventually a vital part of the first canal.

The young visionary and entrepreneur whom history now salutes as the Father of Canadian Transportation was just 13 when the first and was turned November 30, 1824. Merritt died July 5.

(Concluded on Page Two)

ACS PRESIDENT VISITS CANADA

Denise Taylor, President of the Welland Canals Preservation Association, present a hand-forged bolt from a lock gate on the Third Welland Canal to Bill Shank, ACS President, during his April visit to St. Catharines in preparation for our September Field Trip. (Photo by the St. Catharine's Standard)

The "Labradoc", a Canadian ship which had been given up for lost during a recent heavy storm on Lake Erie, passes through Lock Number Three enroute to the St. Catharine's drydock for repairs on April 19th, 1979. In the left foreground are (from left) Lou Cahill and Alex Ormston. (Shank photo)
”CANAL ERA” TABLEAU PLANNED

A full-scale tableau, entitled "The Canal Era," is planned as part of the expansion program of the Allan County-Fort Wayne Historical Society Museum in Fort Wayne, Indiana. The tableau, depicted above in this design concept prepared by Ben Koza of the Wilding Division of Bell and Howell of Chicago, is intended to convey to Museum visitors the important impact which the Wabash and Erie Canal had upon the life and times of Fort Wayne in the early 1800's. The Wabash and Erie Canal passed through Fort Wayne (then "Wayne") on its long route between Lafayette, on the Wabash River, to make a junction with the Miami and Erie Canal (and Lake Erie) in Ohio. David Croason is Director of the Allan County-Fort Wayne Historical Society.

CANAL CALENDAR

May 19-20 - Pennsylvania Canal Society, Lafortuné Canal & Navigation Tour, John P. Miller, 3520 Quincy Lane, Hanover Furnace, Bethel, Pa. 18617

May 19 (Rain Date May 20) - Canal Society of New Jersey, Second Annual Canoe Trip, Delaware and Raritan Canal, between Buena Hill's Island and Lambertville, N.J. (Seven miles)

June 16-17 - Old Canal Days, Lockport, Ill., Street in this issue American Canals or write Old Canal Days, Box 31, Lockport, Ill., 60441.

June 17 - Annual Meeting, Canal Society of New Jersey, Waterboro Village, N.J.


During July - Old Canal Days Festival, Canal Fulton, Ohio.

Summer - Illinois Canal Society, Hiking or biking on Illinois and Michigan and Canadice Canals, Richard Thoms 5617 West Leland Ave., Chicago, Ill., 60650

Aug. 17-19 - Roscoe Village Canal Festival, Roscoe Village Society, 361 Hill Street, Coshocton, Ohio, 43812

Sept. 14-16 - American Canal Society Tour of the Four Welland Canals, St. Catherine's, Ont., Contact Bill Shank, 808 Patton Rd., York, PA 17403

Oct. 6-7 - Canal Days Festival, Portsmouth, Ohio.


(Canal organizations please note: Send information regarding your events for American Canals by 1 July.)

Welland Canals Preservation Association

The Welland Canals Preservation Association is a non-profit corporation endeavoring to preserve and restore those remnants of the Old Welland Canals that flow through the heart of Canada.

As part of their efforts to preserve these heritage waterways, the WCPA is engaged in constructing a rustic linear park system, which will include hiking and bicycle trails, along the length of the Old Canals. Eventually, the WCPA hopes to make the Old Welland Canals a distinctive regional attraction, from Port Colborne on Lake Ontario to Port Colborne on Lake Erie.

St. Catherine's City Council has already granted the WCPA permission to begin constructing the bicycle and hiking paths on city-owned park land along the banks of the canals - the major portion of lands involved in the proposed route. Using supervisory personnel hired under federal government grants and volunteer work crews from the Niagara Detention Centre and the John Howard Society, the WCPA is beginning its work in the field.

