PREFACE

In the curricular structure introduced by this University for students of Post Graduate Diploma Programme, the opportunity to pursue a Post Graduate Diploma course in any subject introduced by this University is equally available to all learners. Instead of being guided by any presumption about ability level, it would perhaps stand to reason if receptivity of a learner is judged in the course of the learning process. That would be entirely in keeping with the objectives of open education which does not believe in artificial differentiation.

Keeping this in view, study materials of the Post Graduate Diploma level in different subjects are being prepared on the basis of a well laid-out syllabus. The course structure combines the best elements in the approved syllabi of Central and State Universities in respective subjects. It has been so designed as to be upgradable with the addition of new information as well as results of fresh thinking and analysis.

The accepted methodology of distance education has been followed in the preparation of these study materials. Co-operation in every form of experienced scholars is indispensable for a work of this kind. We, therefore, owe an enormous debt of gratitude to everyone whose tireless efforts went into the writing, editing and devising of proper lay-out of the materials. Practically speaking, their role amounts to an involvement in 'invisible teaching'. For, whoever makes use of these study materials would virtually derive the benefit of learning under their collective care without each being seen by the other.

The more a learner will seriously pursue these study materials, the easier it will be for him or her to reach out to larger horizons of a subject. Care has also been taken to make the language lucid and presentation attractive so that they may be rated as quality self-learning materials. If anything remains still obscure or difficult to follow, arrangements are there to come to terms with them through the counselling sessions regularly available at the network of study centres set up by the University.

Needless to add, a great deal of these efforts is still experimental–in fact, pioneering in certain areas. Naturally, there is every possibility of some lapse or deficiency here and there. However, these do admit of rectification and further improvement in due course. On the whole, therefore, these study materials are expected to evoke wider appreciation the more they receive serious attention of all concerned.

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Vice-Chancellor

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Advanced **Diploma in Export-Import Management**

PAPER - 4

Operations and Logistics Management

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Advanced Diploma in
Export-Import Management
Paper - 4

NETAJI SUBHAS OPEN UNIVERSITY

Unit 401 ❐ Introduction to International Trade Logistics

Structure

401.1 ❐ International Trade Logistics

- Trade refers to exchange of goods and services between different regions -within the country or across borders
- International means that it will deal with transactions involving individuals or firms in more than one nation.
- Logistics means the organized movement of goods, services, and, sometimes, people.

401.2 ❐ Logistics

- Logistics was originally a military term encompassing the processes to supply combat and troop support.
- In trade, logistics handles the physical movement of products between one or more participants in the supply chain.
- Definition as per Council of Logistics Management: Logistics is defined as that part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption in order to meet customer requirements.

401.3 ❐ Objectives of Logistics

To ensure movement of goods that satifies the following criteria:

- Right product
- Right conditions
- Right time
- Right cost
- Right quantity
- Right quality
- Right promotion

401.4 ❐ International Logistics

- Refers to cross border movement of goods involving complex web of carriers, forwarders, bankers, information and communication companies, traders, and so on
- These stakeholders combinedly facilitate international transactions, trades, and movements of goods and services.

401.5 ❐ Global supply chain management

- Refers to the integration of processes necessary to manage materials from their point of origin through manufacturing and shipment to the final consumer (or beyond, in the case of recycling).

401.6 Conceptual Framework

Logistics starts from the supply of raw material to the firm (in-bound logistics), to its processing and movement of WIP (work-in-progress) (process logistics), supply of finished goods to the distribution channel till it has been received, consumed (out-bound logistics) and returned (reverse logistics) by the consumer. This has to be considered as a "one whole activity" (integrated) with each stage having an impact on price and cost of material supply.

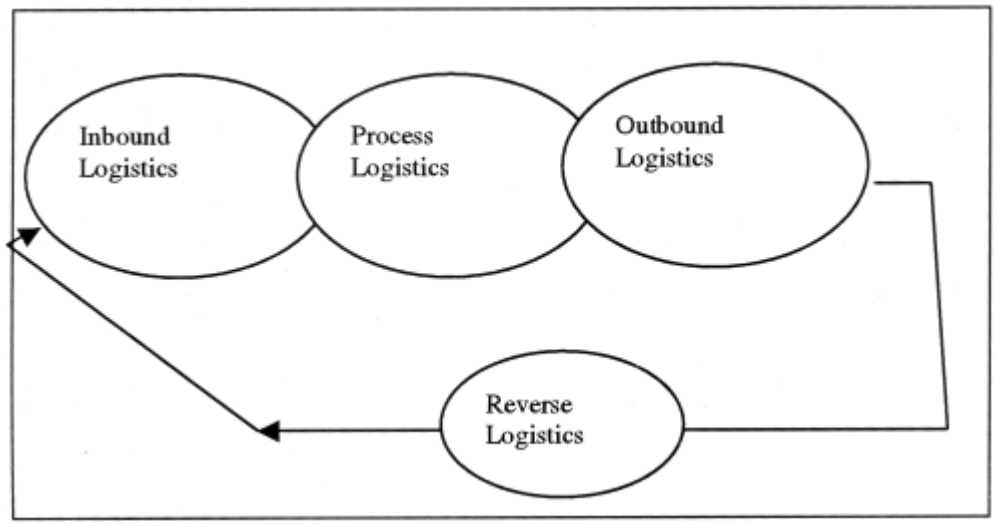


Figure 1: Logistics Process

The completely integrated logistics approach aimed not only at external integration but also interfacing outbound logistics with in-bound or process logistics. This was felt desirable primarily to ensure customer's satisfaction that demanded return of goods that were either rejected or required replacement. Further the need for removal and right disposal of goods to adhere to the environmental requirements, and recycling of containers (e.g. beverage industry) also made reverse logistics important.

401.7 Logistics System

Logistics system like any other system is a group of interacting, interrelated, or interdependent elements or subsystems or activities with the purpose of

managing the orderly flow of material and personnel within the logistics channel i.e., forming a complex whole. The subsystems include the inbound logistics, process logistics, out-bound logistics and reverse logistics. The inputs to the logistics system include a set of detailed methods, procedures, and routines established or formulated to carry out a specific task and the resources namely men, money, materials and machines. Every system has a boundary hence a boundary for the logistic system of a company also needs to be defined for logistics planning and control. The figure 2 below demonstrates the concept of logistics-system boundary. There may be three layers of suppliers to a firm, for example, raw material such as dyes and raw cottons may be supplied by suppliers (S3) to thread makers (Supplier 2) who, in turn, supply to cloth makers (suppliers -S1) supplying clothes to the firm, say, a garment manufacturer. The manufacturer may limit its supply boundary to suppliers -S1 and not beyond. Similarly in case of outbound logistics a firms' distribution channel may include wholesalers, distributors and retailer, where firm may limit its distribution boundary to the wholesalers and not beyond.

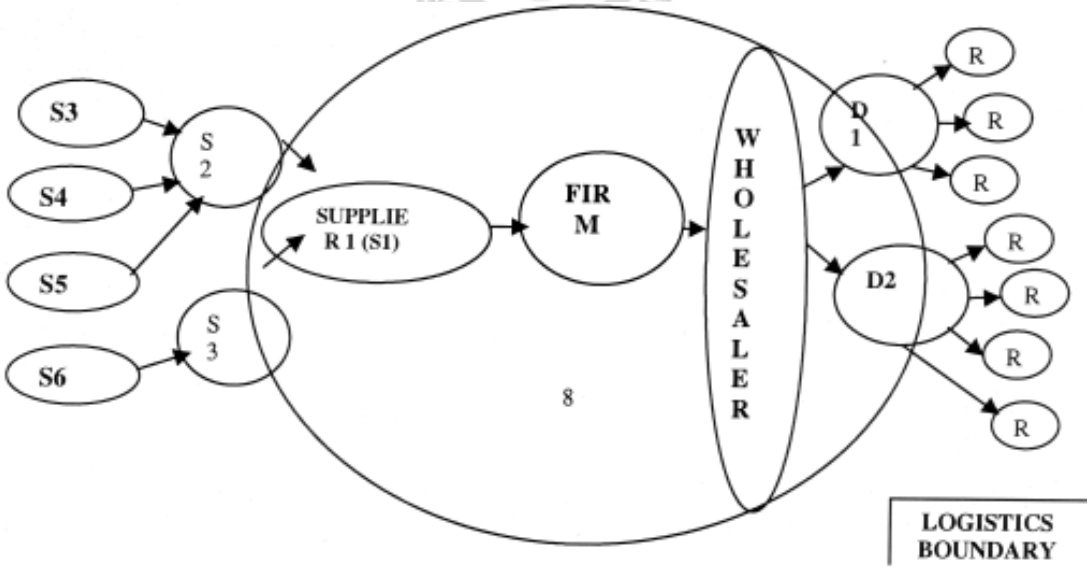


Figure 2 : Logistics boundary

Logistics System - Processes and Activities

1. Order Processing
   - Order collection, compilation and supply planning
2. Forecasting of
   - Finished goods Supply
   - Raw material
   - Other requirements
3. Packaging

   - Wrapping and Strapping : It is the process of deciding of wrapping materials with materials which may be water proof and / or sun-light proof and / or of high tensile strength followed by strapping to restrain the packaged material for ease of shipment and to prevent damage of goods

   - **Cartonization :** It is the process of deciding on the right and optimal combination of items to be packed together, and the proper size cartons in which to place them.

   - **Palletization :** It is the process of placing goods on a pallet secured with strapping, stretch wrap or shrink wrap for ease of shipment .

   - **Containerisation :** It is the process of placing goods in steel or aluminum container having standard dimensions e.g., 20' * 20'* 8'.
4. **Material Handling of**

   - Raw materials, in-process inventory and finished goods using different equipment mainly categorized as fixed, semi- fixed or movable (long or short distance on fixed rails or road ways) having different capacities, say, from less than 1 Ton to around 200 Ton lifting or moving capacity
5. **Warehousing**

   - At each node. Warehousing could be for short period (cross docking) or for specified period. The type of warehouse include open storage space (yards), partially covered sheds (for protection from sun and rain), fully covered warehouses (for high valued non - perishable goods). Temperature controlled warehouses (for high valued perishable goods).
6. **Transportation**

   - Movement of materials suing different modes of transportation such as, road (low volume - less than 200 Ton per carrier and for short to mid distance , say 1000 Km), rail (less than 5000 Ton per rake for mid to long

distance , say 2000 Km), air (low volume, cross border long distance), water ways (high volume, cross border long distance) or pipelines (high volume, cross border long distance for fluids).

7. **Liasoning and Coordination**
   - Coordination with other functions such as materials management, production and operations, and marketing.

401.8 Logistics System - Output

The output from a logistics system would include the following :

1. Customer Service - Order fulfillment (in terms of form, Quantity and Quality)
   - Response Time (Time Utility)
   - Delivery point (Place Utility)
2. Inventory Management - Carrying Cost
   - Obsolescence
3. Total Landed Cost of the product or services
   - Price of the Product or services + Logistics Cost

The logistics cost impact significantly the total landed cost in international trade logistics. The effectiveness of logistics system of a firm finally brings in the competitive advantage for the firm.

401.9 Definitions

- **Inbound Logistics :** Logistical activities which are associated with receiving, storing and disseminating input & "Information" of final product.
- **Process Logistics :** Logistical activity associated with transforming input into the final product i.e. finished products.
- **Outbound Logistics** : Logistical activity which is associated with collecting; storing the goods and their physical distribution to buyers.
- **Reverse Logistics :** Goods return from the consumer point to the original supply point, for various reasons. Bad delivery, over-supply, damage, expiry, failing inspection tests at the customer point, goods unsold, recycling and disposal etc., are some instances where the material traverses back.

401.10 ❐ Interface of Trade Logistics with Other Strategic Areas of Business

i. With Marketing

Logistics is fully integrated with Marketing. The same can be explained in terms of its interface the marketing-mix - 4 Ps

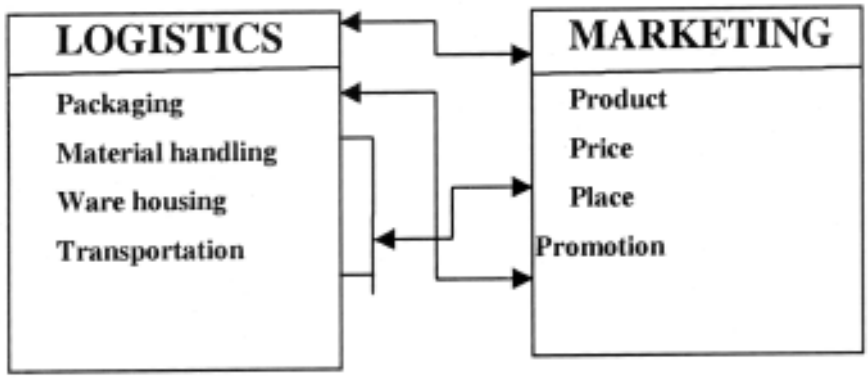


Figure 3 : Logistics - Marketing interface

There are primarily four types of utility that is served by a product service. These are, namely, the form, time, place and possession utility. These are described as follows:

Form Utility : This refers to the objective of providing the product service in the right form to the customer. Traditionally, manufacturing or the operations unit of a firm was primarilly considered to be the provider of form utility.

However, in today's world, logistics also plays a role in providing this utility. Say, for example, a customer wants a package to hold a group of items forminga kit for their use. Convenionally logistics considered transport of goods in the most economical way. As a result individual items may have to be shipped in bulk and the matter left to the customer to form their own kit of groups of items. Today, logistics through their concept of ditribution centres may strip the packets containing one single item and repack by putting different items in a single pack to suite the customer's reuirement. This utility is also created through packaging functions of logistics. However, logistics primarily provides the place and time utility.

Place Utility : This refers to the objective of providing the right product or service to the customer at the right place. Logistics enables the goods and services to reach the customer at their desired location. Transportation as one of the elements of Logistics creates place utility.

Time Utility : This refers to the activity of an economic unit to provide the right product at the right place at the right time. The right choice of transportation (say air instead of sea movement may enable the goods and services to reach the customer at the right time), effective inventory maintenanace and the trategic location (warehousing) of goods and services.

Possession Utility : It refers to the consumer value created by transferring a products' ownership. This utility is created through various marketing activities (such as promotion that creates demands various & time payment, leasing and credit purchase etc.) and also through the logistics services that provides place and time utility.

Image Utility : This refers to the satisfaction acquired from the emotional or psychological meaning attached to the product.

Marketing interface with logistics : Marketing is responsible for creating most of the proucts or services inherent utility as described above. The marketing meets the customer's requirement through the right marketing mix that includes four elements:

- Product
- Price
- Promotion
- Place

The elements of logistics have direct or indirect interface with all elements of marketing mix. This has been explained in the context of the utilities that a firm aims to do. However it is required to lay a special emphasis on the 'Price' element that is affected by logistics in a global scenario. The logistics cost is around 10 - 40% of the total landed cost of product in an international trade. While the firms tend to ignore the logistics cost while quoting f.o.b price, the total landed cost has the ultimate bearing on the demand of the product.

ii. Logistics Interface with Operations or Productions

Logistics enables timely supply of inputs to operations or productions. It serves as an important factor for inventory levels and implementation of JIT (Just in time) approach to inventory.

The packaging activity also serves as interface between logistics and

operations. It helps in providing two major functions viz, protection and preservation.

iii. Logistics interface with Finance

Logistics was traditionally treated as cost centre. However, it serves as profit centre to a firm. The former concept arises out of cost of logistics in firms activities, while latter focuses on enhancing company profit through reduced cost, reduced inventory levels, reduced damages and wastages, and enhance customer's satisfaction (manifested through increase in sales).

iv. Logistics interface with information technology (IT):

The field of IT has led to transformation of rules of logistics operation to a great extent . The Internet coupled with firms ICT (Information-Communication -Technology) has served as one of the major drivers of success of International Trade Logistics. The uncertainty and risk over cross border mevement of goods could be hedged and / or reduced through the possibility of on line or real time tracking and trucing of goods and exchannge of information on a 24x7 mode amongst the stake holders. Thus interface of these two streams is virtually inter-woven and may be no clear line of separation could be identified.

v. Logistics interface with Waste-Green mnagement

Green management aims at reduction of environmental pollution through minimization of wates and conservation or less usage of energy. The concepts of reverse-logistics plays a significant role in control of waste. The removal of used, obsolete, damaged and hazardous goods requires effective logistics support. In developing countries like India, removal and dispossal of goods are also gaining focus of society and cororates.

401.11 ❐ Global Routing

In international trade the movement of goods are inter as well as intra-modal meaning that goods would not only move through different modes of transport, but also may change carriersin particular mode of transport. For example, goods from Guwahati may reach Kolkata Port by roadways and get shipped to Singapore by sea, that is two mode of transportation (inter-modal or multi-modal) are involved. If the goods are meant for a country in Europe, say to Ireland, it may then be shipped by another ship to a deep sea port in Europe, say Rotterdam from their it is once again transshippede to a smaller vell to the smaller port (termed as feeder port) in Ireland (i.e., more than one carrier in the same mode (intra-modal) of transportation is involved). This is the nature of global routing of goods. The figure 4 below iilustrates such concept. A deep sea port that has un-restricted access and is visited by shipping lines typically referred as deep sea ines. A vessel belonging to deep sea line calls upon few ports that are also deep sea ports. In the above example Port of Kolkata and Ieland serve as feeder ports or spoke port while Singapore and Rotterdam are termed as hub port or deep sea port. Goods are handled at these deep-sea ports by deep sea lines meant for transhipment to smaller ports that are served by feeder lines.

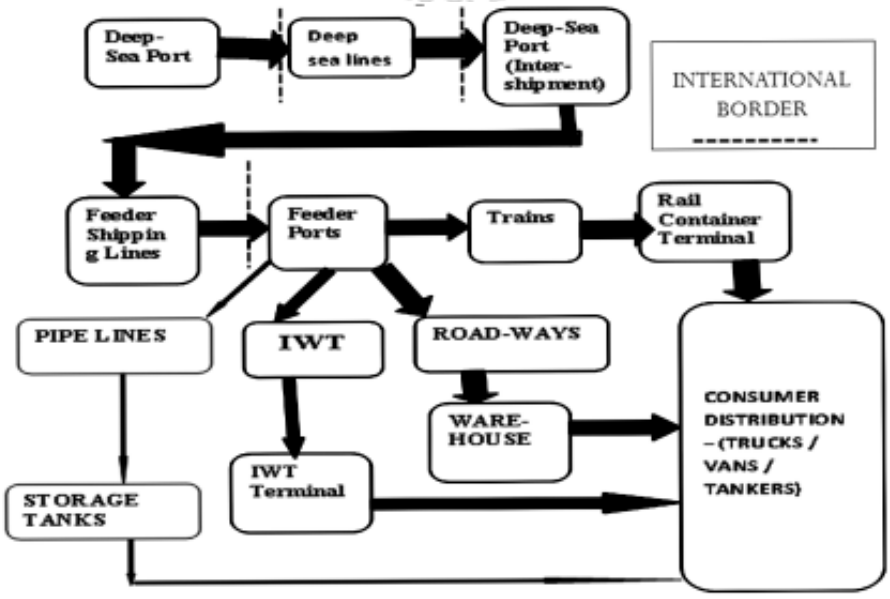


Figure 4: Global routing flow diagram

401.12 ❐ Global Logistics Process

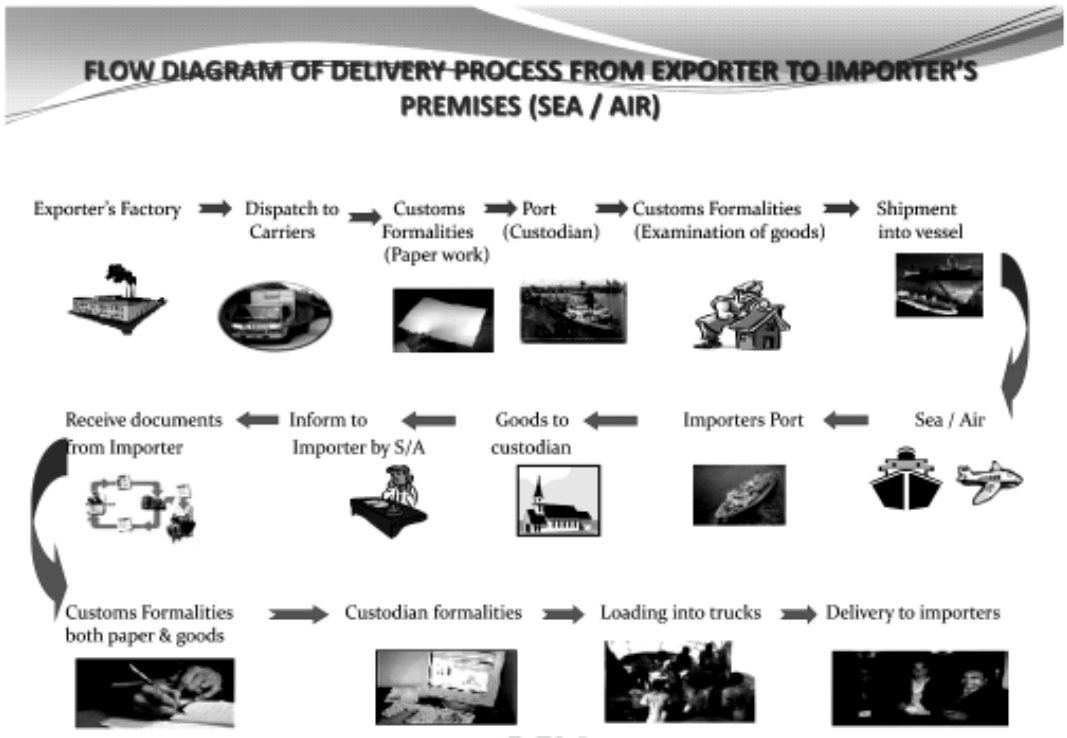


Figure 5: Flow diagram of delivery process from exporter to importer's premises (sea / air)

The above figure 5 illustrates the steps and stakeholders involved in export - import process. The of role of different stake holders in the global logistics are given below :

Sl. No.	Stake holder	Function
1.	Exporter /Importer	Supplier and receiver of goods respectively.
2.	Inspection Agency	Certifies of goods quality as per contract
3.	Packaging Agency	packaging suiting the goods, logistics requirement and importer's requirement
4.	Frieght Forwarder	Books space in the ship, liason with Port authority. Some provide additional services such as warehousing, material handling and transportation.
5.	Transporter	Provided transportation of goods

Sl. No.	Stake holder	Function
6.	ICD / CFS Operator	Provides stuffing and de-stuffing operation, customs examination and approval and onward from ICD / CFS to port and vice-versa. Serves as a "Dry Port".
7.	Customs House Agent	Does documents - clearance from Customs.
8.	Customs	Permits import or export of goods from India. Collects import and export duty wherever applicable.
9.	Shipping Agent	Liasons on behalf of ship owner/shipping co.
10	Port	Providers loading, un-loading and associated facilities to the ship, provides storage space, inspection facilities by Customs for cargo.
11.	Ship's Master	Endorses receipt of good on board the ship.
12.	Stevedores	Provides cargo handling services on board the ship
13.	Draught Surveyors	Determines weight of goods
14.	Quality Surveyors	Determines quality of goods on board vessel during loading and un-loading
15.	NVOCC	A shipment consolidator or freight forwarder who does not own any Vessel, but functions as a carrier by issuing its own bills of lading or air waybills and assuming responsibility for the shipments.
16.	Banks	Effects transfer of funds, provides loans - packing credit, foreign currency, stands as guarantee /negotiates documents, hedges currency rate

Freight Forwarders vs NVOCC

The NVOCC can and sometimes do own and operate their own or leased containers whereas a Freight Forwarder does not.

- In certain countries like USA, the NVOCC operators are required to file their tariffs with the government regulatory bodies and create a public tariff..
- NVOCC is in certain areas accorded the status of a virtual "carrier" and
- A Freight Forwarding company can act as an agent/partner for a NVOCC.
- Apart from the above major differences, all other activities between

these two entities are similar to each other. NVOCC is basically a "carrier to shippers" and "shipper to carriers".

- In addition to above there are several other agencies that play a role in international trade. These are MLO, MTO, CFS operators, equipment suppliers etc.

401.13 ❐ Logistics Costs and Economic Development

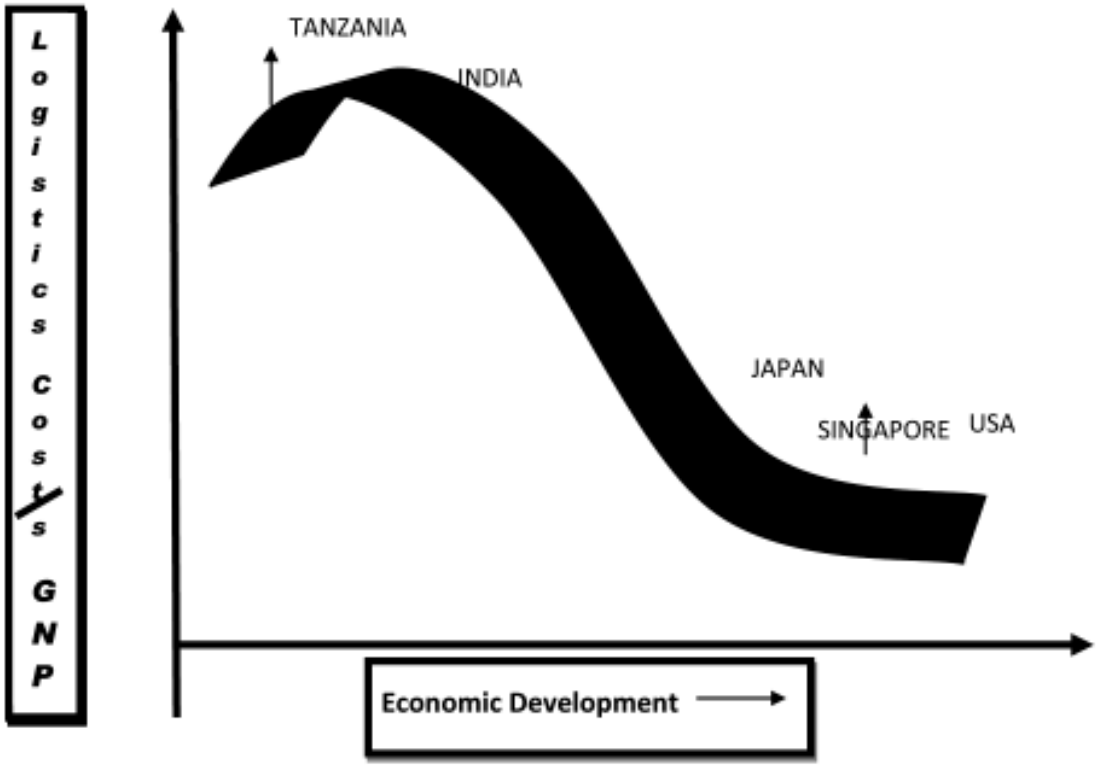


Figure 6 : Logistics Costs and Economic Development

- Logistics costs can amount to 30% of delivered costs in less advanced economies.
- Comparatively, in advanced economies it can be as low as 9.5%.
- The differences are attributed to the nature of the economy as well as to the efficiency of the distribution system.

401.14 ❐ Factors influencing Logistics Cost

Many factors can influence this efficiency:

- Duties and Interest rates
- Level of competition.
- Market information
- Transportation infrastructures.
- Telecommunication infrastructures.
- Legal system.
- Regulations and taxations.

401.15 ❐ Components of Logistics Cost

Logistics costs include the cost of the following:

- Transportation activities, for each mode between two nodes;
- Storage or warehousing activities;
- Packaging & physical form changes required for effective and/or safe transport, storage, and handling;
- Labeling and marking
- Information Technology Services : identifying, recording, tracking, analysis, as well as data transfer and maintenance;
- Yard Operations: Stacking/ un-stacking activities;
- Material handling activities;
- Consolidation/deconsolidation activities: Container Stuffing & De-stuffing, palletization
- logistics system management;
- Opportunity cost: unavailability of goods (when required) / damaged or stolen
- Capital investments: investments in assets in a logistics system or the opportunity cost.

