

# ***What's a Container and Why Should I Care***

A Brief by Deborah D. Johnson

The container is a critical part of our everyday lives. We store food, clothing, old printed photos and various keepsakes in containers. Containers can be found in every room of our homes, schools, work places. The basic definition of a container is “a receptacle (as a box or jar) for holding goods.”<sup>1</sup> Containers can be made of plastic, rubber, wood, glass, steel and nearly anything else that can form a shape and hold material in a reasonably secure manner. These basic containers are the ones with which we are most familiar. The container I wish to define in this brief is much larger and potentially more important than, or equally as important as these every day basic containers.



I stumbled upon the freight transportation enterprise when I worked for a shippers association many years ago. We booked cargo on ships on behalf of our members. Transport carriers (ship operators) guaranteed space and timeliness of cargo transported for the association and its members. My role was to monitor the timeliness of the ship arrivals with cargo in the U.S. and to take the transport bill payments from association members. Until I moved on to transportation research and statistics shortly thereafter, I like, most Americans, had no idea that the goods I use every day ultimately came to me by ship, truck and train.

Billions of dollars of the goods we eat, wear, and use are shipped in containers into, around and out of this country. The transport of these goods is a multi-billion dollar industry. The industry participants involve you and me (the ultimate consumer), the shipper, the transporter, unions, community groups, the banks or financial institutions and federal, state and local agencies that ensure that this activity is efficient, safe and secure.



## **What's the definition of the shipping container?**

According to the same Merriam-Webster source, this container is “a portable compartment in which freight is placed (as on a train or ship) for convenience of movement.”<sup>2</sup> Container shipping is different from conventional shipping because it uses containers of different standard sizes - 20 foot (6.09 m), 40 foot (12.18 m), 45 foot (13.7 m), 48 foot (14.6 m), and 53

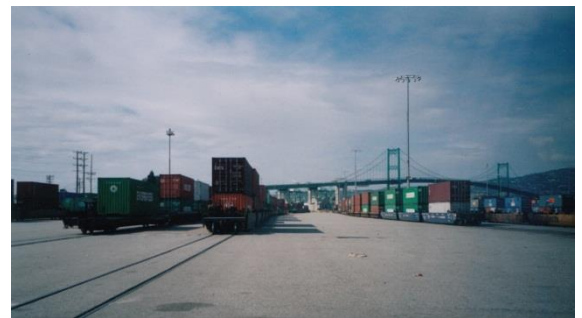
<sup>1</sup> Merriam-Webster as of September 8, 2012 available at: <http://www.merriam-webster.com/dictionary/container?show=0&t=1346788014>.

<sup>2</sup> Merriam-Webster as of September 8, 2012 available at: <http://www.merriam-webster.com/dictionary/container?show=0&t=1346788014>.

foot (16.15 m) - to load, transport, and unload goods.<sup>3</sup> Here's an example of shipping containers. Shipping containers can be seen on trucks, trains, and ships every day, year round.



The first shipping container was invented and patented in 1956 by an American named Malcolm McLean. McLean was a trucker who by 1956 owned the largest trucking fleet in the South and the fifth largest trucking company in the United States. He saved his money and bought his first truck in the 1930s.<sup>4</sup> During the years prior to the invention of the shipping container, cargo was loaded and unloaded in odd sized wooden crates, barrels and sacks. This is basically considered breakbulk shipping ([http://en.wikipedia.org/wiki/Break\\_bulk](http://en.wikipedia.org/wiki/Break_bulk) ). This process was very slow, labor intensive and not standardized. After observing this slow and inefficient process, Malcolm McLean developed a standardized way of loading cargo from trucks to ships and warehouses. Here's an interesting account of the history of containerization <http://gcaptain.com/container-ships-a-brief-history/>. There is also a photographic-oriented work referenced at the end of this brief named *The Box That Changed the World*. Container shipping revolutionized and ultimately supplanted breakbulk shipping.



**Why should I care about shipping containers?** To move large quantities of goods across the country and around the world, Americans depend on our Nation's complex network of roads, bridges, rail tracks, airports, seaports, navigable waterways, pipelines, and equipment. U.S. households buy fresh fruits and vegetables of all kinds year round and expect reasonably priced, fast and reliable deliveries of Internet purchases. Goods produced by U.S. factories and farms are bound for export, and imports originate from all over the world.<sup>5</sup>



According to the *America's Container Ports* report, modern shipping containers carry numerous commodities, from sweaters, blouses, toys and flat-screen televisions to computer equipment and furniture. Containers have reduced the cost of transporting such goods from factories halfway across the globe to neighborhood discount stores across America, and cut the time it takes to load and unload the large vessels used in transporting these goods. During the first half of 2010, America's container ports handled over \$256 billion worth of

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<sup>3</sup> World Shipping Council, About the Industry, Containers as of 9/6/2012. Available at: <http://www.worldshipping.org/about-the-industry/containers>

<sup>4</sup> International Steel Building Units & Container Homes, All About Shipping Containers. Available at: [http://www.isbu-info.org/all\\_about\\_shipping\\_containers.html](http://www.isbu-info.org/all_about_shipping_containers.html).