Total cost of the 15 mile bicycle and hiking trail network is estimated at one million dollars. While a sizable portion of this figure has been met because the WCPA will be employing volunteer work crews from the Niagara Detention Centre's "Day Release" program and the John Howard Society's "Communities Work Order" program, the Association is still actively seeking funds for $450,000 in material and operating costs.

The WCPA is currently selling memberships at a cost of $5 per year. Members receive a periodic newsletter and other pieces of information keeping them up to date on all aspects of the Old Welland Canals. In addition, the Association gratefully receives advice and "input" from members.

For more information concerning the WCPA, to project or membership, please contact: the Welland Canals Preservation Association, 92 Lakeport Road, Box 1224, St. Catherine's, Ontario, Canada, LOR 7A7.
PRESIDENT'S MESSAGE

May Day is the time when ACS traditionally purges its mailing list of those names who are not credited with payment of dues for the current year. Since you are reading this message, you are obviously not one of these. For this we thank you and we promise to do our utmost to justify your continued confidence in us. It is interesting to note that we gain many more new members than we lose each year, and this bodes well for the future of our organization.

Your Principals are pleased to report an ever increasing number of phone and mail inquiries from the United States, Canada, and overseas. All this indicates that we continue to be recognized as the prime source of information on navigable canals, historic and current, in North America. We have recently become the repository for an excellent slide-tape show (developed by Dr. Roger Squiers of England) showing the work being done by volunteers in rebuilding distinct sections of the British canal system, which is available for the use of our members.

We are happy to become involved with our good neighbors in Canada, in observing the 150th Anniversary of the opening of the First Welland Canal. Our Associates in St. Catherine's, Ontario, have extended a cordial invitation to all of us to visit them and enjoy their hospitality during the week-end of September 14-16, 1979. They are planning a most interesting program for us. Please mark your calendar, now, and plan to attend.

Bill Shank

Inland Waterways Conference

In association with the World Inland Waterways and Port Development Exhibition, INLAND WATERWAYS '79, to be held from 28 May to 1st June 1979 in Strasbourg, France, there will be a concurrent conference on the world inland waterway systems from 28 to 31 May. Both events are under the French Ministry of Transport. The aim of the conference and exhibition is to emphasize the enormous potentialities of the world's inland waterway networks for reliable freight transportation at the lowest possible energy cost. A study tour of the Rhine-basin installations is also being planned. Detailed information from the conference secretariat: Brooks & Mark Consultants, Dellebergerstrasse 38, CH-4016 Basle, Switzerland.

Allegheny Portage Railroad Museum Expanded

Part of the new model of Plane Number Six, built by Fred Conner. The steam-driven engine house, at the head of Plane Six, is shown at the left. A sectional canal boat train is shown, being hitched to one of the APRR steam locomotives, for the horizontal Allegheny Summit run. Lemon House is shown in the background.

Several years of hard work on the part of National Park Service staff, and a number of model makers, have come to fruition in the enlarged Pennsylvania Canal and Portage Railroad display in Lemon House, Cresson, Pa. The new Allegheny Portage Railroad Museum facilities were unveiled at an open-house in early spring of this year.

One of the spark-plugs of this expanded exhibit was Judith A. Z. Johnston, Staff Curator for National Park Service at Harpers Ferry Center in West Virginia. The American Canal Society cooperated fully with Mrs. Johnston in the development of the new wall display in the background.

Pennsylvania Canal Packet Boat Model at Lemon House. Note a portion of the new wall display in the background.

Sectional Canal Freight Boats, used on the Allegheny Portage and Philadelphia and Columbia Railroads, are illustrated in this model.

