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# Multimodal Transport From a Canadian Perspective

By Joseph M. Diamond\*

## ABSTRACT

The current approaches towards policy development by both the American and Canadian governments have been overtaken by the transport industry's adoption of new technological advances, the development of business practices and organizational procedures to facilitate intermodal and multimodal transport, and the growth in importance of non-carrier transport enterprises. Even the most recent regulatory reforms in both countries have, in large part, been developed on a piecemeal modal approach. After providing some relevant background information, this paper will identify and assess some issues relevant to the emergence of coordinated intermodal transport services in a North American context and suggest that more stress should be placed on the "multimodal" approach to shippers' distribution requirements rather than the "modal approach" traditionally taken by governments.

## I. INTRODUCTION

In this paper, multimodal transport as a branch of intermodal transport means the transport of cargo by a transportation enterprise, which may be a railway, shipping line, trucking company, air carrier or freight forwarder, who assumes, as a *principal*, responsibility for the through intermodal movement of cargo. For the purposes of this paper, such a transport enterprise will be referred to as an MTO (multimodal transport operator). The forces behind the recent growth of multimodal transport and the emergence of MTO's are well-known in both Canada and the United States. These are essentially the adaptation to new technologies and the appearance of new organizational concepts. The transport systems of both countries have adapted to a number of technological advances such as containerization, giant containerships, double stacked liner trains, and computer technology. Developments in the air freight sector are not discussed in this paper.

## II. REGULATORY REFORM IN CANADA AND THE UNITED STATES

Deregulation has stimulated the development of multimodal transport by allowing carriers and freight forwarders greater freedom of action to take advantage of new market opportunities and to react quickly to competitive pressures. Both countries are implementing regulatory reform in their transport industries but the nature of the reform is necessarily different because of the different ways in which transport has evolved in the two countries.

In the U.S., the Staggers Rail Act of 1980, the Motor Carrier Act of 1980, and the Shipping Act of 1984, have changed the regulatory environment for trucking, rail and shipping allowing intermodal ownership and greater freedom to operate and take advantage of new market opportunities. In Canada, the regulatory system has always allowed intermodal ownership and the National Transportation Act has given Canadian railways a fair degree of latitude in setting rates; and, the Shipping Conferences Exemption Act has not prohibited liner shipping carriers from quoting intermodal rates (such rates have been filed with the Canadian Transport Commission since 1974). The movement towards the regulatory reform of trucking by the provinces has gained considerable momentum. The current deregulatory proposals in the Canadian government's "Freedom to Move" paper re-enforces the provincial movement towards truck deregulation and indicates extensive regulatory reform in all modes of transport.

Although Canadian rail rates have been deregulated since 1967, the Staggers Railway Act broke new ground by, not only deregulating rates, but also allowing confidential contracts and the freedom to rationalize their rail networks and accomplish mergers without being subject to a high degree of regulatory control. As a result, U.S. railways are now better able to reduce operational costs than their Canadian counterparts. For example, the decision of Canadian railways to abandon unprofitable branchlines are still subject to extensive regulatory review.

Freight forwarding is a highly diverse industry in both Canada and the U.S. However, the industry has evolved differently in the two countries because of the different regulatory environments. There are very few instances where freight forwarders are dealt with in Canadian regulation. In Canada, arrangements between domestic forwarders, railroads and motor carriers are relatively free from regulation. In Ontario, there is legislation concerning the regulation of freight forwarders under the *Public Commercial Vehicles Act*. Although entry regulations for this sector are the same as for trucking companies, in practice, entry is not restrictive. However, the regulation in Ontario, for instance, or any other province, does not extend to interprovincial or international transport.

In the U.S., the Interstate Commerce Commission ruled in 1976 that only vessel operators could file intermodal tariffs with domestic surface carriers. Therefore, intermodal opportunities were generally more open to the full containerload shippers. Vessel operators offering intermodal services prefer to deal with large Shippers of full containerloads. Non-vessel operating common carriers (NVOCCs) in their role as consolidators, gave smaller shippers access to intermodal services. After the passage of

trade. The rail data on diverted cargo transiting Canada or the U.S. was not available.

