



**SHIPPING OUT:  
The Development of a  
Gateway Hub at the Port of Halifax**



**JAMES D. FROST**

The AIMS Atlantica Papers #5

Brian Lee Crowley

Series Editor

April 2006

The Atlantic Institute for Market Studies (AIMS) is an independent, non-partisan, social and economic policy think tank based in Halifax. The Institute was founded by a group of Atlantic Canadians to broaden the debate about the realistic options available to build our economy.

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- a) initiating and conducting research identifying current and emerging economic and public policy issues facing Atlantic Canadians and Canadians more generally, including research into the economic and social characteristics and potentials of Atlantic Canada and its four constituent provinces;
- b) investigating and analyzing the full range of options for public and private sector responses to the issues identified and acting as a catalyst for informed debate on those options, with a particular focus on strategies for overcoming Atlantic Canada's economic challenges in terms of regional disparities;
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# ATLANTICA

For some time, the Atlantic Institute for Market Studies has been promoting discussion about a geographical concept dubbed “Atlantica”. The region is broadly composed of the Atlantic provinces, eastern Quebec, the northern tier of New England states, and upstate New York. These territories share a number of common characteristics — similar demographics, diversity, and migration; a shared history, and interrelated transport issues. Perhaps most important, the residents of Atlantica have generally suffered from relative economic underdevelopment and growth compared to their respective national economies.

Atlantica may not merely be an accidental aggregation of like economies or even a region reflecting a confluence of similar external forces. The regional characteristics may exist precisely because the border passes through it. Conceptually, at least, it is not too hard to understand why this may be so. Geographically, the axis of Atlantic Canada’s trade would seem to be naturally north-south — as historically it used to be until national policies imposed an east-west bias. The huge northward bulge of Maine represents a major obstacle between Atlantic Canada and the country’s industrial heartland. Maine and the other upper New England states, on the other hand, are a peninsula encircled by the border. Whatever local opportunities for development that might exist are frequently stymied by that frontier and drawn off southward along the interstate transportation corridors — reinforcing the relative isolation and underdevelopment of the north.

The existence and placement of boundaries, whether national or international, do matter. Borders are not merely cartographic creations. They are the intersections of government policies. Where those policies are not carefully harmonized and the implications of differences clearly understood, economic consequences ensue.

This is the fifth in a series of Atlantica Papers about the International Northeast Economic Region, and is an appropriate companion piece to *Characteristics of Tomorrow’s Successful Port*, by Michael C. Ircha.

## ABOUT THE AUTHOR

**James D. Frost** started his career as Director of Marketing with the Halifax-Dartmouth Port Development Commission. He left there to become Vice President of UM Shipping, a short sea shipping service that operated between Halifax and Boston. He was also Marketing Manager for Marine Atlantic, a large Crown-owned ferry service that operated throughout Atlantic Canada. While there, he developed a new cruise product, “Cruising Labrador,” using the company’s underutilized capacity. Since 1995, Jim has owned and operated MariNova Consulting Ltd., which specializes in multi-modal transportation studies. Jim has a BA from McGill University, an MA from Queen’s, and an MBA from Saint Mary’s University. He teaches history part time at Saint Mary’s and is the author of a recently published book, *Merchant Princes: Halifax’s First Family of Finance, Ships and Steel*. He lives in Halifax with his wife and young son.



# EXECUTIVE SUMMARY

Halifax was an early pioneer in the ship container industry, yet despite recent increases in container throughput, the port continues to lose market share or, at best, stagnate compared to its largest competitors, Montreal, New York, and Norfolk, Virginia. Halifax has a magnificent harbour, but it has been thwarted by its lack of a natural hinterland on a river system and its distance from major markets. However, the continuing rapid growth of world container traffic and the increasing demand for more container terminal capacity on the east coast of North America present an opportunity for the Port of Halifax to take advantage of its enviable geographic position and proximity to major trade routes.

Massive hub ports have been developed in places such as Algeciras, Spain, Gioia Tauro, Italy, and Freeport, Bahamas, which Halifax could emulate. The port already has considerable experience with feeder services and transshipment, with various companies operating out of it since the 1970s. It is well placed to explore the option of developing as a major transshipment hub for container traffic, as well as maintaining its significant role as a gateway to markets in the international northeast and elsewhere in North America. Halifax's position on the Great Circle route also means that cargo could be shipped cost effectively to markets in the Caribbean and South America.