ERS VS NYS BARGE CANAL

Emily and Hayward Medden have a comment for those who are concerned in their use of the term 'Barge Canal.' Their system is an ERIE CANAL, and it goes from Albany to Buffalo. There is a BARGE CANAL SYSTEM which is composed of the ERIE, OSWEGO, CHAMPLAIN, and CAYUGA & SENECA CANALS. The four make up the Barge Canal System and each are their own separate canals. The Erie in the Barge enlargement was pretty well canalized east of Lyons, New York and the old channel is still navigable in spots. West of Lyons, New York it is almost 100% in the original channel or that of the enlarged Erie when many of the turners were taken out. But basically it is a deep channel and there are no charts cut out for it. It was, and is still, the ERIE CANAL.
THE KANKAKEE NAVIGATION

by John M. Lamb

In the 1830s and the 1840s Illinois, like other western states, was swept by a wave of enthusiasm for internal improvements. The enthusiasm resulted in virtual bankruptcy for the state. In Illinois the only achievement of this fevered era of speculation was the Illinois and Michigan Canal, which ran from Chicago to LaSalle, thus connecting Lake Michigan and the Illinois River. By the time this work reached its finishing stage the state awakened from its internal improvement delirium, but the Canal fostered along its route anew fever of land speculation and other efforts to capitalize on the canal's importance.

One of these efforts was the attempt by means of dams and locks to make the Kankakee River, and its tributary, the Illinois and Indiana border. The Kankakee River rises in Indiana near South Bend, and flows in a westerly direction through the State of Illinois to a junction with the Illinois River. The Kankakee has been seen as an important waterway since the time of the earliest explorers. LaSalle, for example, used it as the connecting link between Lake Michigan and his projected empire in the Illinois and Mississippi watersheds.

When the Illinois and Michigan Canal was built, a town called Kankakee was laid out by the Canal Commissioners where the Kankakee joins the Des Plaines, and where the Kankakee feeder to the canal crossed the Des Plaines river by means of an aqueduct to supply water to the canal. The town was widely promoted, but nothing much there. In 1852 the town was taken over by a city on the Kankakee River about forty miles east of the original town. It was like LaSalle's ambition 200 years earlier, a great idea for the river that died aborning.

In 1847, in order to take advantage of the newly completed canal, the state legislature approved the formation of the Kankakee and Illinois Navigation and Manufacturing Company, with headquarters at Wilmington, about nine miles up river from the mouth of the Kankakee. The company wanted to raise $100,000 by selling shares of stock at $50.00 apiece (or $5.00 down). One of the original shareholders was Peter Stewart, who had been a contractor on the Illinois and Michigan Canal. When the original contracts were let (with much fanfare in September of 1847), Stewart was awarded the only contract for a lock just north of Wilmington. It was apparent that there was much more to the business of navigation to Indiana than Wilmington would be able to do.

In December of 1847, further contracts were let with much more promotion about the advantages of investing $50.00. It was promised both the Canal and the Kankakee would be open for navigation in the following year. The canal was opened but nothing was heard from the navigation company. It seems that not enough people had advanced $50 for even one lock to be built. In 1850 an effort was made to whip up enthusiasm by reorganizing the company, but this brought in no money. In 1851 the state legislature approved an act allowing the voters of Wilmington to vote to build on the Kankakee and Illinois Navigation and Manufacturing Company, but the voters, in their infinite wisdom, declined the opportunity.

In the early 1860s the affairs of the Kankakee Navigation Company were taken over by Hiram Alden. Alden had extensive property holdings along the Kankakee River in Wilmington and also property in the newly opened coal fields five miles west of Wilmington. As a local paper noted, contracts were awarded for locks and dams on the river, and concluded with a cartoon note that stands in sharp contrast to previous enthusiasm. "It is believed that this attempt to secure slack water navigation from the Illinois and Michigan Canal to Wilmington will prove more successful than the former ones."

However, it was not much more successful as the only thing completed was a dam and dam about one mile upstream from the Kankakee feeder lock and Dam No. 1. There was a state dam downstream that provided Kankakee water to the feeder to a maximum depth of four feet. Under the circumstances there was not sufficient depth between the feeder and the first dam and lock to provide adequate navigation.

Things seemed to take a turn for the better when the old Kankakee and Illinois Navigation and Manufacturing Co. was bought by the new Kankakee Company. This company was empowered to raise $1 million and its directors included Hiram Alden, a Wilmington banker and the aforementioned Peter Stewart. Promises of locks and dams on both the Kankakee and the Illinois were made to provide access to the bog iron fields of Indiana. Also, it was stated that the coal field near Wilmington would turn the area into another Pittsburgh. But again, capital was found difficult to raise than ideas.