Railways and ocean carriers have been the carriers which have played a major role in initiating and coordinating intermodal and multimodal movements. Although trucking firms participate extensively in intermodal and multimodal movements through pickup and delivery services or performing the linehaul on land portions of such intermodal movements, it appears, from Tables IV and V, that trucking firms in Canada do not usually *arrange* intermodal transport or *initiate* many multimodal services. This is illustrated by the fact that transport purchased by the Canadian-based trucking firms from railways and/or water carriers are almost nil.

Even among truckers who purchase such services from other modes, these expenditures as a percentage of total operating expenses are still very small.

#### IV. INTERMODAL AND MULTIMODAL TRANSPORT DEVELOPMENTS IN A NORTH AMERICAN CONTEXT

As mentioned earlier, *multimodal* transport is a type of *intermodal* transport services which refer to the coordinated through movements of cargo utilizing a combination of modes. *Multimodal* transport services occur when a single business enterprise, acting as a *principal*, offers a *single rate* under one

TABLE IV  
MOTOR CARRIERS WHICH PURCHASE  
RAILWAY TRANSPORT SERVICES

	Number of Carriers	Purchased Transport Expenses (1)	Total Operating Expenses (2)	(1)/(2) (%)
1976	102	66,102,125	833,511,110	7.9
1977	106	65,828,240	901,936,230	7.3
1978	98	70,441,030	1,035,021,101	6.8
1979	113	74,279,570	1,110,999,853	6.7
1980	124	85,888,435	1,437,738,301	6.0
1981	116	88,645,121	1,584,540,079	5.6
1982	120	80,577,170	1,453,876,637	5.5
1983	137	80,449,270	1,387,299,121	5.8
1984	131	88,510,591	1,765,484,522	5.0

TABLE V  
MOTOR CARRIERS WHICH PURCHASE  
MARINE TRANSPORT SERVICES

	Number of Carriers	Purchased Transport Expenses (1)	Total Operating Expenses	(1)/(2) (%)
1976	28	6,817,520	269,832,774	2.5
1977	28	7,588,396	288,789,279	2.6
1978	33	8,499,439	304,103,984	2.8
1979	39	11,387,881	410,901,818	2.8
1980	37	12,156,974	545,705,992	2.2
1981	45	14,152,936	626,553,317	2.3
1982	46	9,667,112	506,408,156	1.9
1983	31	11,585,728	552,198,648	2.1
1984	37	15,501,716	865,442,684	1.8

Source: Derived from Motor Carriers-Freight survey, Transportation and Communications Division, Statistics Canada.

*contract and assumes responsibility for completion of the intermodal movement of cargo* as indicated in the contract of carriage; such an enterprise may be classified as a *multimodal transport operator* (MTO). The characteristic which distinguishes multimodal from intermodal transport is the assumption of responsibility by the MTO as a principle, for the transportation of goods by more than one mode of transport. An examination of transportation trade journals, including a number of recent American publications focussing upon intermodalism, provides a clear indication that the number of multimodal operators are increasing and that these types of services will likely be the major growth area in transportation over the next few years.

There is recognition within the transport industry of a difference between "agents" and "principals". In its proposed Standard Trading Conditions, the Canadian International Freight Forwarders Association defines an "agent" as not being responsible for any "physical" service. Agents perform ". . . acts solely on behalf of the customers in securing services by establishing contracts with third parties so that direct contractual relationships are established between the customer and such third parties". A company can also hold itself out as an operator (or principal) of a regular line or service over a route or part of a route on which the goods are to be carried<sup>2</sup>. As an operator or "principal" this company is responsible to the shipper for the transport of cargo. However, there is a wide range of liability options which can be assumed in any such arrangement.

