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# THE EXPORTER'S GUIDE TO TRANSPORTATION



External Affairs and  
International Trade Canada

Canada

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# THE EXPORTER'S GUIDE TO TRANSPORTATION



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## Foreword

This publication is one in a series of publications aimed at addressing the distribution and transportation needs of Canadian exporters. It is designed to meet the needs of small- and medium-sized exporters, who frequently seek advice on transportation. The publication covers all modes of transportation, as well as other important related matters. It can also be used selectively by exporters using only one mode.

Other publications in this series that are currently available include *Export Markets: The Trading House Connection, Selecting and Using Manufacturers' Agents in the United States, The Countertrade Primer for Canadian Exporters, Selecting and Using Foreign Agents and Distributors, and Safe Stowage*. Other releases will include *The Exporter's Guide to Documentary Credits and Documentation*.

This guide cannot be exhaustive; individual circumstances, interests and needs will dictate how companies make their particular transport decisions. In light of constantly evolving circumstances, users of this guide are cautioned to confirm information when deciding on transport options.

Novice exporters are encouraged to study the publication *Export Guide: A Practical Approach* before embarking upon these more detailed and technical publications. Sources for all the above-noted releases are provided in Appendix II.

Exporters are invited to submit, to the address below, their comments regarding this publication and suggestions for others which may be useful to them in the course of increasing Canadian exports.

Transportation Services Division  
External Affairs and International Trade Canada  
125 Sussex Drive  
Ottawa, Ontario  
K1A 0G2

## Introduction

This publication was developed to provide some basic guidance on export transportation and documentation to Canadian companies who wish to embark on the challenge of exporting. While its main focus is that of transportation, this issue is inextricably linked to the documentary aspects of exporting. The contents have been structured to examine and review these elements from a practical and administrative perspective in order to assist Canadian companies to lay the groundwork for a successful export transaction.

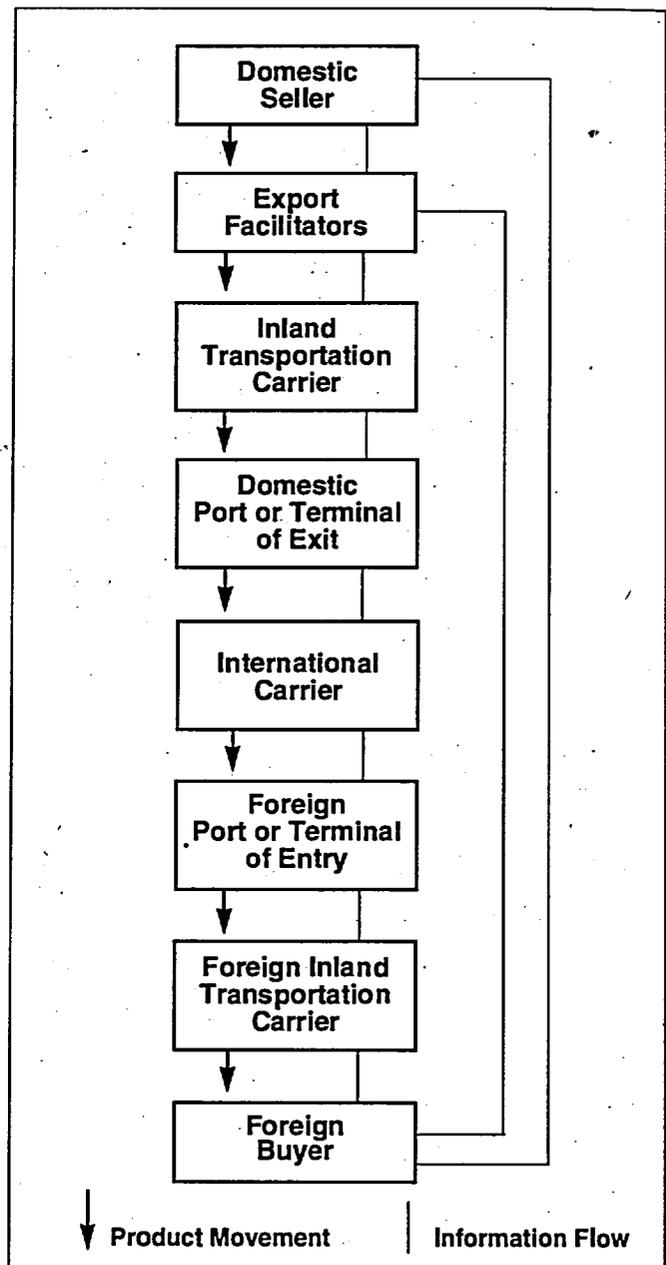
Figure 1 illustrates all of the potential players in international transportation. Each party has its own needs and requirements with respect to information and documentation. For new or even existing exporters this may seem like a complicated process. If approached on a step-by-step basis, however, with or without the assistance of a freight forwarder, the process will soon become routine.

Chapter 1 on International Transportation Channels provides an outline of what transportation options are available to Canadian companies that best suit the product or commodity to be exported. The focus is placed on describing the modes available — road, rail, marine and air — their general service features, options and related equipment. Most offshore transactions, however, usually require the use of more than one mode of transport, thus the term "intermodal" comes into being. An explanation of intermodal connections, their features, different options and services is also provided.

Chapter 2 describes transportation intermediaries and the services they provide. These companies, commonly known as freight forwarders, play a major role in bridging the distance between exporter and customer. Many exporters prefer to use the services of these companies to make the transportation arrangements and prepare the documentation described in Chapters 1 and 4.

Transport liability, exemptions and coverage, as well as freight insurance, policies, coverage and arrangements are reviewed in Chapter 3.

Figure 1: Participants in International Transportation



Three basic kinds of documents are required in international trade. These are commercial documents, transport documents and government/custom documents. Chapter 4 details requirements for transport documents and provides illustrations. Information on commercial documents and government/customs documents, as well as on transfer of payment for goods, is covered in *The Exporter's Guide to Documentary Credits and Documentation*. (See Appendix II.)

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Appendix I covers the more technical subject of preparing the goods for export shipment. This includes the responsibilities of the parties involved and handling techniques according to the type of freight, unit and movement.

Appendix II lists industry and government publications, relevant industry associations and professional institutions, and related government departments and International Trade Centres.

# Chapter 1 International Transportation Channels

## Determining Transportation Needs

You have negotiated a successful international sale. Now your challenge is to move the goods on time, undamaged and at the best possible cost to your customer. To meet this challenge, you begin by

assessing your transportation needs and evaluating your options:

- Do you transport raw materials, natural resources, assembly parts or manufactured products?
- Are the goods time-sensitive, fragile, perishable, dangerous or explosive, susceptible to weather or pressure changes?
- Are the goods solids, liquids or gases? Are they of standard dimensions or unique in size and shape? Are they heavy or light, living or inert, large or small?

Table 1: Transportation Mode Options

OPTIONS CHART	WATER	RAIL	ROAD	AIR
Efficient Distance	Any distance. International Shipping.	Long-haul is more efficient. Some transborder.	Short and medium hauls 1600 km (1000 miles). High volume transborder.	300 km (186 miles) and upwards. Transborder and international.
Maximum Unit Load	62,000 tons in upper Lakes: 28,000 tons in lower Lakes: 200,000 + tons on high seas.	10,000 tons for a large unit train.	Up to 70 tons, depending on jurisdiction.	Up to 35 tons, depending on aircraft.
Bulk Handling	Excellent.	Good.	Can only handle relatively small loads (70 tons).	Must be containerized.
Package Handling	A limited capability for loose freight. Can handle containerized or palletized unit loads.	High overhead costs for loose freight. Increased containerized operations.	Very flexible for loose and containerized freight. Adaptable to less-than-full loads.	Freight is either loose or in containers.
Flexibility of Deployment	Considerable vessel flexibility within Great Lakes. Restricted to natural and adapted water routes.	Considerable car and equipment flexibility. Restricted to established routes.	Trucks can be routed wherever there are roads, and may have multi-purpose designs. Easily acquired and sold.	Aircraft can be routed virtually anywhere in the world.
Service Strengths	Bulk goods not sensitive to time.	Regular shipments to 10,000 tons with unit-style handling.	Door-to-door service.	Time sensitive, long distance moves.
Service Weaknesses	Reduced competitiveness for small loads and inland origins and destinations.	Irregular, short-haul, off-rail points.	Relatively small volume and high unit costs.	Limited dimensions and very high costs.

- Do you ship in bulk or as general freight, in large volumes or small quantities, in full loads or less than full loads?
- Do you ship monthly, weekly, daily, more frequently? Do you ship on a regular schedule, or as needed? Do you batch shipments for multiple deliveries? Do you ship long distances or short distances?
- Do you require assistance in packaging the goods, or in loading or unloading carrier vehicles or containers? Do you require in-transit processing or temporary warehousing?
- Do you require door-to-door service? Is such service multimodal? Who will arrange this service? What transport documents are required?
- What are the terms of sale for the goods? Are you liable for insurance? What kinds of insurance are required: transport, errors and omissions, loss and damage? Who will make arrangements for insurance?

Now evaluate your transportation options in Table 1 and review the important features of the modes as outlined below.

## **Road Transport**

### **1. General Service Features**

Canada's road systems have grown considerably over the last 50 years. Today, for full or less than full loads, long or short distances, transportation by road is the most flexible way to move general freight at a moderate price.

Truck transportation moves freight within and between rural and urban areas, both intra- and interprovincially, as well as between Canada and the U.S. Most trucking is conducted within Ontario and Quebec, reflecting concentrations of population and manufacturing.

Transborder trucking services, which are provided by both Canadian and American motor carriers, move over 50 per cent of our exports to the U.S. — more than any other mode. Trucking operations in Canada are either "for hire" (commercial carriers) or "private" (company-owned or leased). The former includes common carriers, contract carriers and independent owner-operators.

## **2. Service Options**

### **a. For Hire Trucking**

"For hire" carriers offer two basic kinds of service: full truck load (TL) and less than truck load (LTL).

TL service typically includes door-to-door pick-up and delivery. Upon delivery, the carrier asks the receiver to sign the bill of lading prepared by the shipper. A pro-bill is then generated to facilitate rating and billing of charges.

With LTL service, shipments are picked up by local delivery or "city trucks" from several shippers and delivered to the carrier's terminal. There they are sorted, loaded and transported to the corresponding terminal in their city of destination. One final sorting and they are ready for city trucks to deliver them to their final destinations. With all the extra handling involved, LTL is understandably more costly than TL service.

All provinces except Alberta regulate "for hire" carriers through licences that specify their routes and restrict the types of cargo they carry. With the deregulation of the interprovincial trucking market, however, these specifications and restrictions are becoming less and less of a factor.

### **b. Private Trucking**

Private trucks operate without licensing restrictions (provided they comply with safety regulations), but can carry only goods belonging to the company by which they are owned or leased, and can only be driven by their owner or an employee. As shipper of the goods and owner or lessor of the truck, the company is responsible for the freight at all times and in every phase of transport, from initial loading to final delivery.

Private trucking can provide attractive savings over "for hire" trucking for shippers who transport goods on a frequent, regularly scheduled basis. It also offers unique opportunities for customer service.

## **3. Road Transport Equipment**

Two basic kinds of equipment are used for transport by road: the straight truck and the tractor-trailer.

### a. Straight Trucks

A straight truck is a self-propelled vehicle carrying its load on its own wheels, with cab, engine and cargo space all mounted on one chassis.

Comparatively easy to manoeuvre, straight trucks are favoured for city pick-ups and deliveries and make up the majority of trucks used in the motor carrier industry. Cement trucks, dump trucks, garbage trucks and department store delivery vehicles, for example, all fall into the category of straight trucks.

### b. Tractor-Trailers

A tractor-trailer consists of a tractor, which provides the motive power, and a trailer, or a series of trailers, in or on which cargo is loaded. Trailers can be coupled or uncoupled in a matter of minutes and couplers are fairly standardized.

The number of axles on a tractor, along with the spacing between them, determines the gross carrying capacity for which a vehicle can be registered, subject to provincial and territorial weight laws. Regulations also cover the number of trailers that may be operated in combination, and the width, height and length of the tractor.

The maximum load for any combination of motor carrier equipment is 63 500 kg (140 000 lb.)<sup>1</sup> — a striking contrast to the 85-ton capacity of a single railway boxcar. Still, for commodities such as food, beer, timber and general freight, truck transport is often the optimum mode, in spite of the limited size of equipment and provincially regulated maximum load limits.

## **Rail Transport**

### **1. General Service Features**

The development of Canada as a nation is inseparably linked with the development of its rail systems. Today, railways are still an important force in Canadian transportation, providing the most economical way to move bulk commodities and large loads inland over long distances.

<sup>1</sup> This is a maximum gross weight allowed on a vehicle or combination with seven or eight axles, under certain restrictions in Ontario and Vancouver. Figures are given for comparative purposes only and date from 1984.

Unlike marine transport, railways are not bound by natural geographical routes. Building, expanding and maintaining rail lines, however, is expensive and the system remains confined to established lines running primarily through major centres. Consequently, short-distance hauls are seldom feasible.

Except for companies owning or leasing sidings, door-to-door delivery often means interlining with highway carriers or other modes of transportation. Intermodal services increase the railways' ability to meet customer needs.

### **2. Distribution Terminal Services**

In addition to transport, railways provide services and facilities for receiving, loading, unloading and interchanging freight.

#### a. Cartage

Cartage service is available at some points in Canada through existing contracts between railways and local cartage companies.

#### b. Sidings

Sidings are the "side tracks" where railway cars are loaded and unloaded. Private sidings are owned or leased by private companies. But "team tracks," which are railway-owned, are for public use.

Team tracks are usually situated at convenient points throughout large cities, offering shippers and receivers a choice of locations. Some are equipped with forklifts, cranes, platforms, etc.