In the 1870s, through the efforts of Hiram Alden, the enterprise found support in the east from Boston bankers. President of the newly reorganized company was William Cradln, the Governor of Massachusetts. Alden was the secretary and the Engineer had the appropriate name of E. S. Waters. With a million dollars of capital, construction began at last. The State dam was raised two feet, providing a depth five feet.
REVIEW OF A NEW BOOK ON AN OLD SUBJECT

Champlain to Chesapeake:
A Canal Era
Pictorial Cruise

by William J. McKelvey, Jr.

(Exton, Pa.: Canal Press, 1976
224 pp. $25.00)

Review by Ernest H. Schell

A good pictorial history can evoke the multifaceted reality of the past like nothing else can. ACS Director Bill McKelvey's new book is a very good pictorial history indeed, taking the reader back in time and bringing to life the traffic on the eastern intracoastal waterway from Lake Champlain to Chesapeake Bay. This so-called "inside passage," comprising the Champlain Canal, the Hudson River, the Delaware and Raritan Canal, the Delaware River, the Chesapeake and Delaware Canal, the Chesapeake Bay, and the Dismal Swamp Canal, was an important shipping route during the 19th and early 20th centuries, providing safer transportation along the coast from New England to the upper South than the ocean route, particularly in wartime.

Aside from being an extraordinary collection of 485 illustrations, nearly all of them rare and previously unpublished photographs, McKelvey's book gives a much greater coherent unity to the story of the eastern intracoastal waterways than has hitherto been available. The author's starting point in composing this volume was his excellent pictorial history, The Delaware and Raritan Canal (Canal Press, 1975, $14.00). On the practical and historical plane, McKelvey includes a wealth of original information, such as the history and development of the region, the role of transportation in shaping the local economy, and the impact of industrialization on the area.

McKelvey's caption for this photo in the Virginia section of his book reads: "One hundred and forty-four propeller steamboats were seized by the government for use during the Civil War. "Docks at Aquia Creek" by Mathew Brady shows the steam canalboat "New York" with auxiliary sail unfurled. Faded lettering on the pilothouse reads: "Philadelphia and New York Express Steamboat Company. It ran through the Delaware and Raritan Canal."

This photo from "Champlain to Chesapeake" illustrates the side-by-side competition of canals and railroad, along one of the Delaware Canals in the Lambertville-New Hope area. McKelvey identifies the location as "near Jacob Creek Road."

McKelvey identifies this photo (made circa 1931) as Lock Six on the Delaware and Raritan, passing through Trenton, N.J.

(Concluded on Page Six)
**Tenn-Tom Waterway**

The Tennessee-Tombigbee Waterway has come under media attack as a Federal Judge in Mississippi prepared to hear arguments on January 5 concerning the Corps of Engineers’ authority to construct a 300-foot-wide channel. The Corps maintains it has Congressional authority and adds that Congress has been kept up to date on developing construction costs. But several newspapers, including *The Birmingham News* in Tom-Tom territory, have delved into hundreds of documents unearthed in the lawsuit to paint an unflattering picture of Corps work as well as beneficial projections. Both The New York Times and The Washington Star printed editorials this month urging the Congress to reconsider the $1.8 billion navigation link. Jt. Gen. John W. Moore, Chief of Engineers, echoed both papers for printing “unproven allegations.” (National Waterways conference Newsletter, 8 Dec. 1978)

**ACS Member Visits Panama Canal**

Phil Cadman recently sent “greetings to fellow members of the Society” with the above post-card showing a cargo vessel passing through Miraflores Locks of the Panama Canal. Completed 1864-1914, the Panama Canal still represents one of the most important political, economic and military achievements of the United States in the Twentieth Century. Before giving it all away, we should once again seriously investigate a new and larger canal, perhaps a “sea level” canal, connecting the Atlantic and Pacific Oceans, at another location.
I CRUISED THE CANALS OF PARIS BY SUBWAY AND LIVED

by Wm. E. Trout III

Armored with a few subway (metro) tickets (they're cheaper by the dozen), you, too, can tour the most picturesque canal in Paris, but watch where you keep your wallet or you, too, will have another unexpected but educational experience shared by Paris Americans a day in the City of Light. But veteran canal hunters are accustomed to constant danger.

