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Panova T., Lulenko K., Ladutska N.

## **Intermodal Transport as a Way to Reduce Costs**

Belarusian National Technical University  
Minsk, Belarus

Shippers always look for ways to cut costs and improve service, that's why they consider transportation mode options when moving goods long distances. While trucking remains the most dominant mode of shipping product domestically, intermodal freight transport offers opportunities for freight savings and reduced emissions, especially when transporting products over distances of 700 km or more.

Intermodal freight transport involves the transportation of freight in an intermodal container or vehicle, using multiple modes of transportation (e.g., rail, ship, and truck), without any handling of the freight itself when changing modes. The method reduces cargo handling, and so improves security, reduces damage and loss, and allows freight to be transported faster. Reduced costs over road trucking is the key benefit for inter-continental use. This may be offset by reduced timings for road transport over shorter distances.

There are a lot of different transport modes to carry goods. Container ships are used to transport containers by sea. These vessels are custom-built to hold containers. Some vessels can hold thousands of containers. Their capacity is often measured in TEU or FEU. These initials stand for *twenty-foot equivalent unit*, and *forty-foot equivalent unit*, respectively. For example, a vessel that can hold 1,000 40-foot containers or 2,000 20-foot containers can be said to have a capacity of 2,000 TEU. Railways. In North America, containers are often shipped by rail in container well cars.

These cars resemble flatcars but the newer ones have a container-sized depression, or well, in the middle (between the bogies or *trucks*) of the car. This depression allows for sufficient clearance to allow two containers to be loaded in the car in a *double stack* arrangement. The newer container cars also are specifically built as a small articulated *unit*, most commonly in components of three or five, whereby two components are connected by a single bogie as opposed to two bogies, one on each car. Double stacking is also used in parts of Australia.

If the rail line has been built with sufficient vertical clearance then Double-stack rail transport can be used. Where lines are electrified with overhead electric wiring double stacking is normally not possible. The mandatory requirement to fit under overhead wire for the traction engine electrical power supply sets the height limit for the railcars to allow for trailer transport. This requires a certain low building height which led to a minor size of wheels for the railcars. Hence increased degradation of bogeys by wheel wear-out is a cost disadvantage for the system.

When carried by rail, containers can be loaded on flatcars or in container well cars. In Europe, stricter railway height restrictions (smaller loading gauge and structure gauge) and overhead electrification prevent containers from being stacked two high, and containers are hauled one high either on standard flatcars or other railroad cars [1].

The Belarusian Railway is a leading and one of the most important transport system of the republic, which transports up to 70% of all cargoes carried by the national public transport.

One of the key goals of the Belarusian Railway is to make transit services more attractive to customers. To achieve the goal it provides direct fast container trains and implements new projects. Today about 20 container trains are in a regular

operation on the Belarusian Railway, and the number is growing.

The railway infrastructure of the Republic of Belarus may be used effectively, and serve as a link between the East and the West within a single Eurasian transport area, if volumes of cargo transportation by container trains grows worldwide [2].

Trucks. Trucking is frequently used to connect the *linehaul* ocean and rail segments of a global intermodal freight movement. This specialized trucking that runs between ocean ports, rail terminals, and inland shipping docks, is often called drayage, and is typically provided by dedicated drayage companies or by the railroads.

Barges. Barges utilising ro-ro and container-stacking techniques transport freight on large inland waterways such as the Rhine/Danube in Europe and the Mississippi River in the United States [3].

Land bridges. The term land bridge is commonly used in the intermodal freight transport sector in reference to a containerized ocean freight shipment that travels across a large body of land for a significant part of the trip, en route to its final destination. The land portion of the trip is referred to as the *land bridge* and the mode of transport used is rail transport.

Planes. Generally modern, bigger planes usually carry cargo in the containers. Sometimes even the checked luggage is first placed into containers, and then loaded onto the plane. Of course because of the requirement for the lowest weight possible (and very important, little difference in the viable mass point), and low space, specially designed containers made from lightweight material are often used. Due to price and size, this is rarely seen on the roads or in ports.

Pipelines. Pipelines are part of the intermodal freight transportation network as they are the preferred mode of transporting gas and liquids. Often unrecognized by the general

public due to their placement underground, pipelines contribute to freight transport and are critical to the economy. Compared to trucks and trains, pipelines are less damaging to the environment, less susceptible to theft and more economical, safe, convenient and reliable [3].

Intermodal freight transportation gives you lower rates, more predictable pricing, and the flexibility of loading and unloading goods, which reduces handling costs. Additionally, you can significantly reduce your carbon footprint. Intermodal transport makes it significantly easier to organize and optimize the available transport resources. That is why it is the best alternative to traditional transport.

#### References:

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