A survey carried in 2002 by World-bank indicates that around 40% of the logistics costs constitute transportation cost. The distribution is shown in figure 7 below.

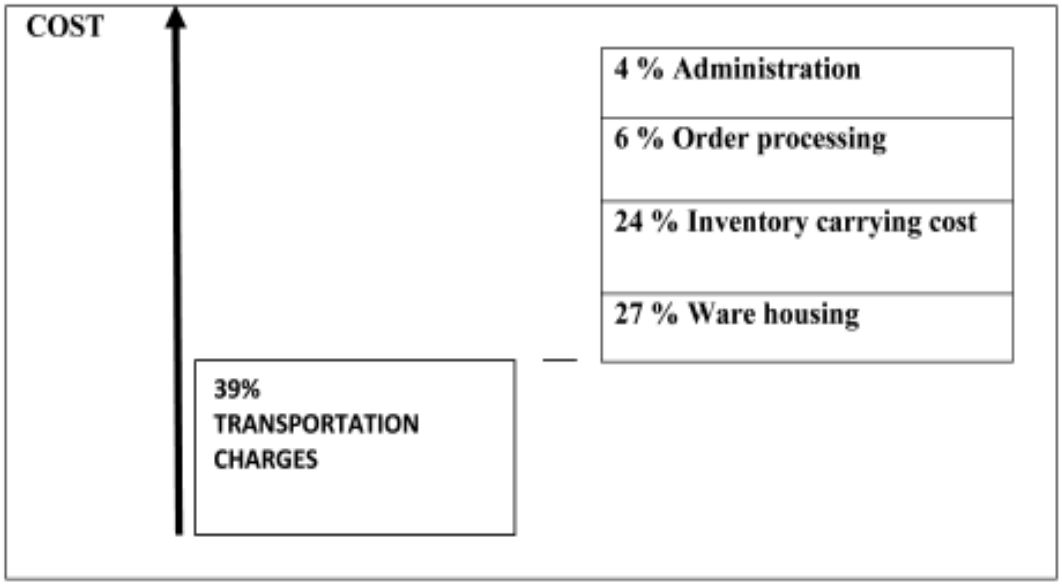


Figure 7: Worldwide Logistics costs distribution

401.16 ❐ Impact of Trade Balance on Logistics

Trade balance implies balance between import and export Though this subject has been the interest of economist it also has a major impact on international trade logistics. There are two cases that needs attention.

Case I : Import greater than export. In this case fully-loaded case ships arriving country's port may have to return empty-fully or partially due to lack of cargo. Thus ships would be discouraged to call on these ports and as such the:

(i) cost of transportation would go up, and the

(ii) The ports would be visited by small or feeder vessels, (as big ships would have significant financial ramifications). Resulting in larger frequency of ship calls, leading to higher cost, congestion in ports and less efficient logistics services.

Case II : Export greater than import. This implications are similar to the one described above as the vessels would have to visit either with no cargo or less cargo.

401.17 ❐ International Logistics - Challenges

- Stability across borders: the political stability across borders i.e., between two countries may differ.
- Standards: the business practices and standards differ across borders
- Jurisprudence: the legal system between two countries may differ i.e., systems of jurisprudence vary. The contract law and the commercial code are not universal.
- Legal practices: the legal practices between two countries may differ. That is, there may be strong laws but weak implementation of laws.
- Documentation: The number of documents and its content between countries may differ.
- Transportation and total cost of logistics: This may differ between countries.
- Monitoring logistics and information sharing: This is quite difficult and complex
- Cultural differences: This also play major role in international trade
- Higher cost: the cost in international market is much higher compared to domestic cost. Cost increases due to increased inventory, duties and taxes, complex documentation, terminal (port / airport) charges, insurance and freight.

401.18 ❐ Logistics Performance Index - LPI

- The LPI is an indicator that help countries to identify the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance . It also serves as a guide to an exporter or importer with regard to the challenges to be faced by them while trading with countries with LPI ranking above or below their own country.
- The LPI allow for comparisons across 155 (LPI 2010) countries.
- It is based on a survey of operators such as global freight forwarders and express carriers, providing feedback on the logistics "friendliness" of the countries in which they operate and those with which they trade.
- Feedback from operators is supplemented with objective data on the performance of key components of the logistics chain in the home country.

- Logistics Performance Index (LPI) is derived as simple average of the country scores on the seven key dimensions:
- Logistics Performance Index (LPI) is the weighted average of the country scores on the six key dimensions:
  - Efficiency of the clearance process (i.e. speed, simplicity and predictability of formalities) by border control agencies, including Customs;
  - Quality of trade and transport related infrastructure (e.g. ports, railroads, roads, information technology);
  - Ease of arranging competitively priced shipments;
  - Competence and quality of logistics services (e.g., transport operators, customs brokers);
  - Ability to track and trace consignments;
  - Timeliness of shipments in reaching destination within the scheduled or expected delivery time.
- The scorecards demonstrate comparative performance - the dimensions show on a scale from 1 to 5 relevant to the possible Comparison groups - all countries (World), region and income groups.
- The index is constructed using the Principal Component Analysis (PCA) method in order to improve the confidence intervals. The scorecards demonstrate comparative performance the dimensions shown on a scale from 1 to 5 relevant to the possible Comparison groups - all countries (World), region and income groups.
- The LPI consists therefore of both
- perception and objective measures and helps build profiles of logistics friendliness for these countries.
- It measures performance along the logistics supply chain within a country and has three parts :
  - Perceptions of the logistics environment of trading partner countries
  - Information on the logistics environment in the home country of operation
  - Real time-cost performance data for country of operation
- The LPI is available in three different modes:
  - **Country Scorecard**
  - **Global LPI Ranking**
  - **Cross-Country Comparison**

LPI - Country Scorecard

- Uses six key dimensions to benchmark countries performance
- Displays the derived overall LPI index.
- The scorecard allows comparisons with the World and with the Region or income group on the 6 key dimensions and the overall LPI index.

Global LPI Ranking

- presents performance scores of all countries on the overall LPI index, as well as
- on the six key dimensions, in a sortable table format.

Cross-Country Comparison

- allows bar-chart comparison of up to 20 countries on their overall LPI index and seven key dimensions.
- The top 10 countries include the following :

Top 10 Countries

Country	LPI	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
Germany	4.11	4	4.34	3.66	4.14	4.18	4.48
Singapore	4.09	4.02	4.22	3.86	4.12	4.15	4.23
Sweden	4.08	3.88	4.03	3.83	4.22	4.22	4.32
Netherlands	4.07	3.98	4.25	3.61	4.15	4.12	4.41
Luxembourg	3.98	4.04	4.06	3.67	3.67	3.92	4.58
Switzerland	3.97	3.73	4.17	3.32	4.32	4.27	4.2
Japan	3.97	3.79	4.19	3.55	4	4.13	4.26
United Kingdom	3.95	3.74	3.95	3.66	3.92	4.13	4.37
Belgium	3.94	3.83	4.01	3.31	4.13	4.22	4.29
Norway	3.93	3.86	4.22	3.35	3.85	4.10	4.35

LPI–SAARC Countries

	LPI	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
India	3.12	2.7	2.91	3.13	3.16	3.14	3.61
Bangladesh	2.74	2.33	2.49	2.99	2.44	2.64	3.46
Maldives	2.4	2.25	2.16	2.42	2.29	2.42	2.83
Pakistan	2.53	2.05	2.08	2.91	2.28	2.64	3.08
Sri Lanka	2.29	1.96	1.88	2.48	2.09	2.23	2.98
Bhutan	2.38	2.14	1.83	2.44	2.24	2.54	2.99
Nepal	2.2	2.07	1.8	2.21	2.07	2.26	2.74

LPI–BRICS

Country (Rank)	LPI	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
China (27)	3.49	3.16	3.54	3.31	3.49	3.55	3.91
South Africa (28)	3.46	3.22	3.42	3.26	3.59	3.73	3.57
Brazil (41)	3.2	2.37	3.1	2.91	3.3	3.42	4.14
India (47)	3.12	2.7	2.91	3.13	3.16	3.14	3.61
Russian Federation (94)	2.61	2.15	2.38	2.72	2.51	2.6	3.23

LPI–India & Major Regions

Country	LPI	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
High income: all (income average)	3.55	3.36	3.56	3.28	3.5	3.65	3.98
China	3.49	3.16	3.54	3.31	3.49	3.55	3.91
India	3.12	2.7	2.91	3.13	3.16	3.14	3.61
Upper middle income (income average)	2.82	2.49	2.54	2.86	2.71	2.89	3.36
Indonesia	2.76	2.43	2.54	2.82	2.47	2.77	3.46
Lower middle income (income average)	2.59	2.23	2.27	2.66	2.48	2.58	3.24
Low income (income average)	2.43	2.19	2.06	2.54	2.25	2.47	2.98

Challenges of trading with countries of different LPI Ranking

a. With countries having lower rank than India

i. Consistency and reliability of logistics services being less than our country, hence possibility of damages and losses are more

ii. Tracking and tracing being difficult, uncertainty is higher and control is less.

iii. Timeliness is less assured. Expected higher cost over runs

iv. Settlement of disputes and recovery of losses may be difficult.

b. With countries having higher rank than India:

i. Compliance (to foreign countries regulation) being stricter, chances of rejection is higher

ii. Quality control, IT and other infrastructure may require more focus by Indian exporter and importer

401.19 ❐ INCO TERMS - 2010

There are 4 (four) groups namely :

SL. NO.	GROUP	DESCRIPTION w.r.t Exporter		TERMS of shipment
		COST	RESPONSIBILTY	
1.	E	Ex Works	Up to exporter's premises	ExW
2.	F	Cost up to a named place (ICD, Port) in exporting country paid by exporter	Up to a named place (ICD, Port) in exporting country	FCA, FAS, FOB
3.	C	Cost of Carriage (Freight) paid by exporter up to any place in the importer's country and in addition may also pay for marine insurance depending on the terms of shipment;	Up to a named place (ICD, Port) in exporting country and not up to any place at importer's country even if the cost has been paid. For example., exporter may pay all cost up to importer's port but his or her responsibility ends at the port of his or her own country	CPT, CIP, CFR, CIF
4.	D	Cost of Carriage (Freight) paid by exporter and in addition may also pay for marine insurance	Responsibility up to named place at importer's country depending on the terms of shipment	DAP, DAT, DDP

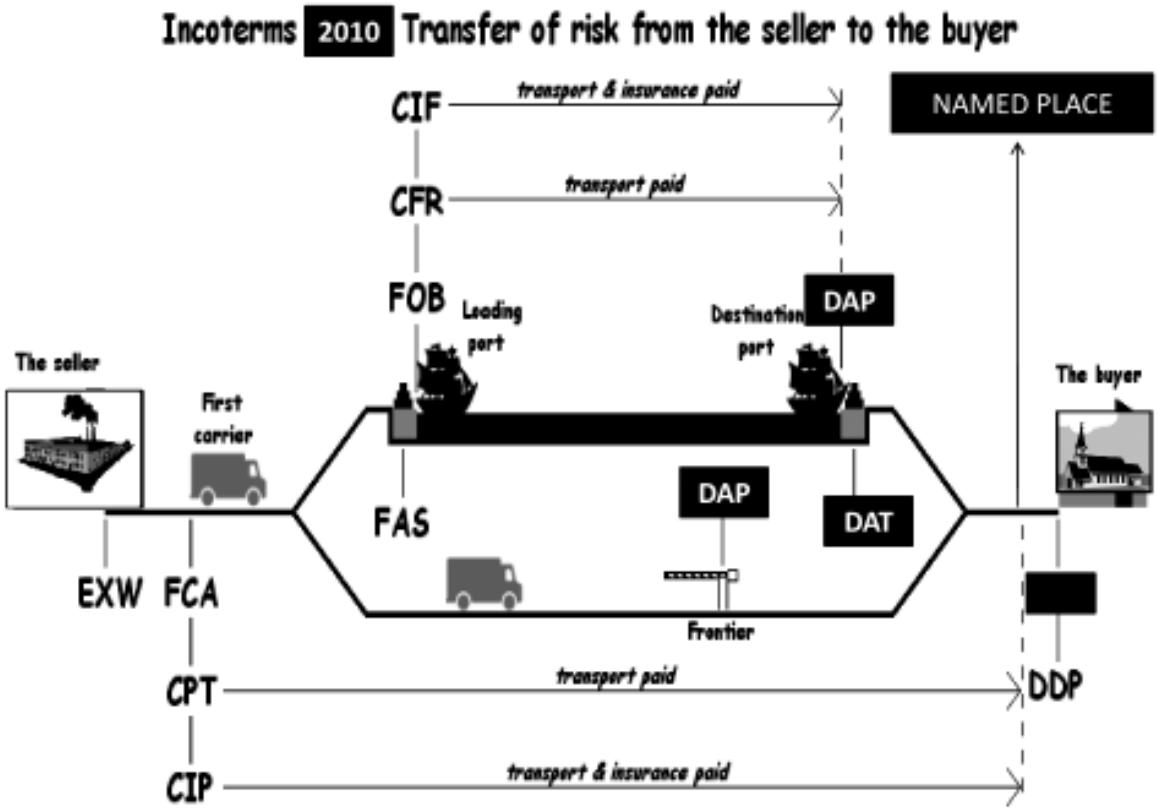


Figure 8: INCO Term: Responsibilty of Exporter

The Twelve Incoterms

- EXW–EX WORKS
- FCA–FREE CARRIER
- FAS–FREE ALONGSIDE SHIP
- FOB–FREE ON BOARD
- CFR–COST AND FRIGHT
- AF–COST, INSURANCE, FREIGHT
- CPT–CARRIAGE PAID TO
- CIP–CARRIAGE & INSURANCE PAID TO
- DAT–DELIVERY AT TERMINAL
- DAP–DELIVERED AT PLACE
- DDP–DELIVERED DUTY PAID

Responsibility

- **EXW**- EX WORKS

  EXPORTER : NO RESPONSIBILITY EXCEPT SELLING THE RIGHT MATERIAL

  IMPORTER : EXPORT / IMPORT DOCUMENTS, INSPECTION, INLAND TRANSPORTATION, CUSTOMS CLEARANCE, LOADING, CARRAIGE, INSURANCE

- **FCA**- FREE CARRIER (NAMED PLACE)

  EXPORTER: EXPORT / IMPORT DOCUMENTS, INSPECTION, INLAND TRANSPORTATION UP TO A NAMED PLACE & CUSTOMS CLEARANCE

  IMPORTER : EXPORT / IMPORT DOCUMENTS, INSPECTION, INLAND TRANSPORTATION, CUSTOMS CLEARANCE, LOADING, CARRAIGE, INSURANCE

- **FAS**- FREE ALONGSIDE SHIP –

  EXPORTER : EXP / IMP DOCUMENTS, INSPECTION, CUSTOMS CLEARANCE

  IMPORTER : LOADING, CARRAIGE, INSURANCE

- **FOB**- FREE ON BOARD

  EXPORTER: FAS + LOADING

- **CFR**- COST AND FREIGHT

  EXPORTER: FOB + CARRAIGE/ FREIGHT

- **CIF**- COST, INSURANCE, FREIGHT

  EXPORTER: CFR + INSURANCE

- **CPT**- CARRIAGE PAID TO

  EXPORTER: CIF + NAMED PLACE AT DESTINATION

- **CIP** - CARRAIGE & INSURANCE PAID TO NAMED PLACE OF DESTINATION

EXPORTER: CPT + INSURANCE : NAMED PLACE AT DESTINATION

ARRIVAL

DAP- DELIVERED EX SHIP / OR ANY MODE OF TRANSPORT

SIMILAR TO CFR + RESPONSIBILITY UP TO IMPORTER'S PORT

- **DAT**- DELIVERED EX TERMINAL

  CIF+UNLOADING AT IMPORTER'S PORT

- **DDP**- DELIVERED DUTY PAID

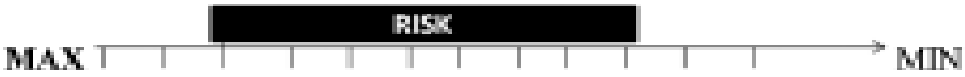
ALL COST UP + RESPONSIBILITY **UP TO DESTINATION**

INCO TERMS: RISK DISTRIBUTION

EXPORTER

EXW FCA FAS FOB CFR CIF CPT CIP DAT DAP DDP

IMPORTER



EXW FCA FAS FOB CFR CIF CPT CIP DAT DAP DDP

Applicability of INCOTERMS to different Modes of Transportation

TERMS	AIR	ROAD	RAIL	SEA
EXW	Y	Y	Y	Y
FCA	Y	Y	Y	Y
FAS				Y
FOB				Y
CFR				Y
CIF				Y
CPT	Y	Y	Y	Y
CIP	Y	Y	Y	Y
DAP	Y	Y	Y	Y
DAT	Y	Y	Y	Y
DDP	Y	Y	Y	Y

Unit : 402 ❐ Integrated Logistics Function

Structure

402.1 ❐ Integrated Logistics Function

As logistics involves various functions, namely, Material handling, Inventory control, Warehousing, Transportation, Documentation, Cargo movement through ports, airports, railway terminals, IWT centres, ICDS, CFS, yards etc., Packaging, Return goods handling, Disposal and scrap handling, Goods tracking and monitoring, the firms tend to look for service providers who are capable of providing integrated services, i.e. In the area of all components of logistics.

Evolution of Integrated Logistics in International Trade

Initially the customs brokers were the key agent in international trade. The Customs Broker or also referred as Customs House Agent has a mandatory role in international trade as they are responsible for customs clearance of goods for import or export. Over a period of time companies started looking for other services such as space reservations in sea going vessel or air craft, warehousing, transportation and other services related to logistics. Agencies termed as freight forwarders started providing these basic functions of logistics

including that of the service being provided by the CHA. As the complexity in supply chain activities of the firms increased the extent overall turnkey services required for organized movement of goods from one country to another became the necessity including inter-country liason and coordination. Thus need for agencies able to serve across borders in wide range of activities such as the basic functions of logistics and the value added services cropped up. This led to the creation of and the 3rd Party Logistics (3PL) service providers. The type of services provided by them is described below.

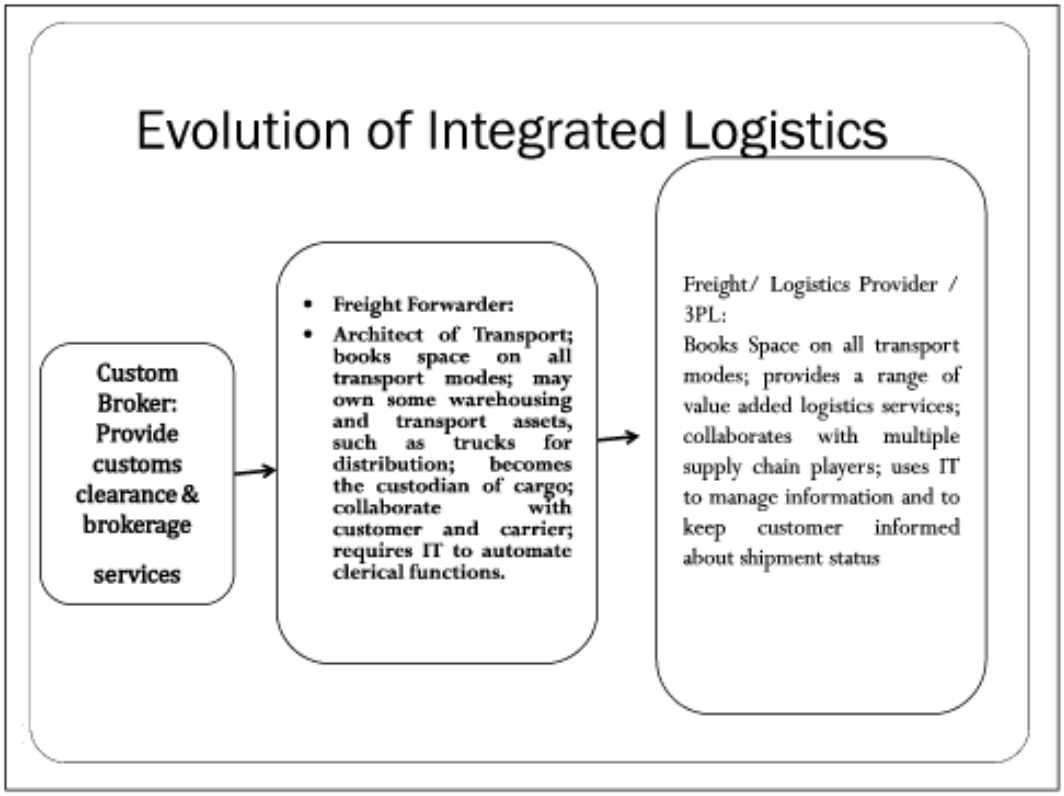


Figure 9 : Evolution of integrated agencies

- Third Party Logistics (3 PL) providers are the specialized dedicated logistics firms which offer the ***complete range of logistics functions such as warehousing, customs clearance, transportation, inventory management, order fulfilment and processing , information sharing and management, documentation services, goods distribution*** at all level of economic activity of a trading firms such as inbound logistics, process logistics and outbound logistics.

402.2 ❐ Logistics Service provided by 3PL

- Freight payment
- Shipment consolidation
- Direct transportation service
- Customs brokerage
- Warehouse management
- Freight forwarding
- Carrier selection
- Tracking/tracing
- Measurement of carrier performance
- Rate negotiation
- Relabelling/repackaging
- Order fulfillment
- Product returns
- Reverse logistics
- Operation of IT systems
- Merge in transit
- Fleet management/operations
- Order processing
- Customer spare parts
- Selection of software
- Contract manufacturing
- Assembly/installation
- Consulting services
- Purchase of materials
- After sales service Product testin

402.3 ❐ 3PL - Issues

- The terms and conditions relating to responsibility for safety of goods : 3PL will pay the shipper the full value of its products if lost or damaged in transit.
- Whether the 3PL will pay the shipper the concealed loss or damage claims and if so on what basis subjected to an arbitrary formula or any standard method.

- Whether the shipper will agree to 3PL's rate agreements which will include limitations on the carrier's liability, including a "per piece" clause for partial losses.
- Whether the 3PL would be responsible to pay carriers who will assess penalties for late payment of freight charges, such as "loss of discount"

402.4 ❐ Metrics to evaluate a 3PL relationship

- **Inventory-related metrics**
  - Measure inventory on hand: Higher inventory may imply inefficiency of the 3PL responsible for total logistics solution of the firm.
  - Inventory in transit: same as above
  - Obsolete inventory: same as above
  - Supplier routing compliance percentage: Higher compliance would imply better performance of 3PL
  - Supplier on-time order shipping percentage: On-time shipping of order is a key target of a 3PL.
- **Transportation-based metrics**

  A 3PL should endeavour at the following:
  - On-time delivery
  - On-time pickup

  A 3PL should aim at :
  - Low claims ratio
  - High rating and billing accuracy percentage
  - Low 3PL cost per shipment vs. historic cost per shipment
  - Monthly optimized cost savings from mode shifting and end-to-end matching
- **Warehousing metrics**

  The performance of a 3PL is assessed to be good if the following are high :
  - Orders processed
  - Order accuracy
  - On-time receiving
  - On-time departure
  - Inventory accuracy
  - Cycle counts
  - Quantity picked/handled per man-hour

The following should be lower:

- Rush shipments handled
- 3PL cost per unit vs. historic cost per unit

402.5 ❐ Appropriate reasons to outsource

- In case the organisation does not possess core competency in logistics or does not wish to possess
- To minimize the logistics and related costs
- To reduce capital investments in logistics components such as carriers, warehouse, equipment and other resources
- To adhere to the response time of customers
- To optimize logistics network
- To gain access to international markets
- To get access to logistics information technology infrastructure for supply chain visibility
- In case of scarce logistics resources and expertise
- To enhance flexibility of the supply chain network and cost
- To enhance customer service
- To enhance labour relations

402.6 ❐ Inappropriate reasons to outsource logistics

- Because outsourcing is getting popular
- To shift accountability for logistics performance of the organization
- To bring control of an out-of-control or an inefficient process
- To assess the cost of logistics

402.7 ❐ Benefits from 3PL

- Cost savings from mode shifting and order tracking systems
- Time savings from carrier selection and routing guide enforcement
- Capital cost savings from not owning assets carrier management
- Improved shipment visibility software

Savings from mode shifting

- A shipper may be shipping a lot of regular LTL (Less Truck Load) meaning the cost per unit shipped is more than the cost per unit shipped in FTL (full truck load).
- A 3PL can make use of their computer tracking systems to observe patterns that would be candidates for consolidation into truckload shipments. For example, if you're shipping once a week 10 boxes from Kolkata to Thimpu i.e., a LTL lot you would save considerable money by shipping one full truck load (20 boxes) every alternate week.

Savings from Order Tracking System

- Many a times an exporter or an importer has to pay for expedited shipments as the planned scheduled could not be met. An order track system of 3PL will enable on-line tracking of orders which in turn reduce rush shipments.
- The 3PL service provider extends use of its software that's designed to manage the shipments from the port to the customers to the shipper. These are web based system based on "any time - any place" concept meaning a shipper can use the facility for consignment tracking from anywhere at any point of time round the year.

Time Savings

- Any organized movement of cargo refers to the choice of the shortest route and on time delivery. This calls for looking for a routing guide and calling the best of the carriers to meet the time schedule.
- This is sometimes a dominating activity for customer service people who instead of servicing customers would be looking for trucks and the best route. A 3PL will take on this responsibility.
- The 3PL will ensure that the shipper always has carriers (e.g., trucks) whenever required.
- The 3PL will take on the brunt of coordination between the plant, suppliers and customers. Hence the customer service personnel can concentrate on servicing customers and taking orders.

Improved Carrier Management

- A shipper may have a myriad of contracts, assessorial charges, fuel surcharge tables, insurances, licenses, etc. to manage as a part of their logistic activities.

- In the process this may affect shippers' case activities and also result in low logistics performance. A 3PL can take up this job. They generally have software designed to manage these activities.
- A 3PL can help shipper to standardize their activities and negotiate assessorial and fuel surcharges. This will not only save you time filing and collecting all this data, but also ensure improved carrier management.

Shipment Visibility

- In international trade i.e., across countries there is cost to implement a software system to help track and manage shipments. Even maintenance and implementation is a difficult task.
- The 3PL has international presence and can leverage their technology for shipper's benefit. If required they may customize their software to the needs of the shipper.
- This will enable the shipment visibility and timely reporting at no extra charge.

Risk Reduction

- A carrier is selected not only on the basis of cost of moving goods but also on the safety considerations. It is required to consider the risk they have when they load a shipment on a carrier.
- A 3PL is expected to look into the safety ratings of the carriers, the status of insurance and other similar factors to ensure safe transit of goods.
- The job has to be performed along all modes of transportation along different nodes in different countries. Thus the shipper may not have the time or competence or both for managing all carriers for every shipment.
- Any loss of life or property is required to be borne by the shipper as he did not conduct "due diligence" on the carrier chosen to ship their shipments. This can be avoided on engaging a 3PL.
- A 3PL will ensure that the risks are managed and minimized. They will check for the validity of insurances, age and condition of the carriers.

402.8 ❒ Managing Information Flows

In international trade various documents are exchanged. The form, timing, legal and financial implications differ amongst documents and from country to country. Example of information flows is illustrated below.