You can start your tour of the Canal St. Martin at the lower end by taking the metro to the Quai de la Rapée. The station is beside the outlet lock and if you come from the east, via Arsenal, you saw the canal from the subway train. From here walk a couple of blocks north along the canal, here called the Bassin de l'Arsenal, until it disappears into a 2 km tunnel directly under the Bastille metro station. Note the narrow gauge tracks for the electric relays which cross low trestles through the tunnel. You can't see into the tunnel but you can bypass it by taking the metro from Bastille to Republique and walking two blocks east along the Rue du Faubourg St. Martin. Here you have Locks 7 and 8, which lower boats into the tunnel. All four pairs of locks on the canal are two-lock staircases in picturesque parks complete with shady trees, benches, iron arches, and artists painting them, but you won't see much traffic except for a 'Peniche Theatre' moored near Locks 3 and 4. Walk the 2 km from the canal to Lock 1 and 2 at the Place de Stalingrad, or if you prefer to walk downhill, start from the Stalingrad metro station.

At the Place de Stalingrad the canal becomes the Canal de l'Oourq, which runs west for 107 km up the Marne and Ourq valleys. It was built in 1822 to bring fresh water to Paris, in addition to being navigable. This is the Parisian canal with the boat traffic, and at the junction with the Canal St. Denis, 5 km upstream you can see that traffic passing through one of the most unusual old locks in the world. You can either walk up (can't miss the old iron lift bridge at the Rue de l'Ourq) or take the metro from Stalingrad to Coquelin-Carnot and follow the street of the road to the canal's lower end. The street runs to the canal at St. Denis, then right to Lock 1 at the junction. This canal taxes boats from the Canal de l'Oourq down to the Seine below Paris, through seven locks (the Gare St. Denis is next to the canal at Lock 3). Each lock is actually two parallel locks with different sized chambers (62 x 33.5 m); all have moderate lifts of 2 to 4 meters except Lock 1 which has the enormous lift of 10 meters, or some 30 feet. This lock is so deep that boats going downstream seem to come to a dead-end wall, but when the lock is emptied a previously submerged gate opens and the boats exit through a tunnel at the bottom of the lock. This canal, like the others in Paris, was completed by the early 1800's, but it must have been enlarged since; the portals of the tunnels from Lock 1 date 1891 and 1892. And the canal era in France is not yet over, because a modern control building for the lock was under construction, a contrast to the old stone walls, buildings, and inscriptions.

The Arch Footbridge at Locks 5 and 6 on the Canal St. Martin in the middle of Paris.

You can also bicycle along the canal. Paris-Velo (Rent-A-Bike), 2 Rue de Fer a Moulin, Paris 5 (Phone 437-28-22) is conveniently located just across the Seine from the lower end of the Canal St. Martin and is open every day. I also cycled 5 km up the Seine and the mouth of the Marne to see 'The Lock at Charenton' (L'Eculeuse No. 1'), a scene of Georges Simenon's mystery novel that was published in English in MAIGRET BITS IT OUT, Penguin Books, 1962. The metro or a bus will also get you there; the Falk map of Paris shows metro stations and bus routes, in contrast to most maps. Sit next to the lock, read the book, and realize how much things have been changed by time and freeways. From Charenton you can cycle two more km along a riverside trail and back streets to the lock and 15 km tunnel on the Canal St. Martin, which cuts across a bend in the Marne to Joinville-Le Pont. An inscription at the end of the tunnel dates it 1813, and a water supply tunnel next to it at 1836.

