

# The Global Conference on Rail Freight

Railway Land Bridges – examples of conditions for success from  
North America – 1984 to 2010

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A Harsco Rail Business Unit

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# From 30% to 70% market share

**This is the technology that made it**



## The “railway corridor revolution” began in the United States with this Land Bridge APL Ocean Line Train Set back in 1984

- **SHORTER DISTANCE:**
  - 3,080 miles by rail to reach NYC versus 4,920 nautical miles via Panama Canal
- **CHEAPER & FASTER:**
  - Rail delivery price 15% cheaper than by ship and 29% faster time
- **BIGGER BOXES:**
  - From 20 foot to 53 foot. By 2005, the TEU was actually becoming economically “obsolete in North America
- **NEW WAGON TECHNOLOGY:**
  - New ‘well car’ design that reduced the center of gravity very close to the top of the rail.
- **AND:**
  - Saving APL the capital cost of building more than four new ships

## Note the Economics



- The success factor was the ability to save on the tariff or contract price per container
- Savings of 30% (about 7-days) time on the delivery timetable was insufficient alone to make the service a commercial success
- Shippers need to take “PRICE” out of the supply chain and not just the days

## HUGE INVESTMENTS

**APL** sold its Liner Trains service to a forwarder named **PACER**. **PACER** "contracts with Union Pacific in this picture to haul the private **PACER** train ( Photo by Sean Lamb)



### To make this a success:

**APL** and then **PACER** needed to make train set and other equipment investments

### **CAPITAL REQUIRED**

Over 27,000 53 foot and 48 foot double-stack containers

Over 29,000 chassis

Over 1,800 deep-well double-stack railcars

## Others followed the APL Leadership between 1986 and 1996

- The American President Lines double stack service established a new standard for the ability to control end-to-end service
- In 1984, containers bound for North America could be moved and/or arranged by one “organizer” or carrier door-to-door from almost anywhere in Pacific Rim world
- By the early 1990’s, the ocean carriers that responded included:

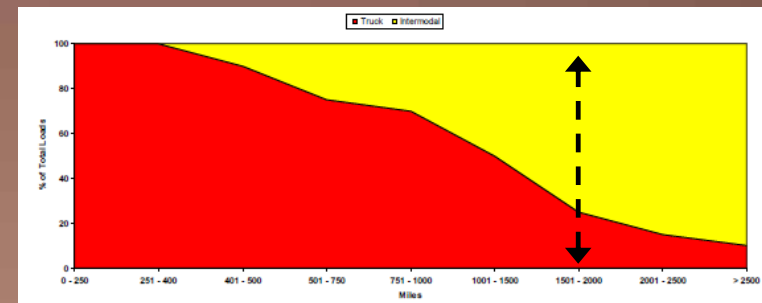
<u>Maersk</u>	<u>Overseas Orient Container Line (OOCL)</u>
<u>Mitsui (MOL)</u>	<u>Hanjin</u>
<u>Evergreen</u>	<u>K'-Line</u>
- Then, **JB Hunt** and **Schneider** trucking firms also re-engineered their highway operations to take advantage of the railway economics

# HIGHWAY TRUCKER JB HUNT SHIFTS TO TRAINS

**TO MAKE THIS POSSIBLE** JB Hunt had to re-engineer its business process and its capital structure. They shifted capital from trailers to containers. They shifted from road drivers to local city drivers. This was an aggressive and “bold” business process decision!

The equivalent of 2 million TEU's in up to 53-ft containers during 2009

JB Hunt earned a 19.5% operating profit from every Intermodal railway unit they moved (Intermodal revenue USD 2 bill).



Ave. length of JB Hunt railway moved container haul is 1,800 miles

- JB Hunt uses more than 43,000 company owned or leased containers in 2010
- JB Hunt sells the retail supply chain services and contracts for wholesale train service from its railroad partners like the BNSF





- A typical modern train in North America can be 2.5 km in length and be carrying from 200 to 350 containers
- About 60% to 70% of United States intermodal trains carry containers and not trailers
- Most of the containers are owned or leased by the ocean lines or trucking lines – not by the railroad companies



# Twenty-four years later, this was the resulting North American Rail Land Bridge Corridors including both Canada and the USA