New port facilities to handle potential increased transshipment traffic would require a major investment commitment, but the investment would be well worth it, particularly if container vessels continue to grow in size and are no longer able to enter the harbours of Halifax's rivals on the US east coast, such as Boston, New York, and Philadelphia.



# INTRODUCTION

The Port of Halifax was an early pioneer in the container industry. Despite its location on the Great Circle shipping route, astride several major trade lanes, Halifax's long-held ambition to become a major North American gateway remains largely unrealized, largely because of the distances and expense of accessing its major markets. How can the port capitalize on its natural advantages and achieve this long-held ambition?

Twenty years ago, changes in the container industry heavily favoured Halifax. In 1989, with the introduction of round-the-world services, larger Generation III (G-3) vessels, and a trend toward "load centres," the port came within 50,000 TEUs of its arch-rival, Montreal. In the early 1990s, structural change within the industry had a deleterious effect on Halifax. Through no real fault of its own, the port lost volume, and its share of the east coast North American market, which peaked in 1990 at 11 percent, has basically been on the decline ever since, despite recent growth and record-breaking volumes. This has potentially serious consequences in terms of maintaining a critical mass to compete with ports such as Montreal, New York, and Norfolk.

From a geographic standpoint, the Port of Halifax is well positioned to take advantage of the most recent trends in global container shipping. Halifax's advantages are legendary: it is the second-largest natural harbour in the world, has deep water, is ice free, and is located on the Great Circle navigation route. It is, however, further away from its principal markets than is its competitors.

There is a long list of studies undertaken over the past decade that have focused on various aspects of the region's ports and transportation infrastructure. A number of consistent themes run through all of these studies including the need to optimize logistical flows via the Halifax gateway and transshipment node by integrating the complete value chain. Other ideas that have gained some primacy, and have experienced some recent success, are the attraction of transload and distribution activity — in effect, to increase the size of the local market.

World container port capacity was projected to grow by 125 percent between 2000 and 2012, or more than 10 percent per annum (Ocean Shipping Consultants 1999, 5, 9). In North America alone, demand for container terminal capacity was expected to increase by 7.8 million TEUs<sup>1</sup> between 1996 and 2005, requiring the building of 16 new container terminals (Drewry Shipping Consultants 1997, 1–4). Thus, early in this new century, instead of reaching the end of its "port life cycle" (see Sletmo 1999), Halifax has a major window of opportunity to develop as a major gateway and transshipment hub, provided it and its partners are willing to make the appropriate investments. An onslaught of

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1 TEUs refer to 20-foot equivalent units — hence, a 40-foot container is 2 TEUs.



more than 240 new post-Panamax vessels, many larger than 8000 TEUs, was expected to be delivered between 2005 and 2008. Few ports on the east coast of North America are able to accommodate them. Halifax is one of them, and has already deepened its berths to 55 feet (16.6 metres) for this purpose.

This study suggests a way forward and brings to the discussion some of the many examples of mammoth new hub ports being developed around the world, which offer possible lessons for Halifax.

# WORLD HUB PORT DEVELOPMENTS

A transshipment hub is “a container port that provides terminal and marine services to handle and facilitate the transfer or transshipment of containers between feeder and mother vessels in the shortest possible time” (Baird 2001). Cargo is transferred from large “mother” ships at load centre ports onto small “feeder” ships destined for smaller, regional ports. The concept is akin to a hub-and-spoke airline operation, such as that operated by Air Canada Jazz, Air Canada’s former regional subsidiary in Atlantic Canada.

