CONTAINERIZATION ON THE GREAT LAKES: WHY IT DECLINED

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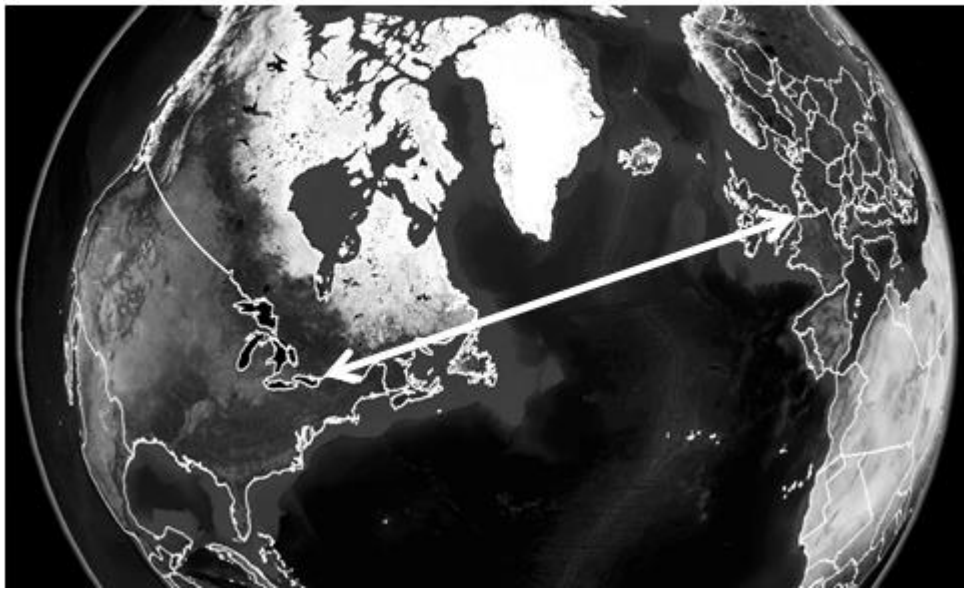
Introduction

The minimum mileage route between the largest ports of Europe and many major Great Lakes cities is the all water route utilizing the St Lawrence Seaway (see figure). Stated directly, if one takes a globe, sticks a pin in Rotterdam/Antwerp and a second pin in Toronto or Cleveland, and connects the pins with a string, then one discovers that the string extends along the St Lawrence Seaway. This route though, is highly underutilized for commerce. In fact, the only scheduled service existing on this route today was begun in 2014 by the Dutch operator, Spliethoff Group. During 2014, the Spliethoff service operated monthly between Cleveland and Antwerp, moving a combination of breakbulk, project cargo, and containers. During the 2015 season, the service will increase to biweekly.

MINIMUM MILEAGE ROUTE BETWEEN GREAT LAKES AND ROTTERDAM/ANTWERP

Satellite map courtesy of NASA World Wind



The abovementioned lack of Great Lakes commerce is puzzling because many scheduled services operated on the Great Lakes between the 1930s and 1980s, but all of them died out. This paper investigates the reasons that these services (particularly for containers) ended, with a view toward determining if conditions are favorable for a near term revival.

This paper begins with a discussion of the history of containers on the Great Lakes. Next will be a general discussion of why the Great Lakes business declined. Next, a special case -- the growth and decline of Manchester Liners, the primary Great Lakes container carrier -- will be examined. The paper concludes with a short discussion of the importance of this issue.

Container history on the Great Lakes

Below is a brief history of container shipping on the Great Lakes, described as a timeline. The timeline identifies both specific Great Lakes shipping events as well as exogenous but closely related world events. A short discussion of each historical period is included below the timeline.