The role of the freight forwarder has evolved differently in different jurisdictions. In the U.S., the regulatory environment has made a distinction between the freight forwarder as agent and the freight forwarder as principal. In Canada, a freight forwarder is an agent or a principal depending upon what the freight forwarder claims it is willing and capable of doing and the terms of contract between the freight forwarder and its client<sup>3</sup>.

Traditionally, the essential role of a freight forwarder in both Canada and the U.S. was to arrange for the carriage of the shipper's cargo to destination. In this role, the freight forwarder acts as an agent for a client who may be either a shipper or consignee. As has already been mentioned, there are very few legislative or regulatory restraints on what the freight forwarder can undertake in Canada. As a result, the freight forwarder can and has taken on the roles of a principal (with contractual obligations), insurance broker, warehouse operator, customers broker, or carrier, among other functions.

The NVOCC, as an MTO, accepts responsibility and liability for shipments for which it has issued bills of lading and serves as a convenient point of contact for the shipper. NVOCCs have grown in importance because the smaller shipper exporting in less than carload shipments has been at a disadvantage *vis-à-vis* the full containerload shipper. Containerization has made the quotation of through rates and door-to-door cargo movements feasible. Since ocean carriers prefer not to handle less than containerload shipments, a demand arose for freight forwarder and multimodal services.

Both CN Rail and CP Rail are multimodal companies with transcontinental railroad, truck and freight forwarding services. Both railways have established Canadian landbridges and microbridges from coast to coast accompanied by a network of

inland and sea-port container terminals across the country. However, with the American deregulation of truck and rail, U.S. railroads are quickly establishing their intermodal and multimodal networks. Furthermore, at this time, U.S. railways and trucking companies are freer to make the alliances with ocean carriers to implement multimodal services. Both APL and Sea-Land provide such services. For many U.S. trucking companies, diversification into the NVOCC sector is a logical means of extending its domestic operations into the international market. A number of large U.S. trucking companies, such as Yellow Freight and Consolidated Freightways, have initiated multimodal services to Europe and the Far East, both through affiliated companies and through arrangements with independent transport companies of all modes. Furthermore, both Yellow Freight and Consolidated Freightways have Canadian operations either through operating authority in Canada and the ownership of subsidiaries. This provides these large U.S. truck-based MTOs with the ability to handle Canadian overseas cargo. As already mentioned, Canadian truckers are usually not the initiators of multimodal services.

## V. SOME POLICY IMPLICATIONS

Intermodalism and multimodalism has opened up new transport options and has brought carriers and ports who were previously operating in different geographical locations in direct competition or at least coordinating contact.

Some of the major policy issues related to intermodalism and multimodalism are the impacts of regulatory reform, effects of "freer trade" between Canada and the U.S., common carrier status and cargo diversion.

It can be argued that the deregulation which has occurred in the U.S. and the regulatory reform which is imminent in Canada represents a movement towards "freer trade" in transport services between Canada and the U.S.

The Canadian government's deregulatory proposals contained in its "Freedom to Move" paper recognize that since 1967 transportation services utilizing more than one mode have grown and that shippers' needs have become more varied. The paper states that transport policy objectives will be revised to ". . . promote actively both intramodal and intermodal competition". This would be consistent with the reality of, for example, the development of all water "round-the-world" services versus a combination of water and surface transport utilizing the microbridge and landbridge concept. Also, there are indications that the growth of intermodal transport in the U.S. may result in a greater diversion of Canadian overseas trade through the U.S. transport systems resulting in impacts on Canadian carriers, and ports.

The scale of container operations (either for maritime or overland activities) in the U.S. are much greater than in Canada; for example, for each sea-container moved in Canada, ten are moved in the U.S. Most of the liner companies serving Canadian ports are doing so as part of an integrated North American service. Shipping lines are calling at the Canadian east coast ports of Halifax and Saint John and the west coast port of Vancouver as secondary ports of call in a broad North American itinerary

the Motor Carrier Act of 1980, it was decided that the NVOCCs could file intermodal rates with ICC where regulated surface carriers were involved. The Federal Maritime Commission (FMC) also accepted the NVOCC's use of intermodal tariffs based on the ocean carriers' tariff which included transport to inland points. Now an NVOCC may deliver full containers to inland terminals and have a joint tariff with either a trucking company or railroad. Since 1980, it has been easy to become an NVOCC, the only requirements being the filing of a tariff with the FMC and the payment of a registrations fee.