Transshipment hubs, or entrepôts, have existed for centuries. Indeed, many European cities — such as the twelfth-century Hanseatic League of city states — trace their origins from their development as intermediary centres of trade and transshipment. Classic examples of North American entrepôts are Montreal and New York. Halifax has always aspired to be one as well, but despite its magnificent harbour, it has been thwarted by its lack of a natural hinterland on a river system and its distance from major markets.<sup>2</sup>

There are many examples of successful hub ports around the world, but not many in North America. The world’s two largest transshipment hubs are Hong Kong and Singapore, which handled 21.9 million and 20.6 million TEUs, respectively, in 2004. Singapore, which has a population of only 2.5 million, transships most of its cargo to destinations in southeast Asia, such as Indonesia, Thailand, Malaysia, Vietnam, Bangladesh, and India, as well as to Australia and New Zealand. In fact, Singapore bills itself as “the world’s largest transshipment hub,” with over 100,000 vessel calls and 700 million tonnes of cargo handled per annum. The world’s largest feeder vessel, a 1080-TEU unit owned by Regional Container Lines of Thailand, operates from Singapore to the Indian subcontinent. Likewise, feeders operate from Hong Kong to various ports in China, Vietnam, the Philippines, and Indonesia.

By and large, the many examples of hub ports predicated on the concept of transshipment — such as Algeciras, Spain; Gioia Tauro, Italy; and Salalah, Oman — have very little origin-destination cargo; most of their container throughput is transshipped. Algeciras, for example, was established by Sealand and Maersk (which is now one company) as a pivot point for their east-west and north-south routes, from which cargo destined from, say, New York to South Africa could be transshipped. Gioia Tauro, established as a transshipment hub for the Mediterranean area only in 1995, grew to twenty-fourth largest in the world by 2004, handling more than 3.2 million TEUs. Salalah was established by Maersk Line to serve as a transshipment point for its east-west, Middle East, and east African services.

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2 For a history of the early development of Halifax as a port, see Sutherland (1975).



In North America, transshipment hubs are most prevalent in the Caribbean. Notable examples exist at Freeport, Bahamas; San Juan, Puerto Rico; Kingston, Jamaica; and Manzanillo, Panama. Feeder services exist at a number of ports on the US east coast, but only New York and Miami resemble transshipment hubs. New York has services to Albany, Boston, Puerto Rico, and Bermuda. Miami serves destinations in the Caribbean, but many services also actually originate there. Its role as a transshipment hub has, to some extent, been usurped by Freeport. Halifax also functions as a hub, providing transshipment services to St. John's, Newfoundland; St. Pierre and Miquelon; Portland, Maine; and Boston.

There is, however, a downside to developing hub ports purely as transshipment centres. As ports in the Mediterranean and southeast Asia have found out, carriers are able to play ports off against each other. Moreover, hubs can be moved, as in the shift of Maersk Line and Evergreen Line from Singapore to Tanjung Pelapas, Malaysia, in 2000. This inter-port competition can exert significant downward pressure on container-handling rates.

## *Freeport, Bahamas*

It is instructive to examine a number of case studies of recent or proposed hub port developments around the world, as there are a number of lessons for Halifax.

Perhaps the most relevant case study for our purposes is Freeport Container Port in the Bahamas. Located 65 nautical miles from the coast of Florida, Freeport was a joint venture by Hutchison Port Holdings (HPH) and Grand Bahama Development Company, of which HPH owns 50 percent. The terminal, which can handle the largest vessels, was built to exploit Freeport's geographically advantageous location astride several north-south and east-west trade lanes, particularly those going to the Caribbean and South America. In the words of an HPH executive, "the first thing that struck me was Freeport's position — a lot of trade lanes merge here" (Adams 1998).

Phase I of the port cost US\$78.3 million, with an initial capacity of 560,000 TEUs using four post-Panamax gantry cranes. Expected additional improvements include 366 metres of new quay, three additional post-Panamax cranes, and twelve straddle carriers. When finished, the complex will consist of three berths of 915 metres, seven super-post-Panamax cranes, and 22 straddle carriers, with a total capacity of more than 1 million TEUs. The port's owners also plan to explore the feasibility of linking the transshipment terminal's operations with the nearby Freeport International Airport.

Since its establishment, Freeport has grown rapidly in size, from handling fewer than 11,000 TEUs in 1997 to almost 1.2 million TEUs in 2004. It has now become a major rival to nearby Florida ports, many of which are now gearing up to provide feeder services. In the words of one analyst, Freeport's 14.5-metre channel "beckons large vessels to transload containers to and from large ships that might ignore the largest US ports entirely and tie up where non-union port gangs and shortline railroads congregate" (Wilner 1999, 12–13). Freeport is meant to be a deeper, cheaper rival to Miami, Jacksonville,

and perhaps Savannah. Its costs are significantly cheaper, with container lift rates reportedly one-half what they are in Miami, and its feeders are not restricted by cabotage regulations under the US *Jones Act*. It also has no unions and few government restrictions, and HPH pays no taxes on its Freeport earnings. Its biggest customers are Mediterranean Shipping Co. and Maersk Line, which together account for 85 percent of the port's throughput. Only 4 percent of the port's cargo is destined for the local market.

