Surface Transportation Board
Rail Energy Transportation Advisory Committee
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Industry Order Activity was Severely Hampered by COVID-19 and Energy Market Collapse

**Freight Car Activity**

- **Freight Car ARCI (Q4 2020)**
  - Orders: 2,704
  - Deliveries: 3,993
  - Backlog: 18,111

**Tank Car Activity**

- **Tank Car ARCI (Q4 2020)**
  - Orders: 693
  - Deliveries: 2,223
  - Backlog: 16,487
Industry Deliveries have Declined Since Late 2019

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<tbody>
<tr>
<td>Orders</td>
<td>8,119</td>
<td>13,626</td>
<td>13,656</td>
<td>13,942</td>
<td>4,816</td>
<td>7,086</td>
<td>5,655</td>
<td>5,406</td>
<td>2,289</td>
<td>1,064</td>
<td>4,207</td>
<td>2,704</td>
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<td>Deliveries</td>
<td>11,143</td>
<td>10,829</td>
<td>8,524</td>
<td>9,933</td>
<td>9,364</td>
<td>10,397</td>
<td>8,773</td>
<td>8,369</td>
<td>5,621</td>
<td>4,183</td>
<td>4,461</td>
<td>3,993</td>
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<tr>
<td>Backlog</td>
<td>38,710</td>
<td>41,007</td>
<td>42,339</td>
<td>45,711</td>
<td>37,624</td>
<td>34,312</td>
<td>28,074</td>
<td>24,977</td>
<td>22,068</td>
<td>19,207</td>
<td>18,950</td>
<td>18,111</td>
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<tbody>
<tr>
<td>Orders</td>
<td>2,229</td>
<td>10,162</td>
<td>11,316</td>
<td>6,013</td>
<td>4,847</td>
<td>4,668</td>
<td>1,660</td>
<td>3,058</td>
<td>3,883</td>
<td>859</td>
<td>1,576</td>
<td>693</td>
</tr>
<tr>
<td>Deliveries</td>
<td>1,955</td>
<td>2,242</td>
<td>2,697</td>
<td>3,529</td>
<td>3,807</td>
<td>5,226</td>
<td>5,798</td>
<td>6,358</td>
<td>5,203</td>
<td>4,258</td>
<td>3,492</td>
<td>2,223</td>
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<tr>
<td>Backlog</td>
<td>16,506</td>
<td>24,154</td>
<td>31,473</td>
<td>34,512</td>
<td>35,452</td>
<td>34,915</td>
<td>30,053</td>
<td>26,318</td>
<td>24,262</td>
<td>20,405</td>
<td>18,467</td>
<td>16,487</td>
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</table>
**Railcar Delivery Outlook Expected to Contract**

- Limited orders in recent quarters is driving the lower 2021 delivery forecast.
- Freight cars are expected to be the primary driver of deliveries over the next few years.
- Flammable liquid regulations will pull-forward replacement demand for next 5 years.
- Tank cars, 3,500-5,500 cubic foot covered hoppers for grain, >5,500 cubic foot covered hoppers for plastics, and intermodal flat cars are expected to support future deliveries.
Coal Demand Continues to Decline

- Coal carloads are down 4.1% year-to-date through April 3, 2021.
- The railcar fleet servicing coal will see continued attrition in the coming years.
- 28% of gondolas and 33% of open hoppers in the North American fleet are in storage as of March 2021.
- Current Estimated Fleet Sizes:
  - Coal Gon ~98K
  - Coal Hopper ~94K

Source: UMLER Analysis

Estimated Coal Car Age Distribution

Percent of coal cars in storage rose sharply starting in late 2019

- North American coal carloads are down 4.1% through Week 13 compared to the same time 2020.
- Open hopper storage has recently spiked before starting to return to lower levels while gondola storage has steadily decreased over the last year.
Energy Related Cars Returning to Storage

- Covered hoppers have been coming out of storage, but remain well above historically normal levels, likely due to elevated Small Cube storage.

- Tank car storage has been decreasing consistently since this past summer but remains above pre-pandemic rates.
Liquefied Natural Gas by Rail

**PHMSA, July 24, 2020**

- The Pipeline and Hazardous Materials Safety Administration (PHMSA) issued a final rule authorizing the bulk transportation of liquefied natural gas (LNG) by rail.
- Specifically, the rule permits the bulk transportation of LNG in DOT-113C120W9 (DOT-113) specification tank cars with enhanced outer tank requirements and additional operational controls.

**Biden Administration**

- The PHMSA final rule was challenged in the D.C. Circuit by several environmental groups and 15 states.
- The Biden Administration indicated its intent early on to review the LNG-by-rail rule.
- At the request of Congress, an ad hoc committee appointed by the National Academies of Sciences, Engineering, and Medicine will review DOT’s plans for LNG by rail. The review will last 24-months.
- The full-scale tank car impact testing and analysis of the DOT-113 tank car should be completed by the FRA this summer/fall. These tests should evaluate the performance and crashworthiness of DOT-113 specification tank cars for LNG by rail.
Crude Oil Fleet Size & Composition

Source: Association of American Railroads
Ethanol Fleet Size & Composition

Source: Association of American Railroads

DOT 111  CPC-1232  117/120
Other Flammable Liquids Fleet Size and Composition

Source: Association of American Railroads
February 2021 - Fleet size increased by 5,339 over the last 12 months

Source: Railway Supply Institute
DOT 117R Fleet Growth

December 2020 – 5,745 added in 2020

Source: Railway Supply Institute
## Over 59,000 Tank Cars Require Replaced/Retrofit

### Impacted Fleets by Compliance Dates

<table>
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<tr>
<th>Year</th>
<th>Flammable Liquids</th>
<th>Required Replacement/Retrofit</th>
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<tbody>
<tr>
<td>2023</td>
<td>Ethanol, All DOT-111, Non-Jacketed CPC-1232</td>
<td>10,654</td>
</tr>
<tr>
<td>2025</td>
<td>Crude Oil, Ethanol, Jacketed CPC-1232</td>
<td>4,153</td>
</tr>
<tr>
<td>2029</td>
<td>Other Flammable Liquids, Packing Group II &amp; III</td>
<td>35,771*</td>
</tr>
</tbody>
</table>

- **Based on 4th Quarter 2020 numbers, the number of cars that require replacement to DOT-117J or retrofitted to DOT-117R by service/date.**

- **50,578**: The number of tank cars that require replacement or retrofitted in the North American fleet.

*Flammable Liquids, PG I, transported in DOT 111 or CPC-1232 tank cars require replacement or retrofitted by 5/1/2025.
<table>
<thead>
<tr>
<th>Production</th>
<th>Cars / Month</th>
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<tbody>
<tr>
<td>Cars/Month to Meet Deadlines</td>
<td>815 – 1,146</td>
</tr>
<tr>
<td>DOT-117 Production Avg. 2020</td>
<td>607</td>
</tr>
<tr>
<td>DOT-117R Production Avg. 2020</td>
<td>485</td>
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<tr>
<td>Total Production 2020 Average</td>
<td>1,092</td>
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<tr>
<td>Surplus Production</td>
<td>(-54) - 277</td>
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