The Shipping Act of 1984 recognized a new kind of ocean carriers services—the service contract. This provides a great deal of potential to provide an alternative to tariffed ocean common carrier service under a regular tariff. The FMC considers service contracts as a hybrid of common and contract carriage. There is an extent to which service contracts are treated as common carriage and to what extent it was difficult to negotiate special time/volume rates which could be seen as discriminatory between carriers.

Prior to the Shipping Act of 1984, it was very difficult for shipping conferences to obtain intermodal authority. Furthermore, there was always the question of jurisdiction between the ICC and the FMC. The FMC has now taken this authority which requires filing of intermodal rates. The lack of anti-trust immunity prior to the Shipping Act of 1984 made it difficult for conferences to quote shippers' tariffs which include the inland leg of the foreign door-to-door movement; this impeded intermodalism. Furthermore, before the Shipping Act of 1984, the FMC required such time/volume rates to be available to all shippers.

Deregulation has provided shippers with many more price and service options, which have changed the nature of transport markets. For example, in the five year period since the passage of the Motor Carrier Act of 1980, the number of ICC licensed brokers increased from less than 50 to over 2,500<sup>1</sup>. This dramatic increase in brokers (freight forwarders) has occurred because of the proliferation of price and service choices now available to shippers.

### III. THE GROWTH OF INTERMODAL TRANSPORT IN CANADA AND THE UNITED STATES

The dramatic growth of U.S. intermodal traffic since 1980 has been well documented. The Canadian transport system has experienced similar growth as indicated by Tables I to III in this paper. Although the growth in trailer-on-flatcar (TOFC) has been fairly stable, container-on-flatcar (COFC) movements on the two Canadian railways and the railroads on which they interline with have increased by 140 per cent in terms of revenues and 44 per cent in terms of tonnage.

The available data on COFC and TOFC rail movements performed by CN and CP Rail include the portion of interlining rail movements performed by other rail carriers, including U.S. railways. The "domestic" rail traffic refers to Canadian domestic traffic while "transborder" refers to rail traffic across the Canadian-U.S. border. The "overseas" traffic always refers to Canadian trade going through Canadian ports. The so-call diverted traffic, which crosses the Canadian-U.S. border, is not included in "overseas" trade but included in "transborder"

TABLE I  
TOTAL INTERMODAL TRAFFIC PERFORMED BY CANADIAN NATIONAL  
AND CANADIAN PACIFIC, 1980-1984

	<u>Container-on-Flatcar (COFC)</u>		<u>Trailer-on-Flatcar (TOFC)</u>	
	<u>Revenues</u>	<u>Tons</u>	<u>Revenues</u>	<u>Tons</u>
1980	120,558,068	4,218,865	236,022,917	3,963,453
1981	168,472,099	4,609,840	258,710,764	3,381,555
1982	188,047,829	4,541,780	227,790,106	2,793,163
1983	226,659,928	5,253,631	267,869,004	3,498,259
1984	290,250,169	6,091,431	291,754,828	3,703,893

Source: Traffic and Tariffs Branch, Canadian Transport Commission.