## *Gioia Tauro, Italy*

Gioia Tauro, one of the world's most phenomenal port developments, did not exist until 1995. Occupying 74 hectares, it has eight berths, 14 post-Panamax cranes, 2450 metres of quay length with up to 15 metres of water alongside, and 3000 metres of on-dock rail. In its first full year of operation, Gioia Tauro handled 575,074 TEUs, a remarkable 75 percent of which was in the last six months of 1996 (see Cass 1998, 209; Woodbridge 1999, 87–89).

Gioia Tauro now faces increased competition from several other Italian ports, including older ones such as Naples and Genoa but also newer ports such as Taranto and Caligari, as well as Marsaxlokk, on Malta. In an interesting twist compared to Halifax, Gioia Tauro is also now beginning to look beyond transshipment, which represents an estimated 80 percent of its traffic base, to expanding its role as a gateway for containers moving to Italy and southern Europe.

## *Scapa Flow, Scotland*

In 2001, a new initiative emanating from Scotland promoted the notion of a major transshipment hub at Scapa Flow — the United Kingdom's largest deepwater harbour, in the Orkney Islands, north of the Scottish mainland — with shuttles linking it with the Far East as well as Halifax and Freeport in North America.

The idea for a shuttle service across the Atlantic from Europe is not a new one. In the mid-1960s, an eccentric New York engineer, John Kneiling, was hired by the then Halifax Port Commission to examine the feasibility of developing a container gateway to North America at Halifax. According to Kneiling,

The key to the Port's future is its 70' deep harbour (compared to New York's 45' or Montreal's 35'), which would make Halifax the only port in North America capable of handling superships of 200,000 tons and up. A supership shuttle between the Dutch port of Rotterdam and Halifax, with 70 mph turbotrains hauling seven mile long strings of container cars deep into the US and Canadian west, could knock 25 percent off present shipping costs. (Hunter 1993, 67.)

The latest scheme for a shuttle between Scapa Flow and Halifax originates with the Highlands and Islands Enterprise and Orkney Islands Council. Conceived by Alfred Baird, a leading international



expert in port development, it envisions the development of Scapa Flow as a European offshore transshipment hub. Baird notes that, like Halifax, it is “on the Great Circle Route between Northern Europe and North America [and] has traditionally been the last and first port of call on the voyages to Canada. Its strategic location, straddling the North Sea and Atlantic Ocean, was highlighted by its role as Britain’s major Naval Base in two World Wars” (Baird 2001, 6). Initially, three mainline services would intersect at Scapa Flow: a North Atlantic shuttle between Orkney and Halifax; a South Atlantic service between Orkney and Freeport; and a Europe-Asia service between Orkney and Singapore. An array of feeder services would emanate from each hub — in the case of Halifax, services would go to Boston, New York, Baltimore, and Norfolk.

The Orkney concept is predicated on Scapa Flow’s natural advantages as well as on the use of ships of 4000 TEUs capacity for the North and South Atlantic shuttle service and 6000 TEU capacity for the Europe-Asia service. Baird concludes that the North Atlantic service, including feeder costs, would save almost US\$20 per TEU, the South Atlantic one would save almost US\$70 per TEU, and the Europe-Asia service would save more than US\$150 per TEU over existing multi-port itineraries. In addition, there would be significant savings in capital and fuel costs. The Orkney promoters have been seeking proposals for a three-stage development of a new container transshipment hub, ranging in handling capacity from 1.1 million to 3.9 million TEUs. The project is expected to cost between US\$196 million and US\$686 million.