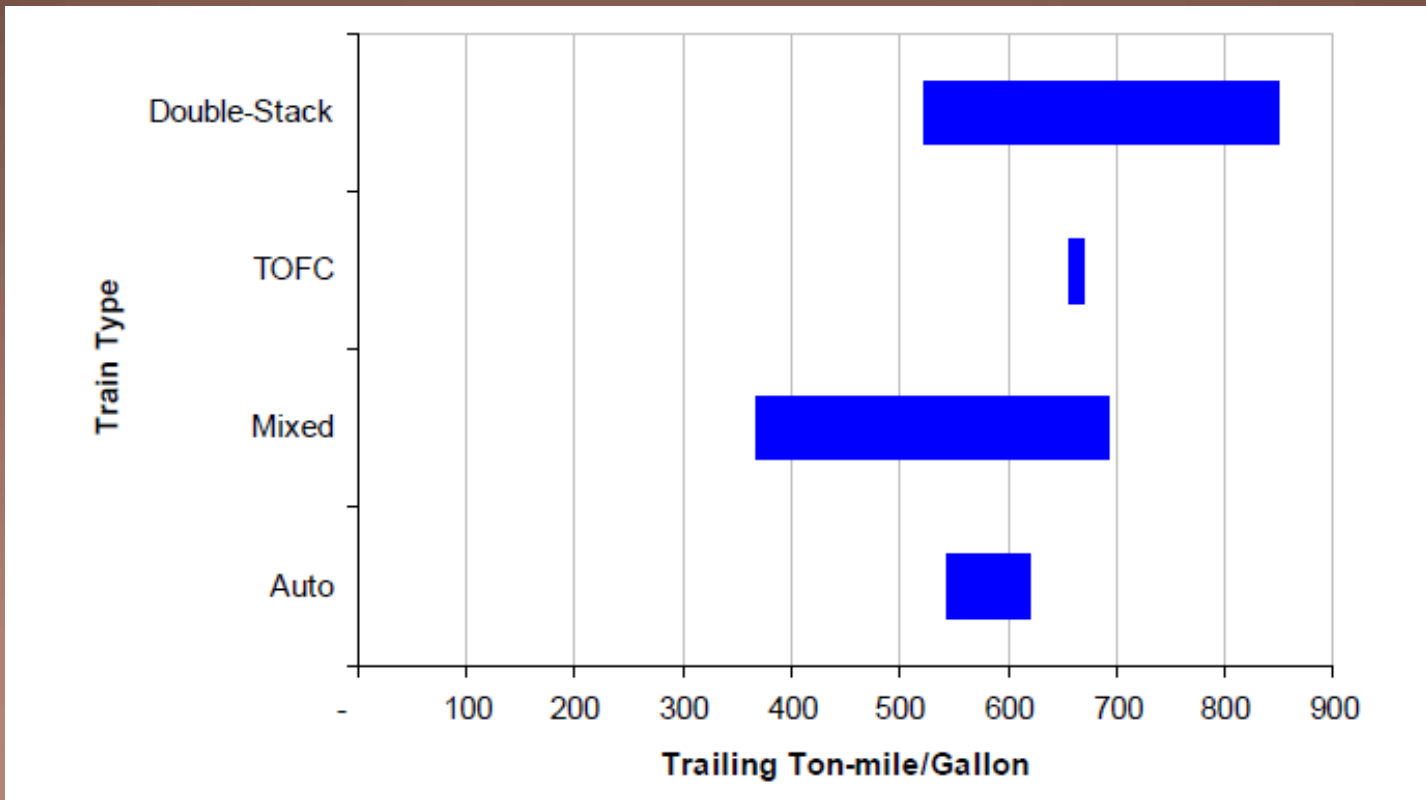
- A Pacer Stacktrain (who bought the APL service)- ALONE AS ONE COMPANY was carrying more than one million 45+ LONG containers per year. (see <http://www.yenra.com/double-stack-rail> )

**This is one of those more than 150 US daily big intermodal trains**



*Norfolk Southern double stack train crosses Harrisburg PA bridge along one of the two Chicago to New York City Corridors.*

Fuel and the resulting “Green Technology” shows the clear advantage of double-stack train use compared with trailers on flat wagons (TOFC) and other types of trains.



“Autos” are finished automobile trains  
Mixed trains are general mixed sets of freight wagons

# The economic “secret” about the heavier axle “business model”

- The key is that while track and bridge maintenance costs per year will go up....
- ...other combined costs come down faster such as crew costs, train paths required, wagons required, locomotives required, etc.

