Rail Carload Traffic

2008 and beyond

A presentation to The Sandhouse Gang by Michael W. Blaszak, January 28, 2008
Rail Carload Traffic

- Overview and Definition
- Traffic Trends 2000-07
- Railroad Performance Initiatives
- The Short Lines’ Role
- The Freight Car Fleet
- Rate Outlook
- Conclusions and Questions
Overview and Definition

• “Carload Traffic” for purposes of this presentation includes railroad freight shipments that are neither intermodal nor handled in unit train service
  – About 42% of total carloads
Overview and Definition

• Carload traffic has been declining for many years
• Trends in the North American economy point to continuing decline
• Nonetheless, this traffic remains profitable
• How can the railroads manage this declining business segment to maximize profits?
Traffic Trends 2000-07

- Measured in ton-miles, total railroad traffic has grown
  - 14.5% since 2000
  - 60.9% since 1990

Source of all traffic data: www.aar.org
• Measured in carloadings, though, total railroad traffic has declined during the 2000-07 period
Traffic Trends 2000-07

- Freight traffic handled in unit train quantities = generally up
- Freight traffic handled in single or low multiple car quantities = generally down
Traffic Trends 2000-07

• Declining: Metallic Ores
  – Closure of major basic steel producers
  – Shift of auto and appliance production offshore
  – New pelletizing technology concentrates iron content
  – High natural gas costs impact production
Traffic Trends 2000-07

Metallic Ores

Carloadings

Calendar Year (52/53 weeks)
Traffic Trends 2000-07

- Declining: Nonmetallic Minerals
  - Florida phosphate production decreases 33%
  - Potential development of huge Saudi deposits could erode export levels
Traffic Trends 2000-07

Nonmetallic Minerals

Calendar Year (52/53 weeks)
Traffic Trends 2000-07

- Declining: Primary Forest Products
  - Flat to declining U.S. lumber production
  - Katrina aftereffects
  - Profitability issues
Traffic Trends 2000-07

Primary Forest Products

Carloadings

Calendar Year (52/53 weeks)
Traffic Trends 2000-07

• Declining: Pulp, Paper and Allied Products
  – Internet destroying newspaper market
  – More consumer packaging made offshore
Traffic Trends 2000-07

Pulp, Paper & Allied Products

Calendar Year (52/53 weeks)


Values: 514079, 470170, 453987, 451159, 446494, 444766, 425344, 391967
Traffic Trends 2000-07

- Declining: Motor Vehicles and Equipment
  - Severe decline in domestic-based manufacturers’ market share
  - Transplant parts suppliers often site near customers’ plants
Traffic Trends 2000-07

Motor Vehicles & Equipment

Calendar Year (52/53 weeks)

Carloadings

2000 2001 2002 2003 2004 2005 2006 2007

1294927 1212103 1262059 1231264 1187911 1162363 1091745 1033544
Traffic Trends 2000-07

• Growing: Petroleum Products
  – Increasing demand
  – Railroad marketing initiatives like BNSF’s Fuel by Rail program
Traffic Trends 2000-07

Petroleum Products

Carloadings

Calendar Year (52/53 weeks)
Traffic Trends 2000-07

• Growing: Waste and Scrap Materials
  – Limited landfill space in coastal urban areas
Traffic Trends 2000-07

Waste & Scrap Materials

Calendar Year (52/53 weeks)

Carloadings

Traffic Trends 2000-07
Traffic Trends 2000-07

- No Clear Trend: Chemicals
  - Traffic declined in 2005 and 2006 (flat production, rate increases)
  - Traffic grew in 2007 due to ethanol
  - Is the ethanol boom over, or just beginning?
Traffic Trends 2000-07

• No clear trend:
  – Grain Mill Products
  – Food and Kindred Products
  – Lumber and Wood Products
  – Stone, Clay & Glass
  – Metals and Products
Given that carload traffic as a whole is in a state of decline, how can the railroad industry handle this business more efficiently?
### Railroad Performance Initiatives

- Run manifest trains faster?
  - Increases productivity of assets
  - Reduces fuel efficiency
  - Increases track maintenance
  - Not much change (CP reported 24.4 m.p.h. average manifest train speed in 2001)

<table>
<thead>
<tr>
<th>Railroad</th>
<th>1Q2007 (mph)</th>
<th>1/2008 (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNSF</td>
<td>21.8</td>
<td>24.2</td>
</tr>
<tr>
<td>CP</td>
<td>24.1</td>
<td>23.0</td>
</tr>
<tr>
<td>CSXT</td>
<td>19.2</td>
<td>21.8</td>
</tr>
<tr>
<td>KCS</td>
<td>23.9</td>
<td>23.0</td>
</tr>
<tr>
<td>NS</td>
<td>19.9</td>
<td>20.9</td>
</tr>
<tr>
<td>UP</td>
<td>20.5</td>
<td>22.1</td>
</tr>
</tbody>
</table>

Source: [www.Railroadpm.com](http://www.Railroadpm.com). Note: CN does not report this data to RPM.
Railroad Performance Initiatives

• Improved Operating Plans
  – CSXT One Plan
  – UP Unified Plan
  – CN Precision Railroading
  – Common goals: meet customer requirements with most efficient use of resources

• Norfolk Southern Thoroughbred Operating Plan
  – “. . . with more predictable train operations, terminals can allocate track space with a higher degree of certainty about the track space required, and the duration that the track is occupied.”

