

National Transportation Safety Board Rail Safety Forum: Transportation of Crude and Ethanol

Railway Supply Institute Committee on Tank Cars

■ Member Companies:

- *American Railcar Industries; American Railcar Leasing; CIT Rail; GATX Corporation; General Electric Railcar Services Corporation; The Greenbrier Companies; Trinity Rail Group, LLC; and Union Tank Car Company*
- Build 95 percent of tank cars operating in North America
- Own and lease 70 percent of tank cars in North America



RSICTC Recommendations

- A comprehensive set of regulatory recommendations to DOT and TC to address the transportation of Class 3, flammable liquids including crude oil and ethanol in tank cars.
 - Future Tanks Cars to be built
 - CPC-1232 “Good Faith” Tank Cars on order
 - CPC-1232 “Good Faith” Tank Cars in service
 - Existing “Legacy” Tank Cars



Crude Oil and Ethanol Priority

- RSICTC is urging PHMSA and TC to give priority to crude oil and ethanol for a modification program and to consider the following factors in determining a modification schedule:
 - Availability and capability of modification facilities
 - Car cleaning capacity
 - Estimate more than 95,000, Class 3, Packing Group I and II modification candidates:
 - ❖ Legacy and Good Faith tank cars
 - Some tank cars will be retired or repurposed
 - Disruption of tank car supply to shippers



Non-CPC-1232

- Until such time when standards applicable to Legacy tank cars are developed, non-CPC-1232 compliant tank cars should not be newly assigned into crude oil or ethanol service



Questions

Q&A



Fleet Statistics: CPC-1232 Tank Cars

33,800: Tank car industry annual new car capacity

55,400: Current cars on order

25,300: Jacketed crude oil cars on order

12,500: Non-Jacketed crude oil cars on order



0: Jacketed and non-jacketed ethanol cars on order

5,600: Jacketed cars in flammable liquids service

11,700: Non-Jacketed cars in flammable liquids service

55,100: Total CPC-1232 tank cars by the end of 2015



Fleet Statistics: Legacy Tank Cars

22,800: Non-Jacketed crude oil cars

29,200: Non-Jacketed ethanol cars

26,600: Non-Jacketed other Class 3,
PG I and II Cars

5,500: Jacketed crude oil cars

102: Jacketed ethanol cars

81,500: Total legacy tank cars

Costs will vary depending on car design and modification



New Cars

Class 3, PG I and II, Including Crude Oil and Ethanol Tank Cars

- Ordered after PHMSA and TC Date Certain
 - Minimum 7/16 inch normalized steel tank
 - Full height head shields
 - Jacket
 - Top fittings protection
 - ½ inch thermal blanket
 - Pressure relief device per TCC recommendations
 - Re-configured BOV handle
 - Ongoing classification work may require some crude oils packaged in cars other than DOT-111s



New Cars

Class 3, PG III Tank Cars

- Ordered after PHMSA and TC Date Certain
 - Build to current standards
 - Normalized steel tank
 - Top fittings protection
 - Pressure relief device per TCC recommendations
 - Re-configured BOV handle



Current New Car Backlog

Crude Oil and Ethanol Jacketed Tank Cars

- Built after PHMSA and TC Date Certain
 - Build to CPC-1232 standard base
 - ½ inch thermal blanket
 - Full height head shields
 - Pressure relief device per TCC recommendations
 - Re-configured BOV handle
 - 25,300 cars



Current New Car Backlog

Crude Oil and Ethanol Non-Jacketed Tank Cars

- Built after PHMSA Date Certain
 - Build to CPC-1232 standard base
 - Pressure relief device per TCC recommendations
 - Re-configured BOV handle
 - 12,500 cars



Current New Car Backlog

Other Jacketed Class 3, PG I and II Tank Cars

- Build to CPC-1232 standard base
- ½ inch thermal blanket
- Full height head shield
- Pressure relief device per TCC recommendations
- Re-configured BOV handle

Other Non-Jacketed Class 3, PG I and II Tank Cars

- Build to CPC-1232 standard base
- Pressure relief valve per TCC recommendations
- Re-configured BOV handle

Other Jacketed and Non-Jacketed Class 3, PG III Tank Cars

- Build as ordered
- Pressure relief device per TCC recommendations
- Re-configured BOV handle



Existing CPC-1232 (Good Faith)

Existing CPC-1232 Jacketed and Non-Jacketed Tank Cars

- Pressure relief device per TCC recommendations
- Re-configured BOV handle
- Full statutory life
- 55,100 in service or on order



Existing Legacy

Existing (Legacy) Non-Jacketed Crude Oil and Ethanol Tanks Cars

- Full height head shields
- Jacket
- Improved top fittings protection
- ½ inch thermal blanket
- Pressure relief device per TCC recommendations
- Re-configured BOV handle
- Full statutory life
- 22,800 crude oil cars
- 29,200 ethanol cars