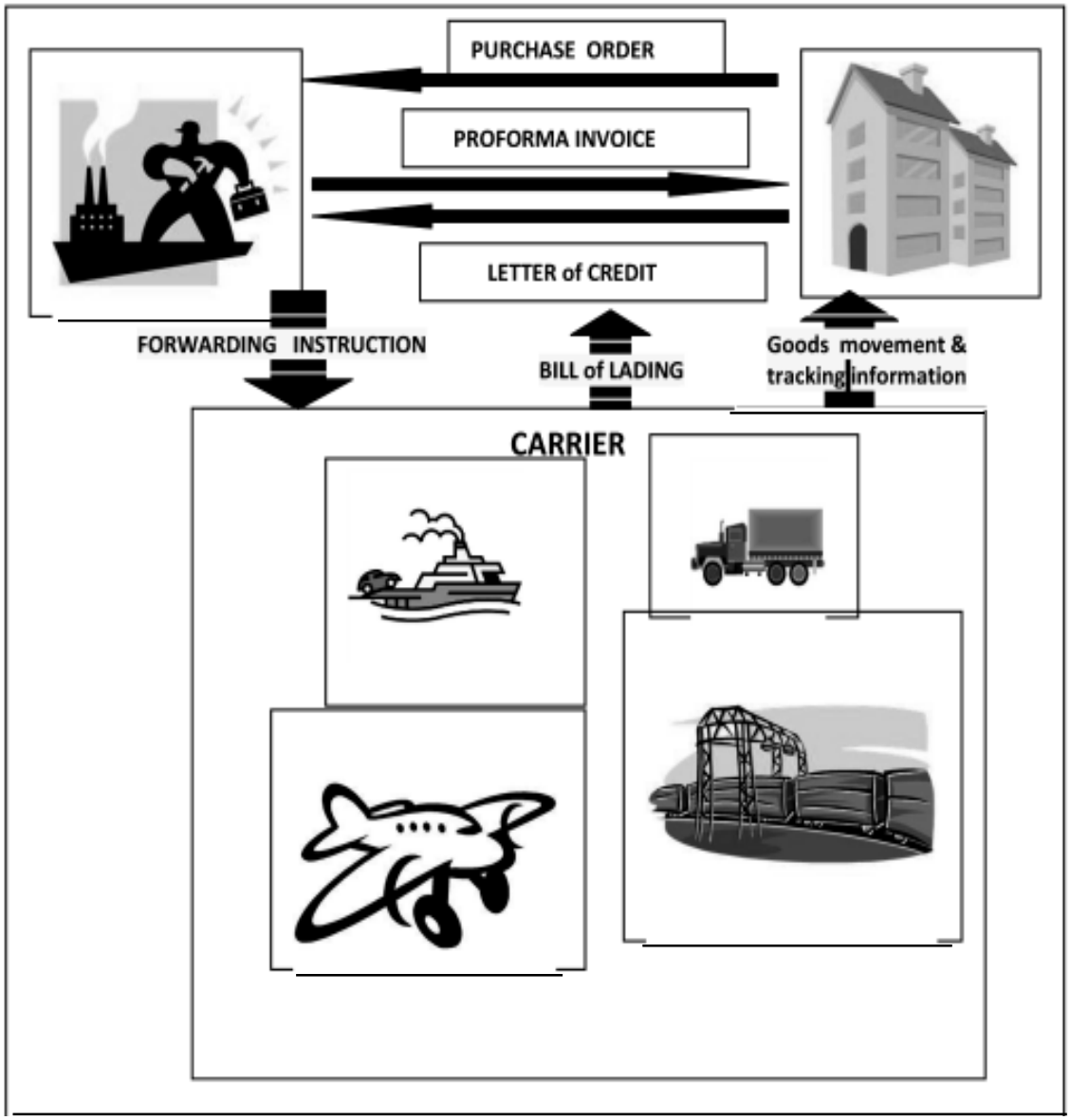


Figure 10: Examples of information flows

402.9 ❐ Leading Integrated Logistics Providers

1. Nippon Express
2. Exel Group
3. Schenker
4. Deutsche Post Logistics
5. Kuehne + Nagel
6. UPS SCS
7. TNT Logistics
8. Panalpina
9. CH Robinson
10. Geodis

Unit 403 ❐ Role of Transportation in Logistics & Multi-modal Transportation

Structure

403.1 ❐ Role of Transportation in Logistics

- Transportation cost absorbs between ten to fifty percent of total logistics costs.
- An effective and inexpensive transportation system contributes to the following:
- **Greater competition in marketplace**
- Transportation make goods available at the right time from the right place leading to market penetration
- **Greater economies of scale in production**

  Wider markets can result in lower production cost. It also permits decoupling of market and production sites.
- **Reduced prices for goods**

  Inexpensive transportation also contributes to reduced prices.
- The demand for the commodity is not the same as demand for transport.
- Commodity can move in any feasible mode of transport. The choice of transport would depend on type of cargo, time, cost and host of other factors.

- The per - unit distance transportation costs within the country always account for the final node of volume of trade than the same exportable items of other countries.

403.2 ❐ Service Choices

- There are five basic modes of transportation, namely, water, air, rail, road, and pipeline
- Any one or combination of these can be used for transportation of goods from one place to another
- Selection of modes of transportation is made based on best balance between quality of service and cost.

403.3 ❐ Characteristics of Transportation

- Price
- Average transit time
- Time variability
- Loss and damage

Price

The cost of transportation for shipper includes the following:

- Line haul rate

  - The rate charged by the liner carrier for transportation (per unit space or per unit weight) and accessorial or terminal charges for additional service

  - The above definition is applicable in case of less-truck-load (LTL) or less car load (LCL) where car refers to a railway rake.

- For hire service

  - the rate charged by the charter carrier : That is, the rate for movement of goods from one point to another and additional charges e.g., price up to origin, delivery at destination, insurance, and preparing goods for shipment.

  - The above definition is applicable in case of Full-truck-load (FTL) or Full-car-load (FCL) cargo

The cost of different services

Cost of service varies from one type of transport service to another. The hierarchy of cost for different transport services is as follows:

Air > truck > rail >water > pipeline

Cost Comparison

- Cost of movement of goods through trucks is seven times that by rail
- Cost of movement of goods through rail is four times that by water or pipeline

Actual cost comparison should be made on actual charges that reflect the following:

- Commodity being shipped
- Distance and direction of movement
- Any special handling required

TRANSIT TIME and VARIABILITY

Average delivery time and delivery time variability rank at the top as important transportation performance characteristics:

For comparing carrier performance, it is best to measure transit time of door-to-door, even if more than one mode is involved.

Variability refers to the usual differences that occur between shipments by various modes:

Even if transported by same means variability may be due to effects of weather, traffic, congestion, and number of stop-offs and differences in time to consolidate shipments.

Transit time variability is the measures of uncertainty in carrier performance:

The performance of a particular type of carrier is a function of distance, variability and loss and damage.

Performance with respect to the distance

Distance greater than 600 miles:

- Air freight is the fastest mode followed by truck load, then less truck load and then comes rail.

Distance less than 600 miles:

- Air and truck are comparable

Distance less than 50 miles:

- Transit time is influenced by pick up and delivery operation than line haul transit time

Variability

The variability of different modes of transport is as follows:

- Rail has the highest delivery time variability
- Air has the lowest delivery time variability

Loss and damage

This becomes factor for selection of a carrier

Modes of Transport

Characteristics with respect to:

- DISTANCE
- SPEED
- QUANTITY and
- VOLUME OF CARGO

RAIL

- Rail: A rail load is basically a long hauler, slow mover of refrigerated material, raw materials and low valued bulk commodities, manufactured products like new automobiles etc.
- Rail movement is usually referred as rake-movement. A rake consists of number of wagons. A wagon typically can hold 50 ton to 60 ton. A typical full rake consists of 40 BCN wagons. That is ,rake load of 2400 to 2200 tons. Sometimes half loads (mini-rake) of 20 BCN wagons (1100T) are also available. BCN are covered bogie wagons and can also be used for goods requiring protection from rain and sun. There are other types of wagons. One such popular type is the BOXN wagons which are typically high-sided-bogie-open top wagons.
- A carload (or rake-load) quantity refers to predetermined shipment size usually approaching or exceeding average capacity of a rail car, i.e., say 2000 to 2500 tons., to which particular rate is applied.
- Other services include :
- various stop off privileges which permit partial loading and unloading
- pick-up and delivery,
- diversion and re-consignment which allows flexibility in routing and

changes in the final destination of a shipment while en-route

- Fixed Cost is High while Variable Cost is low
- Variable cost includes loading, unloading, billing, collecting, yard switching and multiple shipment costs
- The cost per unit is lower for increased shipment volume.

Truck

- Best suited for semi finished and finished goods with an average length of freight haul of 646 miles for truck load and 274 miles for less truck load.
- The shipment size smaller than rail. It is advantageous for door-to-door service (less material handling, better availability and frequency of service)
- Trucking has a service advantage in the small shipment market.

Air

- Air freight is twice truck charges and sixteen times rail charges.
- The appeal of air transportation is its unmatched origin-destination speed, especially over long distances (maximum delay in surface freight handling and movement in door-to-door delivery time)
- Delivery time variability is low in absolute magnitude, even though air service is quite sensitive to mechanical break down, weather conditions and traffic congestions
- Compared to water, average delivery time variability is high as a result one can rank air as one of the least reliable modes.
- Loss and damages are less

Water

- Slowest, can handle liquid and bulk cargoes also high valued cargo in containers, loss and damage in general low as it is not of much concern with low valued bulk products and loss due to delays are not serious (large inventories are often maintained).
- But for valued good substantial packing is needed to protect from rough handling of goods.

Waterways

Waterways are better means of transport following types of goods:

- Transported across the border i.e. for international trade

- Low cost, containerizable, non-perishable goods
- Liquid cargo, in large quantities
- Capable of withstanding longer lead times in supply
- Distribution and less careful handling.
- Now-a-days almost all types of cargo including cars and vehicles (roll-on - roll-off ships as well as conventional carriers) finished goods, raw materials, small sized or large shaped cargo are transported through waterways.

Pipeline

- Offers limited range of services and capabilities. It is used for movement of fluids
- It is slow but tempered by the fact that products move 24 hours a day and 7 days a week
- It is the most dependable mode of transport
- The loss and damage is low
- Pipeline parallels the railroad in cost characteristics
- Fixed cost is high and the variable cost (Power and cost of operation) vary greatly with line throughput and diameter of pipe
- The cost per ton mile is low.

Time - Cost Trade-off

It can be observed that cost increases with reduction in time to move the cargo. So we need to trade off between cost and time.

Speed - Volume Trade-Off

It is evident that high-volume cargo-carriers move at less speed than low volume cargo movers.

The speed-volume and time - cost optimization can be achieved through combining different modes of transportation i.e., through multi-modal transportation.

403.4 ❐ Multi-Modal Transportation (also referred as inter-modal transportation)

Inter-modal services refer to shipping by more than one means of transportation:

Dimensions of Multi-Modal Transportation

The different dimensions of multi model transportations are

1. CARGO MIX

   The combination of different modes of transportation would depend on the following types of cargos:

   Break bulk: Cargo packed and handled in piece meal manner.

   Container: Cargo packed and handled in standardized box called container

   Dry bulk: Cargo handled in loose form

   Liquid bulk: Cargo handled in bulk in fluid form

2. MODAL MIX: Any combination of two or more of following modes of the transportation is observed in multi-modal transportation.

   LAND / RAIL / AIRWAYS / WATERWAYS / PIPELINES OR OTHER MODES

3. NODAL MIX: Implies number and type of nodes in multi-model transportation

   The options are -

   TRUNK ROUTE - HUB TO HUB

   FEEDER ROUTE - HUB TO SPOKE

   - SPOKE TO SPOKE

   For example, cargo from Ireland (from a spoke port) may flow to Rotterdam (a hub port), further being shipped to Singapore (another hub port). From Singapore it moves to Chennai Port (a spoke port). From Chennai it moves by ship to Kolkata port (another spoke port). From Kolkata port it reaches the importer by trucks. .Thus there are five nodes involved only in sea mode of transportation and two nodes in land transport, one at Ireland and the other at India.

4. FINANCIAL / COST

   FIXED / VARIABLE

   PENALTIES

   DELAYS

   OPPORTUNITY COST

5. DEMAND

ONE TIME

PHASE WISE

For example, one million metric ton of cargo is required to be shipped as a one-time requirement vis-à-vis 1MMT of cargo to be shipped in phases comprising 40,000MT per shipment every 20 days. In the former case one shipload of 1MMT is the best choice unless there is a restriction with respect to the size of ship that is imposed by either the loading or unloading port, the storage space and perishability of cargo.

In the latter case, a smaller ship can be deployed to move 40000 MT of cargo each time, thus increasing the number of trips (increase in variable cost) while reducing the cargo handling requirements (infrastructure) at the port.

6. **QUALITY OF SERVICE**

DOOR TO DOOR: Mostly inter-model transportation

TERMINAL TO DESTINATION

7. **INFRASTRUCTURE**

ROUTE CONDITION: Refers to navigability of the sea route that determines the voyage time of ship, road conditions for movement of trucks, railway track-load bearing capacity and its condition that determines the speed of the train.

MATERIAL HANDLING: refers to number of equipment and their capacities, procedures etc

TERMINAL EFFICIENCY: refers to business process and work flow and its effectiveness

8. **CAPACITY**

ROUTE CAPACITY (LANES / RAKES / DRAFT)

HAULAGE (Quantum of cargo that the carrier can support)

EQUIPMENT CAPACITY: refers to unit load per equipment per move and the cycle-time per move. Higher the load bearing capacity and quicker the cycle- time, faster is the loading and unloading of cargo.

9. **INFORMATION**

OFF LINE: refers to availability of information after occurrence of an event, i.e. not instantaneous.

ON LINE: refers to availability of information immediately on completion of an event or change in state of previous information.

REAL TIME: refers to instantaneous availability of information at the time of occurrence of an event or change in state of previous information. Off Line information makes tracking & tracing of cargo difficult, and thus reduce control on logistics activities resulting in increase in risk and uncertainty. On the other hand on-line systems enable data capture at the point-of-operation enabling implementation of integrated logistics system. On-line systems with in-built time constraints resulting in instantaneous capture and availability of information, is called real-time system. It requires implementation of highly automated systems such as RFID, GPS, camera based data capture etc. where in there is data capture simultaneous to the event. For example, use of Hand-Held-Terminals to record position of containers in a yard at the time of their movement is an example of on-line system, while use of RFID system to record such movement is an example of a Real Time System.

10. COMPETITION

PERFECT MARKET: refers to large number of service providers
OLIGOPOLY: refers to existence of few service providers
MONOPOLY: refers to existence of one service provider

The cost of logistics is primarily dependent on two factors; one the fuel cost and other the supply-demand gap. In case of the latter, monopoly or oligopoly market is likely to raise the cost of logistics and also provide limited customization of services as the shipper would have no or less say on choice of service providers.

11. LEGAL / STATUTORY / ENVIRONMENTAL

The choice of mode of transport and their inter operationability depend on the legal, slatutatory and other environmental factors. The stringent and ambiguous legal system acts a non -tariff barrier to trade. Rcovery and compensation becomes difficult in MM transportation as there are more than an agency involved.

403.5 ❐ Multi-modal Concept

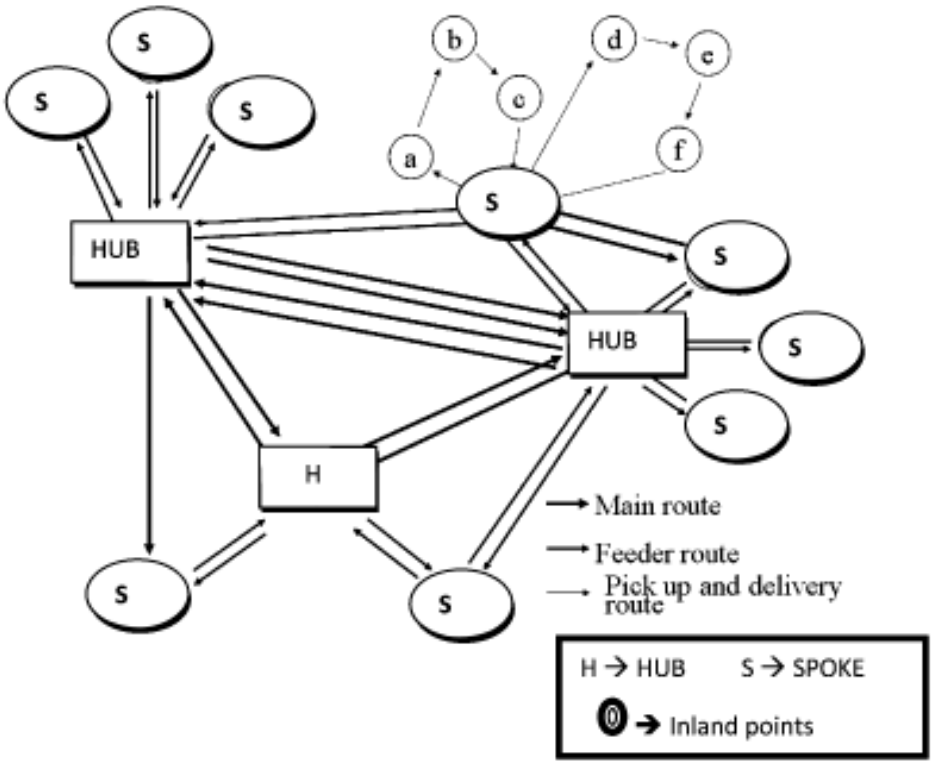


Figure 11: Multi-modal transportation involving Hub-to-Hub (H2H), Hub-to-Spoke (H2S), Spoke-to-Spoke (S2S) and inland movement of cargo.

403.6 ❐ MM Transporation–Issues

- NUMBER OF NODES
- MATERIAL HANDLING AT NODES
  - NO. OF EQUIPMENT
  - CAPACITY
  - CYCLE TIME
- STORAGE CAPACITY AT NODES
- DOCUMENT CLEARANCE AT NODES
- TERMINAL DOCUMENTATION

- CUSTOMS CLEARANCES
- CHOICE OF MODES
  PARCEL LOAD
  ROUTE CAPACITY
  SPEED
  COST
- FULL TRUCK LOAD vs LESS TRUCK LOAD
- COST - TIME TRADE OFF
- AGGREGATION vs CROSS DOCKING
- STORAGE vs CUSTOMIZATION AT NODES

Unit - 404 ❐ Ware-housing, Material Handling, Packaging & Labelling, Containers , Risk Management & Customs Infrastructure

Structure

404.1 Warehouse

Figure 12 below shows a typical warehouse. Materials (boxes and cartons) are stacked over one another in rows and columns. These materials may

Figure 12: A typical warehouse

require protection from sun and/or rain or moisture or may be required to be stored under temperature controlled environment. Thus, a warehouse

provides a wide variety of storage services including chill, freeze, and other temperature-controlled storage feasible for foods, pharmaceuticals, and other sensitive products.

A open storage space, also termed as storage yards generally store materials that can withstand the rigours of sun, rain and other weather conditions. The figure 13 below shows a container yard that store containers.

Figure 13 : A Container Yard

Ware house Operations

These include:

i. Gate operations : Queue management, document generation and checking, entry or exit permit generation (for men, vehicle and cargo) and its verification, scanning of containers, tagging and labeling of vehicle and cargo or containers using RFID (radio frequency identification), Bar Coding, or other systems.

ii. Cargo movement, stacking and tracking: Transferring and storing cargo as per yard plan or bay plan. Tracking of cargo using RFID or GPS (global positioning system) technology.

iii. Goods repair, testing, assembly or kit preparation: Some warehouse provided for value added services such as repair, stitching and bagging, preliminary testing or enabling inspections, preparing kit supply by combining goods of different kinds from different consignments and putting them together in one package, or light assembly.

iv. Freight forwarding: Typical jobs include contacting the carrier, booking space and arranging for cargo movement, prepare and process the documentation and perform related activities pertaining to international shipments.

v. Warehouse and terminal management:

a. Inventory management: Elimination of obsolescence, damage and theft

b. Equipment management: Ensuring availability, utilization and maintenance of equipment.

c. Yard Management: Allotting space, shifting of goods from one point to another and tracking

d. Warehouse and yard maintenance: Repairing, replacing and modernizing warehouses, yards and the system

vi. Information dessimination

Value-Added Services

To value added services for enhancing logistics functions, include :

- inspections,
- barcoding,
- tagging/labelling,
- packaging,
- light assembly,
- test routines, etc.

Warehouse Management Systems

A warehouse needs to implement information technologies to support high quality and low cost warehouse operations, such as Intelligent Warehousing System, Distribution System etc for effective management of its activities. This requires integration of On-line Systems with various kinds of automated handling machinery and equipment.

Intelligent Warehousing System

- Intelligent Transport System

- Freight Forwarding System
- Container Terminal Information System /
- Intelligent Container Yard Control System
- Warehouse Management System
- Inventory Handling System
- Electronic Data Interchange
- Integrated Information System
- Warehouse Location Control System
- Dispatching Truck System
- Truck Delivery Management System
- Container Tracking System

Intelligent Transport System

This system supports advanced data search function, contributing to swift and accurate operations (import, export and cross transportation) and up-to-date information supplies to customers.

Freight Forwarding System

This system provides detailed information on import from origin to final destination. With this system, the firm can share the information linking key sections (service, customs clearance, warehousing, distribution), and it helps increasing efficiency and overall cost savings.

Container Terminal Information System / Intelligent Container Yard Control System

This is a management system for container terminal operations. A container terminal may be operated by a port or logistics service provider or shipping companies, The Intelligent Container Yard Control System controls various information including discharging, carrying-in-and-out, details of containers, and customs clearance.

Warehouse Management System

This system is designed to control inventories and receiving /shipping at different types of warehouses at home and abroad including fixed temperature warehouses, low temperature warehouses and refrigerated warehouses.
It allows the precise control according to characteristics, packing and states of each product such as foods, materials and manufactured products.

It is linked with other systems such as Inventory Handling and Warehouse Location Control System, this system provides.

Inventory Handling System

- This system controls operations relating to delivery materials stored in the warehouse.
- It enables tracking, issuing invoices and labels, picking for orders, and also \provides variety of customized information.

Electronic Data Interchange (EDI) - with customers

This system is used to interchange data on receiving/shipping, inventories and other relevant information with customers resulting in expediting and streamlining transactions of business, EDI aims interchange of data or documents as per structured format. These formats are either adopted from global standards such as UNEDIFACT (United Nations Electronic Data Interchange for Administration, Commerce and Transportation; or as per mutually agreed format between business partners. In India all major ports and their stakeholders namely, Shipping agents, Freight Forwarders, Transporters, CONCOR, CFS & ICD operators, Banks, and others have implemented an EDI system called 'Port Community System (PCS) for electronic interchange of documents. This system is also expected to get integrated with Customs EDI i.e., ICEGATE.

Integrated Information System

- This system aims at providing web-based integrated information on inventory, receiving and shipping details for each warehouse.

- This system will enable downloading of all data in this system is in various format such as PDF, CSV, XML etc, which enables customers to create another database or tables easily.

- This system can be customized to send alert e-mail and SMS messages automatically to the concerned according to the set rules, such as the departure schedules of trucks and carriers, upper or lower limits of inventories or the expiration dates etc. to keep timely and appropriate inventory management.

Warehouse Location Control System

This system enables control of inventory, its location, receiving and shipping of goods designed for automated warehouses.

Dispatching Truck System

This system ensures efficient movement of goods. It has functions of managing various rules and constraints, such as time restrictions for truck movements within a city, holidays and just in time specification delivery. This system aids in simplifying dispatch planning and realizing the best truck routing and scheduling.

Truck Delivery Management System

This enables tracking of vehicles in real time (can be tracked on the map on the website), primarily, using Global Positioning System (GPS). It also guides vehicle routing and diversions and in other related issues.

Container Tracking System

This system enables tracking of containers and hence efficient delivery arrangement. It provides container delivery status, such as, container pickup, on-chassis status delivering and empty container return, etc , on the website. It primarily uses radio Frequency Identification (RFID) technology for real time information or Radio terminal on board cranes handling containers.

404.2 Material Handling

Material Handling at Warehouse

- Primary Components of Material Handling include:
  Material
  Moves
  Method

5 Key Inputs - to Describe 3 Components

- Product (what)
- Quantity (how much)
- Routing (where)
- Support (with what back up)
- Time

Physical Characteristics Affecting Movement

- Size
- Weight / Density
- Shape
- Risk of Damage
- Condition

Principles of Material Handling

i. Planning Principle : it states that, planning should proceed any activity such as material handling. It basically aims at answering 5 Ws and 1 H. That is,

- Where are we
- What do we want (where do we want to go)
- Why (purpose)
- When (time frame)
- Who (responsibility) and
- How (procedure)

ii. System Principle : it states that a systematic approach to material handling leads to integration of all activities in supply chain

iii. Material flow principle: An organized flow of material reduces back tracking, minimizing delay, cost and damages.

iv. Simplification Principle : simplification of procedures and proceses leads to effective material handling (i.e. less error and maximum customer satisfaction)

v. Space Utilization Principle : flow of material should not be inhibited with storage of material and at the same time the utilization of space should be optimum

vi. Unit Size Principle : unitization leads to effective material handling. It reduces material handling moves, enhances the

cycle time and enables better control on the activity. Use of pallets, containers are examples of unitization

vii. Mechanisation Principle : material handling should be automated to the extent possible as it improves conistency and reliability, thus reducing error, uncertainty, time and cost.

viii. Gravity Principle : use of gravity enables conservation of energy and minimization of cost. Hence where ever feasible use of gravity should be made. Movement of slurry through conduits are examples of use of gravity

ix. Equipment Selection Principle: equipment differ in terms of type, size, weight of material it can move and its cycle time. Thus selecting the right equipment for a right job is an important factor. For example, use of slings in lieu of spreaders for unloading and unloading of containers to and from vessels.

x. Standardisation Principle: standardization of procedures, process and flows of materials (incluing its packaging) enhances productivity maximizing terminal and warehouse capacity. It also aids in better inventory control of spares of equipment and deployment of other resources. Simplification, unitization are attempts to standardization.

xi. Utilisation Principle: selection of equipment and method of handling should be such that the utilisation of equipment and all other resources (men, money, machine & material) are optimum. For example, a 20 ton crane may be used to lift 8 ton material thus leaving it under utilized.

xii. Dead Weight Principle: material handling should aim at reducing idle movement of materials.

xiii. Safety Principles : material handling should follow principles of safety to reduce loss of life and damage to goods.

Apart from the major principles stated above, other principles include maintenance, control, capacity, adaptability, performance & obsolescence principles.

Container handling equipment in warehouse and yards

FORK LIFT TRUCKS

Figure 14 : Fark Lift Truck

A fork lift truck is a low capacity (generally 2-10T) and low hauler (50-100 mts) of goods. It is used to move and lift goods inside a warehouse or stuff a container or make small moves of cargo in the terminals. The maximum capacity of forklift can go upto 50Tons. It has normal lifting capacity between 10 to 15 feet, while it can go upto 36 feet or so.

Figure 15 : A Rail-Mounted-Gantry Crane (RMG)

It is used for moving containers in a container yard. It moves on rail tracks and hence its maneuverability is reduced. Similar to RMG are the Rubber Tyred Gantry Crane (RTG) performing similar functions. RTG also move on a definite path. The spreader is used to lift containers.

Figure 16 : Reach Stacker

Reach Stackers can move containers in a yard with greater maneuverability. Unlike RMG or RTG it can move from one yard to another

STRADDLE CARRIER

Figure 17 : Straddle Carriers

These are used for container movements within yards and also between container yard and the berth.

Figure 18 : Straddle carrier Stacking containers

Table 2 below gives a comparative study of different types of container handling equipment at yards.

