**Introduction**

Wherever you travel these days there is always a container nearby. Whether it is on a train, on a ship, or on a truck, intermodal containers are an integral part of today’s supply chain. The modern era of containerization started only fifty years ago and revolutionized the way in which goods were moved along the supply chain.

**History of Containerization**

Before the [intermodal](http://freight.about.com/od/Routes/a/Intermodal-Transport-Services.htm) container was developed, goods were moved from land to sea using crates, barrels, sacks, pallets, and boxes.

The loading and unloading of ships when they arrived at the dock was slow and labor intensive. The term used for this type cargo is called break bulk, derived from the phrase “breaking bulk” which means the extraction of a portion of the cargo of a ship. The ships were unloaded of their cargo and the cargo to be placed in the ships hold would be moved to the dock from warehouses at the port.

If the items were large enough they were hoisted on to the shop using dockside cranes or the ship’s equipment. Smaller items were first placed on to trays or placed in cargo nets so they could be moved on to the ship.

When the railroads arrived at the [ports](http://geography.about.com/cs/transportation/a/aa061603.htm) the labor intensity of the break bulk system was multiplied as the cargo had to be removed from the ship to the dock and then on to the freight trains. The system of break bulk was used throughout the [Second World War](http://history1900s.about.com/od/worldwarii/a/World-War-II-Timeline.htm) in the same manner that have been used for the previous hundred years.

It was ten years after the end of the war that the era of containerization began. In 1953 Malcolm McLean started to develop a vehicle that could be driven moved directly from the road to the ship.

The concept was not successful as it did not use the space efficiently. McLean modified his design so that the container could be removed from the chassis and loaded on the ship, rather than the complete truck. In 1955 Malcolm McLean sold his trucking company and purchased two Second World War tankers.

The first tanker, the Ideal X, was converted with a reinforced deck to carry 58 metal container boxes as well as 15,000 tons of bulk petroleum. The maiden voyage was from Port Elizabeth, New Jersey to the Port of Houston on April 26th, 1956.

**Container Standardization**

Malcolm McLean’s initial design for the container in 1956 was 8 feet tall by 8 ft wide box in 10 ft long units constructed from 2.5 mm thick corrugated steel. As the container system started to be adopted in the late 1950’s and early 1960’s, there was no standard as to container size and construction. Shipping companies had their own standards, with Matson using 24 foot long containers and Sea-Land, owned by McLean, used 35 foot long containers. To ensure that containers could be moved between shipping companies in the US and across the world, the International Organization for Standardization (ISO) developed standards for intermodal containers, such as corner fittings, identification markings, and minimum internal dimensions.

The normal intermodal container is usually 8 feet wide by 8.5 feet high. The length of the container can vary; 20 feet, 40 feet, 45 feet, and 53 feet. There is a container called a Hi-Cube that is 9.5 feet high, but still 8 feet wide. There are a number of container variations such as the open top container and the refrigerated container.

Containers can be stacked using twistlock fastenings at the container’s corners. An [ISO](http://logistics.about.com/od/legalandgovernment/a/ISO_9000_Certification.htm) standard defines the maximum size and position of the holes in the connector used on the container. Standard 20 foot containers can be stacked seven high.

**Summary**

The introduction of the container has completely changed in which goods are moved. Over ninety percent of non-bulk cargo is moved using containers. Some ships can move almost 15,000 twenty-foot containers with China leading the world in the number of container movements with over 105 million in 2009. In comparison the US had only 34 million movements in the same year. The standardization of container sizes has allowed the ease of movement of containers between nations accelerating the development of international trade.