Industry Order Activity Moderating To Replacement Levels In 2019

**Freight Car Activity**

- Freight Car Orders
- Freight Car Deliveries
- Freight Car Backlog

**Tank Car Activity**

- Tank Car Orders
- Tank Car Deliveries
- Tank Car Backlog
Railcar Delivery Outlook Expected To Contract

- Forecasted delivery reduction due to oversupply of certain car types and PSR implementations
- Tank cars and >5,500cf covered hoppers for plastics are expected to support future deliveries
- Non-energy tank cars will drive new tank car demand
Energy Related Cars Returning To Storage

- Coal carloads are down 7.1% year-to-date in 2019
- 21% of gondolas and 23% of open hoppers in the North American fleet are in storage as of November 2019
- Despite declining coal carloads, the railcar fleet servicing coal will see continued attrition in the coming years
- Over 40,000 coal railcars are over 35 years old

Percent of coal cars in storage has stabilized in recent months

- Retirements are expected to outpace coal car replacements due to lower demand
- The coal fleet consists of:
  - ~110k hoppers
  - ~112k gondolas

Source: Association of American Railroads
Energy Related Cars Returning To Storage

Sand / Cement Cars in Storage

Crude Oil / Ethanol Cars in Storage
Liquefied Natural Gas by Rail

NPRM, October 24, 2019

- The current HMRs do not authorize the bulk transport of LNG in rail tank cars
- LNG production and consumption trends are related to international fuel prices, mainly crude oil, diesel, and coal
- Between 2010 and 2018, in the United States:
  - the number of facilities increased by 28.7 percent, and the total storage and vaporization capacities increased by 21 and 23 percent, respectively
  - total liquefaction capacity increased by 939 percent due to new LNG export terminals

Presidential Executive Order

- The NPRM is consistent with Section 4(b) of the President’s April 10, 2019, “Executive Order on Promoting Energy Infrastructure and Economic Growth,” which directs the Secretary of Transportation to publish an NPRM that would propose to treat LNG the same as other cryogenic liquids and permit LNG to be transported in approved rail tank cars
Crude Oil Fleet Size & Composition

![Graph showing fleet size and composition over time.]

- **DOT 111**
  - 2013: 40,333
  - 2014: 50,803
  - 2015: 48,920
  - 2016: 24,865
  - 2017: 21,569
  - 2018: 25,470
  - Q2 2019: 29,240

- **CPC-1232**
  - 2013: 46%
  - 2014: 67%
  - 2015: 82%
  - 2016: 81%
  - 2017: 74%
  - 2018: 54%
  - Q3 2019: 68%

- **117/120**
  - 2013: 54%
  - 2014: 33%
  - 2015: 14%
  - 2016: 3%
  - 2017: 1%
  - 2018: 54%
  - Q3 2019: 32%
Ethanol Fleet Size & Composition

Source: Association of American Railroads
Other Flammable Liquids Fleet Size and Composition

Source: Association of American Railroads
September 2019 - Fleet size increased by 1028 Cars or 3.3 %

Based on 10/1/2019 UMLER
September 2019 - Fleet size increased by 983 cars or 3.6%
Over 59,000 Tank Cars Require Replaced/Retrofit

Impacted Fleets by Compliance Dates

- **2020**
  - Crude Oil
  - Non-Jacketed CPC-1232
  > 498

- **2023**
  - Ethanol
  - All DOT-111
  - Non-Jacketed CPC-1232
  > 13,156
  > 1,551

- **2025**
  - Crude Oil, Ethanol
  - Jacketed CPC-1232
  > 9,796

- **2029**
  - Other Flammable Liquids
  - Packing Group I, II & III
  > 35,025

- Based on 3rd Quarter 2019 numbers, the number of cars that need to be Replaced/Retrofit to DOT-117J or DOT-117R by Service/Date
- 59,248 tank cars will need to be retrofitted/replaced in the North American fleet
Cars per Month Required vs. Last Month Actual Production

<table>
<thead>
<tr>
<th>Production</th>
<th>Cars / Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars/Month to Meet Deadlines</td>
<td>863 - 1081</td>
</tr>
<tr>
<td>DOT-117 Production Avg. Last 3 Months</td>
<td>625</td>
</tr>
<tr>
<td>DOT-117R Production Avg. Last 3 Months</td>
<td>762</td>
</tr>
<tr>
<td>Total Production Last 3 Months Average</td>
<td>1,387</td>
</tr>
<tr>
<td>Surplus Production</td>
<td>402 - 587</td>
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