#### c. Switching

Railways will "switch" or move a railway car on its track, or from one track to another, at private sidings, terminals and junctions, or between railways. Rates vary with the type of switching required.

### **3. Rail Transport Equipment**

#### a. Rolling Stock

Railways maintain a diversified fleet or "rolling stock," with each type available in various sizes. Boxcars, for example, range from 85 m<sup>3</sup> (3 000 cu. ft.) to 156 m<sup>3</sup> (5 500 cu. ft.) and carry up to 94 tons of freight. Other equipment includes hopper cars, flat cars and tank cars.

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## b. Rail Containers

Sometimes the most time- and cost-efficient method of shipping goods involves more than one mode of transport. Railway container services make interlining transportation modes more efficient and more accessible to shippers. They also help reduce losses from breakage and theft, which is a feature common to other container operations.

While these containers are designed with rail transport dimensions, they offer such tremendous flexibility that individual containers can be offloaded at rail destinations and loaded directly onto highway flatbeds for immediate delivery to final destinations.

## c. Intermodal Configurations

Developed by CN Rail and CP Rail to provide economic coast-to-coast movement of general freight, intermodal services interline rail, road and marine transport.

There are two basic kinds of rail intermodal services: import/export services, which combine rail service with marine container transport, and domestic services, which combine rail service with either COFC (Containers On Flat Cars) or TOFC (Trailers On Flat Cars) service.

## d. Rail Container Terminals

Intermodal/container terminals are the backbone of intermodal services for both CN Rail and CP Rail. Such terminals can accommodate both import/export and domestic intermodal operations. Marine terminals, located at most of Canada's major ports, form the threshold of a network of import/export intermodal operations. Here ships take over from trains and trucks, providing the intermodal link to carry marine containers to and from the four corners of the earth. From here, as well, marine containers begin their journey inland to final destinations.

Inland rail terminals serve as mid-shipment destinations for marine containers. Here marine containers are trans-shipped to final destinations by truck. Inland rail terminals also function in domestic intermodal operations: domestic containers and truck trailers are "on-loaded" to rail flat cars for long-haul shipment and "off-loaded" to road transport equipment for delivery to final destinations.

# Marine Transport

## 1. General Service Features

With sea on three sides and 30 per cent of the world's fresh water supply flowing in its rivers and lakes, Canada quickly developed extensive marine and inland water transportation systems and services.

While transportation by water is the slowest mode today, and the one most limited by geophysical conditions, it remains the most economical and energy-efficient way to move large-volume and high-density bulk commodities over long distances. Developments in marine transportation, such as containerized shipping of freight, have enhanced its importance to Canada's overseas trade.

## 2. International Marine Services

### a. Liner Services

Liner services, which are regularly scheduled sailings on specific trade routes, are provided by conference and non-conference carriers.

*Shipping Conferences:* are an association of steamship lines covering the same trade route. The agreement between these lines can cover a multitude of details, but usually involves a basic written agreement among lines specifying the freight rates and services offered to shippers.

Shippers can bind themselves to the use of conference lines under provision of a "conference exclusive patronage" contract. Under such an agreement, a shipper may receive lower freight rates. Alternatively, some conferences may grant "deferred rebates" to shippers on a portion of the freight.

In return, shippers are obliged to route all or a specified portion of freight, or certain specified commodities, depending on the terms of the contract, exclusively by a conference line. The conference lines are thereby collectively guaranteed certain traffic.

To transport freight, the shipper may choose any line from among conference members, and all member lines can compete among themselves.

Conference contracts differ in specific details, but generally include:

- terms relating to the exclusivity of carriage by the line;
- conditions of exemption from exclusivity;
- penalties for violation of the contract;
- a reference to the terms and conditions, rules and regulations in the conference tariffs as part of the contract; and
- a reference to the contract as subject to the various national laws involved.

*Non-Conference Lines:* are those which act independently of any other line. They establish their own tariffs, sailing schedules, contracts, ports of call, etc., without reference to any agreement with any other line. Non-conference lines operate in a manner similar to conference lines, that is, offering a regular service between two or more ports.

#### b. Tramp Steamers

Tramp steamers follow no firm schedule and sail off to where the "pickings" are best. Tramp ships are nearly always chartered, either as full or part charters. Freight rates vary daily and in some cases even hourly.

#### c. Charter Operations

Chartering is a very complicated subject. Expert advice should be solicited before entering into a charter agreement. Advice on chartering can be obtained from Shipping Federation of Canada, 300 St. Sacrement, Suite 326, Montreal, P.Q., H2Y 1X4. Tel: (514) 849-2325, Fax: (514) 849-6992.

Chartering involves a contract of affreightment for the carriage of an entire cargo of goods, or the supply of an entire ship to carry goods. There are various types of charters:

*Time Charter:* involves the chartering of a named, crewed and fully equipped vessel for a certain time period;

*Voyage Charter:* involves the chartering of a named, crewed and fully equipped vessel for a certain voyage, no matter how long it takes;

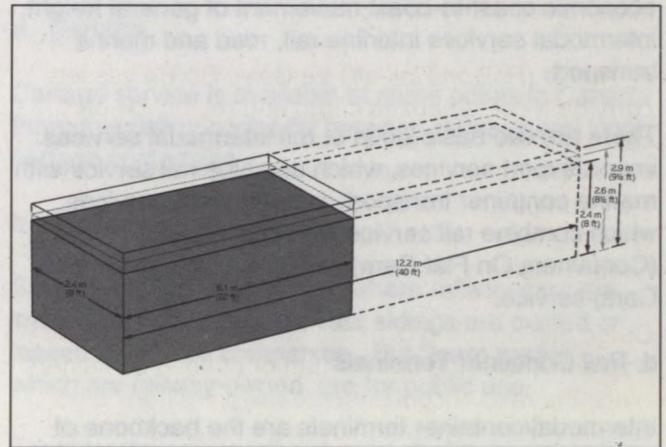
*Bare Boat Charter:* involves the chartering of only the vessel; the shipper is responsible for crewing, provisioning, fuelling, etc.

### 3. Marine Transport Equipment

#### a. Marine Containers

A container is a box of standard size into which freight is packed and secured for transport as a large, single unit. Standard dimensions, prescribed by the International Standards Organization (ISO), ensure that all marine containers meet the varying regulations governing the international transportation of containers and, at the same time, facilitate intermodal operations.

Figure 2: Standard Container Dimensions



Standard Container Dimensions (note that these are outside dimensions — the inside dimensions are smaller):

Length:	6.1 m (20 ft.) or 12.2 m (40 ft.)
Width:	2.4 m (8 ft.)
Height:	2.4 m (8 ft.) or 2.6 m (8 1/2 ft.) or 2.9 m (9 1/2 ft.)

Many different types of containers have been developed to handle the wide variety of cargo moving in international trade. Apart from standard containers, there are also hardtop, open top, flat, platform, refrigerated, tank, bulk, insulated and ventilated containers.

Weight varies according to fabrication. Most are made of steel for durability, but aluminum and fiberglass are also used. (See also *Safe Stowage*, listed in

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Appendix II, and Appendix I, Freight Handling: Preparing the Goods for Shipment.)

#### b. Container Ships

The international shipping of general cargo involves containers. Two types of ships have been developed to carry marine containers, the pure container ship and the Ro/Ro vessel.

*i. Pure Container Ship.* The pure container ship is a vessel that carries only containers. It is built specifically for this purpose, with vertical cell guides to accommodate containers.

Container ships are measured in 20 ft. equivalent units (TEUs). They continue to grow in size, with some exceeding 4 000 TEU. Most common container ships come in small (1 800 TEU), medium (2 800 TEU) and large (3 600 TEU) sizes.

*ii. Ro/Ro (Roll-on/Roll-off) Vessels.* Ro/Ro vessels carry both containerized cargo and roll-on/roll-off cargo. While they vary in size and design, the most common kind has a ramp located at the stern. Some stern ramps are of a fixed design, necessitating a specially built pier. An angled ramp, on the other hand, enables a vessel to berth virtually anywhere.

Cargo can be rolled over the ramp at the same time as ship and shoreside cranes load or off-load containers. Since the ratio of containers to roll-on/roll-off cargo can vary from voyage to voyage, in accordance with changing market demands, Ro/Ro vessels are extremely versatile and flexible.

#### c. Marine Container Terminals

These terminals are used year-round for the loading and discharge of containers by marine container vessels. Their size and their equipment vary according to the volume of traffic. Major terminals in Canada are Vancouver, B.C., Montreal, P.Q., Saint John, N.B. and Halifax, N.S. They are served by CN Rail or CP Rail (some are served by both), as well as by motor carriers, in intermodal operations.

## **Air Transport**

### **1. General Service Features**

Air carriers generally handle considerably less weight per shipment than do other modes, although the maximum lifting capacity of the largest air-freight

aircraft is 100 000 kg. In addition, air freight is costly. A large proportion of air freight is carried as belly cargo in passenger aircraft, a practice that considerably restricts the size and weight of shipments that can be accommodated. However, for long distances, air is the fastest mode. For fragile, highly perishable or time-sensitive goods, it is the best mode; for many isolated parts of the country, it is the only mode.

Air transportation in Canada is very well developed, with two transcontinental, and numerous regional and local carriers.

### **2. International Air Services**

#### a. Air Freight

Air freight services are sold both by the air carriers themselves and by forwarders, many of whom are registered as agents by the International Air Transportation Association (IATA), the world trade organization of scheduled airlines. Members of IATA carry the major portion of the world's scheduled international and domestic traffic, both passenger and freight, under the flags of 85 nations.

A registered IATA agent offers the following services to shippers in connection with the export of their goods:

- facilities for accepting or collecting export shipments from clients;
- preparing airline documentation (air waybills) including all charges thereon and ensuring that invoices and commercial documentation meet all requirements for movement by air;
- checking that export and import licences are in order and comply fully with government regulations in each country;
- ensuring that packing certificates are supplied by exporters of hazardous or restricted goods, in compliance with IATA and government regulations;
- arranging carriage and booking space with airlines and scheduling delivery of goods at the airport;
- arranging to file for customs "drawback" allowances where applicable;
- arranging insurance coverage for clients.

The IATA agent charges customers published air freight rates. To earn a commission from the airlines, the agent must present shipments "ready for carriage," having ensured that all requirements and regulations have been met.

**b. Air Charters**

Normal air freight shipments are carried on scheduled flights at predetermined rates. However, shippers may wish to move cargo which cannot be accommodated on normal flights, is too urgent to wait for a scheduled flight, or is heavier than a normal load. In such instances, shippers may be required to charter an aircraft. Charter companies offer all types of aircraft, from DC-3s to Boeing 747s, capable of lifting 100 000 kg of freight.

When chartering, the party signing the charter agreement is responsible for all charges. The cost is determined by the charter operator and is based on a

round-trip journey. Charter transactions are usually paid in full before the aircraft begins its journey.

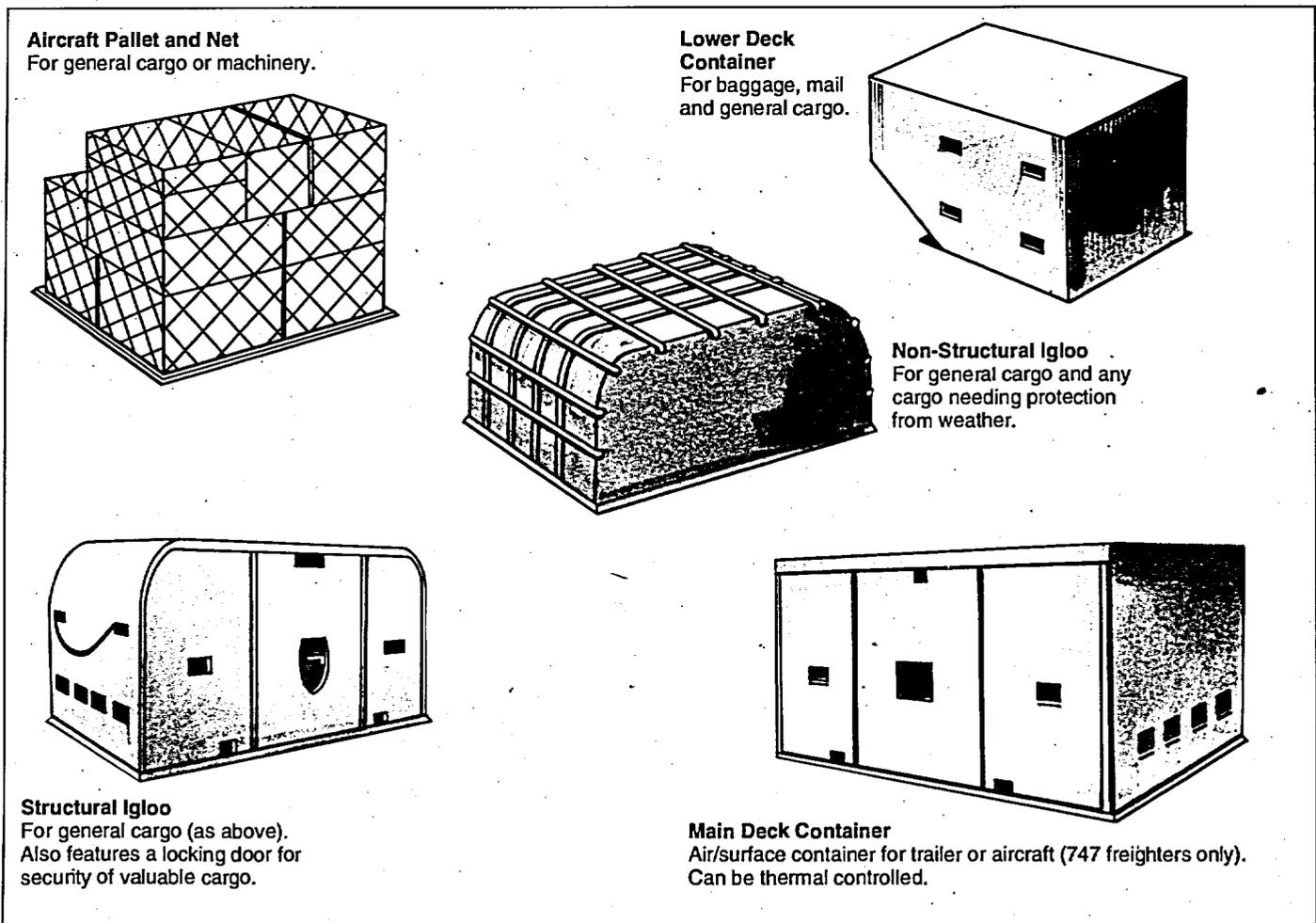
**3. Air Transport Equipment**

**a. Aircraft Configurations**

While Canadian airline fleets contain aircraft numbering in the hundreds and ranging from widebodied jumbo jets to single-engine, two-passenger propeller planes, there are only four basic aircraft configurations for carrying cargo:

- all cargo aircraft;
- belly compartments of passenger aircraft;
- combi: Convertible passenger/cargo aircraft;
- quick-change (Q-C) aircraft, analogous to a station wagon that quickly converts to carry passengers or cargo.