TABLE II  
CN AND CP REVENUES EARNED FROM INTERMODAL TRAFFIC, 1980-1984

	Domestic		Transborder		Overseas*	
	COFC	TOFC	COFC	TOFC	Exports	Imports
1980	20,868,099	230,855,447	21,901,895	14,200,581	47,231,074	57,626,365
1981	49,008,096	254,974,551	28,004,385	29,164,287	53,970,017	69,230,199
1982	70,343,007	226,942,157	22,969,833	7,951,140	52,264,341	66,288,430
1983	91,292,504	265,845,921	21,559,523	12,146,785	57,379,179	80,011,328
1984	112,998,343	290,516,298	31,099,618	18,399,275	67,764,883	110,725,473

TABLE III  
TONS OF INTERMODAL TRAFFIC CARRIED BY CN AND CP, 1980-1984

	Domestic		Transborder		Overseas*	
	COFC	TOFC	COFC	TOFC	Exports	Imports
1980	281,930	3,903,027	787,265	200,493	2,269,439	1,727,922
1981	511,772	3,325,938	781,662	348,616	2,281,946	1,871,739
1982	644,913	2,781,820	599,241	110,710	2,049,518	1,858,692
1983	868,602	3,477,882	595,718	191,391	2,055,990	2,349,416
1984	1,044,038	3,692,766	875,242	366,512	2,034,258	3,024,262

Source: Traffic and Tariffs Branch, Canadian Transport Commission.

\* Most of the overseas traffic is COFC.

which is primarily sustained by large volumes of U.S. cargo. The economic justification for calling on these Canadian ports is that the additional revenue generated therefrom exceeds the incremental cost of calling at the Canadian ports. Many ocean carriers use the port of Montreal as the North American gateway to serve both Canadian and the U.S. Midwest markets. It is clear that, up to now, Canadian shippers have benefitted from a very broad range and quality (i.e., frequency) of services mainly because of Canada's ability to attract U.S. cargo through its ports and its proximity to the U.S.

There has been a continuing integration and rationalization of North American transport networks for the movement of containers. This integration of container distribution networks within North America is taking place through the establishment of all-water (round-the-world) services and/or the micro-and mini-bridges, joining sea-ports with strategic hinterlands through inland transport networks. The latter is leading to the relocation towards inland points of functions, which were traditionally carried out by sea-ports.

The two major Canadian railways, either through their American subsidiaries or commercial agreements with U.S. railways, have been exploiting the fullest possible advantage from opportunities presented by existing or potential favourable intermodal regulatory environments for a much larger market in order to ensure their future competitiveness. "Freer trade" should continue to promote the integration of container distribution networks within North America, thereby encouraging international liner carriers as well as U.S. and Canadian railways to consider North American overseas cargo as one market.

For some time, there have been pressures from American east coast interests to require all Canadian-based liner shipping companies carrying U.S. cargo, to file their tariffs with the U.S. Federal Maritime Commission. Much of this controversy related to CAST during its years as an independent operator on the North Atlantic trades. Currently, even though CAST, Sea-Land, and other major liner companies are conference members, Canadian and U.S. overseas traffic which crosses the Canadian-U.S. border to move through each other's ports (so called "diverted cargo") is not covered by conference tariffs and can be moved under rates agreed upon between the carrier and the shipper, without requiring the filing of tariffs either in Canada or the U.S.

There is the issue of whether transport operators offering multimodal services should be considered as common carriers within the Canadian proposed regulatory framework. Even in the proposed regulatory environment, airlines, trucking firms, railways and ocean carriers will be licensed as common carriers to perform modal services. However, no specific consideration has been given to whether transport operators offering multimodal services should be recognized as common carriers under some licensing regime similar to that imposed upon modal carriers.

Fostering truck arranged multimodal transport may encourage healthy competition in certain transport markets. For example, many Canadian truckers are concerned with the adverse impacts of the entry of large American trucking companies into Canadian trucking markets. There was evidence presented at a public hearing held by the Motor Vehicle

Transport Committee of the Canadian Transport Commission in Vancouver during April of 1985 that large American carriers such as yellow Freight Systems were focussing on the market for the transborder movement of long-haul less-than-truckload general freight. It was the view of some participants at the public hearing that the very large investment in the extensive network of truck terminals operated by companies such as Yellow would preclude smaller Canadian truckers from competing in these markets. However, with the large investments made by U.S. railways in intermodal facilities and the favourable regulatory conditions for fostering truck arranged multimodal transport in Canada, Canadian truckers could regain a share of this transborder freight market through intermodal arrangements.