Table 2. Parameters of comparisons

	SC	RTG	RMG
Parameters	(1 over 2)	(1 over 4, 6+1)	(1 over 8, 11 + 2 + 2)
Equipment cost (CP)	US$0.8 million	US$1 million	US$1.5 million
Economic life of equipment (nc)	10 yrs	15 yrs	20 yrs
Economic life of yard (ny)	40	40	40
Handling cost per box (ch)	US$0.6	US$0.8	US$0.4
Equipment maintenance cost (rm)	8%	8%	8%
Cycle time (hc)	2 min/move	3 min/move	2.5 min/move
Transportation cost (T)	US$5/unit	US$5/unit	US$5/unit
Yard development (CY)	US$85/m2	US$70/m2	US$80/m2
Annual driver cost	US$20,000/man	US$20,000/man	US$20,000/man
Annual dock foreman cost	US$13,000/man	US$13,000/man	US$13,000/man
Annual throughput (Q)	300,000 units	300,000 units	300,000 units
Number of handlings at yard (nh)	2.2 moves/unit	2.5 moves/unit	3 moves/unit
Equipment reserved ratio (rd)	20%	10%	5%
Land cost (CL)	US$100/m2	US$100/m2	US$100/m2
Interest rate (r)	8%	8%	8%
Yard maintenance cost (my)	0.60%	0.75%	0.50%

Table 3 : Equipment type and stacking area

Sl. No.	Handling Equipment and Method	Stacking Height of Container	A_{TEU} in m^2/TEU with the following breadth or line of containers				
			1	2	5	7	9
1	Chassis	1	65				
2	FLT (Fork Lift Truck)/ RS (Reach stacker)	1	72	72			
		2		36			
		3		24			
		4		18			
3	SC (Straddle carrier)	1 over 1	30				
		1 over 2	16				
		1 over 3	12				
4	RTG (Rubber tyre gantry) / RMG (Rail mounted gantry)	1 over 2			21	18	15
		1 over 3			14	12	10
		1 over 4			11	09	08
		1 over 5			08	07	06

Source: Compiled by author from different literature

Container and cargo handling at berths: The different types of equipment used for cargo operation at berths include:

i) Mobile Harbour crane: for containers, with around 20 to 25 moves per hour

ii) Ship- to - Shore Gantry Crane : for containers and break-bulk cargo, with around 10-12 moves of container per hour.

iii) Ship's Derrick: for containers and break bulk cargo, with around 8-10 moves of container per hour

iv) Ship's Grab or shore based Grab Cranes for loading/unloading of dry-bulk cargo. The capacity of such grabs are generally 12-13 cbm (cubic metre) per grab. In Indiian scenario around 10000-15000MT of bulk cargo is handled per day per ship. In highly mechanized environment the cargo handling could be to the tune of 40-50 thousand MT per day per ship.

v) Pumps and pipelines: These are used for fluid cargo. The loading/ unloading capacity depends on the capacity of the pumps and diameter of the pipes.

404.3 ❐ Packing

Packing of Cargo - Concepts

Some sort of packaging will normally be a prerequisite for carrying commodities as general cargo, especially in break bulk.

Packaging has at least three functions:

(a) To protect the goods;

(b) To keep a consignment together;

(c) To prevent the goods from damaging the environment.

There are three levels of packng:

i) Primary: retail or customer level

ii) Secondary : consolidation or group level

iii) Tertiary: Transport or movement level

In logistics we deal primarily with the third level of packaging. In case of containerisation. Containers serve as the fourth level of packaging. For example, a box containing tea is put in a carton (grouping) and cartons are unitized using pallets (transport-levels). In case of containerizations the pallets are further put inside a container.

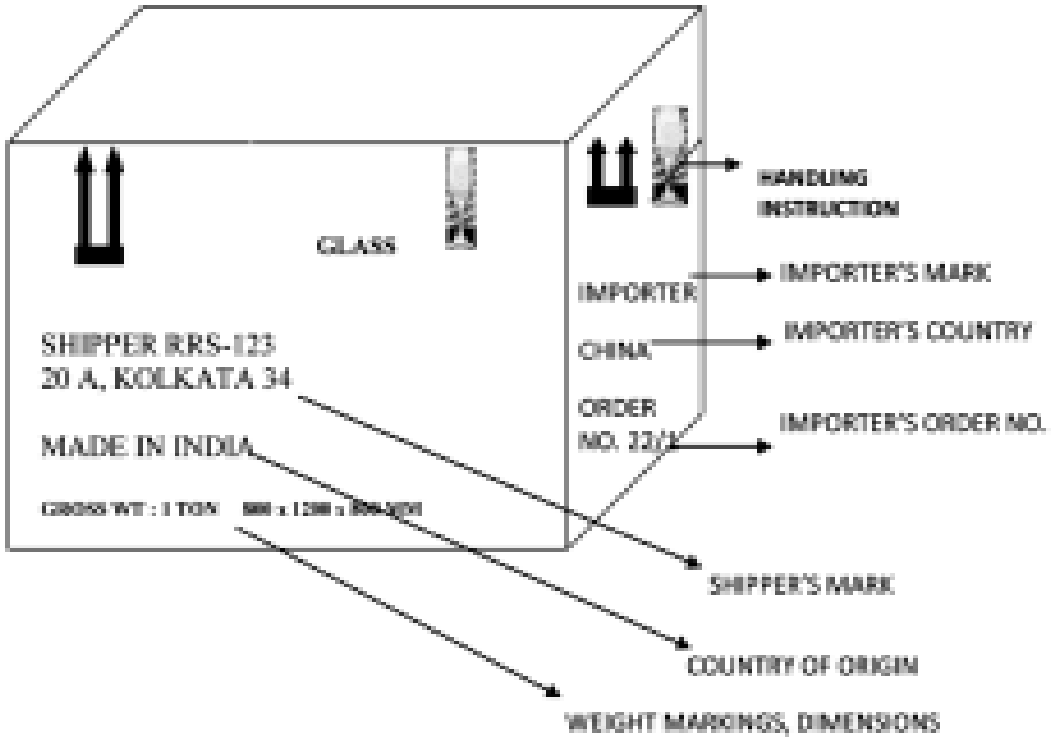


Figure 19 : Labeling in international trade

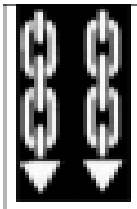
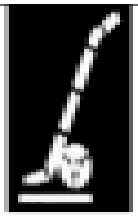
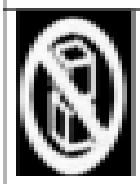
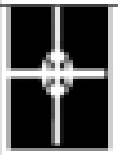
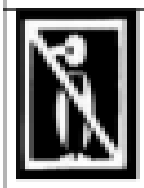
A label has 3 components (instructions)

1. Shipper's Information
   a) Shipper's name
   b) Consignee's name & address
   c) Cargo name
2. Shipping Information
   a) Shipper's mark
   b) Consignee's mark
   c) Order number
3. Handling instructions

In case of in-land or short distance movement the second level packaging serve the purpose. However, whatever is the mode of packaging whether cartons or pallets or containerized, individual packages should be accompanied

with labels. The symbols describing handling method needs to included in the labels. Symbols used in international logistics are described below.

	Fragile – to handle with care		To not Tumble
	Handle With Care		Photographic material
	Keep dry		Protect from Heat
	Do not Roll		Upward Direction
	Use no Hooks		Perishable
	Keep Frozen		Clamp here

	Sling Here		Lift Cart Here
	Do not Stack		Centre of Gravity
	Do not Freeze		Live Animals

Apart from the symbols handling instructions in international languages such as English, French, Spanish, Italian or any other language may also be provided. However, such instructions are not mandatory like that of symbols. Symbols can be understood by any country while handling instructions in specific language is meant for a particular country or community. These are usually applicable for non-dangerous goods.

As regards goods classified as dangerous, that have chemical or physical properties which can damage other goods, or the environment (for example explosives, flammable liquids or gases and poisons). IMO, the International Maritime Organisation, has laid down the rules for the handling of dangerous goods at sea with regard to packaging, marking and labeling, stowage requirements, and other requirements that varies between classes of dangerous goods.

Packaging - Issues

- The cargo during transport is usually subjected to mechanical forces (such as shocks, vibrations, pressures) and/or climatic forces (e.g., temperature, moisture).
- The packaging of these cargos needs to be sturdy enough to withstand the rigours of stowage and multiple handling.

- Strong packaging is required not only to prevent the cargo from damage but also to safeguard damage of other goods in the same transport.
- In inland and local transport paper and carton are traditionally mostly used as the risk of damage is usually lower than international transportation. In international transportation these packaging are supplemented with additional packaging such as palletization and/or containerization.
- Bagged cargo meant for loose cargo (e.g., cement, sugar or grain) are usually put in plastic and jute bags. These are commonly used to pack traditional bulk commodities in small quantities. For but movement of similar goods in bulk no packaging are used and instead put in ship's hold or directly to any other carrier (closed or boxed or partly open such as wagons) Wood is still common to make cases or crates.
- Liquid cargo in small quantities is package in drums and barrels made of metal or plastics, or in tank containers. Liquid cargo in bulk quantities are moved through pipelines or tanker vessels or tanker Lorries or wagons.
- The shipper, with regard to packaging, marking and declarations of contents, has to follow not only procedures laid down by authorities of their countries but also has to comply with standards laid down by the importing country. .

PACKAGING OF CARGO - Packaging Mix

The three P's of packaging:

- protection,
- preservation and
- presentation.

TYPES OF PACKAGING

Depends on:

- Nature and type of goods
- Volume
- Weight
- Number of packages
- Types of packages
- Mode of transport
- Final destination

Broad Guidelines on the choice of packaging

- Goods should be evenly distributed and properly secured. That is, it should be well stowed within the package.
- Items should completely fill the case or carton to contribute to the strength of the whole package.
- Items which do not completely fill the package must be cushioned against shock or vibration.
- There must be adequate internal bracing or securing using battens (bars of wood) or dunnage (mats, wood shavings, etc.).
- In case of the consignment consisting of a number of small packages, consolidation and unitization through palletization and/or containerization is recommended for ease of handling and mining theft and damage. palletization is done by strapping and securing individual packages to a wooden or fibre pallet base (pallet is a portable platform for storing loads)
- Unitization in other words refers to assembly of cargo into the largest practical unit consistent with the handling, weight and dimension requirements. This has the following benefits:
- reduce the danger of theft and damage to a minimum
- improves accountability and productivity.
- reduces handling stresses, as larger units require the use of mechanical handling equipment rather than crude manual techniques.
- Goods moved through containers may also be palletized. Pallet packing is suitable for goods carried in containers as it eases stuffing and de-stuffing operations. These may also be carried by conventional methods as break bulk cargo.
- Cargo should not be "over stowed" by other packages in warehouses and cargo holds. Cargo which allows stacking should be appropriately packaged to withstand the weight of stacked cargo. Or else the "do not stack" symbol should be marked on the package.
- In order to secure the cargo from breaking or falling apart, appropriate strapping and banding techniques should be used for all packages.
- The shipper should check the regulations of the destination country as well as those of any transit countries order to ensure that they do not

prohibit certain types of packing material, particularly material which is harmful to the environment.

- The re-use of second-hand packaging materials (cartons or cases) should be avoided as they are more liable to breakage and /or may attract pilferage or damage.
- The package should match the dimensions of the product so as to save packaging and freight costs. That is, the package should be of minimum dimension with respect to measurement of the cargo. The space within the package should be optimally utilized.
- Packages should not hold items or goods attracting different freight rates. This is so because the carrier charges freight for the whole package at the rate applicable to the highest rated commodity.
- In case of items required to be stored or stowed in open area and are sensitive to moisture, goods should be provided with waterproof wrapping.
- Over-packaging as a measure of protective packaging should be avoided. This will not only ensure optimum use of the carrying capacity but also minimize packaging, handling and freight cost.
- Flexible multi-wall bags should be used for loose or granular material. This will provide double protection as the goods remain secure even if the outer wall ruptures during handling. The type of the bag to be chosen to suit chemical and physical characteristics of the goods.
- An igloo is used to secure break bulk cargo different dimensions in an aircraft.

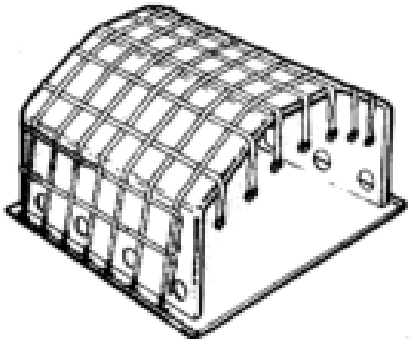


Figure 20 : Igloo

Igloo as can be seen is a container of break bulk cargo of smaller dimension having an open front without any bottom as it is fixed on the floor of the

air craft holding the cargo packages. It is a rigid shell made of fiberglass, metal or other suitable materials. The slope of the upper portion conforms to the contours of the cargo aircraft envelope, i.e. the interior cabin cross-section

- Materials, such as pressed bales (canvas packages of merchandise), needs protection from moisture and water and hence an inner wrap of waterproof paper below an outer or primary cover of fiberboard material may used., over which heavy jute or a similar material may be used as the outer covering before strapping.
- In designing or choosing a suitable package, it may be useful to consult, wherever possible, the consignee and obtain reports from his end about the packaging of specific products moving on specific routes.
- The consignee should be referred for the following information:

i. The handling gear, port equipment, and facilities available at the port of destination,

ii. The inland transportation facilities are available for onward movement of goods from port to the importers place.

iii. The restrictions in use of packaging material.

- Though packaging in logistics refers to tertiary level, consideration should be given to the "presentation" aspect of the package. That is, the design, colour and embellishment of the packages. This is expected to produce a favourable reaction in the export market and improve the competitiveness of the product.

404.4 ❐ Containers

Containerized Cargo

- General cargo or bulk cargo i.e. cargo being handled in a piece-meal manner is usually containerized. It means these piece-meal cargo packages are put inside a box of standard dimensions. Containers are carried on cellular container or Ro/Ro vessels.
- Containers today carry different types of cargo ranging from liquids to large project cargo. That is, almost any commodity can be containerized.
- Containers have the following advantages:

(i) Cargo is not manhandled while loading and unloading or at yards, instead is handled with equipment such as gantry cranes, derricks, mobile harbor cranes, rubber or rail mounted gantry cranes, etc.

(ii) Reduction in manhandling causes consistent output and lowering of cost especially in developed countries.

(iii) The cargo put in a container needs less protective packaging.

- The cargo can be stowed much before it arrives at port. That is , at ICDs and CFS away from port, near to market or production centres. This not only saves time and effort, but also reduces port congestion.
- The containers ships have cells and it enables containers to fit into predetermined positions on board ship. This reduces complicated stowage planning as in case of break bulk cargo
- Large number of individual packages having their respective cargo mark when put inside a container are indentified with one shipping mark , i.e., the container number. Hence documentation and identification of cargo is simplified.
- Tracking and tracing of containers through electronic data interchange (EDI) has increased the supply chain visibility and accounting of cargo.
- The shipping companies own or lease the containers. They ensure availability of containers at the respective port of call. As such they move empty containers at their own' expense.

The ISO containers are of specific sizes. That is,

a. 20' * 8' * 8.5'

b. 40' * 8' * 8.5'

c. 20' or 40' * 8' * 9.5' : A 'High Cube' container

A 20 feet container is termed as a "Twenty Equivalent Unit (TEU)", and forty container is referred as 2 TEU.

- However, there are a variety of heights, widths and even lengths of units in the system today.
- The different types including special purpose containers is given below:

Type	Typical Cargo
Insulated containers	Used for frozen or cool cargo
Half height units	Steel or other heavy items
Flat racks	Timber, vehicles and odd shapes
Open top containers	Over height items
Bulk boxes	Bulk cargo such as grain or fertilisers
Open sided	Ventilated cargo such as onions
Tank containers	Liquids and chemicals in bulk

Figure 21 : A Typical 20' container

Figure 22: A Typical 40' container

Figure 23: A Flat Rack container

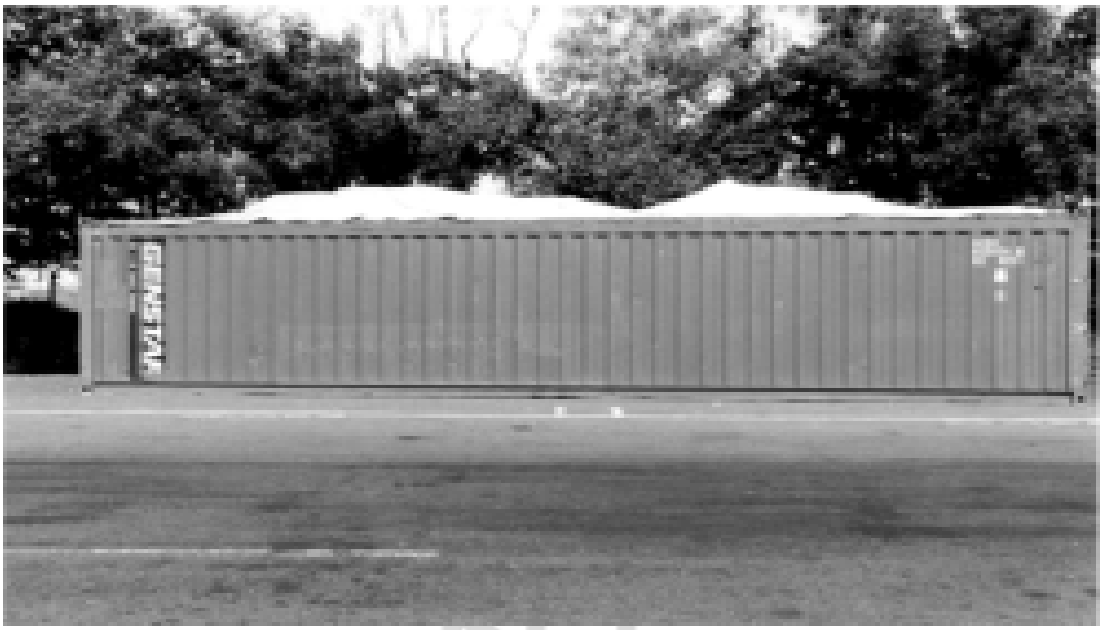


Figure 24: An open top container

Figure 25 : Stacking of containers

Figure 26 : A refrigerated container

Figure 27 : A Tank container

Figure 28 : A side and top open container

Figure 29 : A over dimensioned cargo (out-of-gauge) tied to a flat rack container

404.5 ❐ International Transit Risk Management

Risk arises due to differences in environment (political, economic, social, legal and ecological) and infrastructure such as available modes; quantity, quality, and type of documentation, the number and nature of intermediaries and facilitators (banks, warehouses, transport agencies, etc.). Moreover, global supply chains involve multi-modal transportation and therefore have potentially more delay points, and .greater uncertainties. This calls greater coordination, communication, and monitoring.

Risk -Issues

- The potential losses
- The probability (likelihood) of losses
- The frequency of losses
- The consequences of the losses

Transit Risk - Classification

- Quantitative risk

I. Direct

Damage
Theft
Delay
Price Escalation

II. Indirect

Stock-Outs (Lost Sales),
Overstocking,
Obsolescence,
Customer Discounts,
Inadequate Availability Of Components And Materials In The Supply Chain.

- **Qualitative risks**

Include lack of accuracy, reliability, and precision of the components and materials in the supply chain.
Loss of Goodwill

Risk Management Strategies And Mitigation Plans

- Choose the right INCO Term
- Choose the right payment term
- avoidance,
- postponement,
- speculation,
- hedging,
- control,
- sharing/transferring,
- and security

Avoidance Strategy

This strategy is used when the risks associated with operating in a given product or geographical market, or working with particular suppliers or customers, is considered unacceptable.

Postponement

This strategy refers to deferring or delaying the execution of the contract. This may enable to tide over the uncertainity.

Speculation

This refers to assumption or selective risk taking

Hedging

This refers to insurance coverage for logistics activities.

Control

Integrating logistics activities with a firm's core business i.e., vertical integration may increase control by reducing the risks of supply or demand failures in the supply chain. However, it would lead to change from variable costs to fixed costs. For example, shipping companies owning containers or say manufacturer having their own ships and jetties

The other way could be through designing flexible contracts with the business partners with clauses that account for possible changes in the environment and associated.

Transfer and/or sharing

This can be achieved through engagement of 3PLs and other agencies i.e., outsourcing, off-shoring, and contracting. Outsourcing refers to agencies within or outside country, off-shoring refers to sourcing across borders. In case of outsourcing or off-shoring the risk can be completely transferred or may be a collective risk.

Security

This refers to enhancement of security through use of IT based technologies such as RFID, bar-coding, GPS, CCTV, electronic fencing etc., to reduce risk of pilferage and damage.

404.6 Customs Infrastructure

Customs' infrastructure should enable interaction with

- SHIPPING/CONTAINER/CARGO AGENTS
- PORTS
- OTHER AUTHORITIES

It should have well laid down appraisal framework with regard to

- METHOD / PROCEDURES
- TIMING
- DURATION

Customs should provide on-line facility for

- Filing Of Documents e.g. IGM,GRANT OF ENTRY, OUT OF CHARGE etc.
- Acknowledgement of Documents
- Status of Documents
- Message Exchange with Ports

ISSUES

The issues relating to Customs' facility include:

- EASE OF USE
- AGENT EMPOWERMENT
- ACCURACY

- CONSISTENCY
- TIMELINESS
- SUPPORT SERVICES
- MANUAL INTERVENTION

Communication Infrastructure

NEED FOR

- ANY TIME - ANY PLACE COMMUNICATION
- ACCURACY
- CONSISTENCY
- SPEED
- SUPPORT SERVICES
- SECURITY

INSFRASTRUCTURE FOR

- VOICE COMMUNICATION
- DATA COMMUNICATION
- VIDEO COMMUNICATION

COMPONENTS REQUIRED INCLUDE

- COMPUTERS AND ACCESSORIES
- NETWORK
- SECURITY MEASURES

UTILITIES FROM CUSTOMS SHOULD INCLUDE:

- AVAILABILTY OF INFORMATION
- TRACKING OF DOCUMENTS AND CONSIGNMENT
- GRIEVANCES WITH REGARD TO CUSTOMS' PERFORMANCE

Unit 405 ❐ International Sea Transportation

Structure

405.1 ❐ International Sea Transportation

Ocean Ships and Shipping
Ships are categorized as depicted below:

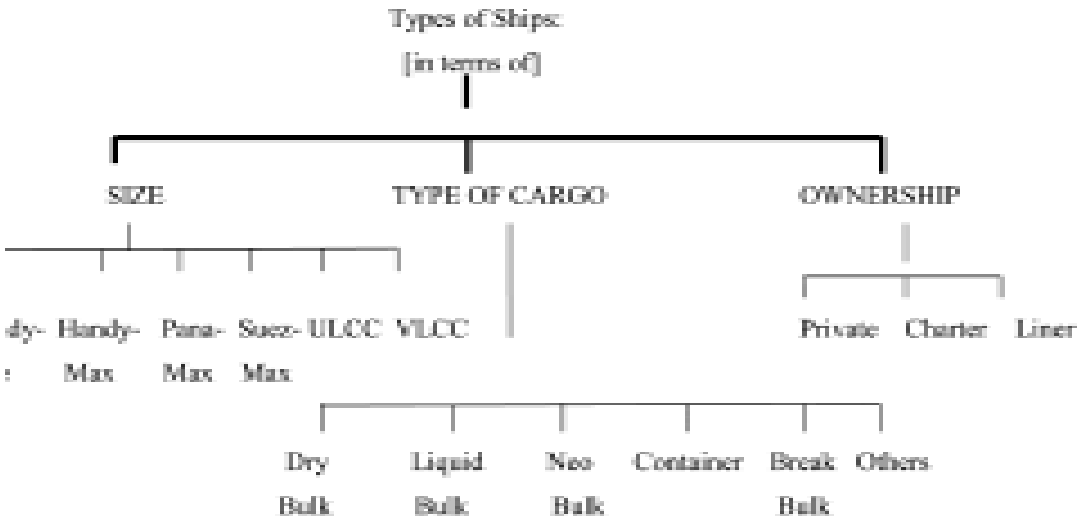


Figure 30: Types of ships

405.2 ❐ Ownership

There are three basic types of ocean carriers:
1 private fleets;
2) Tramps (chartered or leased vessels);
3) Liner carriers.

Private fleets

- Owned by firms in order to carry their own goods.
- Companies dealing with bulk cargo such as oil, cement, coal or neo- bulk cargo (such as lumber) often own and operate large fleets of specialized ships.
- They do so as they have full ship load cargo in long run so as to control both the availability of carriage and the cost thereof and also to ensure that the right kind of ship is available to meet their special needs.
- The size and type of vessel depends on the company's need
- The operating characteristics required in support of the company's business also varies from firm to firm.

TRAMP vs LINER SHIPPING

- When companies have intermittent requirement of transporting full ship load of cargo they charter (hire) vessels. This type of shipping operation is called Tramp Shipping.
- Where as when companies have less than ship load size of cargo they opt for liner services.
- These services carry goods for more than one agency and have planned sailing schedule and route.

405.3 ❐ Cargo Tyres

- BULK
  DRY
  LIQUID
  NEO BULK
- CONTAINER
- BREAK BULK

One way to classify vessels is by the type or types of cargo they carry.

BULK Cargo

- Bulk cargo exists in free form and is stowed loose in the vessel. Common examples of bulk cargoes are chemicals, crude oil, petroleum, grain, coal, iron ore, scrap iron, fertilizers, raw material for fertilizers such as phosphates, and sulfur.
- It is loaded directly into the ship. The equipment used included shovel, pump, bucket, or scoop, is in free form, and must be contained.
- Bulk cargo such as rice may also be packaged as bagged rice and shipped along with bulk rice. This is done by placing the bagged cargo on top of bulk rice to give the load stability.
- Bulk cargo moves by weight.
- The weight carried by the ship in some case is determined by measuring the change in the vessel's depth in the water. This change in water level indicates volume of water displaced as the vessel rides lower. The weight of this displaced water is equivalent to the weight of the cargo being loaded.
- However in case of coal the cargo may have absorbed water due to rain during the voyage. This would increase the coal's moisture content but

adds nothing to its usefulness to the ultimate customer. Besides the weight goes up. Hence, prior to loading and unloading sample of coal is analyzed to record the energy content, measured in GCV (Gross calorific value). At the unloading port the purchaser pays for the number of GCVs in the load.

- Hence, for bulk carrier two additional agencies, namely, quality surveyor and draught surveyor play a role.

Break-bulk

- Break-bulk is also referred as general, or packaged, cargo.
- It has high value per unit of weight, as it is semi finished or finished goods. It moves by number or count.
- They move usually on liner vessels.
- This cargo is loaded and unloaded on a piece-by-piece basis. Sometimes smaller pieces may be tied up with pallets for ease of handling. The palletize goods are covered by shrink wrap (to protect it from moisture and dust and to make it easier to detect pilferage), and held by steel straps.
- Steel often moves as break-bulk cargo. Eg: Oil drums, pallets, iron scraps, steel goods.

CONTAINER

- A container is a box standardized dimensions. The most common dimensions that move by ship are 20¢ ´ 8¢ ´ 8.5¢ (1 TEU) and 40¢´8¢´8.5¢ (2 TEU). Containers having height of 9.5¢ in lieu of 8.5 feet are called "High- Cube" containers. These dimensions have been standardized by International Standard organization (ISO). Although various other types of containers also exist. Containers move by air are called Unit Load Devices (ULD) and are of varied sizes.
- Containers are generally made up of steel but are also built using aluminium.
- In container shipping set of terms such as FCL or CL AND LCL is used,
- CL: CONTAINER LOAD
- FCL : FULL CONTAINER LOAD (meaning container fully loaded with cargo belonging to one agency), and
- LCL, LESS-THAN CONTAINERLOAD (meaning container fully loaded

with cargo belonging to more than one agency).

- A fully container carrying ship is called a cellular ship.
- Sometimes containers are also moved along with other type of cargo. As they are stowed on the weather deck while the major cargo is stowed in the ship's hold.
- Filling of containers with different goods is called "stuffing" while removal of goods from inside the container is called "de- stuffing" or "de-vanning".