The Scapa Flow concept seems somewhat flawed, however, because of the small size of vessels envisioned in the four shuttle services. Already, post-Panamax vessels of 5700 TEUs capacity are calling at multiple ports along the east coast of North America, including Halifax, while ships of more than 8000 TEUs capacity are in service between Europe and Asia. With even larger vessels coming into service, it might be prudent for the Scapa Flow proponents to rework their scheme along the lines of a hub-and-spoke concept called “Malacca-max,” which envisions five hubs located at Rotterdam, Gioia Tauro, Salalah, Singapore, and Hong Kong and able to handle vessels with a capacity of as much as 18,000 TEUs — the maximum size of ship able to negotiate the vital Strait of Malacca between Singapore and Indonesia (see Wijjolst et al. 2000). Moreover, in marked contrast to the Scapa Flow concept, which envisions two transatlantic services, Malacca-max proponents discount the potential of the transatlantic trade to support a single service.

# HALIFAX AS GATEWAY AND TRANSSHIPMENT HUB

Increasingly, transshipment hubs are seen as a critical link in supply-chain management (see Osman 2002). They have to be responsive, provide global service coverage, and be flexible and fully integrated with the whole distribution function. Their success also depends on a port's ability to add value to the logistical chain.

The quickest and perhaps most efficient way to develop a hub port is to build a significant amount of transshipment business. In transshipping, a hub port potentially handles each container four times: the container is lifted off the inbound mother ship, onto the outbound feeder, off the inbound feeder, and back on to an outbound mother ship; as well, containers are typically grounded either on the quay or in the container yard between ship movements. Each move contributes revenue to the terminal operator.

In determining the location of a hub, carriers look for its strategic location relative to the primary origins and final destinations of cargo, its proximity to main shipping lines, and its location relative to feeder ports that it would serve. Beyond location, the most critical attributes of a potential transshipment hub are its ability to handle large ships, the extent of its terminal facilities, the efficiency of container-handling operations, the availability of frequent feeder services with an appropriate geographical spread, and attractive cargo-handling charges (see Fleming 2000; Wijnolst et al. 2000; World Bank 2002, 39–41).<sup>3</sup> Ideally, the hub should also have some hinterland cargo. In addition, carriers and investors look for a port with an impressive growth rate and growth potential.

Halifax now has a unique opportunity to establish itself as both a rail-oriented gateway and a water-based transshipment hub. The port already has considerable experience with feeder services and transshipment, with various companies operating out of it since the 1970s, although the number of containers handled has been quite small. Enhancing Halifax's role as a hub will require new feeder services serving new markets or variations in the way current markets are serviced. Similar to Freeport relative to Florida and other South Atlantic ports, the biggest advantage that Halifax has over its two US competitors, New York and Norfolk, is the ability to use foreign-flagged and -crewed

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3 Most carriers look for a minimum water depth of 15 metres and terminal facilities capable of handling ships of 10,000 TEUs or more. Quick ship turnarounds also require adequate numbers of cranes able to span at least 18 rows of containers. The terminal should also be able to dock one or more feeder ships to the bow or stern of the mother ship along the same dock, thus requiring at least 1000 metres of quay.



shipping to provide feeder services.<sup>4</sup> Shipping between US ports is, however, restricted by the *Jones Act*, which limits such activity to US-built, -owned, and -crewed vessels, although most US-based feeder cargo is carried by a combination of tug and barge, which cannot offer the same level of efficiency in terms of speed and reliability.

The extent to which mainline carriers use feeder services emanating from a hub at Halifax would depend on the economics of calling at numerous ports on a direct basis with relatively small vessels compared with using larger vessels that can be handled by a smaller number of ports and the cost of feeder services. The use of larger new vessels seems to lead to a concomitant lowering of rates, rather than improvements in the economics of operating the new vessels, so that the ability to pay feeder charges is actually impaired. In addition, while the trend toward load centre ports was unrelenting in the 1980s and 1990s, some regions, such as China and southeast Asia, are now seeing a move back to mainline vessels that call at new port facilities, instead of relying on feeder services. For example, until the late 1990s, most Chinese cargo was transshipped at Hong Kong, but new port facilities have sprung up all along the coast of China at places such as Tianjin, Xiamen, Shanghai, Yantian, Quindao, Dalian, and Fuzhou. Similarly, most southeast Asian cargo was handled at Singapore, but new ports have emerged in Malaysia and Indonesia, as well as India.