It is the lower NET TOTAL COSTS that creates the success factor for North America

Remember please that efficient Intermodal is linked to Heavy Axle Train Technology



## What did they do to obtain these sustainable results (30->70%)

- From a “retail” intermodal service to a “wholesale” service/one player
- Extremely low cost train operation at the lowest possible PRICE
- Providing consistent train service at 95% to 98%+ on-time arrival

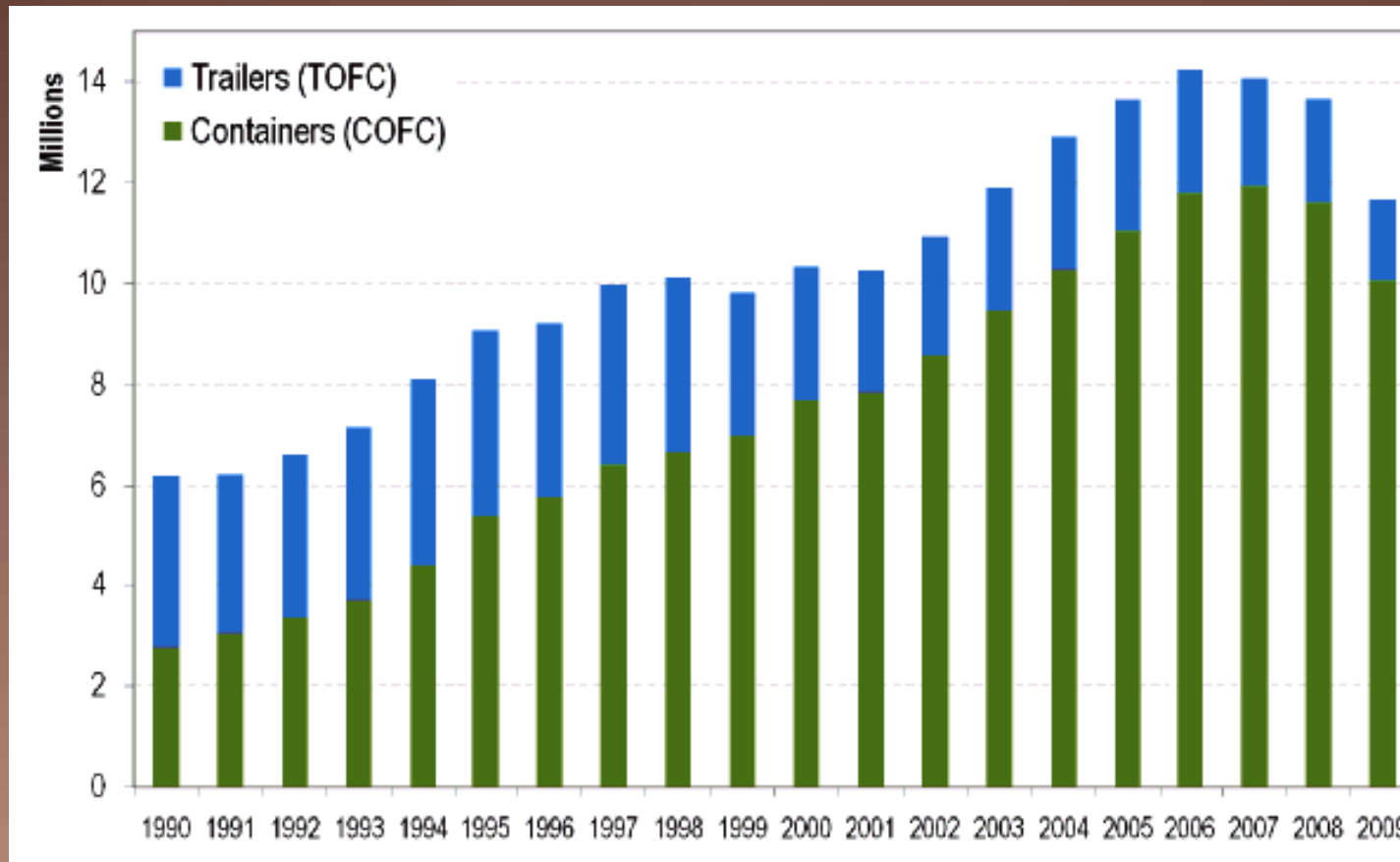


.....and the market accepted the railroads offer:

- ✓ **Railway intermodal operating profits went from a poor long term contribution rate to a very profitable business**
- ✓ **Sustainable:**
  - ✓ cover all costs (capital & operation)
  - ✓ competitive with ocean ships
  - ✓ & no subsidy

# Twenty Year Growth of Entire USA Intermodal Rail Market into the Global slow-down of 2008-09

Data includes both Land bridge and Domestic Traffic



Shippers switched to Containers to take advantage of much lower doublestack transport pricing



## You need to beat the Competition

- ✓ The world is consistently undergoing change
- ✓ Is China “looking to” finance a new Trans-Europe-Asia route to compete against the Russian Trans-Siberian corridor
  - ✓ Will China finance big train and double stack technology
  - ✓ What is the competitive response of Russia to be?
  - ✓ What benchmarks can Russia use from North America?
- ✓ *“If Russia adopts some of these metrics – it could win perhaps a 15% share against Suez Canal ocean routes”*



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**Thank you for inviting us.  
How can we be of help?**

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