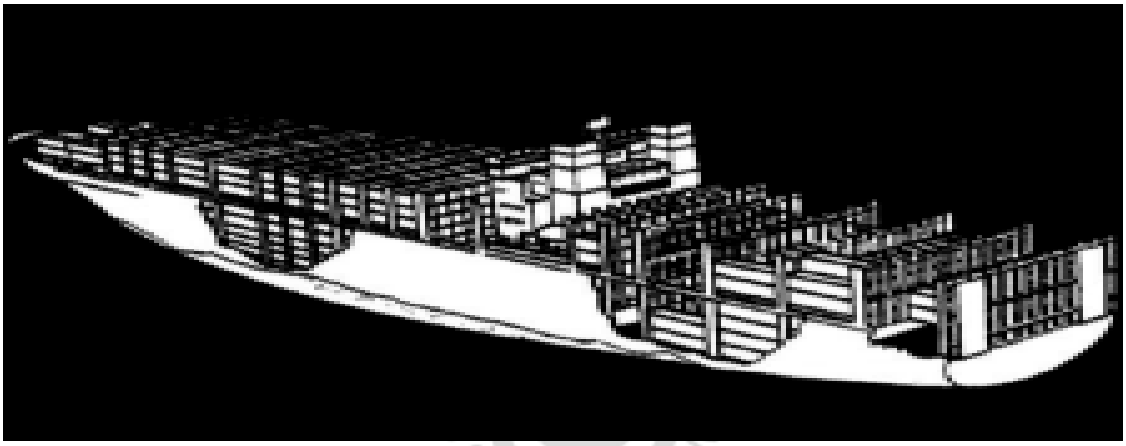


Figure 31 : A hatchless containership, consisting of high Racks placed inside a hull Containerized shipping is very important in routes between developed countries and developing countries such as countries in Asia, Europe and USA. The top five container handling ports are in Asia.

Neo-bulk cargo

- This type of cargo has some characteristics of bulk and some characteristics of break-bulk cargo. For example, logs, automobiles and steel.
- Each of these types move by specialized ocean vessels. That is, car or vehicle carriers are in no way similar and cannot be interchanged.
- Vehicle carriers are generally multi-racked, provided with ramps for vehicles to roll up to the ship or roll down to the berth and require less water depth as the density of the goods is less whereas log carriers carry on their open holds and require greater draft as the goods are dense. The logs are difficult to handle at all points, i.e., at yard, berth and on board the ship resulting in longer turn-around-time (TRT) of ships. These ships are smaller in size than the container vessels because of the difficulty in handling of goods.

- Stacking of logs in yards is not only time consuming but also accident prone as these are heavy cargo. Whereas parking of cars are much easier, but are not stacked and hence require large acreages of land.
- Compared to bulk cargo it is usually worth more on a per-kilo basis and it often moves on specialized ocean vessels.
- The examples of neo-bulk goods are new automobiles, steel and logs.
- These movements often are a little off the routes of major shipping lanes.

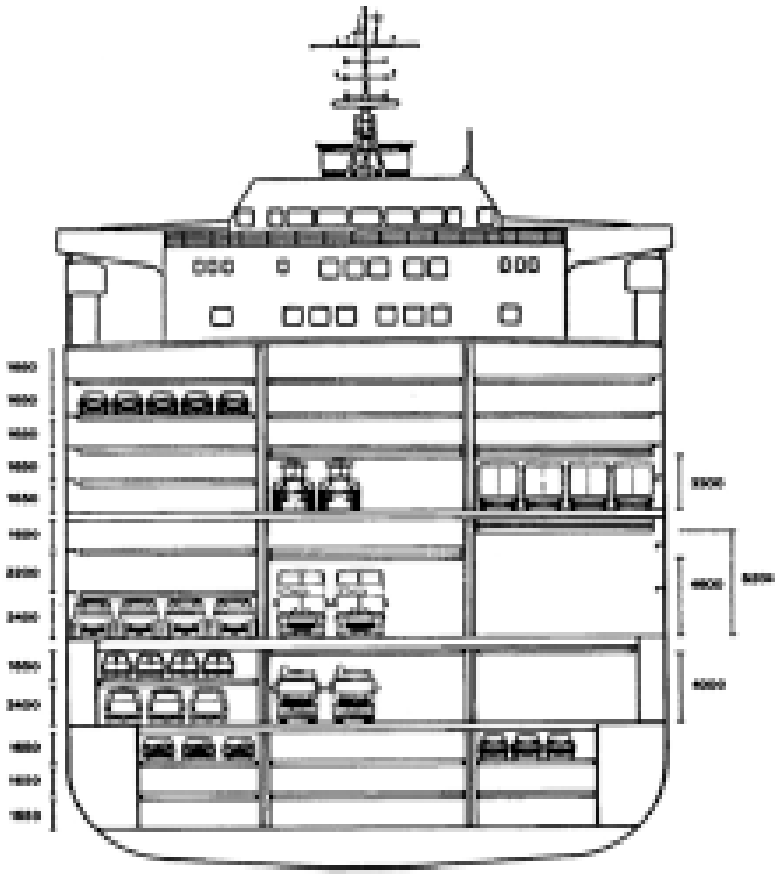


Figure 32: A Auto-Carrier

Figure 32 above shows the front of a cross-section of an auto carrying ship. It carries vehicles of different dimensions and hence the deck levels of which can be adjusted. These ships are also called roll on - roll off (ro-ro) vessels when the vehicles instead of being handled using equipment are driven off the vessel through ramps connecting to the berths.

- Autos and logs also move as break-bulk or containerized cargo. There are special auto-rack containers that can be customized into different shapes to accommodate batches of autos with varying dimensions.

MIXED CARGO CARRIERS OR COMBI-VESSELS

- Some vessels carrying more than one type of cargo. The most common are the specialized carriers carrying cargo in their holds while stowing cargo of different type on their deck. These are termed as "deck" cargo. This practice is normally termed as "topping off", though in Indian ports we refer "topping-off" as loading partially the same cargo on ship in a different port which has been already stowed with majority of that cargo in the port of origin. Say for example, a ship loaded with 20000 tons of coal at Haldia moves to Paradip port for topping off with another 10,000 tons. This is so done because either Haldia port cannot provide full ship load or does not have the required draft for full ship load.
- It is difficult to construct categories into which one can carefully classify all cargoes.
- Bulk cargo, for example, is carried on liner vessels that are scheduled to sail, but have not been able to fill up with more lucrative cargo. For example, baled hay is used as topping off cargo on bulk carriers. The freight, i.e., the rate per ton charged for that haul is near to that paid for moving hay by the vessel load. Or a bulk carrier may be topped -up with over dimensioned cargo (ODC) as deck cargo. Deck cargo are such that it does not require protection from weather conditions. For example engines, buses etc
- These are over dimensional cargo (ODC) and require high capacity cranes and equipment for cargo handling. In most cases the ships that carry project cargo are termed as General Cargo Vessel.

Other varieties of ships include:

a) OBO (Oil - Bulk Ores): it carries oil and bulk ores.
b) Auto carriers: it carries only vehicles of different types. It enables vehicles to roll on or roll off the ship without being handled with cranes.
c) Ro-Ro: or called roll-on-roll-off carriers that carries cars or vehicle, containers put on trolleys or machinery on trailers, that is, anything that can be rolled off or on.

d) Refrigerated vessels: it carries goods that require temperature controlled storage during movement e.g. fresh foods, plant and animal products. This are. Therefore, special type of break-bulk vessel. '

PROJECT CARGO

- A type of break-bulk or general cargo usually having higher weight and density and sometimes are over-dimensioned.
- These are not of common type as mostly fabricated for a single and certain purpose.
- When project cargo is oversized it requires special transportation equipment and handling on both land and sea.

405.4 Vessels and Vessel Characteristics

- A vessel has the capacity to hold cargo, bunker (oil), storage materials for vessel use, engine and other machinery and men.
- The total carrying capacity of a ship is termed as its "dead-weight tonnage (DWT)".
- The cargo carrying space is designed differently depending on the type of cargo.
- Conventionally, a ship's carrying space in the hull is compartmentalized into holds. One or more hold makes a hatch. These hatches are covered with hatch covers. However, in case of fully containerized vessels, there are no hatches, but are provided with guide rails to hold the containers in its hold as well as on the deck. Oil carrying vessels called oil tankers do not carry deck cargo.
- Cargo on board the ship may be handled with ship's own crane called derrick or with equipment on shore (berth). For liquid cargo the same is handled with pump and pipelines. Large ships are normally gearless (i.e. no cargo handling equipment).
- The most frequently used measure is deadweight tonnage (dwt);

- DWT: tons of cargo, stores, and fuel a vessel can carry.
- Gross tonnage (GRT or gross registered tonnage) is defined as the number of units of 100 cubic feet of permanently enclosed space in the ship, leaving out "exempted spaces" like double-bottom and peak tanks.
- Net tonnage (NRT or net registered tonnage) is gross tonnage less spaces that cannot earn revenue, such as the engine room.
- Gross tonnage applies to vessels, and is often used to compare the relative sizes of various nation's fleets.

405.5 ❐ Category of Ships in terms of size

Sr. No	Type of Vessel	Description	DWT	LOA	BEAM	DRAFT	AIR DRAFT	CARGO
1	Cape Size	Travels between oceans, ie through capes such as Cape of Good Hope or Cape Horn. Too big to pass Suez Canal	150000+	1115 ft +	184 ft +	72+ ft	No restriction	Mainly bulk
2	Suez Max	Can pass through Suez Canal	70000-150000	899 ft (272m)	151 ft (46 m)	72.2 ft (22m)	223.1 ft	All types
3	Panamax	Can pass through Panama Canal	60000-80000	761 ft (594.15m)	105 ft (32.31 ft)	39.5 ft (12.04 m)	198 ft (57.91 m)	All types
4	Handymax	Smaller vessels sailing mainly to and from feeder ports	<50000	<650 ft (189.9 m)	<106 ft (32.28m)	39 ft (12m)	-	All types
5	Handysize	-do-	<50000	500 ft (178m)	<89 ft (27m)	< 32 ft (9.8m)	-	Mainly break bulk
6	Aframax	Freight based on average rates of Aframax shipping lines and not on World Scale	< 1,20,000	780 ft	125 ft	> 10m	-	Liquid bulk
	Malaccamax	Ship capable of passing through Malacca strait	< 300000	<1135 ft	<164 ft	82 ft (25m)	-	All types
	Seamaymax	The vessels that can fit through the canal locks of the St. Lawrence Seaway	< 28000	740 ft (226m)	78 ft (24m)	26 ft	-	All types

PANAMAX II

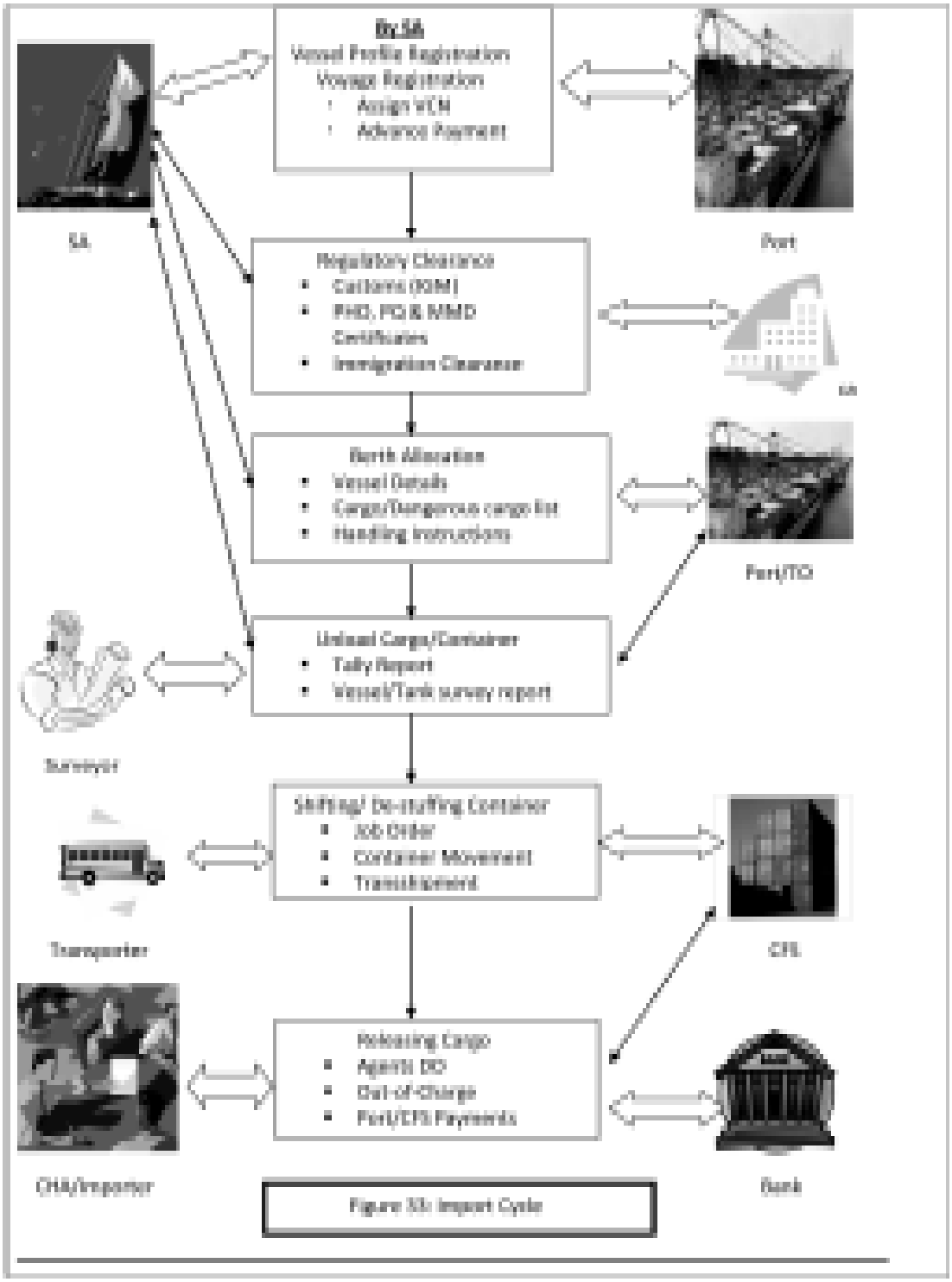
- It is estimated that the project will be completed by 2014 and will cost $5.3 billion;
- Pay back expected within 11 years.
- Cargo capacity up to 13,000 twenty-foot equivalent units (TEU) as against existing 5,000 TEU.
- A thirrd set of locks - 1,400 ft (426.72 m) long, 180 ft (54.86 m) wide, with a draft of 60 ft (18.29 m) - will supplement the two existing sets.

405.6 ❐ Import Cycle

The shipping agent (SA) who acts on behalf of the shipping company has to get its vessel-profile registered before calling to the port. On deciding upon a specific voyage it has to get voyage registration done for every voyage the vessel makes to the port. The port acknowledges the request by allocating a identification code called VCN. The shipping agent has to get regulatory clearances and make advance payment before actually bringing the ship to the port. The berth is allocated to the ship on request and other resources are also provided for loading and unloading operation.

One of the regulatory clearance include from the Customs. As such, the shipping agent has to submit the import general manifest (IGM) in advance and obtain the approval for entry of ship inwards. Once the ship has been berthed, the port prepares the tally report. There could be possibilities of short or excess landings compared to the declaration made earlier by the shipping agent. The final report prepared the port on cargo discharged a port is called the out-turn-report (OTR).

The cargo unloaded at the port is allowed to be taken out of the port by the cargo agent (or importer) only after it provides the delivery order (DO) received from the shipping agent, out-of-charge (OOC) from customs and payment of dues to the port. The out-of-charge (OOC) is obtained against filing of Bill-of-Entry (BE) by the cargo agent. The diagrammatic representation of the above process is shown below.


By SA
Vessel Profile Registration
Voyage Registration
Assign VCN
Advance Payment
SA
Port
Regulatory Clearance
Customs (IGM)
PHO, PQ & MMD Certificates
Immigration Clearance
Berth Allocation
Vessel Details
Cargo/Dangerous cargo list
Handling instructions
Port/TO
Unload Cargo/Container
Tally Report
Vessel/Tank survey report
Surveyor
Shifting/ De-stuffing Container
Job Order
Container Movement
Transhipment
Transporter
CFS
Releasing Cargo
Against DO
Out-of-Charge
Port/CFS Payments
CHA/Importer
Bank
Figure 5b: Import Cycle

405.7 ❐ Export Cycle

Once the space is booked with the shipping agent by the freight forwarder, the permission to bring cargo inside the port premises itaken by submit export declaration or list of cargo. The port provides permission termed as the "carting order". Separate permission has to be obtained for the vehicle carrying the cargo and also for persons accompaning the vehicle. Advance declaration of export cargo has to be also made to the Customs by the shipping agent. Once the material reaches the port premises the same is examined the Customs and Let-Export-Order (LEO) issued for shipment. The loading will start on receipt of LEO, loading plan from the Master of the vessel and payment of port charges. On completion of loading the Master of the vessekl will forward a mate-receipt (MR) to the port and Bill-of-Lading to the Cargo agent through the shipping agent.

405.8 SHIPPING stakeholders

Major players in shipping include:

- CARRIER - SHIP OWNER
- SHIPPER - IMPORTER OR EXPORTER
- SHIPPING AGENTS / BROKERS
- PORTS
- CARGO HANDLING AGENTS
- STEVEDORES
- CUSTOMS
- OTHER AGENCIES - Inspection Agencies MMD, PHO, IMMIGRATION,
- BANKS ETC

405.9 Shipping Operation

There are two types of shipping operation, namely, liner operation and tramp shipping.

LINER AND TRAMP

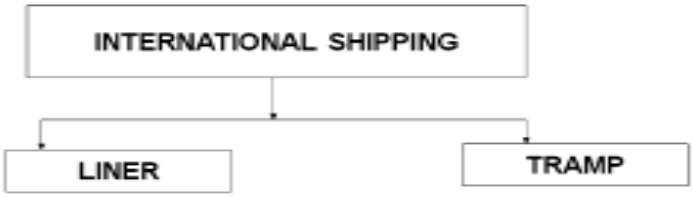


Figure 34: Type of shipping operation

LINER OPERATION

- General cargo (break bulk) & containers: these move by liner ships (other cargo, i.e., bulk move by charter or tramp).
- Regular sailing schedule
- Regular routes & port of calls
- Tariff rates per unit space
- bill of lading - document of contract
- liner (berth) terms: liner usually pays for its stay at berth and other port charges such as port dues and pilotage.
- Booking of spaces usually through shipping agents
- Liner belongs to conferences or outsiders - group of shipping companies form conferences (a form of cartel) to optimize shipping operations.

LINER ROUTES

The Liner Route for container shipping include:

CONTAINER : EAST - WEST TRADE

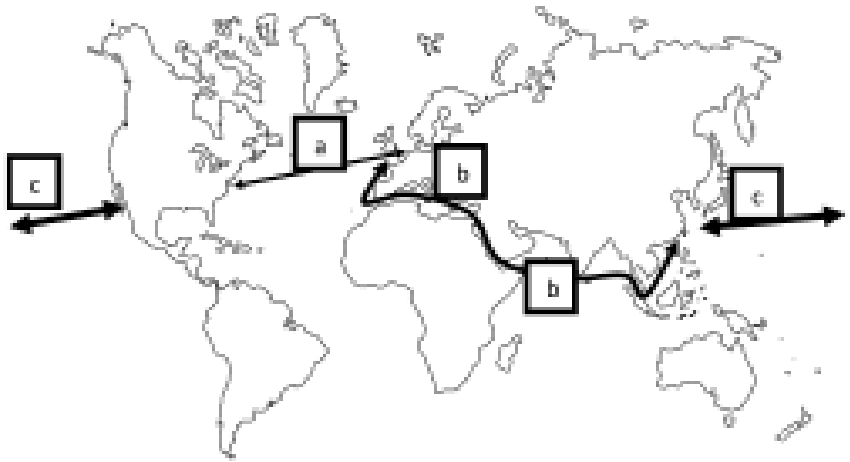


Figure 35: Container liner services - East to West

1. The East- West Trade

a) Across Atlantic Ocean (Trans Atlantic): Between East coast of North America and Europe

b) Across Suez Canal: Between ports of Europe to East and Far East countries.

c) Across Pacific (Trans Pacific): Between west coast of USA and ports in Pacific Ocean.

CONTAINER PARALLEL TRADE

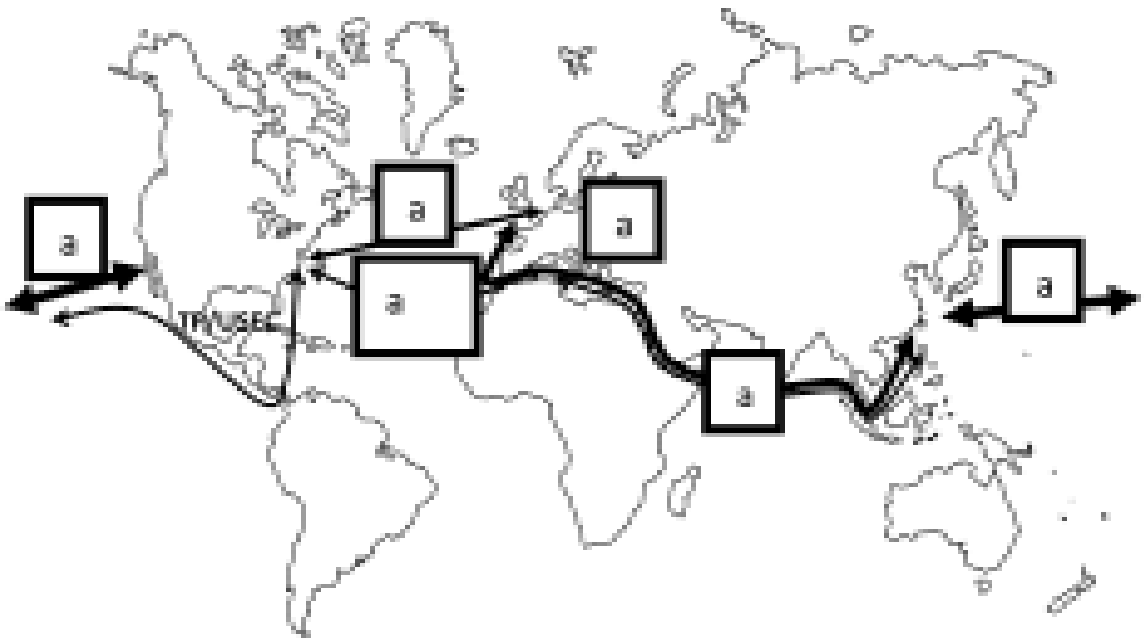


Figure 36 : Container liner services - East to West - West to Far East

2. The Parallel Trade

a) Between ports of west coast of USA to ports in Far East through Suez Canal & Panama Canal
(Simultaneously with east-west trade described above).

CONTAINER NORTH-SOUTH TRADE

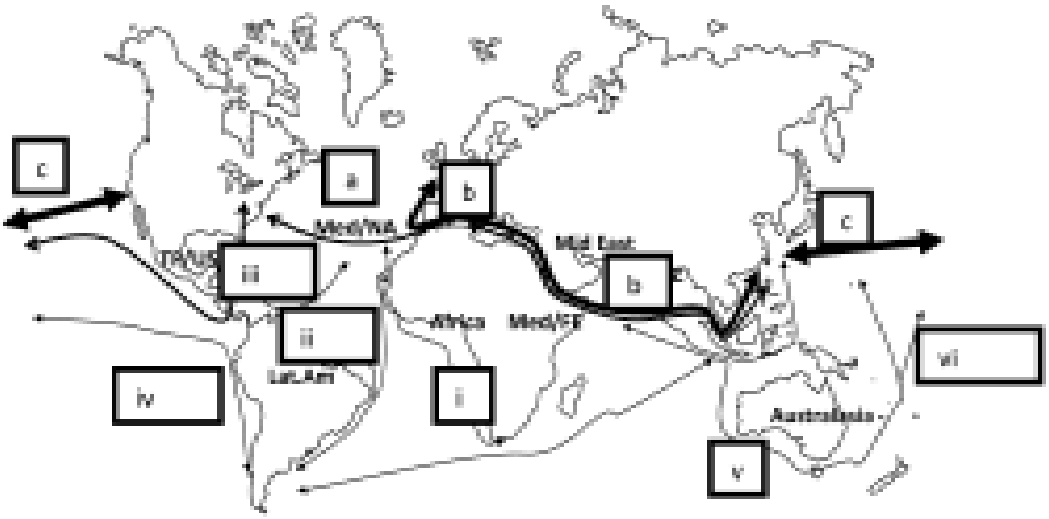


Figure 37 : Container liner services -North to South

3. North-South Trade

i) Ports of Europe and Africa
ii) Ports of East coast of USA to South American ports in East coast.
iii) Ports of West coast of USA to South American ports in East Coast.
iv) Ports of South America and Far east
v) Ports of Middle East to Ports of Australia and New Zealand
vi) Ports of Australia and New Zealand to Ports of Far East

405.10 Liner Conference

EU Regulation 4056/86 defines liner conference as:
" ... A group of two or more vessel-operating carriers which provide

international liner services for the carriage of cargo on a particular route or routes within specialized geographical limits and which has an agreement or arrangement, whatever its nature, within the framework of which they operate under uniform or common freight rates and any other agreed conditions with respect to provision of liner services".
Exemptions for agreements between carriers (liner conferences) granted by EC were subject to conditions attaching to exemption and obligations attaching to exemption.

405.11 ❐ Consortium

Consortium is defined, Art. 2 (1), Regulation 823/2000 (EC) as follows:
".. An agreement between two or more vessel-operating carriers which provide international liner shipping services exclusively for the carriage of cargo, chiefly by container, relating to one or more trades, and the object of which is to bring about co-operation in the joint operation of a maritime transport service, and which improves the services that would be offered individually by each of its members in the absence of the consortium in order to rationalize their operations by means of technical, operational and/or commercial arrangements , with the exception of price fixing"

- Consortia are joint ventures, global alliances and mergers. This has resulted in concentration in the liner shipping sector going up over the years.
- In 2010 the top 10 (ten) shipping lines take up around 80% of the world market. While in 1998 twenty (20) leading carriers in the liner sector controlled 35 per cent of the world container capacity.
- While concentration, by itself is not anti-competitive, higher concentration levels tend to create dominant players who may abuse their dominant position.
- The basic scope of consortia, subject to certain conditions, include joint operations of maritime transport services, temporary capacity adjustments, joint operation or use of port terminals, participation in one or more of the following pools: cargo, revenue, net revenue & a joint marketing structure and/or the issue of a joint bill of loading.
- The top ten shipping companies include:

1. Maersk Line
2. Fed Ex (Federal Express)
3. UPS (United Parcel Services)
4. MSC (Mediterranean Shipping Company)
5. Hapag Llyod
6. CMA CGM
7. Evergreen Line
8. APL
9. COSCO Container lines Americas
10. NYK (Nippon Yushen Kaisha)

405.12 ❐ Tramp Operations

The salient features are:

- BULK CARGO - DRY / LIQUID
- NO SAILING SCHEDULE
- FOLLOW DEMAND
- RATES NEGOTIABLE
- CHARTER PARTY - DOCUMENT OF CONTRACT
- FREE-IN-OUT
- FIXING OF VESSELS THRO. AGENTS
- NO CONFERENCE / CARTEL

405.13 Chaterings

- Chartering is an activity within the shipping industry
- A charterer may be:
  ** a party without a cargo
  ** a party with cargo

CHARTERER - a party with a cargo

In some cases a charterer may own cargo such as the oil companies India (Indian Oil, HPCL) and employ a shipbroker to find a ship to deliver the cargo for a certain price, called freight rate who takes a vessel on charter for a specified period from the owner and then trades the ship to carry cargoes

at a profit above the hire rate, or even makes a profit in a rising market by re-letting the ship out to other charterers.

