INTERMODAL TRANSPORT AND CONTAINERISATION

In the past different modes of transport operated in isolation. Transport system was segmented, not integrated. Each mode, particularly the carriers that operated them, were seeking own advantage in terms of:
- Cost
- Service
- Reliability
- Safety

Carriers tried to retain business and increase revenue by maximizing the haulage under their control. They were not interested with other companies or organisations. All the modes saw the other modes as competitors, and were viewed with a level of suspicion and mistrust.

Since the 1960s major efforts have been made to integrate separate transport systems through intermodalism, which took place in several stages, first with the setting of maritime networks which were connected with inland networks.

From a functional and operational perspective, two components are involved in intermodalism:

**INTERMODAL TRANSPORTATION.**
The movements of passengers or freight from one mode of transport to another, commonly taking place at a terminal specifically designed for such a purpose.

ORIGIN------------ROAD----------RAIL-------------SEA----------DESTINATION

**TRANSOMODAL TRANSPORTATION**
The movements of passengers or freight within the same mode of transport.

ORIGIN----------------------RAIL----------------------RAIL----------DESTINATION

What initially began as improving the productivity of shipping evolved into an integrated supply chain management system across modes and the development of intermodal transportation networks.

**Intermodal transportation network.**
This is a logistically linked system using two or more transport modes with a single rate. Modes are having common handling characteristics, permitting freight (or people) to be transferred between modes during a movement between an origin and a destination.
For freight, it also implies that the cargo does not need to be handled, just the load unit such as a pallet or a container. This involves the use of at least two different modes in a trip from an origin to a destination through an intermodal transport chain, which permit the integration of several transportation networks.

Intermodalism enhances the economic performance of a transport chain by using modes in the most productive manner. Thus, the haulage economies of rail may be used for long distances, with the efficiencies of trucks providing flexible local pick up and deliveries. The key is that the entire trip is seen as a whole, rather than as a series of legs, each marked by an individual operation with separate sets of documentation and rates. This is organized around the followings concepts:

The nature and quantity of the transported cargo. Intermodal transportation is usually suitable for intermediate and finished goods in load units of less than 25 tons. Intermodal transportation is organized as a sequence of modes, often known as an intermodal transport chain.

The dominant modes supporting intermodalism are trucking, rail, and maritime. Air transportation may also require intermodalism (connected with trucking) In some cases load units used by air transportation are not readily convertible with other modes.

CONSIDERING CRITICAL POINTS IN INTERMODALISM:

1. The origins and destinations.
   Distances play an important role as the longer the distance, the more likely an intermodal transport chain will be used. Distances above 500 km (longer than one day of trucking) usually require intermodal transportation.

2. Transportation time and costs.
   Intermodalism tries to use each mode according to their respective time and cost advantages so that total transport costs are minimized.

3. The value of the cargo.
   Suitable for intermediate cargo values. Low and high value shipments are usually less suitable for intermodal transportation.

   High value shipments will tend to use the most direct options (such as air cargo) while low value shipments are usually point to point and relying on one mode such as rail or maritime.
4. **The frequency of shipments.**

   Intermodalism functions well when cargo flows need to be continuous and in similar quantities.

   The significance of intermodalism has increased by use of appropriate technology and standardised containers, pallets.

**Point for discussion:**
(a) Benefits of using containers and pallets.
(b) Why are these two items standardized?

There is a close link between intermodalism and international trade with flexible systems and shipping procedures.

For example, it is possible to use a **bill of lading** with one through rate, despite the transfer of goods from one mode to another.

**What is a bill of lading?**

Bill of lading is a shipping document which serves three purposes:

- It is used as evidence of goods received into the ship.
- It is an agreement (contract) between the shipper and shipping company for the goods being transported from point of origin to the point of consumption.
- It a document of title to the goods. It provides legal ownership of goods.

In intermodalism service can be provided provision with one ticket (for passengers) or one bill of lading (for freight).

It should be appreciated that in modern intermodalism data processing and distribution systems that are critical in ensuring:

- safe
- reliable
- cost effective

control of freight and passenger movements being transported by several modes.

**Electronic Data Interchange (EDI)**

This is an evolving technology that is helping companies and government agencies. Enables business people to cope with an increasingly complex global transport systems. It facilitates efficient international shipping procedures (import and export) such as customs clearance documentation.
Intermodal transport is transforming international business through smooth freight flows across the globe where large integrated transport carriers provide door to door services.

**CONTAINERISATION**
A container serves as the load unit rather than the cargo contained therein. The reference size is the 20 foot box of 20 feet long, 8'6" feet high and 8 feet wide, or 1 Twenty-Foot Equivalent Unit (TEU). The great majority of containers are now forty foot long, the term Forty-Foot Equivalent Unit (FEU) is also used, but less commonly.

A container is a great support for freight transportation. Intermodal transportation and containerization are closely linked and self strengthening. Driving forces include:

- Technology
- Infrastructure
- Management

**Main types of containers are:**

- **Standard container.**
  Container designed to carry a wide variety general cargo. They are often labelled as dry containers because they carry dry goods either in break bulk (most common) or bulk (less common) form. Cargo is loaded and unloaded through a double door.

- **Tank container.**
  Container designed to carry liquids (chemicals or foodstuff). It is composed of a tank surrounded by a structure making it the same size.

- **Open top container.**
  A container with an open roof and designed to carry cargo that is too large to be loaded through standard container doors, such as machinery. The container is loaded from the top with a tarpaulin used to cover its contents.

- **Flat container.**
  Container having an open roof and sides designed to carry heavy and oversized cargo.
• Refrigerated container.

Container designed to carry temperature controlled cargo, often around or below freezing point. It is insulated and equipped with refrigeration plant maintaining the temperature constant.