<sup>5</sup> U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, Freight Transportation: Global Highlights, 2010 (Washington, DC: 2010) page 1.

containerized cargo imports weighing more than 62 million metric tons. They also handled exports worth over \$100 billion and weighing 48 million metric tons.<sup>6</sup>

The most profound impact of the container is on the global economy. Worldwide, by the early 2000s, 300 million twenty-foot equivalent units (teus - [http://en.wikipedia.org/wiki/Twenty-foot equivalent unit](http://en.wikipedia.org/wiki/Twenty-foot_equivalent_unit)) were moved by sea each year, with over a quarter of those shipments coming from China.<sup>7</sup> According to the World Shipping Council, the United States was the top importer of container cargo (in terms of TEUs) (Table 1).

Containers carrying the goods we use every day are transported on what is referred to as the intermodal freight transportation network. As mentioned previously, these are the roads, bridges, rail lines and waterways throughout our Nation. Americans have become accustomed to the nearly invisible, safe and environmentally sustainable operation of an intermodal freight transportation network. There would be no intermodal freight transportation network without the shipping container.

<b>RANK</b>	<b>IMPORTER</b>	<b>2009 TEUS (MILLIONS)</b>	<b>2010 TEUS (MILLIONS)</b>
1	United States	15	17.6
2	China	11.2	12
3	Japan	5.4	6.1
4	South Korea	3.9	4.5
5	Germany	2.4	2.8
6	Other Arabian Gulf	2.3	2.7
7	United Kingdom	2.3	2.5
8	Indonesia	2.1	2.5
9	Taiwan	2.2	2.5
10	Hong Kong	2.3	2.5
11	Western Africa	2.5	2.4
12	United Arab Emirates	2	2.1
13	Malaysia	1.7	2.1
14	Thailand	1.6	2
15	Vietnam	1.8	2
16	India	1.7	2

<sup>6</sup> U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *America's Container Ports 2011*, (Washington, DC: 2011) What's in the Box?.

<sup>7</sup> History and Impact of the Intermodal Container by John Tomlinson, Pratt Institute 9/22/2009, page 6.

17	Brazil	1.3	1.9
18	Australia	1.5	1.8
19	Italy	1.6	1.8
20	Netherlands	1.3	1.7
	<b>World Total</b>	99.7	114.3

Note: TEUs – Twenty foot equivalent units  
Source: World Shipping Council as prepared by IHS  
Global Insights as of 9/6/2012. Available at:  
<http://www.worldshipping.org/about-the-industry/global-trade/trade-statistics#2>

Since this brief is about the shipping container and not intermodalism, I will provide reference information at the end of this paper that will offer some background on intermodalsim including its definition and a bit of history of this enterprise. To date, the definition of intermodal transportation is still subject to interpretation and circumstance. Suffice it to say that intermodal transport involves the seamless movement of goods between different modes of transportation (marine, truck, rail, even air when viable). Those who know the term may tend to think of truck/rail transport as intermodal. This however limits the discussion to land transport. Also, intermodal involves both domestic and international transport and the shipment interchanges between the two.

**Limitations of container data**

Due to the multi-modal nature of container shipping, in order to fully understand this activity and impact on the United States and our daily lives, it is best to have combined data on each mode with the route of the cargo and container through the network. This routing should include the changes between and among modes of transport. At this point, private industry is well aware of its own activity. This information is not readily available on a national basis to the federal, state and local governments. It is understandable that private industry is reluctant to completely share such business-sensitive information. Because of the need for governmental entities to determine how, where and when to make transportation investments, it is necessary to have some reasonable information about the impact of container shipping on the transportation network nationwide. There has been research into and development of reasonable estimates of this activity based on technical assumptions. Multi-modal container transport data which involves routing and transfers between and among modes is a challenge.

**Conclusion**

We all need to be aware of container transport. Container shipping is a critical activity for the U.S. and the world. As such, we all should understand the basic terminology and the general impact of this activity on our daily lives. Airports, sea ports, train, truck and rail depots and warehouses surround us. Trucks are a part of our daily traffic activity to and from work, school, shopping, vacation, entertainment. When we understand how the goods we use every day get to our tables, shelves and refrigerators, then we can make better decisions about transportation-related investments in our

communities and Nation. When we understand the origin country of our merchandise, we will begin to pay more attention to trade discussions and negotiations between the U.S. and the rest of the world.

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