TIMELINE: CONTAINERS ON THE GREAT LAKES

Time Periods	Great Lake Events	Year	Exogenous Factors
Prior to 1960: packaged freight era (pre-containers)	Fjell liner service begins	1933	First Great Lakes liner service (Norwegian)
	Oranje Lijn liner service begins	1938	Second Great Lakes liner service (Dutch)
		1945	WWII Ends
		1956	Ideal X – first-ever container ship.
	Fjell-Oranje pool service	1956	Federal Aid to Highways Act (Interstate Highways)
	Oranje Lijn first Seaway cargo	1959	***ST LAWRENCE SEAWAY OPENS***
1960s: packaged freight and early containers on the Great Lakes	FedNav starts container movements.	1967	National Transportation Act (Canada)
	Manchester Liners offers 1st full cellular service to Montreal	1968	
	Cast begins Montreal service	1969	
		Late60s	Many new GL container services
1970s: Great Lakes containerization peaks in 1973 and then gradual decline	Fjell and Oranje Lijn exit GLs	Early 70s	
	CP Ships opens Quebec term.	1971	
	ML begins GL feeder service	1971	
		1973	Peak year for GL containers
		1973-75	Recession (16 months long)
	Cast hostile bid for ML	1974	
	CN buys 18% of CAST	1975	
	Cast begins rail to GL cities	1976	
	Cast 2nd hostile bid for ML	1976	
	CP Ships relocates to Montreal	1978	
		1979	Manchester truck strike UK ports blockaded
1980s: continued decline of scheduled services and containers on the Great Lakes		1980	Staggers Act, Motor Carriers Act
	New Chicago container term.	1980	
	OOCL buys ML	1981	
	ML's GL feeder service ends	1981	
	St Lawrence Coordinated Service begins (OOCL, CMBelgie, CP Ships)	1981	
	Seamans strike against cont.	1983	
		1981-82	Recession (16 months long)
	Cast sells Montreal terminal	1981	
	Canmar (CP, OOCL)	1983	
	Cast reorg by Royal Bank	1983	
	CN sells its 18% Cast ownership	1983	
	CP/CSX track lease Detroit/Chic	1983	
	GL loses Food For Peace	1989	
1990 to present	Great Lakes Feeder Lines	2008-9	
	Sea-3	2010	
	Spliethoff initiates container service	2014	

1. **Prior to 1960**: Shortly before World War II began, two steamship lines "opened up" the Great Lakes to packaged freight service -- Fjell (a Norwegian carrier) and Oranje Lijn (a Dutch carrier, owned by Anthony Veder, a 22 year old Dutch entrepreneur). Together these steamship companies operated between European ports and Great Lakes cities on a regular basis, even though restricted by the then 14' draft limitation of the St. Lawrence River. Chicago was one of their primary destinations. Other carriers included Manchester Liners, Swedish Chicago Line, Swedish American Line, Hamburg Chicago Lines,

Fabre Lines, Metron, and Ahlmann Transcaribbean Lines. After the conclusion of World War II, the Eisenhower administration dramatically improved the transport infrastructure of the United States by developing the Interstate Highway System, as well as approving US participation in the St Lawrence Seaway which was then deepened from 14' to 27'. Thus, while the opening of the Seaway facilitated commerce between Europe and the Great Lakes, the new Interstate Highways became a competitor. At the same time, Malcolm McLean ushered in the container era with the first ever container ship, the SS Ideal X, which moved 58 20-foot containers between New Jersey and Houston.