**Figure 3: Air-Surface Containers**



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Cargo moves on virtually all passenger flights operated by scheduled airlines, but some aircraft have greater cargo carrying ability than others. A Boeing 747, for example, has room for almost 22 500 kg (50 000 lb.) of freight, even when fully loaded with passengers. A conventional all-cargo airplane of the 747 type will carry about 100 000 kg. Although airlines give priority to scheduling passenger service, they actively solicit air freight, and some even have all-freight aircraft. In addition, there are air carriers operating exclusively in the air freight market.

#### b. Airline Containers

Airline containers are called unit loading devices (ULDs). By consolidating "loose" general freight into larger units for loading and transporting, they decrease ground handling costs and maximize the use of space on board.

ULDs include containers (usually constructed of lightweight aluminum, fibreboard or fibreglass and available in various shapes and sizes), igloos and pallets. While flat underneath to permit fast loading and unloading, ULDs cannot be handled with an ordinary forklift truck. They are designed to restrain loads aboard the aircraft, thus forming a component of the aircraft's loading and restraint system. (See Appendix I, Freight Handling: Preparing the Goods for Shipment.)

#### c. Air/Surface Containers

Given the structure and weight differences between air and conventional containers, ULDs are generally inappropriate for carriage by surface, just as marine/rail containers are unsuitable for air transport.

However, several standard-dimension, ISO-size containers have recently been introduced to facilitate intermodal air/surface service. Constructed of durable aluminum, with such features as aluminum corner castings and reinforced corner posts, the tare weight of these containers is less than half that of conventional steel containers, yet they can be safely interchanged between road, rail, marine and air equipment. Among the newest developments in international transport is the sea-air container.

## **Intermodal Connections**

### **1. General Service Features**

One of the major technological achievements in international transportation during the past two decades has been the widespread introduction of cargo consolidation and unitization through the development of the container. The major advantage of containerization is the reduction and simplification of cargo handling and the facilitation of door-to-door transportation services.

These technological and operational advances have given rise to a number of intermodal transport (also called multimodal transport) options. Technically, "intermodal transport" refers to the through movement of goods using a combination of two or more transport modes.

### **2. Intermodal Transport Options**

There are two distinct intermodal transport options. Under one, the shipper arranges transportation from origin to destination, prepares documentation and negotiates the terms of carriage with each participating carrier (this may be termed "segmented transportation"). Under the other, the shipper arranges for a carrier, freight forwarder or transportation broker to perform these tasks.

In the latter option, which is by far the more common, the following characteristics prevail:

1. The shipper deals with a "transport enterprise" (whether a carrier or non-carrier), which acts as a principal, undertakes to co-ordinate the through movement of cargo, and assumes responsibility for the performance of the transport contract.
2. The shipper and the "transport enterprise" agree to a single transport contract between them, which stipulates the terms and conditions of the entire transport movement.
3. The "transport enterprise" quotes one price for the entire transport movement to the shipper.

The major feature of multimodal transport services is condition 3; full responsibility includes accepting liability for loss, damage or delay arising from the performance of the cargo movement.

The primary distinction between options 1 and 2 resides in liability. In segmented transport service, whether arranged directly by the shipper or indirectly through an agent, each carrier is responsible for the performance of its particular leg of the journey, but cannot be held liable for damage which cannot be attributed to its portion. In option 2, a transport enterprise takes responsibility for the entire movement of the cargo and is responsible even where damage or loss cannot be attributed to one particular transport mode.

### 3. Intermodal Transport Services

In most instances, no mode of transport can work independently of the other modes in order to deliver goods to end users. Goods transported by water are limited to destinations along the coast or as far inland as internal river-lake-canal systems allow. Goods transported by rail are confined to the limits of rail routes, while air transport brings goods to airports and air cargo terminals, and can go no farther.

Trucking, while the most flexible mode of transport, is confined to surface land destinations. This is sufficient insofar as shipments remain intraprovincial, interprovincial or transborder between Canada and the U.S., but trucking cannot offer full transport service in an economy that is "going global."

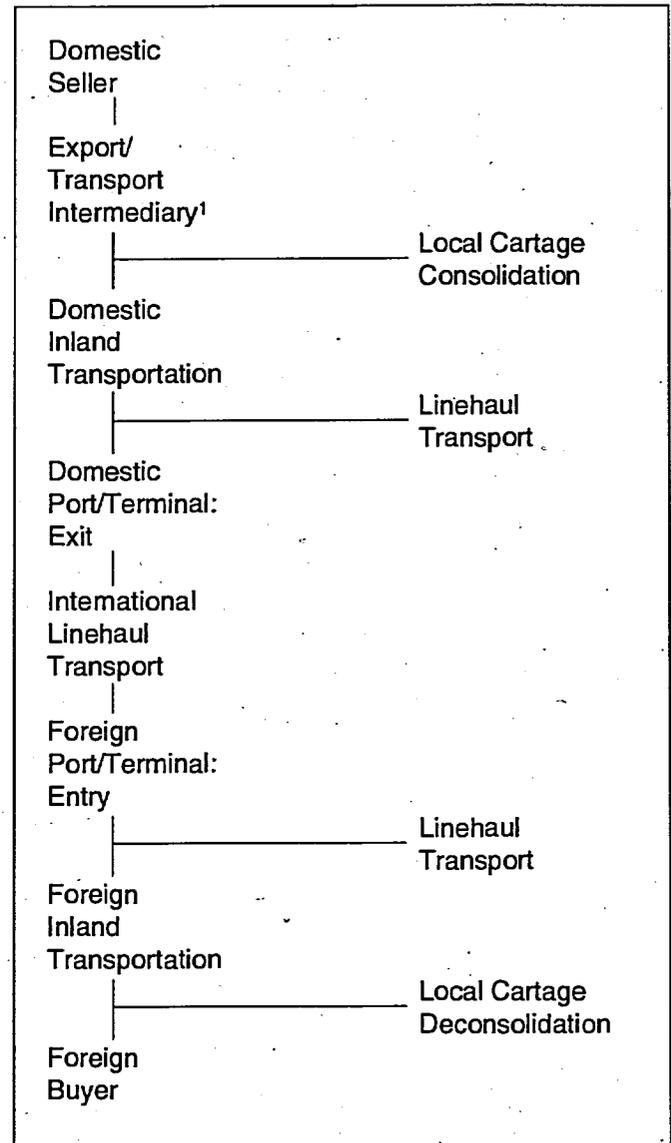
For the sake of full transport service, the Canadian and international transport network is an intermodal network.

An international trade and transport transaction can involve a significant number of participants, as Figure 4 shows.

Conceivably, the through movement of goods on an international delivery could involve:

- a pick-up and delivery service (trucking) from shipper to the domestic linehaul terminal;
- a long-distance overland movement to the point of exit (rail or trucking);
- an international movement to the foreign point of entry (marine or air);
- a long-distance inland movement (rail or trucking); and
- a pick-up and delivery service to the final destination (trucking).

Figure 4: Participants in Intermodal Transport



<sup>1</sup> i.e., freight forwarder

All modes of transport offer intermodal services. Ocean carriers offer three kinds of marine container service:

*i. Container Yard to Container Yard (CY-CY). Also known as house-to-house.*

- Shipper loads and delivers container to ocean carrier's inland terminal.
- Ocean carrier arranges all transport and loading/off-loading from inland terminal to discharge port terminal, then notifies consignee of arrival.

- Consignee arranges for delivery of container to warehouse for destuffing and subsequent return of empty container.

*ii. a) Container Yard to Container Freight Station (CY-CFS).* Also known as house-to-pier.

- Same as CY-CY, except ocean carrier destuffs container at discharge port terminal and notifies consignee. Consignee then picks up cargo.

*ii. (b) Container Freight Station to Container Yard (CFS-CY).* Also known as pier-to-house.

- Shipper delivers cargo to ocean carrier's inland terminal. Ocean carrier stuffs container. Service then proceeds as with CY-CY.

*iii. Container Freight Station to Container Freight Station (CFS-CFS).* Also known as pier-to-pier.

- Shipper delivers cargo to ocean carrier's inland terminal. Ocean carrier stuffs, loads and transports container to discharge port where carrier then destuffs container at destination terminal and notifies consignee. Consignee then picks up cargo.

Rail and truck carriers also offer similar services. In the United States, the direct interlining of highway and ocean carriers is somewhat restricted by the country's stringent road weight limitations. As a result, inland containers are operated by some of the highway carriers that service marine container lines entering Canada indirectly via U.S. Eastern Seaboard ports, mainly New Jersey and Baltimore. When, for example, a 12.2 m (40 ft.) container exceeds the U.S. highway maximum, it is transported by rail from the seaport of entry to an inland container terminal at a Canadian border point for pick-up and final delivery by a motor carrier.

These services move marine containers on flat cars and highway trailers. Marine containers are placed on rail cars or trucks at container terminals in major ports and transported to destination terminals or customers for deconsolidation and final delivery of goods.

Air carriers' intermodal services are as well developed as other modes, but the interlining of air and surface (land and marine) transport is not easily facilitated by the use of surface transport containers.

Domestic rail containers, truck trailers and marine containers cannot be used in air transport equipment; they are too heavy and too bulky. Aircraft usually "bulk out" before they "weigh out," but even if these rectilinear steel containers could be used in aircraft, it must be remembered that the maximum weight an air carrier can load commercially is generally below the loaded weight of surface containers.

Air cargo containers are common. They are usually referred to as unit loading devices and are used by air freight or cargo divisions of airliners, or by international freight forwarders which offer air freight services, to consolidate general freight into larger units for loading and transporting. Unit loading devices are designed more to restrain loads than to increase the volume of shipments. Their use in intermodal movements requires consolidation and stuffing of freight at air cargo terminals and usually by air freight personnel rather than the shipper.

New technology has been developed since the 1980s: the sea-air container. The sea-air container is a standard-dimension ISO-size container (20 or 40 ft. units) constructed of durable aluminum with reinforced corners and ribs. They are light enough for air transport and durable enough for handling on ships, trucks or rail flat cars.

One intermodal transport movement that developed because of this technology is a sea-air container service, which interlines long-haul international marine transport with domestic air transport from port of entry to inland destination. This service is popular in the Pacific Rim.

## ***Freight Handling and Stowage***

The safe handling and stowage of export shipments is, of course, a factor vital to all marine, truck, rail and air transport and equipment. Information on this topic is covered in detail in Appendix I and also in *Safe Stowage*, listed in Appendix II.

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## **Chapter 2**

# **Transportation Intermediaries**

Arranging for export transportation requires attention to detail. First, you must accurately assess your shipping needs and select the most appropriate transportation mode, equipment and routes available. To ensure door-to-door customer service, you may have to use several modes.

To garner optimum cost-efficiency, you may have to consolidate or batch loads. You will have to document all phases of transportation, so that products are properly identified and routed, and can be located in transit if necessary.

And, of course, you will have to comply with all of the regulations and standards governing transportation — federal, provincial, municipal, international and those of the destination country.

In addition to transport documents, you must prepare various export documents, including those required by the Canadian government and by the government of the destination country.

Insurance and payment procedures may need to be arranged.

Fortunately, there are “transportation intermediaries,” specialists who can help small- and medium-sized companies as well as infrequent shippers move goods to market on time, undamaged, and at the lowest possible price. Transportation intermediaries are the architects of the international transport bridge you build between yourself and your foreign customer.

### **General Considerations**

While there are several categories of transportation intermediaries, they break down into two basic groups: transportation brokers and freight consolidators. Both can act either as principal or agent.

As principal, the intermediary assumes responsibility and liability for pick-up, handling, carriage and delivery of a shipment, as would a common carrier.

As agent, the intermediary's responsibility ends once the shipment has been handed over to a licensed carrier who is then liable for its carriage and delivery.

### **Transportation Brokers**

As the name implies, transportation brokers arrange for the movement of freight between transportation purchasers (shippers) and transportation suppliers (carriers). Simply put, brokers are in the business of finding transportation for shippers and freight for carriers.

### **Freight Forwarders and Consolidators**

By consolidating many small shipments from various shippers, freight consolidators may be able to secure more favorable handling, delivery services and rates than individual shippers can obtain.

In general terms, a freight forwarder consolidates individual shipments into single, full loads for linehaul movement by water, rail, road or air carrier, and arranges for distribution upon arrival at the destination terminal.

The freight forwarder usually acts as principal. It issues its own tariffs for the different commodities it handles and charges for each shipment accordingly. The linehaul carrier involved issues a single bill of lading to the forwarder, showing the forwarder as shipper.