## *Potential Feeder Services from Halifax*

An expanding Halifax hub could well see feeder services develop to various ports on the US east coast, as well as to Bermuda and the Caribbean (see Table 1). Halifax's position on various Great Circle Routes also means that it is the closest east coast North American port to both South America and South Africa — a fact that most people do not realize — and vessels calling at Halifax could link up with services to Santos, Brazil, and Cape Town, South Africa.

The most important Halifax-based feeder services would likely be those to markets in New England, which has the highest-value import cargo in the United States and a market of more than 400,000 TEUs per annum. Most cargo would go to Boston, despite its high port costs,<sup>5</sup> since most shipping lines prefer their transshipped cargo to be handled there, rather than move to take advantage of potential savings elsewhere. Ports in northern New England are more competitive than they once were, and they are anxious to develop connections with Halifax, although they do not yet have infrastructure in place to handle significant volumes of cargo. South of Boston, the two potential candidates are Bridgeport and New London, Connecticut.

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4 The US government appears to recognize that US ports are “missing the boat” with respect to developing feeder services and coastwise shipping, but the *Jones Act* debate is highly charged politically; see National Ports and Waterways Institute (2000) — interestingly, this study sees a role for Halifax as a link to US ports in the northern reaches of the continent.

5 When the author managed a Halifax-Boston feeder service in the late 1980s, Boston port costs accounted for fully 55 percent of weekly operating costs; vessel, fuel, Halifax port, and staff costs accounted for the balance.



**Table 1: *Potential Additional Transshipment Cargo through Halifax***

Market	Additional TEUs		
	Low	Medium	High
Newfoundland and Labrador	10,000	20,000	30,000
Northern New England	12,500	25,000	50,000
Southern New England	12,500	25,000	50,000
Philadelphia	5000	10,000	25,000
Caribbean	5000	10,000	25,000
South America	5000	10,000	20,000
Total	50,000	100,000	200,000

Source: Frost 2002.

York would seem to depend, however, on container vessels reaching the 5000–8000 TEU threshold and the ultimate failure of the Port of New York/New Jersey to dredge to depths that would enable it to accommodate such ships.

Still another important market could be Philadelphia, which handled about 178,000 TEUs in 2004. Although its close proximity to New York makes it difficult for Philadelphia to compete with that port, it has developed a significant niche serving the refrigerated meat industry and is a major gateway to and from Australia, New Zealand, and South America. The viability of a feeder service between Halifax and Philadelphia would depend on the cost of the feeder compared with that of sending cargo by truck from New York to Philadelphia. Given New York's relatively high port costs, the latter option is somewhat less expensive, but the economics could easily change; moreover, some shippers would prefer a Philadelphia port call to one in the New York-New Jersey area.

Halifax could also be used as a pivot point for east-west and north-south trade routes similar to the role played by Algeciras, Spain. Halifax's location and relatively low port costs could entice major lines to use it as a transshipment point for cargo from northern and southern Europe as well as south-east Asian cargo routed through the Suez Canal and destined to or from South America.

## ***Feeder Costs***

Generally, most feeder operators prefer to charter vessels, as this allows them to adapt more rapidly to changing market requirements in terms of ship size, type, and speed. Operators of owned tonnage tend to have a sufficiently large route network to enable them to redeploy ships as the optimum vessel configuration evolves.

The size and type of vessel depends on the number of ports called, port rotation, and frequency of service. It also depends on the need for speed, as speed is easier to achieve with a larger vessel,

Another key market is New York. In 1999, Maersk Sealand called for proposals for the development of a Halifax-based superport to serve markets in the New York-New Jersey area. An idea brought forward at the time would have seen Maersk call at Halifax with the company's 6600 TEU vessels and feed the New York market using its own 1250–1450 TEU feeder ships. This option would have kept much of the intermodal cost in-house, rather than paying it out to a railway operator. Transit times would have been faster than the quickest rail route, while costs would have been virtually the same. The feasibility of service to New



although speed also increases fuel costs. Charter rates for geared vessels are also more expensive than for cellular or gearless vessels, but this is probably a consideration only for New England feeders that would call at ports other than Boston, which do not have gantry cranes to lift shipboard containers.