Freight rates may be on a per-ton basis over a certain route (e.g. for iron ore between India and China) or alternatively may be expressed in terms of a total sum - normally in U.S. dollars - per day for the agreed duration of the charter.

CHARTERER - a party with a cargo broker

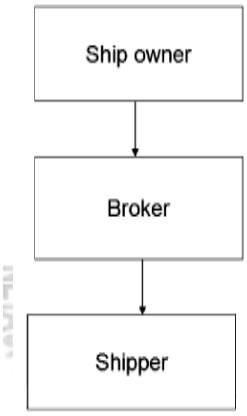


Figure 38 : Role of a Broker

405.14 ❐ Charter types

- A voyage charter refers to the hiring of a vessel for a voyage between a load port and a discharge port. The charterer pays the vessel owner on a per-ton or lump-sum basis. The owner provides for the crew and pays the port costs (excluding stevedoring), fuel costs and crew costs.
- A time charter refers to the hiring of a vessel for a specific period of time. The owner deploys its crew and manages the vessel. It does the maintenance and provides for all provisions excepting fuel. The charterer selects the ports and decides on the voyages.. The charterer pays for all fuel the vessel consumes, port charges, and a daily 'hire' to the owner of the vessel.
- A bareboat charter refers to the hiring of a vessel for a specific period of time without any administration or technical maintenance being done by

the ship owner. The charterer pays for all operating expenses, including fuel, crew, port expenses and hull insurance. In this case, usually, the charterer obtains title (ownership) in the hull at the end of the charter period (normally years). That is, effectively, the owners finance the purchase of the vessel.

- A demise charter refers to shift of the control and possession of the vessel; including the legal and financial responsibility.

405.15 ❐ Charterer— roles & functions

- A Charterer arranges for cargo and monitors so as to ensure full ship load tonnage available
- It monitors freight levels through contacts between themselves
- It communicate with Liner Agents to determine the liner rates and with Brokers who are dealing with suitable tonnage in the open market

405.16 ❐ BROKER- roles & functions

- Carry out negotiation with other broker or with ship owners
- Obtains specific authority to sign agreement of chartering
- Signs agreement as

  i. Agent only - This may give rise to legal problems as to who has really entered into agreement

  ii. Agent for "X" firm

Broker should keep both owner and charterer continuously informed about:

- Market situation and market development
- Available cargo proposals and shipment possibilities
- Broker should act strictly within given authorities in connection with negotiations
- Sometimes broker may have wide discretion within which to work with an absolute limit not to be exceeded
- Non-disclosure of information

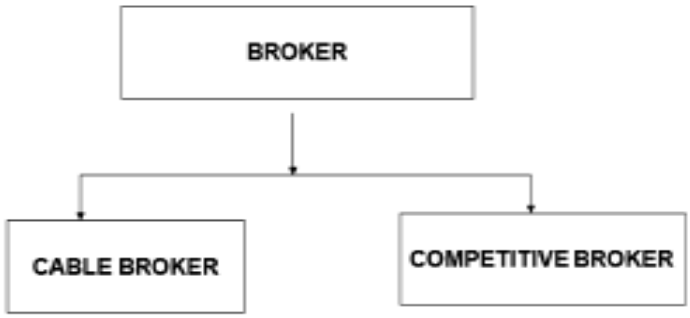


Figure 39 : Types of broker

COMPETITIVE BROKER

- A competitive broker acts as middle men between the owners' confidential broker and with broker of a suitable charterer

CABLE BROKER

- Are members of shipping centres e.g, New York and mainly list orders circulated in the shipping centres. It then distribute the lists to brokers in other shipping centres, for example - LONDON, TOKYO, OSLO, HAMBURG
- They enable tying together brokers, charterers and ship owners of different parts of the world. As such behave as a competitive broker.

405.17 ❐ Affreightment

- Affreightment is derived from the word freight and is a contract of carriage, that is a Charter party.
- Contract of Affreightment (COA) is the expression usually employed to describe the contract between a ship-owner and the charterer, by which the ship-owner agrees to carry goods of the charterer in his ship, or to give to the charterer the use of the whole or part of the cargo-carrying space of the ship for the carriage of his goods on a specified voyage or voyages or for a specified time. The charterer on his part agrees to pay a specified price, called freight, for the carriage of the goods or the use of the ship.

- A charterer may be without cargo and the ship owner may let it to the charterer to take possession and control of it for a specified term and time period. The charterer who hires a ship in this way behaves as a ship-owner during the specified time. The contract by which a ship is so let may be called a charter-party; and not in true sense, a contract of affreightment. Charter-party of this kind, is sometimes called a demise of the ship.

405.18 ❐ CHARTER PARTY

Depending on the type of ship and the type of charter, normally a standard contract form called a charter party is used to record the exact rate, duration and terms agreed between the shipowner and the charterer.

405.19 ❐ Difference between charter party and Bill of Lading:

(1) Charter party is only a contract of affreightment that only represents the hire of tonnage space. Whereas the Bill of lading is the legal document that serves as a proof of the actual shipment/ loading of goods. It therefore manifests the implementing evidence of the contract of affreightment.

(2) The charter party precedes the bill of lading. However in liner shipping there may not be a contract of affreightment with the shipper but there has to be a bill of lading. In this case the announcement of the ship owner to sail in desired voyage is followed by booking of space by the shipper and loading of cargo. That is, a bill of lading serves as a charter party and also serves as a proof of loading, meaning a written confirmation of the COA.

(3) Charter party is a gestation agreement which means that the contract is signed before it is executed where as bill of lading is signed after the goods have been loaded, implying that it is an actual agreement.

405.20 ❐ Charter party-issues

- Country and court of law
- Arbitration - arbitrators and umpire
  arbitrators - international chambers of commerce / comte maritime international (cmi)

- Court or arbitrations
- Arbitration preferred :
  Low cost
  faster
  secrecy - not public
- Evidence : legal principles concerning evidence and the burden of proof are highly complex, and it is impossible to give broad outline.
- The parties may agree on appointment of a common indepent surveyor & similar clauses
- Format as per bimco (baltic & international maritime council) or other accepted method

405.21 Charter party contract - contents

- The identity
- Substitution of owner or charterer
- Charter time - subletting
- Vessel - nomination, identity & substitution
- Vessel's trading limits
- Seaworthiness from
  i. Technical point of view
  ii. cargoworthiness
  iii. seaworthiness for the intended voyage
- Lay / can
  i. Lay : laytime not to commence before
  ii. Can : cancelling clause - on a/c of delay, not arrived or delivered (baltime clause) / ready (gencon clause) or time to cancell asy 48 hrs before arrival (gencon clause)
- War clause
- Currency clause
- Escalation clause
- Other clauses for change of costs
- Exception clauses
- Arrest clauses
- Collision
- Towage & salvage

405.22 ❐ Baltic Dry Index (BDI)

- It is an index issued daily by the London-based Baltic Exchange. It provides an assessment of the price of moving the major raw materials by sea. The index covers for various types of vessels in terms of size namely Handymax, Supramax, Panamax and Capesize dry bulk carriers. This index is computed based on cost of booking goods mainly raw materials such as coal, iron ore and grain in around 26 shipping routes measured on a time charter and voyage basis.
- The index can be accessed on a subscription basis directly from the Baltic Exchange as well as from major financial information and news services such as Thomson Reuters and Bloomberg L.P..
- Most directly, the index measures the demand for shipping capacity versus the supply of dry bulk carriers. The demand for shipping varies with the amount of cargo that is being traded or moved in various markets (supply and demand).
- **BDI - a leading economic indicator :** Dry bulk primarily consists of raw materials (inputs), such as cement, iron ore, coal, fertilizers etc.,to the production of intermediate or finished goods, such as concrete, electricity, steel, and food. Upward movement of the index indicates future economic growth and production. Hence is termed a leading economic indicator because it predicts future economic activity.
- As it indicates the assessment of the price of moving the major raw materials by sea, it gives insights into the highly opaque and diffused shipping market, also serving as the barometer of the volume of global trade - irrespective of political and other issues.

405.23 ❐ Bills of lading

- It is a document signed by the master or agent for the ship-owner, acknowledging the receipt of goods and describing the terms upon which it is to be carried.
- In liner shipping it assumes a triple identity, namely, property title, cargo receipt and carriage contract.

- It originated as a bill (account) presented to shippers for all the charges incurred with his cargo until properly secured and stowed on board. It evolved from a proof that cargo expenses were paid, to a proof that the cargo was really on board the ship and thus become a negotiable property title.
- In tramp shipping, charter party is the carriage-contract.

Unit 406 ❐ International Air Transportation

Structure

406.1 ❐ Development of Aviation

Aviation started in early 20th century. Initially it was used for moving mails. In 1911 India became the first country to use aircraft for moving mails, i.e., 6500 pieces of mails moved to a distance of five miles. UK and Denmark also began air-mail services in this year. Most of the planes were left overs of World War I. By 1930 passenger movement became popular with US leading in the world passenger traffic. In order to cut cost and time of moving mails various mix of sea and water mode of transportation were introduced. For example, sea planes: this referred to planes which landed on ships in North Atlantic (being introduced by Lufthansa) to take fuel and fresh crews for further onward journey. Another such services were flying boat services, by PANAM, a US based company. These were planes that could float as well as fly. At the end of World War II there were surplus aircrafts and trained pilots. During this time several cargo carriers introduced their services, such as Flying Tigers which was taken over by Fed Ex in 1939. By 1950s, the technical advances such as four-engine aircraft, long-haul jet network and Boeing 707 jet followed by Douglas DC-8 were introduced. The passenger traffic now grew at much faster rate. Hence air freight became significant in both domestic and international airlines. Passenger carriers provided space for passenger baggages and mail, while air-cargo carriers exclusively carried cargo.

Improvement in jets

- Wide bodied jets like Boeing747-DREAMLIFTER with huge capacity were introduced
- In 2001 Boeing came with the freighter version of 747-400 passenger plane, which could carry an additional amount 35000 pounds of freight or fuel
- A form of 747 is a combi that has movable bulkhead on the main deck.
- There has been New twin-isle aircraft with belly hold capacity set increase by almost 60% in 2012 compared to 2011

406.2 ❐ Benefits of Air Cargo

a. To speed delivery on products or services seeking wider markets from a fixed facility
b. Less Inventory Management: Cutting down the inventory and storage cost while improving the service
c. Lower Insurance Cost: Superior handling means lower risk of damages and less insurance cost
d. Faster Payment Collection: By shrinking the transit time of expensive products Air Cargo helps its manufacturers get faster collections
e. Increase Dependability: Air cargo has lesser variability in transit time compared to ocean liners
f. Reduced Packaging: Superior conditions of carriage helps reducing the packaging weight and saves money where duty at destination is assessed on gross weight

406.3 ❐ Air cargo movement

Cargo move in pieces or after being unitized through use of pallets, igloos or air cargo containers.

Air Cargo Containers

- Containers are most popular means of moving air cargo.
- Air cargo containers are referred as ULDs (unit load devices). They are designed to take into account the plane's curved surfaces.
- The sizes of containers are varying in nature (around 20 different sizes of containers and pallets). Airlines carry containers that fit into its space.

- There are containers measuring 8 x 8 x 20 feet, that is, similar to sea going containers. However its tare (empty) weight is much less than sea containers as they are designed to carry cargo with higher volume and lesser weight. The other common size is half that size, i.e., 8 x 8 x 10 feet
- Similar ro reefer containers there are **temperature-controlled** air containers to carry livestock and race horses.
- There are special containers having racks at the top for hanging garments.
- The stowage of cargo in aircraft requires special planning to avoid in stability. An illustration of stowage plan in aircraft is shown below.

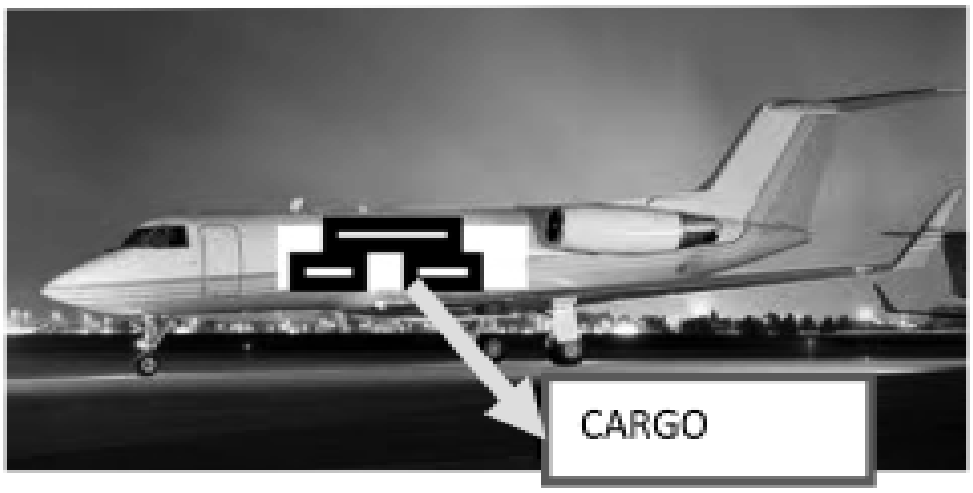


Figure 40: Cargo stowage in aircraft

The Air Cargo Movement

- There are various types of service providers, namely, forwarders, couriers, integrated express services.
- Caro is moved by both scheduled (owning charter airlines) and unscheduled airlines.
- The service providers arrange for collection and consolidation of air cargo at container stations located off airport premises.
- A fully loaded container arriving by a aircraft are cleared by these service providers, say a forwarder, and de-stuffs the container at its premises to be delivered to individual consignees.
- The service providers and carriers offer different levels of service in terms of delivery time and value added services.

Passenger-Cargo Carriers

- Passenger carriers also serve as cargo carriers in various forms. Some air craft who sell excess belly capacity for cargo movement other than that of passengers of the aircraft.
- Cargo, as in case of a type of 747, is placed in aft of the bulk head while passengers occupy front of the bulk head. This are called "combi" aircraft. In some cases aircraft can vary their cabin configuration so as change (within an hour) from all-passenger to all-cargo carriers.
- On an average around 10 to 20 Tons of cargo are carried by passenger carriers, depending on its size and type.

All-cargo Carriers/Charter Cargo Flights

On the main-deck or in the belly; by means of nose-loading, where the whole nose is opened, or side loading, through a large cargo door
Some of the aircrafts used include:

- Antonov AN-124
- Boeing 767-300F
- Boeing 747-400ERF

- Most popular-- ½ world's freighter capacity
- Largest commercial cargo plane
- 124 ton capacity, 5,063 mile range
- Airbus A330-200F

The capacity of the above type of cargo carrier range from 40 to 150 ton with Antonove- aircraft having capacity of around 600 Tons.

406.4 ❐ Type of air services

- Express (2-3 Days)
- Deferred (3-7 Days)
- Consolidated Services
- Direct Service or Direct IATA
- Charter Service

Express

- Serviced by Express Companies i.e.. UPS, DHL, FEDEX, TNT
- Express Companies usually more aggressive when it comes to guarantees

- Traditional Freight Forwarders, who use regularly scheduled commercial carriers do not always guarantee
- Express is the highest priced air service

DEFERRED

- Consolidated Services (Consolidation)
- Shipments from different shippers are grouped together and tendered to the airline as one shipment
- The forwarder gets a much lower price because of the higher volume
- Airport to Airport
- Door to Airport
- Door to Door

- Direct IATA Service
- When no consolidation service is available
- Sometimes used for DG where contract rates are not available
- This method is more expensive than consolidation but offers speedier service

CHARTER

- Many times a forwarder will help a customer charter an entire aircraft
- The aircraft is completely at the customers disposal
- All charges are normally paid in advance

406.5 ❐ Type of goods shipped by air-craft

- Airmail, diplomatic mail
- Live animals, hatching eggs, human organs, human remains, medical supplies
- Express Parcels
- Perishables (Food, Flowers, dry-ice shipments)
- Pharmaceuticals
- Valuables (Money, gold bars, diamonds)
- Technical Supplies (High tech, oil & gas, aerospace, automotive, ship spares)
- Luxury consumer goods (Electronics, fashion goods, accessories)

406.6 ❐ Stakeholders in air-cargo industry

- Shippers
  - Sets in motion international shipping process
- Forwarders
  - Responsible for consolidation pricing, trucking, customs brokering, trucking.
  - They are act as retailers of space to the airlines (acting as wholesalers of space)
  - They serve as indirect air carriers as they are the consolidators of smaller shipments and are shippers to the air craft. The airlines does not account for actual shippers.
- Integrators
  - Integrates function of forwarder and carrier, by controlling freight for customer to customer. It provides services of that of a forwarder and other value added services such as door to door services - collect and dispatch services, electronic tracking, customs clearance; consolidation, packaging, labeling, pricing, documentation (the commercial invoice, the shipper's export declaration, the pickup record, and the waybill). They also specialize in offering third-party logistics services
  - Leading Integrators: Fed-Ex, UPS, DHL, CEVA
- Airports
  - Door way and link to global market place
  - Largest Freight Airports: Memphis, Hong Kong, Anchorage
- Airlines/Carriers
  - Offers flights to traveling customers and (or) Cargo customers

  Leading cargo Airlines: Lufthansa, Singapore Airlines

Couriers

- Couriers, originally carriers of documents, now carry cargo (individual packages) of limited weight of 70 kg in India.
- The courier goods are cleared through a fast track mode on the basis of selective scrutiny of documents.
- The duty, where applicable, is paid by the courier company on behalf of importers/exporters before taking delivery of the parcels.
- Certain goods which require detail investigation and cannot be cleared on fast track mode are not allowed to be imported through courier.

These are animals and plants; perishables; publications containing maps depicting incorrect boundaries of India; precious and semi precious stones, gold or silver in any form; and chemicals falling within Chapters 28, 29 and 38 of the Customs Tariff.

- Certain goods, which attract any duty on exports or those exported under export promotion schemes, such as Drawback, DEEC, EPCG etc., or the value of the consignment is above Rupees Twenty five Thousand and transaction in foreign exchange is involved, are not allowed to be exported through courier mode However, wherever the G.R. waiver or specific permission has been obtained from the Reserve Bank of India, the limit of Rupees Twenty five Thousand will not be applicable.

Air Mail

- Postal services of all countries provide air-mail service.
- The postal agencies deal with various airlines to carry the mail.
- Their certain import and export restrictions defined in terms of value of the goods. Say, non-restricted items up to Rupees Five Thousand may be imported, while any item fetching more than Rupees fifty as foreign exchange may require separate dealing.
- Suitable for shipping small parcels and documents (it includes any message, information or data recorded on paper, cards or photographs having no commercial value, or restrictions)

406.7 ❐ Role of IATA (International Air Transport Association)

- IATA a centralized forum that develops uniform codes and practices (such as air waybill formats or rates)
- It promulgates industry rules and coordinating policies such as forwarder commissions, development of EDI messages and links with customs, and rules on the transport of live animals.
- IATA enables single ticket or way bill system wherein a passenger or cargo may change airlines with single document to reach the destination. That is, it also functions as a clearinghouse. The airlines reimburse each other for such interline tickets and cargo charges.
- Forwarders may act as agents of IATA and as such issues airway bill on behalf of the airline on the airline's form, in lieu of house airway bill (when acts as a indirect air-carrier). In former case the airline assumes all

the risk of transportation liability while in case of latter the forwarder assumes all risk and responsibility.

- As IATA agent its rates are that of airlines, and not its own rates.

406.8 ❐ Air cargo handling equipment

It includes tilt tray sorter, cross-belt sorter, powered belt conveyor*20, ULD-movers, mobile lifting devices, forklift and hand carts. The tilt tray sorters are used for low weighing packages.

Figure 41: A ULD (Unit Load Device)

406.9 ❐ Air cargo documents (as applicable in delhi airport)

Export cargo

The export cargo is required to be placed in "ready for carriage condition". It implies that fully packed cargo with bar - coded labeling, marks & numbers and other shipping information prominently marked on all sides of packages. The documents to be duly attached include:

- 'Carting Order' from concerned airline,
- Air Waybill,
- Shipping Bill,
- Baggage declaration, for admission of cargo.

Terminal Storage & Processing charges are to be paid to the CTO at the Bank/CTO counter in export wing for Non-EDI documents & on-line payment through Web for documents processed through EDI system.

Import Cargo

Import Cargo is received by CTO from Airlines on said-to-contain and said-to- weigh basis as per Import General Manifestation (IGM).

"Delivery of the consignment is effected against the

- Delivery Order from the airline and after
- Customs 'out of charge' on payment of applicable CTO charges".

Import cargo which remains unclaimed beyond 30 days of landing is liable to be disposed off in terms of Section 48 of the Customs Act, 1962.

CTO is not associated in examination of contents of packages at any stage. Examination is carried out by Customs in the presence of consignee or their authorized representative(s). The free storage period is 72 Hrs, the date of flight arrival counting as the first day. Shipments that are not cleared within 72 Hrs are subject to demurrage charges as per applicable charges.

UNIT 407 ❐ Dry Port : ICD and CFS

Structure

407.1 Dry Ports : Concepts

- "Dry port is a yard where containers; conventional bulk cargo and break bulk cargo are intermittently stored for consolidation, deconsolidation and customs appraisal, usually to be exported or imported and is connected to a seaport by rail or road"
- Inland Container Depot (ICD) are larger and virtually dry ports but CFS are generally on off-dock facility close to gateway port which is established so as to decongest gateway port by shifting cargo and customs-related activities outside the port to these Container Freight Stations (CFS).
- Dry port compensates the disadvantages of having industrial hubs in country industrial hubs. ICDs/CFSs have gained increased demand in view of clustering of economic activities at Special Economic Zones at various locations in the country.
- These were introduced to avoid delays in ports, decongest ports and also facilitate small exporters to send their goods to a dry port located closer

to their production site, instead to a far-off sea port. As a dry port provided all facilities for overseas trade.

- ICDs/CFSs are located in close vicinity of production center or place of consumption in country hinterland having rail and road linkages to gateway ports.

407.2 ❐ ICD & CFS - DEFINITION

A common user facility with public authority status equipped with fixed installations and offering services for handling and temporary storage of import/export laden and empty containers carried under customs control and with Customs and other agencies competent to clear goods for home use, warehousing, temporary admissions, re-export, temporary storage for onward transit and outright export. Transhipment of cargo can also take place from such stations.

407.3 ❐ The Statute

- Section 7(aa) of Customs Act 1962
- Section 7: Appointment of Customs ports, airports, etc.:

The Central Government may, by notification in the Official Gazette, appointment,-

- (aa) "the places which alone shall be inland container depots for the unloading of imported goods and the loading of export goods or any class of such goods.
- 9. Power to declare places to be warehousing stations:

The Board may, by notification in the Official Gazette, declare places to be warehousing stations at which alone public warehouses may be appointed and private warehouses may be licensed.

407.4 ❐ ICD & CFS - DISTINCTION

- ICD and CFS, both are transit facilities and there is no functional difference i.e., offer services for containerization of break bulk cargo and vice-versa.

- These could be served by rail and/ or road transport.
- An ICD is generally located away from the servicing ports, i.e., in the interiors (outside the port towns) of the country.
- Also help Land Locked Countries and remote states
- CFS, on the other hand, is an off dock facility located near the sea/river ports. It helps in decongesting the port as the containers meant for stuffing and destuffing are shifted to CFS outside port for customs related activities outside the port area.
- CFSs are largely expected to deal with break-bulk cargo originating/ terminating in the immediate hinterland of a port any may also deal with rail borne traffic to and from inland locations.
- Keeping in view the requirements of Customs Act, and need to introduce clarity in nomenclature, all containers terminal facilities in the hinterland would be designated as " ICDs".

407.5 ❐ ICD & CFS - FUNCTIONs

The primary functions of ICD/CFS may be summed up as under:

- Receipt and dispatch/delivery of cargo.
- Stuffing and stripping of containers.
- Transit operations by rail/road to and from serving ports.
- Customs clearance.
- Consolidation and desegregation of LCL cargo.
- Temporary storage of cargo and containers.
- Reworking of containers.
- Maintenance and repair of container units.

407.6 ICD & CFS - Operations

The operations of the ICDs/CFSs revolve around the following centres of activity :

- Rail Siding (in case of a rail based terminal)

It is the point where container trains are received, dispatched and handled. Here containers are loaded on and unloaded from rail wagons through use of equipment such as RMG (Rail Mounted Cranes) or other lifting equipments.

Figure 42 : Container yard

- **Container Yard**

Container yard occupies the largest area in the ICD or CFS. It is stacking area where the following activities take place:

- export containers are aggregated prior to dispatch to port,
- import containers are stored till Customs clearance and
- empty containers await for onward movement.

Some stacking areas are earmarked for keeping special containers such as refrigerated, hazardous, overweight / over-length, etc.

- **Warehouse**

A covered space or shed where cargo to be exported is received and import cargo stored and delivered.

The received export cargo is stuffed in the containers through use of equipment such as fork left trucks or manually and is termed as LCL (less container load) cargo. Similarly containers are stuffed or destuffed or reworked;

LCL exports are consolidated and importLCLs are unpacked; and cargo is physically examined by Customs.

Export and import consignments are generally handled either at separate areas in a warehouse or in different nominated warehouses/sheds.

Gate Complex: It forms an important area of activity in a CFS or an ICD. The gate complex regulates the entry and exists of road vehicles carrying cargo and containers through the terminal. It is place where documentation, security and container inspection procedures are undertaken.

407.7 ❐ ICD & CFS - Benefits

The main benefits from ICDs/CFSs

- Serves as concentration points for long distance cargoes and its unitisation.
- Serve as a transit facility.
- Provide customs clearance facility available near the centres of production and consumption
- Reduced level of demurrage and pilferage.
- No Customs required at gateway ports.
- Issuance of through bill of lading by shipping lines, hereby resuming full liability of shipments.
- Reduced overall level of empty container movement.
- Competitive transport cost.
- Reduced inventory cost.
- Increased trade flows.

407.8 ❐ ICD & CFS - Set up

1. PRIOR SURVEY OR FEASIBILITY STUDY A MUST

- The findings of the survey should indicate:
  (i) Reduction in total transport cost as this is the prime criterion, as there is possibility ofmarginal increase in total handling cost per box on origin to destination basis.
  (ii) Economic and financial viability, i.e., there is required traffic flow and enables financial sustainability.

(iii) Technical feasibility, in terms of area, connectivity with rail and/or road, use of equipment, facilities for covered storage, open yard and similar requirements for ICD/CFS.

- Collection of data for carrying out analysis could be from secondary sources and field observations, structured over time and space. The latter is more realistic and truthful.
- Interviews and prior discussions must be held with exporters, shipping lines, freight forwarders, port authorities, concerned Commissioners of Customs/Excise etc., and their point of view fully reflected in the report.

2. The traffic flows between Inland centres of production and ports need to be analysed with reference to :-

- Commodities
- Directional-split (Imports/Exports)
- Proportions of less-than-container load (LCL) & full-container-load (FCL)
- Forecast of future growth.
- Modes of transport available.
- Possible reduction in tonne per kilometre or
- Box or TEU per kilometre costs.

3. The economic viability of the facility has to be established for the following stakeholders:

i. firm engaged in ICD and CFS operation,
ii. the users,
iii. the railways for full train load movements;
iv. other transport operators;
v. seaports;
vi. shipping lines;
vii. freight forwarders etc.

- The suggested indicative norms for traffic flow in TEUs are as follows:
  ICD - 6,000 TEUs per year (Two way)
  CFS - 1,000 TEUs per year (Two way)

4. LAND REQUIREMENTS

- The minimum area requirement :
- **CFS : One Hectare**
- **ICD : Four Hectare**

However, a proposal could also be considered having less area on

consideration of technological upgradation and other peculiar features justifying such a deviation.

