Intermodal Flat Decks - An innovative alternative to moving industrial freight using the intermodal rail network

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Buck Buchanan
President, Fontaine Intermodal
Jasper, AL
Who is Fontaine Intermodal?
Definition: Transportation of freight in an intermodal container or vehicle, using multiple modes of transportation (rail, ship and truck) with no handling of the freight itself when changing modes.
Why Intermodal?

Intermodal Continues to Power Rail Growth

By Rip Watson
Senior Reporter

Railroads' third-quarter earnings reports showed a continued reliance on intermodal for volume growth as truck-rail shipments improved about 4% among the six largest carriers, outpacing other freight at most carriers.

Truck-rail shipments that now account for about 43% of all rail freight climbed at the Eastern railroads, while there were mixed results at Western and Canadian railroads.

CSX raised intermodal volume 6% to 257,000 loads and revenue $98 million, accounting for more than 80% of total shipment growth at the Jacksonville, Fla.-based railroad.

"Domestic volume increased as a result of growth with existing customers and continued success with highway-to-rail conversions," a CSX statement said. "International volume grew as strength with existing customers and growth from new service offerings more than offset volume losses from a carrier port shift."

Norfolk Southern, the other railroad in the eastern United States, posted 5% intermodal growth to $112,900 units to produce $605 million in revenue. Intermodal contributed 60% of volume growth in the quarter at Norfolk, Va.-based Norfolk Southern.

In the West, BNSF Railway statistics show 5.4% intermodal growth over the 2012 third quarter. Less than half of the Fort Worth, Texas-based carrier's increase was truck-nail freight.

The carrier's earnings haven't yet been released. BNSF is owned by Berkshire Hathaway.

While BNSF volume improved, Union Pacific intermodal shipments dipped 1% to 46,000 and revenue rose less than 1% to $1.03 billion.

All other loads at Omaha, Neb.-based Union Pacific slipped 0.1%.

"There's excess steamship capacity, and there's natural [market] shifts" that accounted for a 5% international shipment drop off at Union Pacific, Executive Vice President Eric Butler said.

Union Pacific's domestic intermodal volume improved 4% and accounted for nearly half of truck-rail volume.

International intermodal also was hurt at Union Pacific by so-called transloading.

Transloaded shipments arrive by water and are immediately loaded into containers that are counted as domestic freight.

"We think there is still a large over-the-road truck market out there for us to convert," he said, as well potential new business crossing the U.S.-Mexico border as new rail facilities are added on the U.S. side.

In Canada, Montreal-based Canadian National improved its intermodal loads by 8% to 493,000 and raised revenue 13% to C$577 million to account for all shipment growth. Other CN freight shipments fell less than 0.1%.

Canadian Pacific Railway's intermodal volume fell 5% to 259,000, faster than the overall 2% drop in shipments. Revenue at Calgary, Alberta-based Canadian Pacific was down 6% to C$340 million.
Understanding Intermodal

- Ideal for time-sensitive freight moving more than 500 miles
- Seamlessly integrates road, rail and water transportation for truckload quantities
- Works best in markets with large concentrated volumes – not as efficient in lower-volume markets
- Service is equivalent to or better than single-driver truck, averaging 450-620 miles per day

Source: BNSF Intermodal University
US Domestic Intermodal

Freight Origination
- Regional producers
- Break bulk warehouses
- International shipments

Freight Destination

Origin Intermodal Terminal

Origin Drayage (short distance)

Intermodal Rail Double Stack (long distance)

Destination Drayage (short distance)

Destination Intermodal Terminal
A sample of the intermodal rail hubs in the North American network.
Intermodal drayage extends coverage area.
Examples of scheduled intermodal moves to and from Chicago
Transit times competitive to trucking
US Domestic Intermodal

• Intermodal train
  • 8000 ft. long, 400 double stacked containers
  • Containers 20, 40, 45 or 53 ft. - 53 ft. most common domestically

• BNSF and Union Pacific dominate western U.S.
• Norfolk Southern and CSX dominate the east
US Domestic Intermodal

- Railroad infrastructure investment has created under-utilized capacity
- New “express” double stack rail lines make intermodal very competitive with long haul trucking
- Railways highly motivated to grow share of the long haul freight market
Truck to Rail Conversion

- New Hours of Service (HOS) laws limit speed to market
- New regulations (CSA) hold truck drivers personally responsible for violations
- Increasing highway congestion
- Ongoing, severe long haul driver shortage
- Long haul trucking margins impacted by fuel and equip costs

Source: US Gov’t Accountability Office Report to Ranking Member, Committee on Environmental and Public Works, U.S. Senate, January 2008
• New intermodal infrastructure equals or exceeds trucking “speed to market”
• For every ten containers carried by rail, seven trucks are taken off highways
• US Government wants environmentally friendly and safer transportation solutions
• Intermodal drayage “day cabs” less expensive
• Short drayage hauls more attractive to drivers, aids driver retention

Source: *Noel Perry of FTR Associates
High Volume, Long Haul Freight Types

- Commercial freight
  - Consumer goods, electronics, clothing

- Temperature controlled freight
  - Frozen foods, produce, ice cream, paint

- Industrial freight
  - Pipe and tube, steel and aluminum coil, building materials, structural steel
The smartest distance between two points
The Evolution of the intermodal flat rack
Flatbed Truckload Conversion

Total North American Market Potential
2.5M Convertible Flatbed Loads

- **Western US**: 1.2M
- **Eastern US**: 1.0M
- **Canada**: 0.3M

Source: U.S. Data provided by BNSF Railway
Canadian data provided by The Contrans Group
Flatbed Truckload Conversion

At 30% Conversion
Fleet Population Required = 31,250 units

- Western US: 15,000 units
- Eastern US: 12,500 units
- Canada: 3,750 units

Source: U.S. Data provided by BNSF Railway
Canadian data provided by The Contrans Group
At freight origin, loads like a flatbed trailer
Arms rotate beyond vertical for fast, easy loading
Arms rotate beyond vertical for fast, easy loading
Arms remain locked upright for transport, load moved short distance via truck to intermodal rail yard.
Arms lock securely into loaded transport position
Deck is loaded onto train at origin just like an intermodal “box” container
Loaded Evolution decks double stack for long distance movement on intermodal train
Stacked decks securely connected together via IBCs (inter box connectors), just like “dry box” containers.
Deck is unloaded at rail destination intermodal yard just like an intermodal “box” container
Load transported (drayed) short distance to final destination
At freight destination, unloads like a flatbed trailer
Arms collapsed for storage or repositioning
AAR M-930 Testing – Pueblo, CO
December 2012
Full commercialization in real world conditions on multiple commodities

Aluminum Coils

Structural Steel

Suspensions

Steel Pipe

Concrete Siding

Norfolk Southern

BNSF

…over the road and rail

AAR Tested and Certified
Aluminum Coil
Aluminum Coil
Highway Trailer Suspensions
Highway Trailer Suspensions
Large Diameter Steel Pipe
Small Diameter Steel Pipe
Building Material – Concrete “Hardy Board” Siding
Copper Tubing
Aluminum Extrusions for Aircraft Production
Aluminum Extrusions
Solid Aluminum Billets for Extrusion Production
Landfill Liner Material (loaded in Canada)
Questions?

The smartest distance between two points