2. **The decade of the 1960s**, then saw the beginning of container movements on the Great Lakes. Containers were first moved as deck cargo aboard breakbulk ships and on top of the cargo of bulk ships. Manchester Liners, Fednav, Zim Great Lakes Lines, Hapag Lloyd, CP Ships, and several others offered such service. In 1966 Manchester Liners began the first container service to Chicago. In 1967 Fednav was among the first carriers to bring containers into the GLs and they carried them with their steel cargo or on deck. The first move to cellular ships was made by Manchester Liners, a company with considerable background in Great Lakes shipping, when the MANCHESTER CHALLENGE, the first fully cellular container ship arrived at Montreal with 500TEUs in 1968. Soon after this event, CP Ships withdrew its liner service from the Great Lakes in favor of constructing fully cellular ships to travel between Europe and Montreal with inland travel via CP Rail. Also, Cast, a new startup by Frank Narby, began delivering containers to Montreal using bulk ships, for travel further inland using CN Rail. In 1969 Hamburg American and North German Lloyd began a semi cellular service to Montreal, Toronto and Hamilton. Poseidon ordered two ships of 245teus and cargo for delivery in 1970. In 1970 Head Donaldson began a service between Liverpool/Greenock and Quebec Cit. In 1971 Head Donaldson began cellular service to Toronto with two 160teu ships.
3. **The 1970s were the years of intense competition** for Great Lakes container movements with container volumes peaking in 1973 and declining thereafter. Manchester Liners began a Montreal feeder service with weekly deliveries to Detroit, Cleveland, Milwaukee, and Chicago. They also offered weekly train service between Montreal and Toronto. Their primary feeder ships, The Manchester Mercurio and the Manchester Rapido could hold 150TEUs. Manchester Liners' main competitor was Caste, which, partially owned by CN Railroad, offered deeply discounted rates and through bills of lading, and twice tried unsuccessfully for a hostile takeover of Manchester Liners. By the end of the 1970s both Manchester Liners and Cast were in financial difficulties. Container operations in 1979 included Black Sea Shipping, Europe Canada Lakes Line, Falline Container Service, Manchester Liners, Lykes, Netumar, Yugoslav Great Lakes Line. Other 1970s carriers included Polish Ocean Lines, NYK Lines, Shinwa, Hapag Lloyd and Norwegian America.
4. **The 1980s saw the end of Manchester Liners as well as many other container services** in the Great Lakes. Weakened by competition with Caste, having experienced a truck strike which shut down the Port of Manchester as well as the other UK ports, and experiencing a collapse in the charter market, Manchester Liners was acquired by CY Tung Group (OOCL). OOCL ended the Great Lakes feeder service and entered into a consortium, The St Lawrence Coordinated Service with CP Ships and Compagnie Maritime Belge, with rail service provided by CP Rail. Caste, also weakened by competition and estranged from its CN connection, was ultimately reorganized by the Royal Bank. During the 80s, Cast grew, using a new affiliation with CP Rail until it was ultimately purchased by CP Ships. By 1989, many of the GL container services were gone, but several survived. These included Armada Lines, Christensen, Canadian African Line, Fednav, Jadranska Slobodna, Lykes, Netumar, Netumar, and Saguenay Shipping.
5. **Subsequent to the 1990s** there have been few scheduled services on the Great Lakes. Steel is still delivered to the Lakes using Fednav, Polsteam, and Wagenborg. However these ships, though frequently visiting, are not a liner service with a specific time schedule and none of them transports containers. More recently the Great Lakes Feeder Lines and Sea-3 have attempted unsuccessfully to re-institute a liner service. During the 2014, the Port of Cleveland and the Dutch company Spliethoff Group initiated a liner service to move a combination of breakbulk, project, and container cargos. The pilot project was successful, and Spliethoff plans to add another ship for the 2015 season. Further, two other ports on the

Great Lakes are considering a new liner service for 2015. The relationship of the Great Lakes and the Dutch shipping companies is of special interest, since another Dutch carrier, Oranje Lijn, was one of the original pioneers.

Why did container shipping die out on the Lakes?

As noted on the history table above, container movements reached a peak in approximately 1973, and declined thereafter until, by the early 1990s, container services and liner services on the Great Lakes were only sporadic. The references below cite many reasons for the decline, and a summary is given below. The reasons are classified depending on whether they were physical, economic, or regulatory/institutional.

The physical limitations of the Seaway are evident. First, due to the dimensions of the locks, ships can have a maximum length of 740 feet (225.6 m) in length, maximum beam of 78 feet (23.8 m), and a maximum draft of 26.51 feet (8.08 m). This limits the carrying capacity of container ships to perhaps less than 1000 TEUs. Second, seasonality limits use of the Seaway to nine months each year with January through mid-March being the typical months of shutdown. During these months, the Seaway performs lock maintenance, and cargos destined to the midwest must be diverted to Montreal, Halifax, US East Coast ports, or the Port of Albany, NY for transshipment by rail and truck. The need to reroute cargos in winter is disruptive to shippers.

A number of competitive economic issues also contributed to the demise. First, the US and Canadian East Coast ports developed load centers which could turn ships around quickly and at relatively low price per container. Complementing this dynamic, the size of ocean going container ships has risen quickly until today ships holding 22000TEUs are under construction. These ships transport containers at low per unit costs. By comparison, physical limitations do not allow the Seaway to compete. Further, the Great Lakes ports failed to keep up with the East Coast competition. They had higher labor costs for unloading, and slower ship turnaround times since they were slow to modernize their facilities. As example, after several years of discussion with Manchester Liners, the Port of Chicago constructed a modern container handling terminal by 1980, based on a promise that Manchester would double its volumes, only to find Manchester Liners withdraw from the Lakes in 1981due to financial reasons.