Source of quote: NSC 8-K for February 27, 2003
Railroad Performance Initiatives

- **Reduce time in terminals?**
  - Better management improves equipment utilization
  - CP reported terminal dwell time of 27.2 hours in 2001
  - Difficult to make measurable progress without significant investment in terminals

<table>
<thead>
<tr>
<th>Railroad</th>
<th>1Q2007 (hours)</th>
<th>1/2008 (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNSF</td>
<td>24.3</td>
<td>23.0</td>
</tr>
<tr>
<td>CP</td>
<td>24.0</td>
<td>22.6</td>
</tr>
<tr>
<td>CSXT</td>
<td>24.5</td>
<td>23.9</td>
</tr>
<tr>
<td>KCS</td>
<td>24.7</td>
<td>26.2</td>
</tr>
<tr>
<td>NS</td>
<td>22.3</td>
<td>25.7</td>
</tr>
<tr>
<td>UP</td>
<td>25.3</td>
<td>25.3</td>
</tr>
</tbody>
</table>

Source: [www.Railroadpm.com](http://www.Railroadpm.com). Note: CN does not report this data to RPM.
Railroad Performance Initiatives

- Terminal Investment Examples
  - BNSF Argentine Yard
  - NS Conway Yard
  - CP Bensenville Yard
  - UP Roseville Yard
  - CN Johnston Yard
Railroad Performance Initiatives

• CN SmartYard
  – “SmartYard takes information from different existing CN systems, combines the data, and then provides the best sequence for processing the cars. It continuously adjusts to constantly changing conditions of the yard inventory and CN's network . . .”
  – Reduced dwell time at MacMillan Yard by six hours

Sources:  [www.cn.ca](http://www.cn.ca); interview with Mark Hallman
Railroad Performance Initiatives

- Norfolk Southern LOPA
  - Local Operating Plan Adherence--metrics in TYES car inventory management system
  - “LOPA evaluates adherence to our work orders and indicates the extent to which we provide service by pulling cars from, or placing them at, customer sidings.”

Source of quote: NSC 8-K for February 27, 2003
Railroad Performance Initiatives

• BNSF AIM Program
  – "BNSF is ‘reshaping’ the carload network to increase delivery consistency and asking carload customers to play a part as well by examining their own operations and infrastructure for the purpose of identifying opportunities for growth, efficiency and reliability. Feedback from the meeting revealed that customers embrace AIM and are excited about the changes it will bring, not just for the carload network, but system-wide." -- BNSF Group Vice President-Industrial Products Dave Garin, in a prepared statement on BNSF’s Customer Advisory Board meeting in Seattle, October 30, 2007.
Railroad Performance Initiatives

- Local freight train service has not changed in many years
- AIM concentrates on making the “first and last mile” of each carload movement more efficient
Railroad Performance Initiatives

• AIM began in January 2007
• Goal is to collaborate with every BNSF carload customer to find ways to make local train service more efficient and reliable (delivery +/- one hour from plan)
Railroad Performance Initiatives

• AIM relies on customer cooperation
  – Most industry tracks are owned by customers beyond clearance point of switch
  – Inadequate facilities result in additional switching events, require yard storage capacity, and interfere with main line movements
  – The big question: will customers spend capital money to help BNSF provide better service and reduce its costs?
Railroad Performance Initiatives

• What might happen if customers don’t cooperate?
  – UP will enforce policy against switching customers without track agreements
  – CSXT will turn down requests for new sidings that need to be switched off main track
Railroad Performance Initiatives

- Transloading
  - Combines rail efficiency with trucking flexibility
  - Allows railroads to reach off-line customers
  - Reduces switching expense

Pictured: Wind generator parts transload, Iowa, Chicago & Eastern, Bruening, Iowa
Railroad Performance Initiatives

• Logistics parks—wave of the future?
Railroad Performance Initiatives

- First logistics park: ATSF in Alliance, Texas (1990)
- BNSF Logistics Park Chicago (2002)
- Many projects under development

Left: Sketch showing Gardner, Kansas logistics park, to open in 2008 (source: www.gardnerkansas.com)
Railroad Performance Initiatives

• Logistics park advantages
  – Improved switching productivity
  – Concentrated train operations
  – Highway interface