The freight forwarder advises the customer on all questions concerning transportation, helps with document preparation, procures transportation, and takes all reasonable measures to ensure that the consignment arrives at its destination in an expedient and safe manner.

With a worldwide network of branch offices and correspondents, the freight forwarder can choose the most favourable routes and means of transport, and simplify and speed up the flow of information and documentation. If required, the freight forwarder can assist in procurement of payment (money transfer, exchange regulations, etc.).

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As a transportation expert, the freight forwarder can establish new transport routes, both uni- and multimodal networks, and attend to all transport negotiations and documentation. The freight forwarder rationalizes transport performance by producing better load factors for both shippers and carriers.

By its very nature, international freight forwarding is more complex than domestic forwarding. Freight forwarders can act as either principal or agent, offering complete door-to-door transportation services. Moreover, they are experts in handling overseas shipments, combining the services of all sectors of the domestic and foreign transportation industry. Importers and exporters turn to them regularly for advice and for services such as:

- full service documentation
- export packaging and container stuffing
- marine insurance
- letters of credit analysis and negotiation
- consolidation services
- deconsolidation services.

There are two kinds of international freight forwarder services: ocean freight forwarding and air freight forwarding. Both are represented in the Canadian International Freight Forwarders' Association (CIFFA), with approximately 100 regular and 60 associate members.

*i. Ocean Freight Forwarders.* Also known as "non-vessel owning" (NVO) carriers in Canada and "non-vessel operating common carriers" (NVOCC) in the U.S., these forwarders consolidate small shipments destined for the same port into full container loads.

In Canada, ocean freight forwarders often act as a principal for consolidated shipments. The bill of lading is issued between the forwarder and the carrier and shows the forwarder as shipper or consignee. The forwarder is also responsible for deconsolidation and distribution to consignees.

*ii. Air Freight Forwarders.* An air freight forwarder can act as agent or as principal of the shipper or consignee. To act as official airline agents, however, air freight forwarders must be registered with the International Air Transport Association (IATA).

As principal, the forwarder provides each shipper with a "house" bill of lading (the contract of carriage between itself and the shipper) and arranges for consolidation of various small shipments into airline-approved ULDs (airline containers), air transport, deconsolidation and final distribution. On the bill of lading issued between the forwarder and the air carrier, the forwarder is shown as shipper.

As agent, the air freight forwarder acts on behalf of the air carriers with whom it arranges flights and from whom it receives a commission for the international movement of freight (excluding Canada-U.S. transborder shipments). The carrier, not the forwarder, assumes liability for the shipment.

If dangerous goods are shipped, the forwarder may act only as agent. The consignor must certify the shipment and appear as shipper on the bill of lading.

## ***The Canadian International Freight Forwarders' Association***

Since its foundation in 1948, the Canadian International Freight Forwarders' Association (CIFFA), has endeavoured to establish and maintain international freight forwarding as a profession in Canada. CIFFA recently adopted standard trading conditions and established minimum liability insurance coverage, including errors and omissions, as conditions of membership.

The CIFFA standard trading conditions cover:

- the forwarder's role and responsibility;
- the customer's role and responsibility;
- the forwarder as agent;
- the forwarder as principal; and
- limits of liability.

For further information, contact the CIFFA office:

Tel: (416) 567-4633  
Fax: (416) 542-2716  
Telex: 06-22282

## Choosing and Evaluating Your Transport Intermediary

There are three basic steps to build an international transportation strategy:

1. selection of mode/transporter;
2. negotiation and purchase of service; and
3. evaluation of service.

### 1. Selection

Each mode of transportation and each transport provider (carrier, freight forwarder, etc.) has its own built-in advantages. There is no "good" or "bad," only what is best for a specific purpose. In the final analysis, your particular requirements as an exporter will dictate the type of transport services you select and the transport providers you choose to deliver and manage those services.

Your choice of modes and of transport enterprises will depend on their service offerings, their routing and scheduling, their capacities, their pricing and negotiating strategies, their marketing activities and their competition.

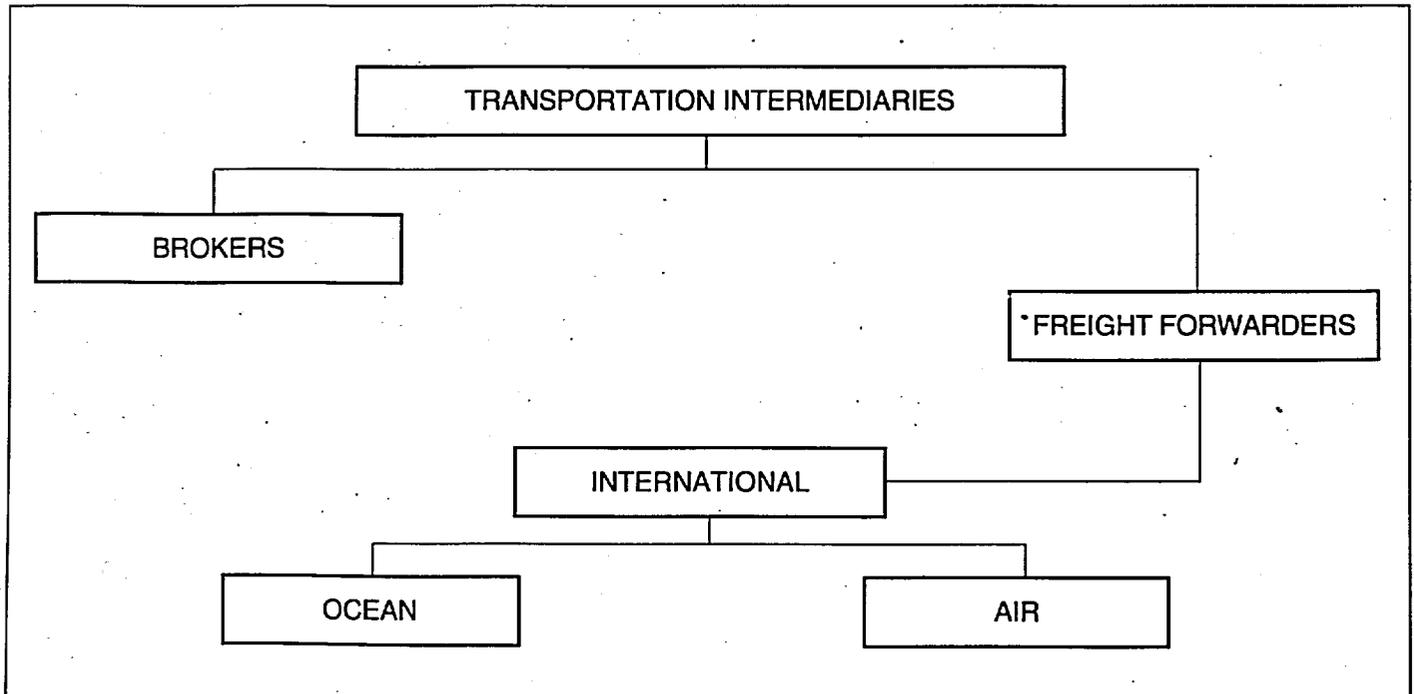
In a complex international movement of goods, the transport enterprise you choose is the one which can offer all of the following:

- to arrange door-to-door service in a multimodal movement, as principal responsible for preparing, documenting and insuring the shipment of your goods;
- to deliver the goods in a timely, dependable and consistent fashion;
- to meet your customer service requirements; and
- to do it all at a reasonable price.

### 2. Negotiation and Purchase

Once you select a suitable transport enterprise, you must negotiate a contract for their services. The economic deregulation of the transport sector in Canada effected by the *National Transportation Act of 1987* allows the negotiation of price/service transport contracts between shippers and carriers.

Figure 5: Breakdown of Transportation Intermediaries



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The advantages of contracting are numerous. Contracts permit the shipper to exercise greater control over the transportation resource. They assure predictability and guard against rate fluctuations. Shippers can negotiate the service level guarantees that will allow them to use transportation to gain competitive advantage.

In negotiating a transport contract, you should ensure that the following points are adequately covered:

- rates;
- origins and destinations to be served;
- commodities to be transported;
- freight and other documents that will govern the movement and export of goods;
- liability coverage for bodily injury, property damage and cargo loss/damage;
- indemnification for the shipper from the carrier in the event that a third party sues the shipper for damages caused by the carrier (trucking contracts only);
- force majeure (an escape clause that voids the contract in the event of an act of God, act of war, or a strike);
- minimum volume guarantees;
- confirmation of the transport enterprise's status as an independent contractor;
- worker's compensation;
- a schedule of payments;
- a guarantee that the contract will be confidential;
- assignment of the contract (specifying that rights granted under the contract cannot be transferred to another party);
- a termination clause;
- specifications for the "measure of loss" or a statement about the replacement value of damaged goods;
- modification of the agreement;

- specifications for carrier equipment and the transport services to be provided by the transport enterprise;
- severability (specifying that even if one clause is held invalid, the other terms of the agreement will remain in effect);
- the transport enterprise's transit, demurrage and terminal privileges.

### **3. Evaluation**

When evaluating your international transportation network, you should take the opportunity to review your total international marketing and distribution strategy. You should examine the cost and service trade-offs of your transportation network in light of your international market and service objectives. Analyse both how products are being moved to customers, and how they should be moved to increase customer service levels.

Do not hesitate to contact both your domestic and international customers directly for an honest evaluation of your service record and for input into how to meet their needs better.

Your "transportation system audit" should review and evaluate the following factors:

*i. Product Considerations:*

- size
- weight
- durability
- value
- freight classification

*ii. Customer Service Considerations:*

- present service levels
- service levels of competitors
- input from customers

*iii. Distance from Markets*

*iv. Modal/Carrier Considerations:*

- frequency of movements
- volume of traffic
- freight handling requirements
- cost of loading/unloading
- special services required
- routes and destinations
- transport equipment

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intermodal connections  
transport documentation  
past experience with transport services:  
    time in transit  
    dependability of service  
    freight charges  
    tracing capabilities  
    liability and insurance  
    in-transit losses  
    damage levels

*v. Impact of Transport/Distribution Strategy on:*  
sourcing, production planning and foreign market  
development:  
    inventory levels and carrying costs  
    warehousing requirements and costs  
    order processing systems and costs

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## **Chapter 3**

# **Managing Transportation Risk**

### **Carrier Liability**

A contract of carriage, whether negotiated or regulated, as in the case of bills of lading, sets the limits of carrier liability and establishes the exemptions from that liability in the event of loss of, or damage to, goods while in transit (see Chapter 4 on documentation).

#### **1. Exemptions**

There are four basic exemptions from liability allowed by common law to a carrier:

*i. Act of God.* An accident due solely to natural causes, without human intervention and which could not have been prevented by any reasonable amount of foresight or care.

Example: Frost in southern Canada in August would probably be ruled an "Act of God," but in January freezing weather is something a carrier should foresee.

*ii. Enemies of the Queen or State.* Enemies of the state to which the carrier belongs.

Example: International terrorism; does not include robbers on land, but could include pirates on the high seas.

*iii. Defect or inherent vice in the goods.* An inherent characteristic in the goods, at the time of shipment, which would result in their damage or destruction, even if they had not been shipped.

Example: Fermentation or evaporation of liquids, decay of fruit, or the loss of animals by starvation as a result of their refusal to eat in transit.

*iv. Act or default of the shipper or owner.* Damage or loss caused by negligence of the shipper in preparing the shipment.

Example: The shipper providing poor or inadequate packaging for transport, or improperly loading a container or ULD.

Liability can be extended beyond statutory limits, as per contract between carrier and shipper.

In negotiating contracts of carriage, you should always enquire about the amount of liability and insurance coverage for damage and/or loss of goods carried by the carrier or freight forwarder. Adequate coverage should not be assumed.

#### **2. Bills of Lading and Liability Coverage**

Generally, a bill of lading is a memorandum of the terms and conditions of the contract between the shipper and the carrier for the transportation of the goods to the destination named in the contract. In some instances, such as rail and trucking, the bill of lading can be the contract of carriage.

An ocean bill of lading, on the other hand, is not in itself a contract: it is primarily a receipt for goods and evidence of a contract. This "receipt" usually contains a multitude of clauses outlining the responsibilities and immunities of the owner of the goods as well as those of the owner of the vessel. The acceptance by the shipper of the tendered ocean bill of lading is an acknowledgement that the contract includes the terms printed thereon.

Among the clauses appearing in fine print on the back of any bill of lading, sometimes in abbreviated form, are the terms and conditions setting limits of liability and specifying carrier exemptions. These terms and conditions are regulated by both domestic legislation and international conventions applicable to each mode of transport.

Liability is not usually open-ended or automatically set at the value of the goods, but can be limited by a formula applicable only under certain conditions. There is no uniform "maximum limit of liability" applicable to all modes of transport. Each mode has its own bill of lading, governed by its own regulatory legislation or international convention, and hence its own limit of liability.

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An international movement of goods, which could interline several modes of transport, might involve several bills of lading setting different levels and conditions of liability for loss or damage. You should exercise caution to ensure that the terms of the contract of carriage are the same or compatible on all bills of lading.

The carrier or transport enterprise, unless acting as principal assuming full responsibility for the shipment of the goods, is not an insurer of those goods, but is bound to take all reasonable care of them and is liable for loss or damage occasioned by its negligence.

## ***Freight Insurance***

The liabilities of a water carrier are much different from those of a rail or highway carrier. A shipper can obtain a clean, signed ocean bill of lading from a steamship carrier, and sometime later find that the goods did not arrive at the destination port because they were jettisoned to prevent the ship from sinking in high seas. In most cases, the exporter has no recourse against the steamship company. Unless the goods were insured, their value is lost.

Marine insurance, therefore, is an essential element in international trade and transportation, providing financial protection against loss or damage to cargo incurred by reason of maritime peril.