5. DESIGN AND LAY-OUT OF ICD/CFS

- The design and layout should be the most modern state-of-art equipped with mechanical/electrical facilities of international standards.
- Key to a good lay-out is the smooth flow of containers, cargo and vehicles through the ICD/CFS.
- The design and lay out should take into account initial volume of business, estimated volume in 10 years' horizon and the type of facilities exporters would require.

DESIGN AND LAY-OUT OF ICD/CFS

- The initial lay should be flexible to changing circumstances.
- The design primarily includes provision for (rail) siding, container yard, gate house and security features, boundary wall (fencing), roads, pavements, office building and public amenities.
- The facility should have adequate rake handling facility.
- There should adequate security through boundary wall, perimeter fencing, surveillance system, fire-fighting system and lighting. These must meet the standards required by Customs authorities.
- The gate operations being an import area of activity should be well designed to avoid congestion and delays.
- The capacity of the administration building needs to be determined in terms of requirements of potential occupants. It acts as the focal point of production and processing of all documentation relating to handling of cargo and containers.
- Adequate facility for sanitation, food service and other similar needs to be provided..
- The ID and CFS should provide for good communication system and EDI connectivity for computerised tracking of cargo and processing of documents.
- The pathways and pavements should meet requirements for heavy duty equipment to be deployed for material and container handling at yard and the terminal

- Separate provisions should be made to accommodate ICD, Customs office and agencies equipped with basic facilities.
- Separately warehousing facility for exports and imports and long term storage of bonded cargo should be provided.
- Truck terminals and adequate parking space for vehicles awaiting entry to the terminal should be provided.
- Electronic weighbridge, and container scanners should be provided.
- Surveillance and other security measures (including fire fighting)
- The criterion for setting up of a ICD or CFS should include:

  (i) Handling of expected volume of traffic initially and over the years, say in 10 years' horizon

  (ii) Type of cargo and facility required by exporters and importers.

6. EQUIPPING THE ICD/CFS

- The ICD/CFS should equipped with state of art material and container handling equipment for loading, unloading of containers from rail flats, chassis, their stacking, movement, cargo handling, stuffing/destuffing, etc. These are as follows:

i. lift truck (front end loader, side loader or reach-stacker),

ii. straddle carrier,

iii. rail mounted yard gantry crane, rubber tyre yard gantry crane, etc.

These equipment should be of reputed make and in good working condition (not more than 5 to 8 years old).

- The RTG and RMG should be equipped with a telescopic spreader for handling the 20 ft and 40 ft boxes.
- The equipment must have a minimum residual life of 8 years duly certified by the manufacturer or a recognized inspection agency.
- Following minimum equipment should be made available at ICDs/CFSs (Reach stacker may not be mandatory):

  An additional unit of equipment should be provided when the throughput exceeds 8000 TEUs per annum or its multiples for lift truck based operations.

- Terminals resorting to purely chassis-based operations do not require dedicated box handling equipment. However, chassis-based operations should be restricted to CFSs proposed to be set up near ports.
- Small capacity (2 to 5 tonnes) forklifts must be provided for cargo handling operations in all terminals.

7. RAIL HEAD ICDs

- The ICD service providers will bear the cost all infrastructure facilities including land, track, handling equipment for containers, maintenance of assets including track, rolling stock, etc. as per extant railway rules applicable to private sidings.
- The cost of the railway staff would be borne by them as per the prevailing Government policy.

8. TARIFF

- Tariff structure and costing should be worked out along with the feasibility study and information provided with the application.

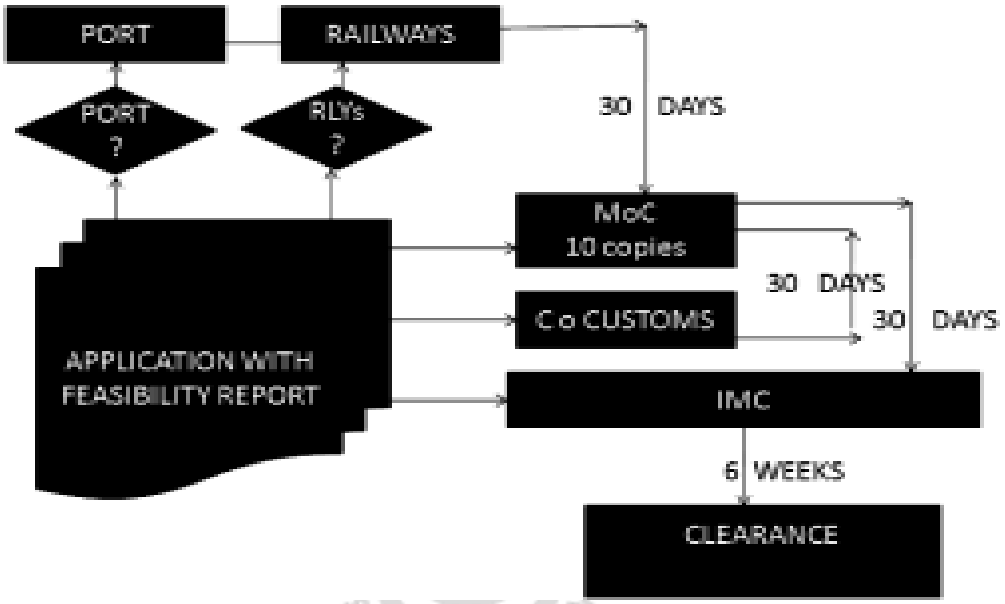
9. GENERAL

- The main function of an ICD/CFS being receipt, despatch and clearance of containerised cargo, the need for an up-to-date inventory control and tracking system to locate containers / cargo is paramount.
  Each functional unit of the facility (e.g. siding, container yard gate, stuffing/destuffing area, etc.) should have up-to-date and where possible on-line, real time information about all the containers, etc., to meet the requirements of customers, administration, railways etc. As far as possible, these operations shall be through electronic mode.

ICD & CFS - Procedure for approval

- Proposals for setting up ICD/CFS will be considered and cleared, on merits, by an Inter Ministerial Committee (IMC) for ICDs/CFSs, which consists of officials of the Ministries of Commerce, Finance (Department of Revenue), Railways and Shipping.
- Views of the State Governments as necessary would be obtained.
  Application 10 copies in enclosed form should be submitted to the Infrastructure Division in the Ministry of Commerce, Udyog Bhavan,

New Delhi. Application must be accompanied by 10 copies of feasibility reports mentioned in the guidelines.



- The applicant should also send a separate copy of the application to the jurisdictional Commissioner of Customs.
- The Commissioner of Customs will send his comments to the Ministry of Commerce and the Central Board of Excise & Customs (CBEC) within 30 days.
- In case, the project is planned in a port town, a copy of the proposal should also be sent to the concerned Port Authority who would furnish their comments within 30 days to the Ministry of Surface Transport and the Ministry of Commerce.
- The applicants are also requested to familiarise with the statutory Custom requirements in relation to Bonding, Transit Bond, Security Insurance and other necessary procedural requirements and cost recovery charges payable before filing the application.
- On receipt of the proposal, the Ministry of Commerce would take action to obtain the comments from the jurisdictional Commissioner of Customs and other concerned agencies within 30 days.

- Wherever necessary, a copy of the proposal should also be sent to Zonal Railway Manager, under intimation to the Ministry of Railways
- One copy of the proposal would also be made available to the IMC Members for advance action. The decision of the IMC would be taken within six weeks of the receipt of the proposal under normal circumstances.
- On acceptance of a proposal, a Letter of Intent will be issued to the applicant, which will enable it to initiate steps to create infrastructure.
- The applicant would be required to set up the infrastructure within one year from the date of approval.
- The Ministry of Commerce may grant an extension of six months keeping in view the justification given by the party.
- Thereafter, a report would be submitted to IMC to consider extension for a further (final) period of six months.
- The IMC may consider extension or may submitted to IMC to withdraw the approval granted.
- The applicant, after receipt of approval, shall send quarterly progress report to Ministry of Commerce.
- Three formats (given as annexure I to III) for sending the quarterly/ annual report shall have to be submitted to Department of Commerce through electronic mode as well as through hard copy.
- After the applicant has put up the required infrastructure, met the security standards of the jurisdictional Commissioner of Customs and provided a bond backed by bank guarantee to the Customs, final clearance and Customs notification will be issued.
- The approval will be subject to cancellation in the event of any abuse or violation of the conditions of approval.
- The working of the ICD/CFS will be open to review by the Inter Ministerial Committee

407.9 ❐ Rail Served ICDs

AGRA	JAIPUR (KANAKPURA)	MORADABAD	TONDIARPET (CHENNAI)
AMINGAON (GUWAHATI)	JAMSHEDPUR (TATANAGAR)	NAGPUR	TUGHLAKABAD (DELHI)
ANKLESHWAR	JODHPUR (BHAGAT KI KOTHI)	NEW MULUND (MUMBAI)	VADODARA
BALASORE	KANPUR	RAIPUR (M.P.)	VADODARA (CHANNI)
BALLABHGARH (WITHOUT CFS)	MADURAI	RAWTA ROAD (KOTA)	WHITEFIELD (BANGALORE)
BHUSAWAL	MAJERHAT (KOLKATA)	REWARI	MADHOSINGH
CHINCHWAD (PUNE)	MALANPUR (GWALIOR)	SABARMATI (AHEMDABAD)	
COCHIN (WITHOUT CFS)	MANDIDEEP (BHOPAL)	SANATHNAGAR (HYDERABAD)	
DADRI (GREATER NOIDA)	MILAVITTAN (TUTICORIN)	SONEPAT (WITHOUT CFS)	
DAULTABAD (AURANGABAD)	MIRAJ		
DESUR			
DHAPPAR			
DHANDARIKALAN (LUDHIANA)			
DRONAGIRI NODE			

407.10 ❐ Pure Domestic Terminal

- DCT/OKHLA (DELHI)
- FATUHA (PATNA)
- GUNTUR
- KHODIYAR (AHEMDABAD)
- PHILLAUR (LUDHIANA)
- SALEM MARKET
- SANATHNAGAR
- SHALIMAR
- TURBE
- DURGAPUR

407.11 ❐ Road Served ICDs

- BABARPUR (PANIPAT)
- IRUGUR (COIMBATORE)
- RATLAM
- MULUND (MUMBAI)
- PITAMPUR (INDORE)
- TIRUPUR

407.12 ❐ Port Container Terminal

- HARBOUR OF MADRAS (CHENNAI)
- HALDIA (KOLKATA)
- KANDLA (GANDHIDHAM)
- SHALIMAR (KOLKATA)
- VISHAKHAPATNAME

Unit 408 ❐ Maritime fraud

Stucture

408.1 Maritime fraud

Maritime fraud is said to have occurred when one of the stakeholders involved in an international trade transaction, such as the importer, exporter, ship owner, charterer, ship's master or crew, insurer, banker, broker or agent does illicitly secure money or goods from another stakeholder with whom, he is required to fulfill specific trade, transport and financial obligations.

In many cases, a group of stakeholders act in collusion to defraud another. Any of the stakeholders, though mainly banks and insurers, are the victims of such frauds. Maritime fraud has assumed international dimension and not restricted to specific regions. Asian countries including Indians are worst affected due to their limited knowledge in international trade and for looking into low cost options.

408.2 ❐ Types of Fraud

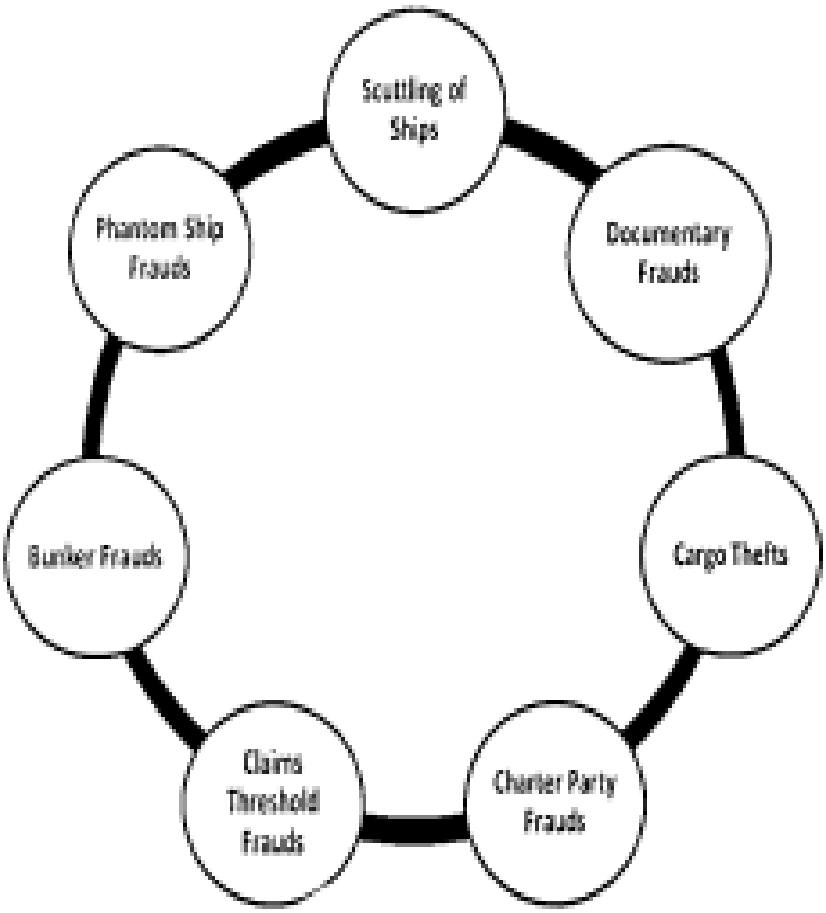


Figure 43 : Types of fraud

Scuttling of Ships

- Refers to sinking of vessels deliberately in pursuance of fraud against both cargo and hull interests.
- Fraud committed by ship-owners, especially when a vessel is nearing or has the end of its economic life
- The frauds are generally aimed at hull insurers alone or against both hull and cargo interests, where, insurance Companies are the main victims.

Figure 44 : Sunken ship

Documentary fraud

- A fraud that is involved in the sale and purchase of goods, committed by the seller.
- Documentary credit terms and some or all of the documents as specified by the buyer to be presented by the seller to the bank in order to receive payment are forged.
- The banks pay against these forged documents, as they negotiate or deal with documents and not in the goods covered by them.
- The bank which accepts documents, appearing to be correct on their face, as listed in the letter of credit is not legally responsible to its principal if the documents turn out to be forged or to contain false statements. This bank is entitled to obtain reimbursement against such documents from the issuing bank that in turn is entitled to obtain payment against them from the buyer.
- Thus the buyer is usually, the loser.

Cargo Theft

- Involves loss of goods.
- There are various modus operandi of cargo thefts. For example, the vessel carrying goods may deviate from its route and berths at its port of convenience.
- By intentionally setting fire (i.e. arson) and reporting as accidental fires, after disposing the vessel or cargo with the connivance of the owners.

- The cargo after unloaded may be sold without importer's consent.
- Changing the name of the ship in the documents, by the concerned agency, e.g. the chartered accountants, deliberately.
- Followed by scuttling of vessels in order to hide the evidence of theft.
- The shipping company may not own asset or have ships for carriage as they are "paper companies" set up a few days prior to the operation.
- Example: In V/O Rasnoimport v. Guthrie & Co. Ltd., where bales of rubber were stolen after mate's receipts had been signed by the take company.

Charter Party Fraud

- Involved with contract of carriage, i.e Charter party. There primarily three stakeholders, namely, Ship Owner, Charterer and the Cargo Owner
- The charterer without cargo charters a vessel from an unsuspecting owner and works with the shipper to transport goods at a rate which is comparatively lower than the usual freight rates, thus appearing lucrative to the shipper. After the cargo is put on board the vessel and sails from the port the charterer disappears with all the money he or she has collected from the shipper without paying a penny to the shipowner, or some, say few month, hire charges.
- The ship owner and shipper are the losers. The ship owner may have to pay for port charges, crew and maintenance cost, cost of fuel, etc. The cargo owner may not get hold of the cargo as the ship has landed up in controversy.
- This usually happens in depressed conditions of shipping market. The ship and cargo owner both look for business opportunities without verifying the credibility of the charterer or without demanding any substantial financial guarantee for the performance of the charter contract. That is, the ship owner gets an opportunity for utilization of his ship and the shipper gets a lower freight enabling him to sell at lower price in the depressed market.
- Example: Manchester Trust v. Furness, Withy & Co. Ltd., The Boston City & Shell International Petroleum Co. v. Gibbs, The Salem

408.3 ❐ Signs of Maritime Frauds

- Offering goods in high demand market situation
- Offering goods especially from a country or by an exporter who is not a normal source of supply but agrees to supply at unduly low prices
- Calling for liberal or out-of-line payment conditions
- Seeking advance payment through an intermediary offering the goods without disclosing name of suppliers.
- Involving use of names that resemble but are not those of well-known houses.
- Pressurizing for fast acceptances of offer and speedy issuance of documentary credit.
- Requiring payment by documentary credit issued in favour of party other than named.
- Requiring Charter Party Bills of Lading to be accepted when contrary to nature of transaction or type of goods.
- Offering for sale and insurance of non-existent cargo.
- Issuance of False certificates by corrupt port officials for short landing of cargo.
- Issuance of Bills of lading without actual loading of cargo.
- Exportation of rubbish by consignors.
- Illegal manipulation of valves at oil terminals.
- Oil used as bunker.

408.4 ❐ Legal implications and relief

Liability for Breach of Contractual Duty

- In accordance to the Common law, an entity or a person who has entered into a contract impliedly guarantees that he has the capacity to perform stipulated obligations.
- in general, it is not required, to prove a fault of the defendant, but the defendant is strictly liable for the contractual obligations.
- The contract should explicitly state the scope of obligations and the warranties implied there in.

- In case of breach of duties by a defendant, he is liable for the damage it causes to its contracting party regardless of the fault. The individual responsibilities and duties depend on the terms and conditions of the contract, which needs to be carefully formulated.

Tort of Deceit

- The tort of deceit, also known as "fraud". Deceit is said to have occurred when an entity makes a factual misrepresentation. The entity is completely aware that it is false (or having no belief in its truth and being reckless as to whether it is true) and intends it to be relied on by the recipient, and the recipient acts to his or her detriment in reliance on it.
- This came to prominence with case of Pasley v. Freeman. Here the defendant said that a third party was creditworthy to the claimant, knowing he was broke. The claimant loaned the third party money and lost it. He sued the defendant successfully.
- The leading case in English law is Derry v. Peek (1888) LR 14 App Cas 337.
- In tort law, by contrast , the victim decides whether to bring a tort claim and is free to choose not to do so. A plaintiff may also be awarded punitive damages, defined as damages in excess of compensatory relief.
- In cases of a claim for damages is under the tort of deceit, only actual losses are recoverable.
- In certain cases though, the courts have awarded damages for loss of profit, basing it on loss of opportunity.
- One can use the law to compensate financial loss and mental distress resulting from false claims.

Mareva Injunction

- The Mareva Injunction is also referred as a freezing order or Mareva order.
- This order provides interlocutory relief to the claimant as the court order freezes assets so that a defendant to an action cannot dissipate their assets from beyond the jurisdiction of a court so as to frustrate a judgment.

- It is named after the court's decision in the case of Mareva Compania Naviera SA v International Bulkcarriers, decided in 1975.
- This order is often granted on the , basis of affidavit evidence alone at the pre-trial stage in ex parte hearings. Hence, is referred to as a harsh decision. A Mareva injunction is often combined with an Anton Piller order in these circumstances.
- It aims at protecting the interests of the plaintiff during the pendency of the suit.
- It is granted to restrain the defendant from disposing of their assets within the jurisdiction until the trial ends or judgment in the action for infringement is passed.
- This injunction is passed when there is evidence or material to show that the debtor is acting in a manner or is likely to act in a manner to frustrate subsequent order/decree of the court or tribunal. The Court therefore orders for freezing of the assets of the debtor to prevent the assets from being disposed or dissipated and to prevent irreversible damage to the creditor. It prevents a foreign defendant from removing his assets from the jurisdiction of the court.
- It is like and akin to "attachment before judgment" and conditions mentioned in the said provision should be satisfied before freezing junction order is passed.
- An applicant should satisfy the following conditions and aspects for an ex-parte application to become entitled to a Mareva injunction: -

  a. There must be an arguable claim ;

  b. There must be a real risk that the final judgment in applicants favor would remain unsatisfied

  c. There must be full and frank disclosure of all the material facts;

  d. The exercise of discretionary power by the court.

Anton Piller

- An Anton Piller order (In English and English-derived legal systems,) is a court order that provides the right to search premises and seize evidence without prior warning.
- This stops obliteration of relevant evidence, particularly in cases of alleged trademark, copyright or patent infringements.

- The order is named after the English case of Anton Piller KG v Manufacturing Processes Limited [1976] Ch 55[1] in 1976, though the first reported such similar order was granted in the case of EMI Limited v Pandit [1975] 1 All ER 418 in 1975.
- They are now referred to as search orders in England, Wales and Western Australia.
- In accordance to the following three-step test set out by Ormrod LJ in the Anton Piller case, only the orders are issued :
- There is an extremely strong prima facie case against the respondent,
- The damage, potential or actual, must be very serious for the applicant, and
- There must be clear evidence that the respondents have in their possession relevant documents or things and that there is a real possibility that they may destroy such material before an inter party application can be made.
- Since such an order is may out to essentially unfair to the accused party, such orders are only issued exceptionally.

408.5 ❐ Jurisdictional Issues

- In international trade there are several stakeholders belonging different countries, meaning different traditions, law, culture and environment. The relationship continues till the stakeholders trust each other.
- Jurisdictional issue assumes importance when the trust between stakeholders in an international trade is misplaced or something goes wrong due to mis-understandings, mis-represenatation of facts or deceit the difference between the trading partners is likely to be compounded by jurisdictional problems especially when a ship has left the port ,it is not easy to know what is she doing.
- It is, therefore, necessary to be aware of the English rules in R.S.C. Order 11, and the Brussels Convention on Jurisdiction and the Enforcement of Judgments in Civil and Commercial Matters (as amended). These issues were dealt with in detail in Grupo Torras S.A. v. Sheikh Fahad Mohammed Al Sabah.
- There may also be advantages, of course, in litigating outside the U.K. This is likely to depend on individual circumstances.
- In many cases arbitration is preferred over court cases as it results in faster settlement, low cost and enables maintenance of secrecy.

408.6 ❐ Investigation of Maritime Frauds

- The investigations of maritime frauds are done generally by external investigation agencies.
- Some of the common techniques are listed below:
- Investigations of records maintained by the register of companies, from collecting data on names and addresses of directors, professional advisers and bankers.
- Applying surveillance techniques on individuals, who is likely to have committed the fraud. Their bank accounts and movement are recoded and analyzed.
- Investigation of records of Immigration department (if access available) to record entry and exit from countries.
- To search for other records such as travel agent records, hotel registers, car hire receipts, communication company records (for telexes, etc.) etc.
- The object of such investigation is to identify the whereabouts of traceable assets and then to move quickly to freeze them through Mareva injunction or similar court orders, before they can be disposed or dissipated by the fraudster or an accomplice.

408.7 ❐ Precautionary Measures for Fraud Prevention

The following precautionary measures are suggested:

- Partnering with reputed companies
- Verifying the antecedents' and creditworthiness of trading partners and also of the risks in trade and transport transactions from Embassies (commercial sections), trade promotion councils and Chambers of Commerce.
- Documentary credit confirmed by a bank is the safest mode of payment from seller's point of view. .
- Proper understanding of shipment terms.
- Pre- shipment inspection and approval of goods and vessels by authoritative organizations and by surveyors of insurance companies, wherever applicable.

Unit 409 ❐ Import Procedure

Structure

409.1 ❐ Introduction

This note provides only a basic idea about the various agencies, the formalities, the rules and procedures related to import of goods and services into India. This study material is by no means exhaustive or complete. The reader is advised to seek detailed and the latest information from the concerned agencies/authorities on matters of interest.

In international trade, import of goods and services occupies as important a place as the export of goods and services. The reasons for importing could be as follows:

- Reasons of availability: Certain goods or services may not be available domestically, whatever the reason.
- Quality and price: Some products could be better overseas in terms of quality, efficiency or price than those available domestically.
- Cost effectiveness; Cheaper to import than to manufacture locally.
- Environmental issues: Domestic production not permitted because

1. Disclaimer: Information furnished herein is non-binding in nature. For the latest applicable rules, guidelines etc. the learner should refer to the concerned institution or authority - as the case may be.

of environmental concerns.

- As raw material or inputs: Goods may be imported not only for home consumption, but for use as inputs or raw material for further processing, manufacturing and export activities.

409.2 ❐ Regulatory bodies, rules and procedures

The following are the institutions that govern import trade in India:

- Ministry of Commerce and Industry
- Directorate General of Foreign Trade (DGFT)
- Central Board of Excise and Customs (CBEC)
- The Reserve Bank of India

Directorate General of Foreign Trade (DGFT)

In India, activities related to import and export are handled by the Directorate General of Foreign Trade (DGFT). Set up by the Central Government, and working under the Ministry Commerce and Industries, the DGFT also manages the preparation, formulation and implementation of Export Import Policies as one of its main functions. DGFT is also responsible for issuing IEC (Import Export Code), in controlling DEPB rates and setting standard input-output norms. Modification in new codes in ITC-HS Codes is also carried out by DGFT.

The Reserve Bank of India (RBI)

Under the Foreign Exchange Management Act (FEMA), the RBI issues instructions and guideline for the exporters, importers and commercial banks handling international trade. Among others, every July the RBI issues a document tilted *Master Circular on Import of Goods and Services.* This Master Circular consolidates at one place the existing instructions on the subject of "Import of Goods and Services". This is revised and updated on the first day of July every year. The Master Circular covers practical, day to day issues on imports, such as:

- Time limit for the settlement of import payments
- Operational guidelines for imports
- Form A-1
- Norms for advance remittance
- Interest on import bills

- Remittances against and guarantee for replacement imports
- Receipt of import bills/documents from overseas
- Evidence of import, its preservation
- Issue of bank guarantee by banks towards imports
- Import of gold, platinum, platinum, palladium, rhodium and silver
- Import factoring
- Merchanting trade

Ministry of Commerce and Industry

The Ministry of Commerce and Industry is the nodal authority for formulating and implementing the foreign trade policy in matter related to import, multilateral and bilateral commercial relations, export promotion measures, development and regulation of certain import oriented industries and commodities.

The exporters and importers in India should note the current issue of the following publications issued by the Ministry of Commerce, Government of India:

- Import - Export Policy (updated on the 31st of March every year)
- Handbook of Procedure (issued every five years)
- Standard Input - Output Norms
- ITC (HS) Classification of import and Export Items.

Central Board of Excises Customs (CBEC)

The Central Board of Excises Customs (CBEC) under Ministry of Finance is the controlling authority to handle custom duty related matters.

409.3 ❐ Preliminaries for starting import business

Registration for Importers.

All importers must obtain an IEC number. This is a pre-requisite for import of goods into India (except from a few countries like Nepal or Myanmar through Indo-Myanmar border). The process begins with the importer applying to the DGFT in the prescribed form, furnishing necessary documents, and paying the fees the prescribed fees.

Selection of overseas supplier

There are several ways to approach this subject- Taking the advice and active assistance of experienced importers is one such step. Advice from local trade bodies may also be sought. At some point, the initial efforts should be cemented by personal visits to the suppliers' sites for a personal assessment of the various key aspects of the suppliers.

Import through exporters' overseas agents in India

Some overseas suppliers have appointed their agents in India. These agents procure orders from the Indian parties and arrange for the supply of goods from abroad. It is advisable to import through such agents as they can be readily contacted in case of any difficulty with regards to quality of goods, payment and documentation, etc.

409.4 Import license

This section provides a brief overview of the import licensing system in India. Note that the majority of the goods can e freely imported. Exim Policy (2007) of India prohibits import of certain categories of products, and provides for the conditional import of certain other items under licence.