• Logistics park disadvantages
  – Land cost
  – Distance from market
  – Profit sharing with developer
The Short Lines’ Role

• 545 United States short lines
  – 55 in Canada

• U.S. Railroad Mileage (2006)
  – Class 1 Railroads: 94,801
  – Class 2 and 3 Railroads: 45,689
  – Total: 140,490

• Freight Revenue (2006)
  – Class 1 Railroads: $50.3 billion
  – Class 2 and 3 Railroads: $3.7 billion

Source: www.aar.org
The Short Lines’ Role

• In 2006 short lines handled 10.6 million cars to about 12,000 locations
  – About 25% of all U.S. rail traffic originated or terminated on a short line
The Short Lines’ Role

- **Short line advantages**
  - Economical operations
  - Access to more than one Class 1 connection
  - Generally located in lower wage and land cost areas
The Short Lines’ Role

- **Short line disadvantages**
  - Limited geographic scope
  - Small size = scant purchasing power (offset to some extent through holding companies)
  - Condition of track and bridges
The Short Lines’ Role

• **Short Line Railroad Investment Act**
  - Tax credit for track upgrading (2004)
  - Investment needed to handle 286,000 lb. cars
  - Expired December 31, 2007
  - No action by Congress on extension
The Freight Car Fleet

- Railroad-owned car fleet shrinking for decades
  - More efficient operations
  - But still insufficient productivity
  - Desire to get assets off balance sheet

Source: AAR Railroad Facts; www.aar.org
The Freight Car Fleet

- Freight car production rises and falls in response to railroad traffic levels

Source: Railway Supply Institute (rsiweb.org); Progressive Railroading

Note: 2007 and 2008 data are estimates.
The Freight Car Fleet

• Tank cars: the manufacturers’ lifeline
  – Virtually all privately owned
  – Regular investment by lessors and shippers
  – Ethanol shipments driving demand
    (22,500 new tanks projected for 2007)
The Freight Car Fleet

- Covered hoppers: demand dropping fast
  - Cement and roofing granule traffic declines with housing
  - Grain traffic flat to down
    - DDG shipments less than expected
The Freight Car Fleet

- Gondolas: always a low priority
  - Used primarily for scrap
  - Old cars are good enough
  - 1,000-2,000 cars/year produced
The Freight Car Fleet

- Centerbeam flatcars: housing slump shelves orders
  - About 1,700 new flatcars expected in 2007
The Freight Car Fleet

• Boxcars: the vanishing mainstay
  – Decline of paper traffic damps demand
  – About 500 deliveries expected in 2007
The Freight Car Fleet

• Railroad cars: a long-term investment
  – Cars built before July 1, 1974—40 years in interchange service
  – Cars built on or after July 1, 1974—50 years in interchange service
  – Rebuilt cars may be given an additional 40 years of life not to exceed 65 total years (subject to FRA approval)
Rate Outlook

- Railroads have been improving profits in the stagnant rail carload market primarily by raising rates.
- Because carload shipments generally move by rail because truck transport is impractical or uneconomic, shippers have had few short-term alternatives to paying the higher rates.
## Rate Outlook

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class 1 Freight Revenue</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(billions)</td>
<td>$39.1</td>
<td>$44.5</td>
<td>$50.3</td>
</tr>
<tr>
<td><strong>Revenue/ton mile</strong></td>
<td>$0.02354</td>
<td>$0.0262</td>
<td>$0.02840</td>
</tr>
<tr>
<td><strong>Average tons/carload</strong></td>
<td>61.3</td>
<td>61.0</td>
<td>60.9</td>
</tr>
<tr>
<td><strong>Average tons/train</strong></td>
<td>3126</td>
<td>3115</td>
<td>3163</td>
</tr>
</tbody>
</table>

Source: [www.aar.org](http://www.aar.org)
Rate Outlook

• Upcoming: more of the same
  – Contracts being renegotiated as they expire
    • UP 1Q08 analysts conference call: 6% revenue increase expected for year on flat volume
  – Movement to tariff rates for some commodities (coal), which railroads can change easily
  – Effect of economic slowdown?
  – Reregulation?
Conclusions and Questions

• The railroads’ carload freight business, as a whole, is declining
  – Some segments declining faster than others
  – Pockets of growth

• Prospects for reversing the broad trend are dim due to structural change in North American economy
Conclusions and Questions

- Railroads have had some success in improving the efficiency of carload service
  - Better measurement
  - Better management
  - Targeted investment
  - Question: how much will railroads and their customers continue to invest in the business?
Conclusions and Questions

• Railroads have improved the profitability of carload service primarily by raising rates
  – Will this strategy continue to work in a period of flat economic growth—or a recession?
  – At what point do rate increases push marginal customers offshore—or out of business?
Conclusions and Questions

• The future?
  – 2000-07 trend: losing 167,278 carloads a year
Conclusions and Questions

• Questions?