### ***1. General Considerations: Marine Insurance***

A marine insurance policy is a contract of indemnity, but not a perfect one. To indemnify means simply to put a person back into their original situation with respect to a specified thing or a certain condition.

Insurance strives to make good whatever financial loss a person may have suffered through the destruction or depreciation of the true value of the insured commodity. It does not endeavour to reimburse the assured for any sentimental or aesthetic value, unless such value can be measured financially and the policy agrees that it shall be insured.

In many transactions, it is common for Canadian exporters, even those selling on FAS (Free Alongside Ship) or FOB (Free on Board) terms, to control the

placing or arranging of marine and war risk insurance on a "warehouse-to-warehouse" basis, for "account of whom it may concern," as an additional provision in the contract of sale. In this situation, the cost of insurance is charged to the buyer as a separate item of expense in addition to the FAS or FOB price.

There are several reasons for this: foreign buyers, who may not be able to secure their investment, are protected with Canadian insurance coverage; Canadian exporters, who sell goods on extended payment terms, are financially at risk while the goods are in transit to overseas destinations.

#### **a. Certificate of Insurance**

Under the usual form of "open cargo policy" issued to exporters, the assured has authority to issue special policies of insurance or insurance certificates. In most transactions involving bank credit, a certificate of insurance is a prerequisite (Figure 6).

The certificate of insurance constitutes evidence of insurance protection on the shipment specifically described therein, and provides the means of transferring the insurance protection to other interested parties such as the buyer, importer or consignee. Overseas selling is facilitated by arranging insurance protection "for account of whom it may concern," that is for the benefit of all parties to the sales contract.

## ***2. Arranging Insurance***

Insurance may be arranged in one of several ways:

- directly with the insurer;
- with an insurance broker or agent; or
- through a freight forwarder or customs broker.

It is customary to arrange marine insurance through an intermediary who is familiar with the technicalities of both shipping and insurance. Agents are usually paid by the person who hires them. In the case of insurance, however, compensation comes from the insurer in the form of a percentage of the premium paid. This percentage is absorbed by the insurers as an operating cost and would not be saved by dealing directly with them.

*Licensed Companies:* include those which are incorporated in Canada either federally or provincially and foreign companies which conduct marine business through branch offices in Canada. Both operate under the auspices of provincial insurance authorities.

*Unlicensed Companies:* are generally foreign-owned and apparently do not maintain underwriting facilities in Canada, since all Canadian business is placed with them through insurance brokers. Lloyd's of London is an example of such an unlicensed company.

### **3. Types of Policies**

According to the Canadian *Marine Insurance Act of 1906*, a marine insurance policy cannot cover the assured against all loss or damage that may overtake his or her property. The cause of the loss or damage must be fortuitous, that is, beyond the control of the assured. Marine underwriters are, therefore, exempt from liability for losses which are inevitable because of packaging or nature of the goods (shipper's negligence or inherent vice of the goods).

Two main types of policies are available:

- individual policies covering one specific risk, and
- open cover policies.

The format of both policies is similar, the main difference being that the individual policy specifies the goods and shipping details, while the open cover policy specifies the type of goods and voyages covered.

*i. Individual Policy.* While it is possible for an exporter to arrange insurance on each individual shipment, this can be cumbersome and expensive. A shipment may be overlooked and thus be uninsured. Insurance rates can fluctuate and, unless long-term coverage is arranged, the premium on each shipment could vary according to the claims experience of previous shipments.

*ii. Open Cover Policy.* If exporters have regular overseas business, it will be advantageous to arrange a long-term contract with an insurance company. Most of these contracts are simply designed as "open cover," some as "continuous cover always open," some as "floaters."

These arrangements can be for a stated period of time, or may be continuous, subject to cancellation upon notice by either party.

With these types of contracts, the assured is given definite provisions as to conditions and rates applicable under normal circumstances. While awaiting shipment or after discharge, there is generally a monetary limit per location and vessel. Details and values are generally sent to the insurer at regular intervals.

The open cover policy cannot be sent overseas. When a policy of insurance is demanded by the buyer, a certificate of insurance (Figure 11) is issued which outlines the coverage terms of the open policy and has spaces for the exporter to fill in details of the particular shipment involved.

### **4. Types of Coverage**

Three main types of coverage are available:

*i. Free of Particular Average (FPA).* This is the narrowest form of coverage. In addition to total losses, partial losses resulting from perils of the sea are recoverable, but only if the vessel has been stranded, sunk, burnt, or in a collision.

*ii. With Average (WA).* This coverage offers more inclusive protection for partial damage by sea perils, if such damage amounts to 3 per cent or other specified percentage of the value of the shipment. If the vessel has been stranded, sunk, burned or has collided with another vessel, losses are recoverable in full.

*iii. All Risk.* This is the most comprehensive coverage. The all risk policy protects against physical loss or damage from external causes. It does not include war, strikes, riots, seizure or detention, unless endorsed by a special clause or separate policy.

### **5. Insurance Rates**

Marine insurance rates are not controlled by statute. The rate quoted by the underwriter is based on knowledge of the risk, experience, competition and intuition. Rates in North America are generally quoted in "cents per \$100" of insured value.

Figure 6: Sample Certificate of Insurance

M 67

ORIGINAL ORIGINAL AND DUPLICATE ISSUED, ONE OF WHICH BEING ACCOMPLISHED, THE OTHER TO STAND VOID.

No. 99006

CERTIFICATE OF INSURANCE

Maritime Insurance Company, Limited

NORWICH UNION INSURANCE GROUP

Marine Department, Head Office for Canada:

60 YONGE STREET, TORONTO, ONTARIO M5E 1H5 CANADA

TELEX: 06-219667 PREFIX: NORMARINE

TELEPHONE: (416) 362-2961

REF:

56/222

BROKER: Tower Chisholm Ferguson Ltd. Issued at Toronto, Ontario. Aug 3/84 19

This is to Certify, that CANADIAN COLEMAN COMPANY LTD., have

insured \$ Can\$ 11,605.00 (ELEVEN THOUSAND SIX HUNDRED AND FIVE-----CANS Dollars)

on 200 Cartons on 2 Skids LANTERNS, MANTELS, GLASS GLOBES AS PER PURCHASE ORDER.

MARKS & NUMBERS

Addressed # 1/200

per COLUMBUS NEW ZEALAND V.01 Sailing on or about AUGUST 5/84

from Toronto, Ontario via Vancouver

to Port Moresby, Papua, New Guinea

Covering Institute Cargo Clauses All Risks, Institute War, S.R. & C.C. clauses

CLAIMS ARE PAYABLE IN THE CURRENCY OF DRAFT.

Against all risks of loss or damage per Institute Cargo Clauses (All Risks) as over. Including War, Strikes, Riots, Civil Commotions and Malicious Damage as per current Institute War and Strikes Clauses.

Subject to the conditions of Open Policy No. AA-111 against which the interest insured hereunder has been declared.

SURVEY CLAUSE.—In the event of loss or damage which may give rise to a claim under this Certificate, notice must be given immediately to the undernoted agent/s so that he/they may appoint a Surveyor if he/they so desire.

Agents at Port Moresby, Papua, New Guinea are XYZ Insurance Group, Marine Office Port Moresby, Papua, New Guinea.

CLAIMS PAYABLE ABROAD (Delete if not required). In case of any claim arising on this Certificate, it is agreed that the same shall be settled at by AS ABOVE Agents at that place.

Notice of any claim must be given by the holder of the Certificate to the said Agents as soon as practicable and the settlement thereof will be made in conformity with the laws and customs of England. In the event of any difference of opinion arising between the said parties the settlement shall be referred to the Company in Toronto.

NOTICE TO CONSIGNEES

If claims hereunder are made payable in any of the following countries, attention is drawn to the fact that this Certificate must be stamped within the specified period after its receipt to conform with their Revenue Laws, otherwise no claim can be paid in these countries.

South Africa 7 days. Malaysia 30 days. India/Pakistan 3 months.

OTHER COUNTRIES MAY HAVE SIMILAR REQUIREMENTS

This Certificate is not valid unless countersigned.

For Maritime Insurance Company, Limited

Countersigned:

Per

[Signature]

[Signature]

Marine Manager for Canada

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The principal factors taken into consideration in establishing standard rates are:

- type of policy;
- commodity;
- length and destination of voyage;
- season;
- ship classification, construction, size, nationality, ownership and age;
- the market for marine insurance (supply and demand or competition between underwriters);
- utmost good faith in information supplied by the assured;
- packing provided by the shipper;
- salvage possibilities;
- underwriting experience with the assured (the rate will reflect the assured's loss ratio).

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## Chapter 4

# Transport Documentation

### Carrier's Bill of Lading

#### a. General Considerations

The primary transport document is the carrier's bill of lading. The expression "bill of lading" has its origins in the movement of goods by sea, and in many countries its use is restricted even today to movements by water.

In Canada and the U.S., we use the expressions "rail bills of lading" and "truck bills of lading." In other English-speaking countries, unless the document is used to cover a movement by sea, the expressions may be meaningless. A piece of paper may be a "goods receipt" or a "shipping contract," but never a "rail bill of lading."

*i. Purposes of a Bill of Lading.* A bill of lading has three purposes; it is:

- a receipt to the shipper signed by or on behalf of the carrier acknowledging that specific goods have been received for shipment;
- a memorandum of the terms and conditions of the contract between the shipper and the carrier for the transportation of the goods to the destination named in the contract; and
- evidence of title to the goods. To make it such a negotiable document of title, the goods must be consigned "to the order of ..." If it is not drawn up in this fashion, it is non-negotiable.

*ii. "Clean" Bill of Lading.* If there is an apparent defect in the goods and/or their packaging when received from the shipper, the carrier will make a notation to this effect directly on the bill of lading. Such a notation renders the bill of lading "unclean." A bill of lading without any such notation is considered to be "clean."

In fact, many clauses may be superimposed or stamped on a bill of lading. Those that do not directly refer to a defective condition of the goods and/or packaging do not render the instrument unclean.

Misunderstandings and disputes between seller, carrier and buyer sometimes arise from such clauses. The International Chamber of Commerce (see Appendix II) has published a booklet called *The Problem of Clean Bills of Lading* (#283) explaining the situation, making recommendations to avoid disputes and listing clauses commonly used.

#### b. Ocean Bill of Lading

An ocean bill of lading (see Figure 7) is prepared by either the shipper or carrier on forms provided by the carrier. Each steamship line has its own form of bill of lading and while there may be no uniformity in their appearance, the clauses are fairly standard.

An order bill of lading is "negotiable." The consignee may endorse in blank or specifically to the order of another party. Moreover, the endorsee and/or any subsequent endorsees may re-endorse in blank or specifically. In due course the carrier will deliver the goods to an endorser who surrenders the bill of lading after customs clearance.

Shipments may be made against bills of lading to the order of the named shipper. In such cases, the shipper must endorse the bill of lading before delivering it to the buyer. As a rule, such endorsement is made in blank.

Ocean bills of lading customarily include the name of a party to be notified immediately below the name of the consignee. The agent of the steamship company will address an "arrival notice" to this party at the time the goods are unloaded at the point of destination. It should be noted, however, that the agent has no legal obligation to send such notice and incurs no liability for failing to do so.

Some bills of lading may state "shipped in good order and condition on board the ..." This is an "on board" bill of lading. Others may read "received in good order and condition for shipment on the ..." This is a "received" bill of lading.

Before preparing an ocean bill of lading, it is important to review all the terms of sale and bill of lading requirements. If the goods are sold against documentary credit, an "on board" bill of lading may be required.

Figure 7: Sample Ocean Bill of Lading

<b>COLUMBUS LINE</b>		Australia New Zealand Service	A service of Hamburg-Südamerikanische Dampfschiffahrts-Gesellschaft Eggert & Amsinck	Established 1871	<b>BILL OF LADING</b> (STANDARD MASTER)	
SHIPPER/EXPORTER		SHIPPER		DOCUMENT NO.		
CANADIAN COLEMAN COMPANY LTD. 700 KIPLING AVENUE TORONTO, ONTARIO M8Z 5V5				EXPORT REFERENCES		
CONSIGNEE		CONSIGNEE		FORWARDING AGENT - REFERENCES		
TO ORDER				ABLE FORWARDING COMPANY 75 HORNER AVE # 11-13, TORONTO, ONTARIO. REF: 56/222		
NOTIFY PARTY		NOTIFY PARTY		POINT AND COUNTRY OF ORIGIN (PLACE OF RECEIPT)*		
ABC COMPANY LIMITED PORT MORESBY, PAPUA, NEW GUINEA				TORONTO, ONTARIO, CANADA.		
PIER				DOMESTIC ROUTING EXPORT INSTRUCTIONS		
EXPORTING CARRIER (VESSEL)		PORT OF LOADING		UNWARD INLAND ROUTING (PLACE OF DELIVERY)*		
COLUMBUS NEW ZEALAND V.01		VANCOUVER, BC				
PORT OF DISCHARGE		FOR TRANSHIPMENT TO*				
PORT MORESBY, PAPUA, NEW GUINEA.						
<b>PARTICULARS FURNISHED BY SHIPPER</b>						
MARKS AND NUMBERS	NO. OF PKGS.	DESCRIPTION OF PACKAGES AND GOODS			GROSS WEIGHT	MEASUREMENT
Addressed # 1/200	200	Cartons on 3 Skids <i>P</i> c.c. LANTERNS, MANTELS, GLASS GLOBES AS PER PURCHASE ORDER. C.I.F. PORT MORESBY.  LETTER OF CREDIT NO: ABC 5678 PAPUA NEW GUINEA BANK, PORT MORESBY, PAPUA, NEW GUINEA DATED: JULY 11th 1984.  Clean "On board" Aug 5/84 <i>CP</i> "Freight Prepaid" CONTRACT NO: CTA-1230			400 lbs	75 cft.
*To be completed only when goods accepted on through transportation basis						
				- SEE BELOW -		
				X	1	0
				0	0	1
0	10	VSL.	13	VOL.	16	ORIG.
20	25	DEST.	30	B/L NO.	35	SHIPPER
40	45	DOLLAR AMOUNT	50	55	70	72
DIR.	80	85	90	95	100	COCE
RECEIVED by Columbus Line for shipment by ocean vessel, between port of loading and port of discharge, and for arrangement or procurement of pre-carriage from place of acceptance and/or on-carriage to place of delivery as indicated above, the goods as specified above in apparent good order and condition unless otherwise stated. The goods to be delivered at the above mentioned				port of discharge or place of delivery, whichever applies. Subject to terms contained on the reverse side hereof, to which the Shipper agrees by accepting this Bill of Lading. One of the Bs/L must be surrendered duly endorsed in exchange for the goods or delivery order.		
IN WITNESS WHEREOF three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the others to be void						
FOR THE MASTER						
By COLUMBUS LINE <i>[Signature]</i>						
Dated at TORONTO, ONTARIO.						
T-10	08	05	1984			
B/L No.	Month	Day	Year	Tariff Item No.		
				cu. ft. @ \$ _____ per 40 cu. ft. \$ _____ cu. ft. @ \$ _____ per 40 cu. ft. \$ _____ lbs. @ \$ _____ per 2240 lbs. \$ _____ lbs. @ \$ _____ per 2240 lbs. \$ _____ @ \$ _____ \$ _____ DECLARED VALUE CHARGES (See Clause 3 & 4c) \$ _____ Prepaid / Collect Total \$ _____		

ORIGINAL

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There is no particular form printed for an "order" bill of lading in marine transport. If the goods are to be consigned to order, the word "order" is simply typed in as a prefix to the name of the consignee in the proper place.