Categories of import

The imported goods are classified under four categories as follows:

i. *Freely importable items:* Most capital goods fall into this category. These items do not require import licenses.

ii. *Licensed imports:* These are goods which can only be importer under an import license. This category includes products such as consumer goods; precious and semi-precious stones, seeds, plants and animals, some insecticides, Pharmaceuticals and chemicals, several items reserved for production by the small-scale sector; and several miscellaneous or special-category items.

iii. *Canalised Items:* These can be importer only through specified channels or government agencies.

iv. *Prohibited items:* Only four items - tallow fat, animal rennet, wild animals and unprocessed ivory - are completely banned from importation.

Category of importers

Importers are divided into the following groups for the purpose of being permitted import licenses:

1. Actual Users - As the name suggests, this type of license is issued for the import of items for personal use rather than for business or trade purpose. The two types of actual user license are:

(a) General License: For use by the importers of goods from all countries, except those countries from which imports are prohibited;

(b) Specific License: This license can only be used for import from a specific country.

2. Registered exporters' licence: Issued to those who have a valid registration certificate issued by an export promotion council, commodity board or other registered authority designated by the Government for purposes of export-promotion.

The import licenses are issued by the DGFT and are valid for 24 months for capital goods and 18 months for raw materials components, consumable and spares; the license terms are renewable. Generally, import licenses consist of two copies:

(a) *Exchange Control Copy:* For effecting remittance to overseas seller or for opening letter of credit;

(b) *Customs Copy.* For presenting to customs authority to enable them to clear the goods.

409.5 ❐ Negotiation, finalisation of contract

Once the groundwork is done, the importer should proceed to select the item to purchase, the overseas supplier, and the terms of supply before an agreement or contract is signed. This last part is very critical. A purchase contract needs to incorporate all the terms and conditions of the transaction. It can be a simple one, or contain extensive detail running into hundreds of pages. The nature of the agreement or contract will depend primarily on the nature of the transaction. A list of the critical components are furnished in the Study Material Unit 410 under "Export contract".

Points to note while finalising the agreement:

Product specifications:

Note the details about the product, including any special marks. Do you

need a quality certificate to confirm the quality? If yes, ask for it. While doing so, you might specify the name of the issuer and what the certificate should confirm.

Product Standards: Check whether the imported product meets the product standards like ISO certification. Stipulate accordingly.

Inspection: Importer should make clear weather the inspection of imported product will be done by the importer (or his nominated agent), the exporter {or his nominated agent), or by a third party (to be chosen by whom?). For abundant safety, the importer might wish to name the agent who is to do the inspection, and mutually agree as to who will bear the inspection charges.

Terms of Delivery: Delivery terms define the obligations and the responsibilities of the buyer and seller during the delivery of goods. It is important to select the right terms for every transaction. Refer to Incoterms (ICC Publication) for more information on this subject. Incoterms also covers matters regarding insurance.

Terms of Payments: The terms of payment are essential parts of an import contract. The terms range from one that favours the seller the most to that which completely favours the buyer. The appropriate terms should be negotiated, agreed upon, and incorporated in the purchase agreement. The negotiation should include issue of charges at various points from the seller's place to that of the buyer. Who pays which part of the bank charges should also be agreed upon and written into the contract (also refer to Incoterms).

Import License and Import Permits: Importer should check whether the goods to be imported need any license, are prohibited or are restricted items.

Shipment, delivery: This includes earliest date of shipment, the last date of shipment, whether part shipment or shipment by instalments, the type of carriage and transportation (air, ship, rail, container), transhipment allowed or not, penalty for late shipment and so on.

Documents required: The importer should make a list of all the documents that he would require for his use. The requirement could be for the use by the importer, mandatory or statutory in nature, for incentive purposes, for re-export, for customs clearance and import into the country, to confirm quality

409.6 ❐ Managing risks in international trade

Every trade is associated with risks of various kinds. International trade entails greater risks than domestic trade. An importer should be aware of these risks, and be in a position to reduce (if not eliminate) them to the extent possible.

A reference to Unit 306 Study Material may be made to gain an overview of the risks in international trade and the options available for their mitigation.

409.7 Custom duty on import of goods

Import duty covers a wide spectrum and is applicable to every product or item imported to India, with few exceptions like food grains, fertilizer, life saving drugs and equipment etc. Import duties form a significant source of revenue for the country and are levied on the goods and at the rates specified in the Schedules to the Customs Tariff Act, 1975.

Some of the duties that are imposed by customs authorities are as follows:

Basic duty: Imposed under the Customs Act (1962) varying from 5% to 40%. The duty may be fixed on ad -valorem basis or specific rate basis.

Additional customs duty: Also known as countervailing duty or CVD, is equal to the excise duty imposed on a like product manufactured or produced in India. It is implemented under Section 3(1} of the Indian Custom Tariff Act.

Special additional duty: Imposed at the rate of 4% in order to provide a level playing field to indigenous goods which have to bear sales tax.

Anti-dumping duty: This duty is imposed to counter-act the threat of "dumping" foreign goods on o the India soil- The laws related to anti-dumping duties are mention in the sections 9A, 9B and 9C of the Indian Customs Tariff Act (1975), and the Indian Customs Tariff Rules (1995). These laws are based on the Agreement on Anti-Dumping which is in pursuance of Article VI of GATT 1994.

409.8 ❐ Import incentives

The Government of India offers incentives to Indian importers against import of products that are mostly meant for manufacturing of goods meant for export. The following are some of the important import incentives offered by the Government of India, which significantly reduce the effective tax rates for the import companies, and increase their competitiveness in the world market. Some of these schemes are:

- Preferential Rates
- DEPB
- Duty Drawback
- DFRC
- DFIA
- Deemed Exports
- Agri Export Zones
- Served from India
- Manufacture under Bond
- Export Promotion Capital Goods Scheme (EPCG)

However, note that these schemes are under continuous review. With changes in policy, while some may be scrapped, new ones could take their place. The intending importer is advised to keep track of the various schemes in operation so that advantage can be taken at appropriate times. The schemes are introduced briefly below:

Preferential Rates: Applicable for the import of goods from certain preferential countries.

DEPB: Duty Entitlement Pass Book (DEPB) is an export incentive scheme. The objective of DEPB scheme is to neutralize the incidence of basic custom duty on the import content of the exported products. The DEPB allows import of any items except the items which are otherwise restricted for imports.

Duty Drawback: Duty drawback rates or concession are applicable on products which are used in the processing of goods manufactured in India and then exported to foreign countries. There are extensive guidelines for the operation of this scheme.

Duty Free Replenishment Certificate (DFRC): Under this scheme, import incentives are given to the exporter for the import of inputs used in the manufacture of goods without payment of basic customs duty.

Duty Free Import Authorisation (DFIA): DFIA allows duty free import of inputs which are used in the manufacture of the export product and consumables which are utilised in the course manufacturing the export product.

Deemed Exports: Deemed Exports as defined in the Foreign Trade Policy means those transactions in which the goods supplied do not leave the country and the supplier in India receives the payment for the goods. It means the goods supplied need not go out of India to treat them as 'Deemed Export'. Such suppliers receive certain benefits earmarked for actual exporters.

Agri Export Zones: Various importers that come under the Agri Export Zones are entitled to all the import facilities and incentives,

Served from India: In order to create a powerful "Served from India" brand all over the world, the government has provided different type of import incentive to the invisible export providers. Under the Served from India Scheme, import incentive is given for import of any capital goods, spares, office equipment and professional equipment.

Manufacture under Bond: Under the Manufacture under Bond Scheme, all factories registered to produce their goods for export are exempted from import duty and other taxes on inputs used to manufacture such goods. Against this the manufacturer is allowed to import goods without paying any customs duty. The production is made under the supervision of customs or excise authority.

Export Promotion Capital Goods Scheme (EPCG): EPCG is a special type of incentive given to the EPCG license holder. Under this scheme, a license holder can import capital goods such as plant, machinery, equipment, components and spare parts of the machinery at concessional rate of customs duty and without paying CVD or special duty.

409.9 ❐ Rules and procedure for import of various items

Government of India have formulated detailed rules and guidelines for the import of various items. The rules and procedures are available in the

Handbook of Procedure, the RBI Master Circulars, and other publications. Look out for the most recent Exim Policy, the Union Budget, 'baggage rules', customs notifications, and the FEMA for the complete picture. The rules cover import of items such as

- Import of samples.
- Import of machinery
- Import of personal baggage.
- Items by registered courier
- Import of gifts.
- Import of items by Indian professionals
- Import of cars, commercial and non commercial vehicles.
- Import of laptops and personal computers
- Import of scrap and waste products,
- Import gold and silver by NRI.
- Import of items by UN officials
- Import drugs and medicine
- Import under specialized schemes

Methods of payments

- Advance payment (part or full)
- Open account/Consignment basis
- Collection bills (DP, DA or under deferred payment}
- Banker's Acceptance
- Bank guarantee (BG). Payment guarantee
- Standby Credit
- Letter of Credit, available by;
  - Negotiation
  - Sight payment
  - Acceptance, or
  - Deferred Payment

During negotiation with the counterparty, one of the important elements to be discussed and mutually agreed on is the method of payment or settlement of international trade. The above list shows some of the common methods of payment. Each of them carries its own risks and advantages. Each can be further tailored to meet a particular requirement or risk perception. The

risks and advantages should be understood very clearly before an agreement is finalised.

About bill payment

All bills - irrespective of their nature, purpose and content, covering domestic, export or import trade -fall under one of the following two groups;

(a) *Non-LC bills:* These are shipping bills (clean or documentary) routed through banks *without* the accompaniment of letters of credit (LC);

(b) LC *bills:* These are shipping bills (clean or documentary) presented to banks under cover of letters of credit.

One must clearly understand that every set of documents presented to a bank must be clearly identified for processing under one of these two groups. *There is no other.* This distinction is the key to our understanding of the rules for settlement and payment. Commercial banks are required to comply with defined sets of rules and regulations .while handling shipping documents. The rules applicable to these two groups of bills are as follows:

1. *Non-LC bills:* These are governed by Uniform Rules for Collection (URC). published by the International Chamber of Commerce, Paris. At present, ICC Publication No. 522 (1995 Revision), also known as URC 522 or ICC 522, is in operation.

2. LC *bills:* These are governed by the Uniform Customs and Practice for Documentary Credits (UCP), another ICC Publication. Presently the 2007 Revision of the UCP, International Chamber of Commerce Publication No. 600, commonly referred as UCP 600, is in operation. It came into effect from 1 July, 2007,

To reiterate, URC applies to *ail bills that are not presented under letters of credit.* If the bills/documents are instead presented to a bank under a letter of credit, the UCP applies. These two sets of rules can be said to cover the entire gamut of operations relating to *all* documents that are routed through the banking system.

The methods of payment and the risks associated with each, have been discussed in Study Material Unit 509.

409.11 ❐ Financing imports

Direct loan to importer: Loans to importers provide them with the flexibility to take a period of extended credit without any obligation from the seller/ exporter. Finance to importers, being undisclosed to the seller, allows the importer optimum payment terms to be offered to the seller. Taking advantage of import loans, the importer is in a position to settle the underlying transaction on a 'sight' basis, with the goods being consigned to the order of the bank. By offering to settle import bills immediately instead of on usance terms, importers are able to negotiate better terms or prices with their suppliers. Import loans simultaneously allow the importer time to sell the goods and realise the proceeds before having to repay the loan.

Finance against Warehouse Receipts/Trust Receipts: Where goods are consigned to the order of the bank, they can be warehoused in the bank's name for an agreed period. The quantity of goods required by the importer may be drawn by him from time to time (against cash payment). Where immediate possession of the goods is required, e.g. to fulfil orders already received, the goods may be released to the importer 'in trust' for an agreed period at the end of which, payment would be required. In either case, the agreed period would take account of the importer's usual terms of trade and would commence from the date of the bank's payment in settlement of the underlying transaction.

Over and above the import loan, if the importer still opts for credit from the supplier, the import loan facility can even then be used to meet the importer's obligation on the maturity date of a term bill and provide finance for an extended period to match sales receipts.

Buyer's *Credit*

These are short term loans (not exceeding three years) offered by an overseas bank for import by the buyer into his country. The overseas loan by way of buyer's credit is raised at the initiative of the importer through his banker. Under this arrangement the overseas lender, on the strength of security offered by the importer's banker (by way of a bank guarantee or a letter of comfort) creates the loan in its books in the name of the buyer. The tenure of the loan - as mutually agreed with the seller - is set to match the credit need of the importer, and the maturity of the guarantee or letter of comfort furnished by

the importer's bank. Under a buyer's credit the importer enjoys the extended term for repayment and need not effect payment immediately on receipt of the import bill.

Suppliers credit

These are also short-term loans (six months to three years) extended by the supplier to the buyer. On its turn, the exporter or the supplier either arranges a loan for itself or gets the importer's bills discounted in the overseas market (Banker's Acceptance). Though the arrangement does work well under collection bills too, most often the supplier's credit is extended on the basis of the usance letter of credit issued by the importer's bank. As with Banker's Acceptance, under this arrangement too the supplier gets cash on the day of presentation of documents to the bank abroad that extends the suppliers' credit. The supplier need not wait for the payment to be received on the expiry of the usance period (as would have happened according to the original payments terms). As in the case of buyer's credit, the overseas bank lends against the security of the LC issued by the importer's bank. Cost of funds varies accordingly.

References

- *Fundamentals of International Banking,* Chapter 24, Rupnarayan Bose. Macmillan India, 2007.
- *An Introduction to Documentary Credits,* Rupnarayan Bose, Macmiilan India, 2006.

Unit 410 ❐ Export Procedure

Structure

410.1. ❐ Objective

Export is made up of two main components, manufactured goods and services. India's share of export of services has been growing at a fast pace of late, and occupies a major share of the total international trade. This section aims to provide basic information to a new entrepreneur about the steps for setting up an export business for manufactured goods. The process involves certain formalities as prescribed by the various authorities. After going through this section, one should be fairly conversant with the requirements - the various stages, applicable rules, regulatory requirements and procedure - for setting up an export business. However, one should remember that nothing ever can replace hands-on, on the job, practical experience.

410.2. ❐ Introduction

Firms get into international business with four major objectives. These are:
1. expansion of sales;
2. acquisition of resources;
3. diversification of markets;
4. diversification of sources of supply.

The decision to export depends on factors like the size of the existing business, available resources, domestic competition, market situation, financial objectives and overall business strategy, the ability to manage growth, associated risks and other considerations. It is a fact that international trade comes with more risks than domestic trade. Yet, international trade offers advantages too that may outweigh the risks associated with it. The advantages are described hereunder as follows:

- Exporting stabilizes a company's cyclical changes in sales and profits by allowing the company to sell to foreign markets in boom times while its home market is in recession.
- A growing company's home market size eventually limits sales and earnings. Where corporate strategy or shareholder expectations demand continued revenue and earnings growth, foreign export markets can respond by eventually delivering new markets and additional customers.
- Companies with differentiated or low priced goods perform very well in foreign markets. Differentiated or 'specialized' products can be sold for higher prices abroad than domestically. Low priced goods and commodity products can easily undercut foreign competitors' market share. In either case, higher margins can result from exporting.

410.3. ❐ Advantages of international trade

Trading internationally offers competitive advantages to a business enterprise. The spin-offs and benefits include the following.

- access to low-cost production based on low cost materials and labour;
- high-tech production allowing for higher quality or efficiency;
- access to capital - sometimes at a much lower cost compared to domestic sources;

- facilitate sourcing of low-cost raw materials and components;
- procurement of critical technology - to save costs, improve quality or add features to existing products);
- development of local partnerships that are key to a business's domestic or international strategy:
- favourable government-backed financing associated with exporting to certain countries, including incentives, lines of credit, government backed export assistance or investment programmes.

410.4. ❐ Basic approach

In order to be successful in export business one should keep certain facts in mind. A few of these are set out very briefly below. The list is illustrative and not exhaustive.

a) Select your export market very carefully. The initial research to select the target market could make all the difference between success and failure.

b) Issues to be researched include, among others, the economic conditions and policies of the target country, its market potential, local and overseas competition, local laws and regulations, taxation and incentives.

c) Serious consideration should be given to whether, at the initial stages, it would be better to export through canalising agencies and other established merchant exporters, export through recognised export houses or trading houses, export through overseas sales agencies or go for direct exports.

d) Limit yourself to what you know - especially the product and the market.

e) It would not be wise to tackle all markets at once, i.e. bite off more than one can chew, even if it appears that a golden opportunity would be lost otherwise.

f) Always sell as close to the market as possible. The fewer intermediaries one has the better, because every intermediary needs some percentage for his share in his business - which means less profit for the exporter, higher prices for the customer, more distance between the producer and the end user. It also prevents establishing yourself in the export market or getting to know it better.

g) The products must be produced with due regard to the needs of the export markets. Local culture, tradition and value system are issues that must be kept in mind while venturing into a new market. For example, when you meet your counterpart, tradition may require that some time be spent in courteous exchange of pleasantries (like ceremonious exchange of business cards and small talk) before coming to the main business for the day.

h) All goods for export must be efficiently produced. Efficiency includes logistics both at the domestic and overseas ends of the markets,

i) Quality and delivery schedule should be maintained at all costs,

j) Good communication is vital in any business. It is no exception in international trade. Communication must be continuous and immediate, irrespective of whether things are going according to plan or otherwise. Bad news should be given priority,

k) in a competitive and globalised world, nothing should be taken for granted. It is also not worth being complacent. Attitude is important.

I) Market research and feedback from the export market, agents, intermediaries, customers and competition should be a continuous process, analysed and acted upon in order to survive in a competitive environment,

m) Finally, commitment, high quality, integrity, honesty and transparency, excellent service are some of the ingredients that would make the difference in a crowded and competitive worlkd.

410.5. ❐ The groundwork

The initial groundwork includes several key components. These are listed below:

- Choosing appropriate business model and mode of operation
- Deciding on the organization structure.
- Naming the business
- Appointing key personnel
- Selecting the markets
- Selecting prospective buyers
- Negotiating with prospective buyers

- Entering into export contract
- Processing an export order
- Export pricing and costing
- Managing risks in international trade

Organisation structure

The first and the foremost question a prospective exporter has to decide are about the structure of the organisation. The options are: (a) sole proprietary concern, (b) a partnership firm, (c) a limited liability partnership firm (LLP), fd) a private limited company, or (e) a public limited company.

Each form or structure has its own advantages and disadvantages. For a small firm with limited resources, the first three options are worth consideration. A limited liability corporate structure should be thought of once the organisation grows bigger, and is in requirement of greater amount of capital. While planning the initial structure, consideration should be given to the ability of the promoters, available resources, fund raising capacity, financial capability to set up the intended structure, management and operational issues, the last but not the least being the tax implications. Expert advice should be taken prior to setting up the organisation.

410.6. ❐ Name and location

Naming the business is an essential task for every exporter. The name and style should say something about your organisation, reflecting its purpose and goals.

As early as is convenient set up your own website, even if it is on a modest scale. Take necessary help to build it. However, since frequent changes would be called for during the initial stages, learn to manage it yourself.

The office and factory should be located in clean and workable surroundings. Remember that the overseas buyers may like to visit your setup - both office and factory - in India at some point in time, if not before entering into formal arrangements as prospective buyers.

410.7. ❐ Registrations

Registration with Reserve Bank of India: No longer required. Prior to 1.1.1997

it was compulsory for every exporter to obtain an exporters' code number from the Reserve Bank of India before engaging

in export. This has since been dispensed with and,registration with the licensing authorities is sufficient before commencing export or import.

Registration with Regional Licensing: Authorities (obtaining /EC Code *Number):* For obtaining IEC number you should apply to Regional Licensing Authority. Before applying for IEC number it is necessary to open a bank account in the name of your company / firm with any commercial bank authorised to deal in foreign exchange.

Registration with an appropriate export promotion agency: In order to enable you to obtain benefits/concession under the export-import policy, as also suitable guidance and advice, have an opportunity to meet fellow exporters, register yourself with an appropriate export promotion agency.

Registration with sales tax authorities: Goods which are to be shipped out of the country for export are eligible for exemption from both sales tax and central sales tax. For this purpose, get yourself registered with the sales tax authority of your state.

410.8. ❐ Banking relationship

Open a current account in the name of the organisation as early as possible. It is advisable to open the account with a branch of a bank which is authorised to deal in foreign exchange, and is near to your workplace. Start operations in the account from the earliest stage. Route all transactions -including cash transactions - through the account. Take small loans initially and repay them on schedule. This way, the bank will get to know you better, and have increasing confidence in your ability to service loans. These steps will also help you to get used to the bank formalities, and lay the foundation for bigger loans/transactions later when the time comes.

410.9. ❐ Appointing agents

Selling through an overseas agent is an effective strategy. These agents serve as a source of market intelligence, regularly sending the latest trends on the current fashion, taste and price in the market. Being the man on the spot, the

agent is in a position to render expert advice to new exporters or advise methods and strategy for increasing sales. He also provides you support in the matter of transportation, reservation of accommodation, appointment with the authorities or other local buyers as and when required by you. It is, therefore, essential that you should carefully select your overseas agent. Consider the points listed below when appointing an agent:

- The company's track record and reputation in his area of operation
- Company's management structure, balance sheet size, turnover and related issues
- Whether the company deals with competing products
- Length of company's association with other buyers
- Agent's capability to provide sales promotion and advertising services
- Agent's transport and warehousing capacity
- Agent's rate of commission; payment terms required
- References on the agents from banks, trade associations and major buyers

410.10. ❐ Acquire export licence

Exports free unless regulated: A!! goods may be exported without any restriction except to the extent such exports are regulated by the ITC (HS) Classifications of Export and Import items or any other provisions of the EXIM Policy or any other law for the time being in force. The Director General of Foreign Trade may, however, specify through a Public Notice such terms and conditions according to which any goods, not included in the ITC (HS) Classifications of Export and Import items may be exported without a license.

Application for an Export License: An application for grant of export license in respect of items mentioned in Schedule 2 of ITC (HS) Classifications of Export and Import items may be made in the form given in Appendix-ISA or 18B or 18C, as the case may be, to the Director General of Foreign Trade and shall be accompanied by the documents prescribed therein.

410.11. ❐ Acquire export credit insurance

Export credit insurance protects the exporter from the consequences of risks

associated with cross-border trade. It enables an exporter to expand overseas business without fear of serious loss. Risk cover can be obtained from the Export Credit and Guarantee Corporation of India Limited. ECGC provides insurance cover to all sizes of exporters and have special schemes for small exporters. ECGC also offers advice and country risk profiles to exporters, which are very useful in reducing risks in international trade.

410.12. ❐ Export contract

In order to avoid disputes, it is necessary to enter into an export contract with the overseas buyer. For this purpose, export contract should be carefully drafted incorporating comprehensive but precise terms to include all relevant and important conditions of a transaction. There should not be any ambiguity regarding the exact specifications of goods and terms of sale including export price, terms of shipment, mode of delivery and payment, storage and distribution methods, type of packaging, port of shipment, delivery schedule etc. Depending on the nature of the transaction or the relationship between the parties, a purchase/sale contract may include the following:

- Names addresses and contact details of the parties to the contract,
- product, standards, specifications, performance parameters
- total value of the contract
- terms, mode, currency and stages of payment,
- advance, discounts, retention money, early payment benefits
- rate, total amount, discounts and commissions (if any)
- quantity, packing, labelling and marking
- documentary requirements
- verification/certification of quality, inspection
- mode of shipment, terms of delivery, period of delivery/shipment
- terms of shipment, insurance,
- Incoterms, and other applicable rules
- licenses and permits
- taxes, duties and (statutory) charges payable at the exporting and the importing countries -who pays what?
- compliance with statutory or other obligations,
- case-in-need,
- penal or compensation clauses,

- force majeure or excuse for non-performance of contract,
- dispute resolution procedure including arbitration, remedies, legal jurisdiction.

Each of these provisions in a contract has an important bearing on the elimination of future conflicts and in the successful conclusion of a trade transaction. Early groundwork and proper application of mind are, therefore, necessary while drawing up a contract.

Exporters and importers should be also conversant with a few publications from the International Chamber of Commerce (ICC), Paris, especially:

(a) For collection bills: Uniform Rules for Collection (URC 522),

(b) For bills under letter of credit: Uniform Customs and Practice for Documentary Credits (UCP 600), and ISBP681, and

(c) Incoterms 2010

which deal with some of the important issues listed above.

410.13. ❐ Financing export

External source of finance play a big role in making it easier for the exporter to procure necessary inputs without undue pressure on the cash-flow. The financing options may include even the period between shipment and the receipt of payment from the buyer (post-shipment financing). Availability of financing options for his working capital requirements (pre-shipment financing) offers him better options and a more competitive environment to conduct his business.

Requests for extension of financial facilities on an ad-hoc basis are not generally encouraged by banks. Any financial facility, whether fund based or otherwise, should be arranged in advance. For this, the exporter must approach the bank well in time, and comply with all the formalities as required by the bank concerned. Only after the formalities have been completed and the facilities are formally in place, can a customer make use of such facilities. Therefore, as an essential part -of his business plan an exporter (or an importer) would be well-advised to examine his projected cash-flow, organise his funding requirement, and take all steps necessary to ensure that the required financial facilities are available according to schedule

Pre-shipment and post-shipment finance

Finance is available at the pre-shipment stage or at the post-shipment stage

or both. The pre-shipment stage is the period between the receipt of the purchase order and the actual shipment of goods. Pre-shipment finance is also sometimes termed as 'packing credit', as finance (i.e. 'credit') is made available to the exporter to procure the goods till the stage of their being 'packed' and made ready for export. Post-shipment stage begins once shipment is effected. Once shipment has been effected, banks need to convert the outstanding 'pre-shipment finance' (if any) to 'post-shipment finance'.

Methods of finance

The modes of bank finance during the pre-shipment stages include the following:

(i) financing purchase of raw material from local sources or from overseas;
(ii) LC credit line to the exporter for issue of LC in favour of the original supplier, or for issue of issue of back-to-back LC;
(iii) offering finance against stocks, work-in-progress, against finished goods;
(iv) financing cost of packing, insurance, and shipment expenses. At the post-shipment stage, working capital finance is available by way of
(i) financing receivables in the form of bills purchase, bills discounting, negotiation of documents under LCs,
(ii) advance against export bills in the course of collection (over draft), and also
(iii) Banker's Acceptance.
(iv) Advance against claims of duty drawback
(v) Advance against retention money
(vi) Advance against undrawn balance

410.14. ❐ Labelling, packaging, packing and marking goods

Labelling: An important stage after manufacturing of goods or their procurement is their preparation for shipment. This involves labelling, packaging, packing and marking of export consignments. Labelling requirements differ from country to country and the same should be ascertained well in advance from the buyer. The label should indicate quality, quantity, method of use etc.

Packing: Packing refers to the external containers used for transportation. The shape of packing cases plays a very important role in packing the cargo.

The nature of packing material to be used will depend upon the items exported. Packaging fulfils a vital role in helping to get your export products to the market in top condition, as well as in presenting your goods to the overseas buyer in an attractive

way. While packaging, quality should not be compromised merely to cut down costs. Packaging should also be in conformity with the instructions issued by the importer.

Marking: Marking means to mark the address, number of packages etc. on the packets. It is essential for identification purpose and should provide information on exporters' mark, port of destination, place of destination, order number and date, gross, net and tare weight and handling instructions. It should also be ensured that while putting marks, the law of buyer's country is duly compiled with.

Packing list: Before packing and sealing the goods, it should be ensured that all the contents are properly placed in the cases, and the list of contents inside every package - called the packing list -should be prepared so that any individual item can be easily located from a consignment. A well-prepared, detailed packing list also helps the buyer, the customs and the insurance authorities to easily locate and check the contents of any particular case.

410.15. ❐ Conclusion

The above is only the tip of the iceberg. The other related issues for the export of goods cover a very wide spectrum of activity. It would serve little purpose to list them here. The topics have been covered through the course materials prepared and distributed separately.

Note