The container ship charter market is usually in a state of flux and can be quite volatile. For example, the cost to charter geared vessels with a capacity of 350 TEUs rose from US\$4463 in 2003 to US\$8479 in 2005;<sup>6</sup> moreover, such vessels are difficult to obtain. Owners are also demanding that charters be fixed for a minimum of 24 months. Likewise, the market index for vessels up to 725 TEUs rose from US\$6650 in 2003 to US\$9888 in 2005 (Clarkson's 2006).

Whether feeder charges are on liner terms or on a port-port basis will depend on the type of route structure and the comparative strength the feeder operator has relative to the mainline carrier.<sup>7</sup> At outports such as Gloucester, Massachusetts, for instance, a Halifax-based feeder would probably charge liner terms and absorb all costs of the operation. For ports such as Boston, New York, or Philadelphia, it is conceivable that the feeder would carry the cargo on a port-port basis and the mainline carriers would pay for stevedoring, labour assessments, and other port charges.

## *Other Financial Considerations*

The financial implications of developing a transshipment hub are significant. Throughput containers (to rail or truck) generate tariffs of about \$50 per container and an incremental contribution of approximately \$40 to handling fixed costs, while each additional transshipment container would generate the same \$50 tariff revenue, as well as two incremental contributions of \$40 per lift, because each container is handled at least twice. Thus, an additional 100,000 transshipment containers handled at Halifax would result in 200,000 lifts and incremental contribution of \$13 million to the profitability of the port system.

Should the Scapa Flow or Malacca-max concepts come to fruition, there is considerable potential to enhance the total amount of container traffic routed through Halifax, particularly if it becomes viable to serve the New York market by feeder. If the projected New York dredging program is delayed and the largest post-Panamax tonnage begins to be used on the North Atlantic, this would open up additional possibilities for serving New York, although Halifax would likely continue to be used for lightening and topping off cargo destined for the US Midwest.

Halifax may grow incrementally, but the port has found it difficult recently to increase its share of North Atlantic container traffic. The Maersk Sealand superport proposal faced the challenge of attracting sufficient volumes to justify the required investment in new facilities. However, maximizing

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6 Such "time charters" include crew costs, but not fuel, lubricants, or port charges such as pilotage and stevedoring.

7 "Liner terms" means the feeder pays for all stevedoring charges, whereas "port-port" means the stevedoring costs are absorbed by the mother ship and the feeder operator charges only for moving the container from one port to the other.

transshipment cargo at a hub port could be the easiest and fastest way to build volume to justify significant capital investment. It is estimated that additional transshipment traffic could generate 100,000 TEUs of new business for the Port of Halifax, which, in effect, would net out to an additional 200,000 TEUs, since each container would be handled by both a feeder ship and a mother ship.

To Halifax's advantage is the fact that financial markets view ports and terminals favourably. A 1999 report notes that "the extent to which these [large] load centres will be able to maintain a solid position in the competitive market for discretionary cargo will depend on four key factors: harbour depth, efficiency in intermodal connections, labour productivity, and the size of the local market they serve" (Moody's Investors Service 1999). In referring specifically to hub ports, the report notes that hubs yield advantages for shipping lines in terms of greater asset use, better negotiating position *vis à vis* inter-port competition, and vastly improved economies of scale.



# CONCLUSION

In this paper, I have suggested that the Port of Halifax is well placed to explore the option of developing itself as a transshipment hub for container traffic in addition to maintaining its significant and long-sought-after role as a gateway. Obviously, a greatly increased level of throughput would be needed to justify the massive investment required for new port facilities. If adequate facilities were developed, however, transshipment could account for between 25 and 50 percent of the port's cargo base, or even more if vessels continue to grow so large that they can no longer enter the harbours of Halifax's rivals on the US east coast, such as Boston, New York, and Philadelphia.

Massive hub ports have been developed in places such as Algeciras, Spain, Gioia Tauro, Italy, and Freeport, Bahamas, which Halifax could emulate. Feeder vessels from a Halifax hub could serve the US east coast, Bermuda and the Caribbean, and cargo could be transhipped to South America. The development of such feeder services could augment the port's role as a gateway, increase its share of the New England market, and open up new markets in places such as Philadelphia, the Caribbean, and South America.

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