The form of the bill of lading is self-explanatory. Provision is made for the name of the shipper, the port of loading, the name of the vessel, the consignee and the address for notification, the port of discharge and whether the freight is to be prepaid or collect.

*i. Important Features.* Three very important features of the ocean bill of lading must be noted:

1. **Lead marks** (sometimes designated "marks and numbers"): To appreciate the importance of marking cargo, remember that your cases may be mixed in the ship's hold and in the shed with cases from another hundred shippers, each of which may be very similar to yours. Cases, chests, bales, bundles, crates or pieces, whatever you are shipping, must be clearly marked so that they can be sorted out at destination. Legible identification marks should be stencilled on at least one side and one end of packages where they can be read when packages are stacked. Marks should show port of discharge and some identifying code for the receiver. These lead marks would appear on the bill of lading.

2. **Weights and measurements:** If possible, weights and measurements should both be marked on each of the individual packages, and the total weight and measurement of the complete shipment should be shown on the bill of lading. The consignee may require both figures when arranging handling from the port of discharge; both are necessary when the vessel's agent is planning the stowage of the ship.

3. **Number of originals:** An ocean bill of lading is generally made with two or more originals.

Usually above the signature on each bill of lading, there appears an indication of how many copies were signed. The surrender of any one signed original to the carrier will release the goods to the bearer of the signed document. It is important, therefore, that the importing buyer obtain from the shipper the full set of bills of lading.

### c. Rail and Truck Bills of Lading

Rail and truck bills of lading are issued with only one original. In addition to the order bill of lading, both modes issue "straight" bills of lading. A straight bill of lading (see Figure 8) is a non-negotiable document in which the consignee is named. Goods are delivered on arrival without surrender of the bill of lading.

A rail bill of lading, whether negotiable or not, is a contract for carriage between the shipper and the carrier. The bill of lading consists of three parts: the original, the shipping order and the memorandum. All three parts are signed by the shipper; the carrier signs only the original and the memorandum.

The original copy is the only part of the document that has value in any dispute between the shipper or owner of the goods and the carrier. The shipping order is retained by the carrier as authority for the services it agreed to perform. The original, as well as the memorandum, is returned to the shipper.

After years of negotiations, the Canadian trucking industry developed a Canadian Uniform Highway Bill of Lading (Figure 9). Although each trucking company issues its own form of bill of lading, most follow the format devised for national application.

All three modes, marine, rail and trucking, can issue a "short form of straight bill of lading." This short form gives only the most important terms and conditions of carriage. However, it states that all the terms and conditions found in the regular form of bill of lading apply, whether stated or not.

### d. Intermodal Bills of Lading

Under an intermodal movement arranged by the shipper with several carriers, each carrier issues a bill of lading for its segment of transportation. Each party is responsible for only its leg of the journey, and the terms and conditions appearing on its bill of lading, including limits of liability, are applicable only to that segment.

In a multimodal transport movement, arranged by an intermediary, a combined transport document can apply. This document is issued by a "combined transport operator." All parties to the multimodal movement would agree to the terms and conditions set out in the combined transport document. The "combined transport operator," whether a freight forwarder or a carrier, when acting as principal, would assume full responsibility for the shipment, including liability for loss or damage.





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To foster standardization among nations engaged in international trade and to establish the rights and responsibilities of all parties engaged in multimodal transportation, the International Chamber of Commerce has adopted and published *Uniform Rules for a Combined Transport Document* Publication #298). Combined transport documentation is not yet universally applicable or generally accepted.

## **Forwarder's Receipt/Bill of Lading**

Upon agreement between buyer and seller, the seller may substitute a forwarder's receipt for the ocean bill of lading when providing documentation to the buyer (Figure 10).

### **a. Procedures**

To obtain this document, the shipper will deliver the shipment to an international freight forwarder who will issue a receipt for it. The forwarder will consolidate a number of small shipments received from several sellers into one master shipment. The forwarder, acting as principal on behalf of these shippers, will then negotiate a contract for carriage of the consolidated shipment with a marine carrier. An ocean bill of lading is issued by the carrier to the forwarder.

In effect, in the initial transaction, the international freight forwarder acts as a "carrier" selling voyage space to the exporting shippers. The forwarder's receipt is therefore comparable to a bill of lading.

In the subsequent transaction, the forwarder acts as a "shipper" buying voyage space from the steamship line. The line's ocean bill of lading is therefore issued to the forwarder as shipper.

The forwarder sends this ocean bill of lading to its branch or agent at the point of discharge. Through this representative, the forwarder clears the shipment through customs and takes possession of the goods.

The individual buyers in turn present the forwarder's receipts sent to them by their respective shippers (exporters) and accordingly take possession of their parts of the master shipment.

### **b. Format**

The format of the forwarder's receipt varies. The simplest form is a receipt indicating that delivery will be made to a named consignee. The more elaborate "forwarder's bill of lading" states that the forwarder undertakes to make delivery to the order of an identified party. In appearance, the forwarder's bill of lading resembles a carrier's bill of lading and will most likely state that the shipment is handled subject to the terms and conditions of the carrier's bill of lading.

In the event of loss or damage, the holder of the forwarder's receipt/bill of lading has recourse against the forwarder.

## **Air Waybill**

The air waybill (AWB) may be used for only two types of transportation: the transportation of individual shipments and the transportation of consolidated shipments. For individual shipments put into a consolidated shipment for transportation by air, the consolidator or air freight forwarder must use its own "house air waybill," and not the carrier's AWB.

The AWB is a non-negotiable document consisting of three originals and six copies. Carriers may provide up to five additional copies, which are for internal use only.

*Purposes and Functions.* A typical AWB (Figure 11) contains 37 boxes requesting detailed information. The AWB is the most important cargo document issued by a carrier or its authorized cargo agents. It functions in a number of ways, and is:

- documentary evidence of the conclusion of a contract of carriage;
- proof of receipt of goods for shipment;
- a certificate of insurance, if the carrier's insurance is requested by the shipper;
- a customs declaration; and
- a waybill, that is, a guide to the carrier's staff in handling, dispatching and delivering the consignment.

Figure 10: Sample Forwarder's Through Bill of Lading

Forwarder's Through Bill of Lading		INTERNATIONAL TRANSPORTATION 330 BAY STREET, SUITE 903 TEL (416) 367-0235 TORONTO, ONT. M5H 2S8 TELEX 05-22557		PRET N°	
Exporter	Ref.	<b>THROUGH BILL OF LADING</b>  FOR RELEASE OF CARGO APPLY TO Overseas Agent			
Consignee	Ref.				
Notify	Ref.				
Pre-Carriage by (Inland Trans):	From (Local lading point)	Country Origin	Country Destination		
Ocean Vessel	Port of Loading	Insurance Value			
Port of Discharge	Place of Delivery	Onward Inland Routing			
MARKS & NUMBERS AND/OR CONTAINER & SEAL NUMBERS	RECEIVED IN APPARENT GOOD ORDER & CONDITION	NUMBERS & KIND OF PACKAGES DESCRIPTION OF GOODS	NET WEIGHT	GROSS WEIGHT	MEASURE METRY
<p style="font-size: 2em; font-weight: bold; transform: rotate(-15deg);">NON NEGOTIABLE</p> <p>ACCORDING TO THE DECLARATION OF THE EXPORTER</p>					
<p>The goods covered by this Bill of Lading have been received and will be shipped, carried, forwarded, stored, handled and delivered subject to the terms and conditions of the Canadian International Freight Forwarders Association (CIFFA) for Canadian Forwarding Agents as well as to the conditions and exceptions of carrier organizations or firms who have part in receiving, shipping, carrying, forwarding, storing, handling and delivering the said goods. Warranted free of capture, seizure, arrest, restraint or detainment, and the consequences thereof or of any attempt thereat, also from the consequences of hostilities or warlike operations, whether there be a declaration of war or not. One of these Through Bill of Lading must be surrendered duly endorsed in exchange for the goods.</p> <p>In witness whereof the original Through Bills of Lading all of this tenor and date have been signed in three, when one has been accomplished, the others are void.</p>					
Dated in ..... this ..... 19 .....		Authorized Signature			

All business is undertaken subject to the "General Conditions" of the CIFFA



Figure 12: Sample Air Waybill (2)

Forwarder's Air Waybill

Shipper's Name and Address		Shipper's Account Number		NOT NEGOTIABLE <b>AIR WAYBILL</b> (AIR CONSIGNMENT NOTE) ISSUED BY 	
Consignee's Name and Address		Consignee's Account Number			
INVOICEE (If other than shipper)		Account Number		COPIES 1, 2 AND 3 OF THIS WAYBILL ARE ORIGINALS AND HAVE THE SAME VALIDITY.  ALSO NOTIFY	
Airport of Departure		Airport of Destination			
ROUTING AND DESTINATION				ACCOUNTING INFORMATION	
To	By First Carrier	To	By		
Flight Date		For Carrier Use Only		Flight Date	
Currency		Chgt Code	WT / YOL	PPD	COLL
Amount of Insurance		Declared Value for Customs		Master Air Waybill	
INSURANCE - IF SHIPPER REQUESTS INSURANCE IN ACCORDANCE WITH CONDITIONS ON REVERSE HEREOF INDICATE AMOUNT TO BE INSURED IN FIGURES IN BOX MARKED AMOUNT OF INSURANCE.					

Handling information

Document attached to AWB:  Commercial/Customs Invoice  Packing List  Other

No. of Pieces RCP	Gross Weight	Kg Lb	Rate Class Commodity Item No.	Chargeable Weight	Rate/Charge	Total	Nature and Quantity of Goods (Incl. Dimensions or Volume)
Weight Charge				Other Charges (Specify)			
Insurance				Due Agent:			
Carriage				Due Carrier:			
Total Other Charges Due Agent				<b>COD</b> ▶ Currency THIS AMOUNT IS NOT INCLUDED WITH OTHER CHARGES			
Total Other Charges Due Carrier				Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains restricted articles, such part is properly described by name and is in proper condition for carriage by air according to the International Air Transport Association restricted article regulations and AGREES TO THE CONDITIONS ON THE REVERSE HEREOF.			
C.O.D. Fee							
CURR. TOTAL PREPAID		CURR. TOTAL COLLECT		SIGNATURE OF SHIPPER OR HIS AGENT			
Currency Conversion Rate		CC Charges in Dest. Currency					
FOR CARRIER'S USE ONLY AT DESTINATION				Carrier certifies goods described were received for carriage SUBJECT TO THE CONDITIONS ON REVERSE HEREOF. The goods then being in apparent good order and condition except as stated hereon.			
Charges at Destination							
Cur.		Total Collect Charges		Executed on (Date) at (Place) Signature of Issuing Carrier or His Agent			

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The carrier's contract starts when the AWB is executed, that is, when it is signed by the shipper and the carrier. The contract expires when the consignment is delivered to the consignee named on the AWB.

*Procedures.* The shipper prepares the AWB in accordance with international conventions, and is responsible for the correctness of the particulars and statements relating to the goods. The shipper is liable for all damage suffered by the carrier or any other person by reason of the irregularity, incorrectness or incompleteness of these particulars and statements. By signing the AWB, the shipper simultaneously confirms and agrees to the conditions of contract set forth on the reverse side of the AWB and to the conditions of carriage.

The term "non-negotiable" printed on top of the AWB means that it is a "straight" bill of lading. Air carriers do not issue negotiable air waybills.

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# **Appendix I**

## **Freight Handling: Preparing the Goods for Shipment**

Everyone involved in the distribution channel, from exporter to carrier to end user, has a responsibility to ensure that goods are properly prepared, packaged and identified for shipment. Two objectives should be borne in mind:

- achieving safe delivery of the total shipment; or,
- in the event that damage occurs, minimizing the monetary loss.

### **Responsibilities**

At the initial stages of transport, the onus is on you, the exporter, to ensure that goods are properly packaged, unitized, and/or containerized. Otherwise, carriers could refuse to handle the goods and any claim for recovery would be jeopardized.