Visitors to Paris are also warned by a recent article in WATERWAYS WORLD not to miss the waterways museum downstream at Conflans St. Honorine, 25 minutes by train from platform 13 at the Gare St. Lazare, open on Wednesday, Saturday and Sunday from 1000 to 1800; it is recommended, when the boatmen are there, and Roger Calvert, in INLAND WATERWAYS OF EUROPE, recommends contacting Tourisme Français, 99 Rue de la Victoire for cruises on the Seine. And how about the other underground canals of Paris - the sewers, open to visitors at confusing dates and times? Don't forget to pick up local postcards of the canals as you travel, and paperback copies of Georges Simenon's canal novels with canal-boat covers, such as L'ECULEUSE No. 1, MAIGRET ET LES TEMOINS RECALLANT, and LE CHARHAIET DE LA PROVIDENCE. The last, in English; MAIGRET MEETS A MILOD, Penguin Books, 1963 takes Maigret on a bicycle along the 57 km Canal Latéral a la Marne, which might be worth repeating. And then there are his canal short stories such as 'Inspector Maigret Thinks,' in Ellery Queen's Mystery Magazine for June 1967, an incident on the upper Seine. Is there a Simenon enthusiast who wouldn't let us know of other canal short stories, perhaps enough for a collection?

For charts of the French canals see GUIDE DE LA NAVIGATION INTERIEURE (Bergeron-Lavraut, 5, rue Auguste-Compte, Paris 7)

Lehigh "Clean-Up"

On Sat., Dec. 15th, 1979, the members of the Bethlehem Township Lions Club held a work party on the Lehigh Canal Towpath. Starting at Lock #46 (Hopes Lock) the towpath hiking trail was cleared of underbrush for a distance of over 34 miles. If you combine this with the section that was cleared by a manpower crew last summer, almost half the 44 mile trail has been reopened to hikers and bikers. It is the hope of the Lions Club that they can complete clearing the trail early next spring. All canal and hiking enthusiasts should applaud the efforts taken by this group of men. (C. W. Dow, Vice Pres., P. O. C.)

AMERICAN CANALS, NO. 29 - May 1979
Street signs are - Canal and Lock.

Posted beyond the cemetery wall.

And the long, long ditch that still remains.

Acknowledged as the dried up track.

The destination has not changed.

The goal, however, is unclear.

How often do the wheels run?

How often do we walk the streets

That were ghostly passage to appear.

Our vision blurred, the dream longed.

The brave attempt - a lost huzza.

How often do we read the signs that bind.

Our minds to pictures there were suitable ceremonies in Plainville, celebrating the arrival of canal service as far as Farmington 150 years ago.

New Chinese Canal

China is planning massive water resources development projects to enhance its agricultural and industrial productivity. Preliminary work has already been concluded on the most ambitious plan. It involves construction of a 70-mile waterway diverting some waters from the Yangtze River northward to the Yellow River and the grain-producing but drought-plagued plains of North China. For some 600 miles, the waterway would follow the route of the ancient Grand Canal, which was completed by Emperor Kublai Khan in the 13th Century. Fluvial floods and wars long ago made it obsolete.

When completed, the new waterway will have 15 navigable channels to accommodate vessels of up to 2,000 deadweight tons. Some 30 pumping stations will provide water to irrigate 10 million acres. Total cost is estimated at 100 billion yuan. In another development, China announced plans to build four huge hydropower dams with a price tag of some 300 billion yuan. Numerous improvements in the country's extensive (100,000 miles) but antiquated irrigation and navigation systems are in the works, too.

Energy Efficient Waterways

Gil Carmichael, Meridian, Mississippi, a member of the National Transportation Policy Study Committee, suggested that if the canal is the nation's energy source, then the inland waterway transportation system could be the nation's transportation in the hole. Creating the energy efficiency of water service can be compared to other modes. Mr. Carmichael said, "It is a mode of transportation that can make BTU's into useful energy. It is one of the highest priorities." He said that "important to note that large boats don't need a lot of energy to move energy. The wastage of energy is a very serious lack," he said. (National Waterways Conference Newsletter, 8 Dec. 1978)