Existing Legacy

Existing (Legacy) Non-Jacketed Other Class 3, PG I and II Tank Cars

- Half height head shields
- Improved top fittings protection
- Pressure relief device per TCC recommendations
- Re-configured BOV handle
- Full statutory life
- 26,600 cars



Existing Legacy

Existing (Legacy) Jacketed Class 3, PG I and II Tank Cars

- Pressure relief device per TCC recommendations
- Re-configured BOV handle
- Full statutory life
- 5,500 crude oil cars
- 102 ethanol cars
- 9,400 other cars



Existing Legacy

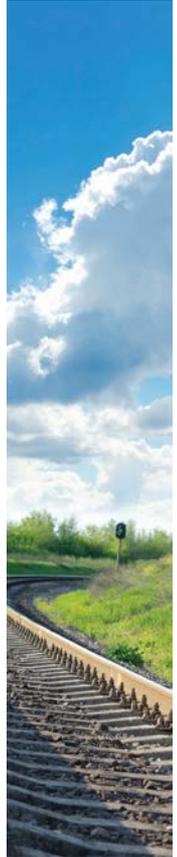
Existing (Legacy) Jacketed and Non-Jacketed Class 3, PG III Tank Cars

- Pressure relief device per TCC recommendations
- Re-configured BOV handle
- Full statutory life



RSI HM-251 Position Paper

<p>Newly Ordered Tanks Cars</p>	<p>All Class 3, PG I and II (incl. crude oil and ethanol)</p> <ul style="list-style-type: none"> • Min. 7/16" normalized steel tank • Full height head shield • Top fittings protection • ½" thermal blanket with steel jacket • Pressure relief device per AARTCC • Reconfigured bottom outlet valve handle (TBD) 	<p>Class 3, PG III (other flammable liquids)</p> <ul style="list-style-type: none"> • Current standards • Normalized steel tank • Top fittings protection • Pressure relief device per AARTCC • Reconfigured bottom outlet valve handle (TBD) 	<p>NOTE: Some types of crude oil may require packaging in a DOT tank car class other than a DOT 111</p>
<p>New Tank Car Backlog</p>	<p>Crude Oil and Ethanol Only</p> <p><u>Jacketed:</u></p> <ul style="list-style-type: none"> • CPC-1232 Compliant • ½" thermal blanket with steel jacket • Pressure relief device per AARTCC • Reconfigured bottom outlet valve handle (TBD) • Full height head shield <p><u>Non-Jacketed:</u></p> <ul style="list-style-type: none"> • CPC-1232 Compliant • Pressure relief device per AARTCC • Reconfigured bottom outlet valve handle (TBD) 	<p>Other Class 3, PG I and II</p> <p><u>Jacketed:</u></p> <ul style="list-style-type: none"> • CPC-1232 Compliant • ½" thermal blanket with steel jacket • Pressure relief device per AARTCC • Reconfigured bottom outlet valve handle (TBD) • Full height head shield <p><u>Non-Jacketed:</u></p> <ul style="list-style-type: none"> • CPC-1232 Compliant • Pressure relief device per AARTCC • Reconfigured bottom outlet valve handle (TBD) 	<p>Class 3, PG III</p> <ul style="list-style-type: none"> • Built as ordered • Can include non-normalized tank for certain commodities • Pressure relief device per AARTCC • Reconfigured bottom outlet valve handle (TBD)



RSI HM-251 Position Paper

Existing CPC-1232 Compliant Good Faith tank cars	[All Class 3, PG I, II and III] <ul style="list-style-type: none"> Jacketed and non-jacketed remain in unrestricted service, full statutory life Pressure relief device per AARTCC Reconfigured bottom outlet valve handle (TBD)
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Legacy Tank Cars	Crude Oil and Ethanol Only Freeze fleet – no new assignment; existing ok <u>Jacketed:</u> <ul style="list-style-type: none"> Remain in unrestricted service, full statutory life Pressure relief device per AARTCC Reconfigure bottom outlet valve handle (TBD) <u>Non-Jacketed</u> <ul style="list-style-type: none"> Steel Jacket Full height head shield Improved top fittings protection ½” thermal blanket Pressure relief device per AARTCC Reconfigure bottom outlet valve handle (TBD) Remain in unrestricted service, full statutory life Option to remove from service rather than modify 	All Other Class 3, PG I and II <u>Jacketed:</u> <ul style="list-style-type: none"> Remain in unrestricted service, full statutory life Pressure relief device per AARTCC Reconfigure bottom outlet valve handle (TBD) <u>Non-Jacketed</u> <ul style="list-style-type: none"> Improved top fittings protection Half height head shield Pressure relief device per AARTCC Reconfigure bottom outlet valve handle (TBD) Remain in unrestricted service, full statutory life Option to remove from service rather than modify 	Class 3, PG III <ul style="list-style-type: none"> Remain in unrestricted service, full statutory life Pressure relief device per AARTCC Reconfigure bottom outlet valve handle (TBD)
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