## VI. CONCLUSIONS

With the movement towards "freer trade" between Canada and the United States, already each other's most important trading partners, the regulatory and other changes occurring in both transport systems will have a number of interrelated impacts on transportation and trade in the two countries. These impacts include the rationalization of port facilities, the vertical integration of transportation enterprises, the emergence of inland cargo terminals of "hub centres", the development of alternative cargo routing and changes in the structure and conduct of traditional truck, rail, shipping and freight forwarding industries in North America. Many of these impacts are also directly related to the practical application of the multimodal transport concept.

## REFERENCES

- Archambault, M. 1985. NORTH AMERICAN TRADE DIVERSION: A NEW PERSPECTIVE. *transportation Research Forum*. pp. 66-75.
- Canadian International Freight Forwarders Association. May 1986. STANDARD AND OPPORTUNITIES FOR SHIPPERS AND NVOCCs. *Western Transportation Law Journal*. pp. 83-88.
- Fernandes, R.M. 1984. FREIGHT FORWARDER—DUTIES AND LIABILITIES. Paper delivered at a meeting of the Canadian International Freight Forwarders Association. Toronto. November 27, 1984.
- Freidmann, P.A. and Deviermo, J.O. July 1984. THE SHIFT FROM GOVERNMENT REGULATION TO SHIPPER REGULATION. *Journal of Maritime Law and Commerce*. Vol. 15, no. 3. pp. 311-351.
- Giduck, J. 1985. THE SHIPPING ACT OF 1984: A RETURN TO ANTITRUST IMMUNITY. *Transportation Law Journal*. Vol. XIV, no. 1. pp. 153-177.
- Government of Canada. 1985. FREEDOM TO MOVE: A Framework for Transportation Reform.
- Interstate Commerce Commission. December 1985. RAILROAD TOFC/COFC MONITORING STUDY. Office of Transportation Analysis.
- Jones, F.M. 1984. CONSULTANT OR CONTRACTOR. Paper delivered at a meeting of the Cana-

- dian International Freight Forwarders Association. Toronto. November 27, 1984.
- Lidinsky, R.A. and Hellauer, R.E. January 1984. AMERICAN-CANADIAN CROSS BORDER TRAFFIC: INNOVATION OR CARGO DIVERSION? *Journal of Maritime Law and Commerce*. Vol. 15, no. 1. pp. 103-115.
- Pope, D.J. and Thomchick, E.A. Spring 1985. U.S. FOREIGN FORWARDERS AND NVOCCs. *Transportation Journal*. Vol. 24, no. 3. pp. 26-36.
- Quinn, F.R. February 1985. THE BROKER BOOM. *Traffic Management*. pp. 36-39.
- Ritchie, R.J. 1985. DEVELOPMENT OF INTERMODALISM IN CANADA AND ITS PROSPECTS. To Seatrade's Intermodalism Symposium, New York, December 11, 1985.
- Sloss, J. and Harrington, I.E. 1985. SOME OBSERVATIONS ON DOMESTIC FREIGHT FORWARDING IN CANADA AND THE UNITED STATES—AN HITHERTO NEGLECTED COMPONENT OF THE TRANSPORTATION UNIVERSE. *Canadian Transportation Research Forum*. pp. 55-63.
- Theiss, D.I. 1985. THE SHIPPING ACT OF 1984:

EFFECTS ON CARRIERS AND CONFERENCES. *Western Transportation Law Seminar*. pp. 80-82.

#### ENDNOTES

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1. Quinn, F.R. February 1985. THE BROKER BOOM. *Traffic Management*. p. 36.
  2. Canadian International Freight Forwarders Association. May 1986. STANDARD TRADING CONDITIONS. *Annual General Meeting*. Vancouver, B.C. p. 11.
  3. Fernandes, R.M. 1984. FREIGHT FORWARDERS—DUTIES AND LIABILITIES. Paper delivered at a meeting of the Canadian International Freight Forwarders Association. Toronto. November 27, 1984. p. 2.