#### **1. General Guidelines**

A few basic rules:

- assess the total transportation movement and pack for the toughest leg;
- determine the frequency of trans-shipment in a multimodal movement and prepare the goods for multiple handling;
- determine packaging regulations and requirements applicable in the country of origin, for each carrier, at all ports of exit and entry, and in the country of destination;
- know packaging capabilities: strengths and weaknesses, "stackability" and handling, susceptibility to weather;
- package goods to minimize internal movement and to protect corners, edges, finishes, valves, dials and knobs, or upholstery and material;

- use appropriate unitizing devices (i.e., pallets, containers, etc.) and place, load and secure goods properly;
- determine the kind of handling equipment to be used and its availability at trans-shipment points.

#### **2. Compliance with Modal Rules**

Of all transport modes, the railways in particular have established rules for size, construction and strength of most packages to be used. When these rules are not complied with, a penalty freight charge can be assessed and claim recovery could be jeopardized.

Other modes vary in the application of such strict rules, but all require that goods must be properly packaged to reasonably withstand handling and transport.

#### **3. Equipment Inspection**

Before loading goods, you should inspect the transport equipment, whether it is a truck trailer, a rail car, or a container. If the transport equipment has not been properly inspected before loading, your claim for recovery of any damages may be jeopardized.

You should check the following points:

##### **a. External**

- equipment must not have any obvious holes or tears in the outside panelling;
- doors should be in good order; watch carefully that gaskets, door hinges and locks are not broken or twisted;
- before packing open-top or open-ended equipment, ensure that the canvas tilts are complete and not ripped; customs seal ropes should be in position and fit correctly, with end pieces intact;
- soft-topped equipment should have all roof-bows or supports in the right places;
- any labels remaining on the outside of the equipment which refer to the previous cargo should be removed to avoid misunderstandings and penalties;

- when using refrigerated equipment with integral reefer units, ensure that the temperature setting is correct for the commodity to be packed.

#### b. Internal

- equipment should be clean and there should be no evidence of previous cargo;
- make sure no nails or other protruding objects can cause damage to your cargo;
- if delicate goods susceptible to damage by bad odours are to be packed, equipment should be "sweet-smelling"; cross-taint can be saturated by either burning coffee beans or using a deodorant spray;
- before packing highly delicate goods, equipment should be lined with paper or plastic;
- satisfy yourself that the interior is absolutely dry; any present "sweat" or frost should be wiped off to avoid damage from dampness;
- to check whether the container is watertight, enter the container and have both doors shut; if any spots of light can be seen, water can gain entry;
- if you intend to ship goods liable to leakage and/or producing bad odours, equipment should be protected by plastic foils and absorbing material.

### 4. Consolidated Shipments

Goods transported in consolidated shipments, in less than carload (LCL) or in less than truckload (LTL) quantities, must be marked, labelled and fully identified on a per item basis. In preparing such shipments, you should try to determine what other types of goods could come in contact with your products, and prepare them accordingly. Carriers and other transport enterprises should be notified about the sensitivity of goods in proximity to other substances.

### 5. Dangerous Goods

The handling, transport and storage of dangerous goods and hazardous substances are strictly regulated both domestically and internationally. You, as the exporter and shipper, are responsible to ensure compliance with all such regulations.

Various regulations apply, depending on the modal service used:

- International Maritime Dangerous Goods Code (International Conventions)
- Regulations for the Transportation of Dangerous Goods by Rail (Rail; Canada);
- *Title 49 of the U.S. Code of Federal Regulations* (Rail and Trucking in the U. S. A.);
- Regulations for the Transportation of Dangerous Goods by Air (both International Civil Aviation Organization [ICAO] and International Air Transport Association [IATA] regulations);
- *Transportation of Dangerous Goods Act and Regulations and Provincial Companion Legislation* (Trucking, Canada).

Regulations generally cover:

- product identification by name, number and classifications;
- packaging instructions and specifications;
- marking and labelling;
- documentation;
- handling; and
- emergency response procedures.

Only you as the exporter and shipper are legally held responsible for compliance with dangerous goods regulations and for signing dangerous goods documents.

### 6. Seeking Advice

You can seek advice on how best to prepare your goods for international transport from carriers and other transport enterprises, such as freight forwarders. They can provide expertise on correct packaging and handling procedures, blocking and bracing procedures and minimum protection standards. Boxmakers also have access to information on package strengths and international packaging standards.

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The publication *Safe Stowage*, prepared by External Affairs and International Trade Canada, deals with the proper methods of efficient and effective stowage.

## **Handling Techniques According to Freight**

There are three general kinds of freight, each requiring different handling techniques:

- bulk freight;
- unit load freight; and
- containerized freight.

### **1. Bulk Freight**

#### **a. Definition**

Bulk freight is freight which, due to its physical properties, cannot or should not be packaged in anything less than the transportation unit itself.

#### **b. Examples**

Examples include grains and ores; forest products; steel and other processed metal products; cars, trucks and other transportation equipment; machinery and other industrial equipment of a size which cannot be packaged or containerized.

#### **c. Handling Techniques**

Handling involves direct loading into transport vehicles or vessels using facilities and equipment provided on the vessel or at the loading site.

Bulk freight can be handled only by carriers equipped to do so. Special loading operations and facilities are required. The knowledge of those who handle the product, rather than a knowledge of the product itself, is important where bulk freight is concerned.

### **2. Unit Load Freight**

#### **a. Definition**

Unit load freight involves one or more packages secured to a pallet or skid or other "unitizing" device,

such that it can be handled, loaded and secured as a single unit.

The objective of unit load freight is to save labour and time while simultaneously providing security. The unit load cuts handling operations down to a minimum by moving a large number of packages by mechanical means. Strapping and packaging merchandise together reduces pilferage and breakage.

#### **b. Examples**

Examples include almost any commodity which is bagged, boxed, in cartons, crated, wrapped or stacked, or which can be loaded onto pallets, built up on skids, and/or braced.

#### **c. Handling Techniques**

Handling involves equipment such as forklift trucks, cranes, slings, etc.

Unit loads are often secured to pallets by horizontal and vertical strapping. Shrink-and-stretch plastic wrappings are used to stabilize and protect palletized loads. Stacking protection for the top of the load is accomplished with a lumber or plywood cap. Loads susceptible to compression are supported with vertical framing. In some cases, the entire pallet load may be encased in a cardboard or fibreglass enclosure.

*i. Palletizing Guidelines.* Factors to bear in mind for securing and protecting goods in unit loads include:

- wherever possible, goods should be secured to pallets in bonded fashion;
- goods should be placed with weight evenly distributed, with heavier weights at the bottom and lighter ones at the top;
- goods should not overhang the pallet;
- in some instances, goods will require independent securing before being placed on the pallet;
- strapping should be two-way for complete securing and should be placed so that it cannot be broken by normal use of a forklift truck;
- metal-to-metal contact should be avoided by insertion of wood, cardboard or cloth to prevent slipping;

- the probability of other cargo being placed on top and the possibility of goods being walked on should be taken into consideration;
- the unit should be fully marked with port marks, addresses, gross unit weight, general handling and stowing advice, dimensions, special precautions that might apply, and any other pertinent information.

### **3. Containerized Freight**

#### **a. Definition**

Containerized freight is freight which can be loaded into a container.

#### **b. Examples**

Examples include any type of merchandise, bulk commodities and liquids, as well as unit loads.

#### **c. Handling Techniques**

Handling involves the use of carrier-owned equipment, such as containers, overhead cranes, flatbed cars and trucks, and container vessels.

The advantages of moving goods in containers are the same as for unit loads — reduced labour costs, carrier transit times, pilferage and breakage. In addition, there is a reduction in packaging costs because the container becomes the actual transport package.

## **Handling Techniques According to Package Unit**

### **1. Bags**

A fundamental concern with bagged cargo, especially when packed into containers, is shifting. Bagged cargo which has shifted not only puts extreme pressure on the container walls, but is also likely to burst out of the container when the doors are opened.

It takes a comparatively long time to pack and unpack a container of bagged cargo. The use of expendable pallets would probably be more economical.

### **2. Bales**

The strength, shape and rigidity of a bale is determined by its contents. The outer covering may be of hessian, paper or some other material. When packing bales, care should be taken not to damage the outer covering.

Normally, bales are stuffed into transport equipment by forklift trucks. When stowing bales of paper or wood pulp, wood battens of the same length as the transport equipment should be laid out on the floor of that equipment and on the lower layer of bales to assure that a forklift truck can discharge the cargo.

Protection must be provided against sharp corners and edges. Bales should not be stowed directly against edges and corners without some form of protection. Loads should be secured by timber struttred against corner posts.

### **3. Cartons**

Cartons chafe easily, so a tight stow, using "filler pieces," strutting or lashing is essential to absorb any movement. Packing is started at the front end of the transport equipment and filling is carried out from the sides to the middle. The space should be utilized so as to avoid unnecessary waste space.

If free space remains, the cargo should be struttred. This is particularly important in the case of fragile goods with light packaging.

### **4. Small Cases and Crates**

In principle, the same precautions and stowage patterns apply as for cartons. To improve the stability of the stow, cases should be turned or staggered to give a three-dimensional brick wall effect. To reduce movement and the possibility of collapse when the doors are opened, the cases may even be nailed to each other.

### **5. Drums and Barrels**

Before loading drums or barrels, ensure that they are not leaking. Leaking drums and barrels must not be loaded. Barrels should always be loaded with the bung or closure uppermost.

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Metal drums are best stowed upright and close together. Drums containing dangerous chemicals should be stowed on a timber dunnage laid in the long axis of the container.

Unless the drums and barrels are especially designed to "nest," there should be some form of soft dunnage, such as timber or hardboard, between each tier of drums. Next to doors, they should be secured by steel strapping and/or wooden wedges.

Metal drums and wooden barrels should never be stowed together. To avoid leakage, wooden barrels should lie on their bilges in such a way that the weight is absorbed by the ends and not the middle. This is done by placing planks under the ends of the barrels to a height where the bilges do not touch the container floor. The barrels are then prevented from rolling by means of wedges.

## **6. Pallets**

Cargo should be secured to a pallet by strapping, gluing or shrinkwrapping. Dimensions of pallets should be chosen to utilize the transport equipment fully.

If the dimensions are such that there is only room for one unit across the width of the transport equipment, the row should be stowed down the middle. If dimensions allow two or more pallet units across the width, the rows should be located close to the sides.

When pallets are stowed in a single layer, timber connectors under each pallet are sufficient for securing them. If they are stowed in several layers on top of each other, securing should be done by means of timber strutting or air bags.

## **7. Rolls and Coils**

Rolls of paper which are stowed upright should be packed close together down the ends and along the walls of transport equipment. Any empty spaces between rolls must be filled in. Next to door openings, the rolls should be secured by means of planks and/or wedges.

Heavy steel coils, when shipped with a horizontal axis, must be supported by wooden beams to avoid concentrated loads on the floor of the transport equipment. Wedges and strong wire lashing should be used for securing.

When stowing steel coils with a vertical axis, the same stowage method as for rolls of paper should be used.

If steel coils are shipped on specially designed skids or pallets, they need to be tightly fastened to the skids.

## **8. Machinery**

Machinery and heavy pieces of equipment are normally shipped in open-top containers or on flats. Heavy lifts should be placed on strong wooden skids, which should be tightly fastened to the load.

If only a single piece is shipped, it must be placed in the centre of the transport equipment. Skids should be secured to the floor and strutted against corner posts and/or longitudinal rails.

The load should be secured against sliding in a longitudinal direction by means of strong timber connectors. For transverse securing, timber beams should be used.

## **9. Vehicles**

Passenger vehicles and small trucks can be shipped in closed box containers. It is essential that they are absolutely dry when put into the container. Windows should be opened about 1 cm. Special lashings are available to secure vehicles to the container.

Larger trucks, harvesters and bulldozers can be shipped on platforms or flats. Steel wire with turnbuckles and wedges should be used for securing.

## **Handling Techniques According to Movement**

### **1. Marine Cargo Movements**

When stuffing a marine cargo container, it is important to remember that the ocean is part of the international voyage. Oceans are rough, particularly the North Atlantic in the winter. Crossing can be hazardous; vessels, containers and the goods can sustain considerable damage. In violent storms, containers carried on deck can be swept overboard or even jettisoned to save the ship.

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The following points should be borne in mind when containerizing goods:

- in fastening cargo down, use the equipment provided (rings in the floor, on the wall, etc.);
- container walls are not designed to take sustained pressure; do not brace cargo against the walls of the box;
- wooden wedges and braces must be removed at destination without damage to the interior of the box;
- any empty space in the container after the cargo is stuffed must be filled;
- care must be taken to avoid cargo shifting to put pressure on the doors, which might spring open during transit;
- packing lists and documents should be placed in convenient and easily spotted locations;
- when loading cargo in packages of varying sizes, prepare a theoretical stuffing plan to optimize use of space;
- remember the loading capacity of the container and its handling equipment and weight restrictions of land conveyance;
- take care of any customs requirements;
- mark any hazardous cargo with appropriate international labels and placards, and always load hazardous cargo closest to the doors; mark the container accordingly;
- comply with the compatibility guidelines for various types of cargo, especially when batching different kinds of goods;
- load from the back of the container forwards and from the side walls towards the middle; ensure that no empty space is left against the wall;
- put heavy cargo at the bottom;
- as far as possible, spread the weight of the cargo evenly over the whole floor of the container;

- mark gross weight on packages, especially where heavy cargo is concerned;
- load the container in the way that you would like to see it if you were the one who had to unload it;
- in the end, do not forget to close the doors properly; only sealed doors make the container waterproof.

## **2. Air Freight Movements**

### **a. General Considerations**

In air freight movements, the actual size of the shipment is a more significant factor than in any other mode of transportation. If it is impossible to load the freight through the cargo door of an aircraft, it cannot be shipped by regular air freight.