A second economic reason for decline was rail and truck competition. Just as the Seaway was being developed, the Eisenhower administration added a competitor by constructing the Interstate Highway System, which assured greater truck competition to US East Coast ports. Further, US railroads had no desire to shorthaul their cargos between the East Coast ports and MidWest cities, and charged more to go to Great Lakes relative to East Coast ports. In Canada, Canadian Pacific was vertically integrated, owning both CP Ships, a Montreal terminal, and CP Rail, and used them to capture potential waterborne business. Cast/CN mentioned above, was a water/rail partnership which greatly weakened Manchester Liners with discounted rates. CN was accused of artifically lowering its rates charged to Cast.

A final contributory economic reason for decline is that rail service to Midwest cities can be quicker from Montreal by rail, than from Montreal by feeder ship. This, added to the fact that railroads are naturally reluctant to move cargo seasonally when they could move it year round, likely contributed to unattractive wintertime rates.

Regulatory/Institutional factors also lead to the decline of scheduled services and containers. Three such factors are listed below: 1) the small Seaway sized vessels offering scheduled service between the Great Lakes and Europe were typically foreign flag vessels. Such vessels, while highly effective had little voice in Congress or Parliament. More important were the voices of East Coast ports, railroads, and trucking companies, 2) especially in the early days of the Seaway, the US Congress limited its ability to market its services. This limitation was addressed by James Emery, the Administrator of the St Lawrence Seaway Development Corporation in 1984, and 3) Congressional funding for moving Food for Peace under PL480 was rescinded, since Jones Act tonnage was no longer available in the Great Lakes. Food for Peace had been a source of commerce for the Jones Act fleet due to

cargo preference laws. Thus, the Great Lakes lost an important source of US Flag business to East and Gulf Coast ports, and companies such as the US flagged Lykes Line withdrew from the Lakes.

The above reasons for decline represent a compilation of the views of multiple authors

Why did the Manchester Liners Montreal hub with Great Lakes feeders end its service?

Manchester Liners (ML) was the first mover to offer fully cellular liner service into Montreal with the arrival of the 500TEU Manchester Challenge into Montreal in 1968. Shortly thereafter, they initiated a feeder service where smaller 150TEU ships would sequentially call at Cleveland, Detroit, Milwaukee, and Chicago before returning to Montreal. Stops were also made at Hamilton, Toledo and Duluth on a less than weekly basis. Manchester Liners had a contract with CN Railroad to move containers during winter months and a dedicated train service to Toronto. By 1980 the Port of Chicago constructed a new container facility at Iroquois Landing and Manchester Liners planned to double its container volume to Chicago. The feeder service operated between 1971 and 1981, when Manchester Liners was acquired by OOCL and Great Lakes service was withdrawn, leaving the Port of Chicago without a base customer. A number of reasons have been postulated for the end of this service:

1. Manchester Liners' home port is Manchester UK, which is located on a ship canal with draft limitations similar to the Seaway. As a result, they were constrained to using relatively small ocean going container ships while container industry grew. Toward the end, Manchester Liners began to build larger ships, but the charter market crashed, leaving the company financially strained by 1981. Adding to this strain was a truck strike in Manchester which ultimately resulted in a blockade of British ports in 1979.
2. By significant rate cutting one of its competitors, Cast contributed to both Manchester being purchased by OOCL as well as Cast being reorganized by the Royal Bank. Cast never provided a feeder service to Montreal, but instead used its close relationship with CN to provide rail competition to the midwest. Cast had no fully cellular ships initially, but instead reconfigured several large bulk ocean ships to handle containers as well as bulk. This allowed them economies of scale and claims were made that CN had offered lower container rates to Cast than their other customers.
3. Another competitor, CP Ships constructed larger 2nd and 3rd cellular ships to service their Montreal hub, while Manchester continued to use its smaller 1st generation ships. CP Ships had a highly efficient system involving CP Rail and their own Montreal intermodal terminal, which must have provided significant competition.

What is the significance of Great Lakes container history?

Water competition can often have the use of reducing rail and truck rates. Currently the Midwest region is connected to the Atlantic Seaboard primarily by rail. Trucking remains an option, but an increasingly expensive option for cities located further away from the East Coast, especially in times when diesel rates are high. Water service to the Midwest can also be more timely than using US East Coast ports, as Spliethoff has shown. Its direct trips between Cleveland and Antwerp can be a week shorter than shipping via US East Coast ports. Direct shipping between Europe and Midwestern customers can avoid port congestion.

Thus, with the potential to limit rail rates, and with time advantage, the Great Lakes route is one worth revisiting. This historical review above was designed to study what we can learn from the past.

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