The shipment must match the configuration of unit loading devices (ULDs). Consideration must be given to whether the size of a shipment will require more than one ULD or even more than one aircraft.

### **b. Security Considerations**

Security is vital in the movement of air freight because air cargo is generally more valuable than cargo moving by other modes of transport; it is often loaded and unloaded during hours of darkness, and it moves at peak periods, when the emphasis is on speed and flexibility.

Although most airlines employ sophisticated security systems, the exporter should remember:

- package marking should not easily identify the contents of valuable shipments, such as cameras;
- pick-up and delivery times should be scheduled to minimize the amount of time goods remain on airport property;
- containers loaded by the shipper should have a non-reusable seal attached to them, with a number shown on the transport documents, so that it can be verified at point of destination that the seal has not been tampered with;
- airlines should be made aware of unusually valuable shipments, and shippers should become aware of the special security services offered by airlines;

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- shippers should be aware of airline liability limits and what compensation would be in case of loss of, or damage to, cargo.

- in stacking, goods should be interlocked to provide stability and prevent movement of outer packages when securing nets are installed.

#### c. Temperature and Pressure Considerations

Airlines make every effort to keep exposure of cargo to temperature extremes to an absolute minimum. However, it is important that shippers be aware of the general temperature variations at points of origin and destination.

Altitude pressure also has an effect on cargo. The cabin interior of an all-cargo jet is normally pressurized to a level of between 5 000 and 8 000 ft. The cargo compartments of combination aircraft are normally pressurized to the 8 000 ft. level, creating a pressure differential of 4 lb./sq. in. compared to sea level. This is suitable pressure for baggage, mail and most solid freight, although it may be unsuitable for certain liquids.

Under extreme conditions, that is, in unpressurized cargo compartments, the pressure reduction can reach a differential of 8 lb./sq. in. compared to sea level. This pressure can affect certain liquid cargoes unless they are adequately sealed. Room should always be allowed for expansion within a container or package.

#### d. Handling ULDs

Unit load devices do not have forklift capabilities and must move over mechanized equipment that differs from other unitization devices. The base of ULDs is relatively thin and flexible. Highly concentrated loads should not be placed on the base without sufficient flooring or shoring to meet floor-loading requirements.

#### e. Guidelines to Stuffing ULDs

To load a ULD, the weight of the goods must be evenly distributed. You should remember:

- heavy items should be placed at the bottom and towards the edges;
- when several heavy pieces are loaded, the weight should be distributed evenly both laterally and longitudinally;
- light items should be placed towards the centre;
- where practical, goods should be arranged so that labels are visible;

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## **Appendix II Information Sources and Contacts**

### **Industry Publications**

*Canadian Transportation Law Reporter*, 2 volumes. Published by the Canadian Institute of Traffic and Transportation and CCH Canadian Limited. Toronto: CCH Canadian Limited, 1989 (with monthly updates).

Volume 1 contains commentary on the transportation and distribution environment in Canada, including transportation by rail, road, water, air and pipeline, as well as marine cargo insurance, warehousing, customs, dangerous goods, materials handling, unitization and logistics.

Volume 2 contains the texts of the federal, provincial and territorial statutes, ordinances and regulations pertinent to the transportation of goods in Canada.

Subscriptions, with basic text, monthly updates and a monthly newsletter, are available from CCH Canadian Limited, 6 Garamond Court, Don Mills, Ontario M3C 1Z5, Tel: (416) 441-2992.

*Exporter's Guide to Cargo Insurance*. Published by the Canadian Board of Marine Underwriters. Montreal: Canadian Board of Marine Underwriters, no date.

A guide prepared for Canadian exporters either already experienced or about to venture into the world market.

Enquiries may be referred to the Canadian Board of Marine Underwriters, 1 Eva Road, Suite 409, Etobicoke, Ontario M9C 4Z5, Tel: (416) 626-7380.

### **International Chamber of Commerce Publications**

*Uniform Rules for a Combined Transport Document*. Publication #298.

Rules laying minimum standard conditions for contracts of carriage offered by combined transport operations.

*Clean Transport Documents*. Publication #473.

Information on transport documents, maritime bills of lading, clean transport documents, letters of indemnity and containerization.

To order ICC Publications, contact the International Business Council of Canada, 1080 Beaver Hall Hill, Montreal, Quebec H2Z 1T2, Tel: (514) 866-4334.

### **External Affairs and International Trade Canada Publications**

The following is a short list of some of the publications available from External Affairs and International Trade Canada. They may be obtained free of charge through the regional International Trade Centres (ITCs) listed below or from EAITC, 125 Sussex Drive, Ottawa, Ontario K1A 0G2, Tel: InfoExport (Toll free) 1-800-267-8376.

*CanadExport*. This is a bi-monthly newsletter published by EAITC's Trade Communications Canada Division.

*Export Guide: A Practical Approach*. Third edition, June 1989.

*Safe Stowage*.

*Export Markets: The Trading House Connection*.

*Selecting and Using Manufacturers' Agents in the United States*.

*Countertrade Primer for Canadian Exporters*.

*Selecting and Using Foreign Agents and Distributors*.

*The Exporter's Guide to Documentary Credits and Documentation*.

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## **Other Government Publications**

*Exportation: D-Memorandum 20.* Issued by Revenue Canada, Customs and Excise.

D-Memoranda are Customs and Excise Directives.

They are divided into 21 sections and are available from Supply and Services Canada, Ottawa, Ontario K1A 0S9, Tel: (819) 956-4800. There is a charge for this publication.

*Our Knowledge Builds Competitiveness: ISTC Programs and Services.* Published by Industry, Science and Technology Canada.

For free copies of this and other publications contact a regional office of ISTC or Industry, Science and Technology Canada, 235 Queen Street, Ottawa, Ontario K1A 0H5, Tel: (613) 995-8900.

## **Industry Associations**

Canadian Association of Customs Brokers  
121 York Street  
Ottawa, Ontario K1N 5T4  
Tel: (613) 238-3394

Canadian Board of Marine Underwriters  
1 Eva Road, Suite 409  
Etobicoke, Ontario M9C 4Z5  
Tel: (416) 626-7380

Canadian Chamber of Commerce  
International Affairs Division  
55 Metcalfe Street, Suite 1160  
Ottawa, Ontario K1P 6N4  
Tel: (613) 238-4000

Canadian Exporters' Association  
Suite 250, 99 Bank Street  
Ottawa, Ontario K1P 6B9  
Tel: (613) 238-8888

Canadian International Freight  
Forwarders' Association  
P.O. Box 929  
Streetsville, Ontario L5M 2C5  
Tel: (416) 567-4633

Canadian Manufacturers' Association  
Export Department  
1 Yonge Street  
Toronto, Ontario M5E 1J9  
Tel: (416) 363-7261

International Business Council of Canada  
1080 Beaver Hall Hill, Suite 1730  
Montreal, Quebec H2Z 1T2  
Tel: (514) 866-4334

## **Professional Institutions**

### **1. Customs Brokerage**

Canadian Institute of Customs Brokers  
305-555 Burnhamthorpe Road  
Etobicoke, Ontario M9C 2Y3  
Tel: (416) 622-5807

### **2. Transportation, Distribution and Logistics**

Canadian Institute of Traffic and Transportation  
145 Berkeley Street, Suite 500  
Toronto, Ontario M5A 2X1  
Tel: (416) 363-5696

## **Federal Government Agencies and Departments**

Canadian International Development Agency  
200 Promenade du Portage  
Hull, Quebec K1A 0G4  
Tel: (819) 997-7775

Export Development Corporation  
151 O'Connor Street  
Ottawa, Ontario K1P 5T9  
Tel: (613) 598-2500

External Affairs and International Trade Canada  
125 Sussex Drive  
Ottawa, Ontario K1A 0G2  
Tel: (Toll free) 1-800 267-8376  
or (613) 993-6435

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Industry, Science and Technology Canada  
235 Queen Street  
Ottawa, Ontario K1A 0H6  
Tel: (613) 995-8900

## ***International Trade Centres***

If you have never marketed abroad, please contact EAITC's International Trade Centre (ITC) in your province. ITCs are co-located with the offices of Industry, Science and Technology Canada, except in the Northwest Territories and the Yukon.

### **British Columbia**

International Trade Centre  
650 West Georgia Street, Suite 900  
P.O. Box 11610  
Vancouver BC V6B 5H8  
Tel: (604) 666-0434  
Telex: 045-1191  
Fax: (604) 666-8330

### **Alberta**

International Trade Centre  
Canada Place, Room 540  
9700 Jasper Avenue  
Edmonton, AB T5J 4C3  
Tel: (403) 495-2944  
Telex: 037-2762  
Fax: (403) 495-4507

International Trade Centre  
510 -5th Street S.W., Suite 1100  
Calgary AB T2P 3S2  
Tel: (403) 292-6660  
Fax: (403) 292-4578

### **Saskatchewan**

International Trade Centre  
105-21st Street East, 6th Floor  
Saskatoon SK S7K 0B3  
Tel: (306) 975-5925  
Telex: 074-2742  
Fax: (306) 975-5334

International Trade Centre  
1955 Smith Street, 4th Floor  
Regina SK S4P 2N8  
Tel: (306) 780-6108  
Telex: 071-2745  
Fax: (306) 780-6679

### **Manitoba**

International Trade Centre  
330 Portage Avenue, 8th Floor  
P.O. Box 981  
Winnipeg MB R3C 2V2  
Tel: (204) 983-8036  
Telex: 07-57624  
Fax: (204) 983-2187

### **Ontario**

International Trade Centre  
Dominion Public Building, 4th Floor  
1 Front Street West  
Toronto ON M5J 1A4  
Tel: (416) 973-5053  
Telex: 065-24378  
Fax: (416) 973-8161

### **Quebec**

International Trade Centre  
Stock Exchange Tower, Suite 3800  
800 Victoria Square  
P.O. Box 247  
Montreal PQ H4Z 1E8  
Tel: (514) 283-8185  
Telex: 055-60768  
Fax: (514) 283-8794

### **New Brunswick**

International Trade Centre  
770 Main Street  
P.O. Box 1210  
Moncton NB E1C 8P9  
Tel: (506) 851-6452  
Telex: 014-2200  
Fax: (506) 851-6429

### **Nova Scotia**

International Trade Centre  
1801 Hollis Street  
P.O. Box 940, Station 'M'  
Halifax NS B3J 2V9  
Tel: (902) 426-7540  
Telex: 019-22525  
Fax: (902) 426-2624

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**Prince Edward Island**  
International Trade Centre  
Confederation Court Mall, Suite 400  
134 Kent Street  
P.O. Box 1115  
Charlottetown PEI C1A 7M8  
Tel: (902) 566-7400  
Telex: 014-44129  
Fax: (902) 566-7450

**Newfoundland**  
International Trade Centre  
Atlantic Place, Suite 504  
215 Water Street  
P.O. Box 8950  
St John's NF A1B 3R9  
Tel: (709) 772-5511  
Telex: 016-4749  
Fax: (709) 772-2373

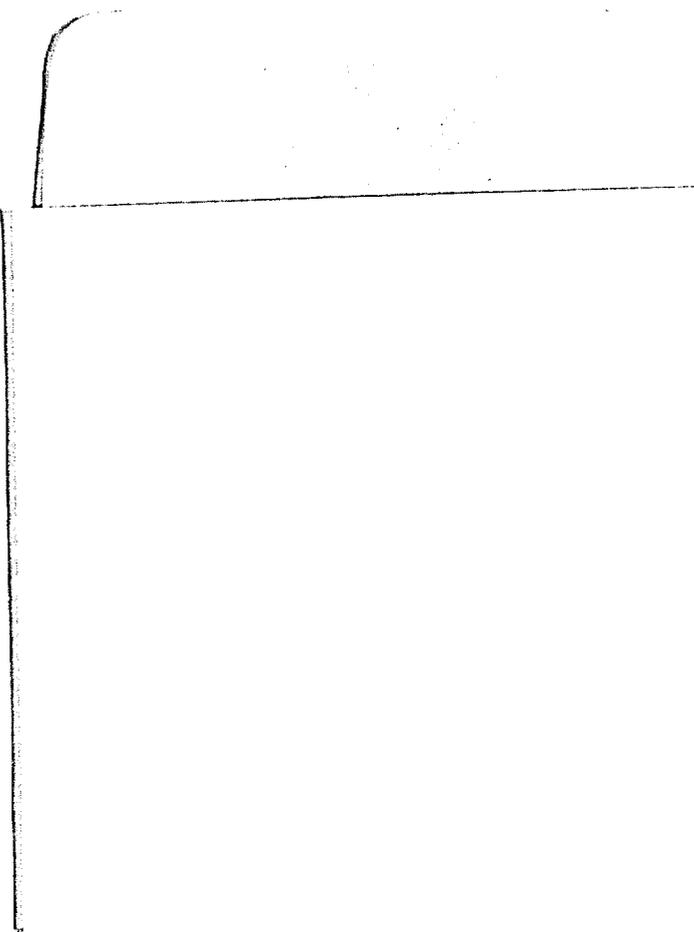
International Trade Centres are also situated in the following locations:

**Business Centre**  
Industry, Science and Technology Canada  
235 Queen Street  
Ottawa ON K1A 0H5  
Tel: (613) 995-5771

**Northwest Territories**  
Industry, Science and Technology Canada  
Precambrian Building  
P.O. Bag 6100  
Yellowknife NT X1A 2R3  
Tel: (403) 920-8578  
Fax: (403) 873-6228  
AES: (403) 920-2618

**Yukon**  
Industry, Science and Technology Canada  
108 Lambert Street, Suite 301  
Whitehorse YT Y1A 1Z2  
Tel: (403) 668-4655  
Telex: 014-2200  
Fax: (403) 668-5003

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