The Greenbrier Companies

NTSB
2014
How does a manufacturer demonstrate compliance with requirements?

DOT delegates **review** and approval responsibility to AAR Tank Car Committee.

The Committee has experienced tank car Independent Third Party Engineers that carefully review drawings and applications for DOT and AAR compliance.

Each and all build lots must be approved.

AAR M-1001, M-1002, and M-1003 audits.
What kinds of tank cars are being built by Greenbrier?

Greenbrier builds mostly tank cars in the non-pressure, CPC-1232, configuration.

Greenbrier builds pressure tank cars in North America (NA) and has over 30 years of tank experience in Europe including pressure cars.

About 3/4 of all tank cars built for NA are non-pressure type.
What kinds of cars are being ordered?

Industry-wide production – actual & forecast

Small cube hoppers & tank cars account for 60% of 2012 – 2014F deliveries

Source: FTR Associates, March 2014
What kinds of cars are being ordered?

Greenbrier builds mostly DOT 111A (non-pressure) tank cars entirely in the CPC-1232 configuration.

About 3/4 of all tank cars are non-pressure type.

DOT 111A cars including CPC-1232 cars are over 75% of the tank car market.
What is the industry’s tank car production capacity?

Greenbrier believes tank car production can increase 7,000 to 10,000 per year.

Source: Railway Supply Institute
What types of retrofitting is feasible on different kinds of older tank cars?

For many cars it will be possible to add:

- Head shields
- Jackets
- Top fittings protection
- Thermal protection
- Operating handles
Key Tank Car Retrofit Areas
An Opportunity for “Triage” Across Hazardous Material Commodities Transported by Rail

UPGRADES FOR OLDER DOT-111 CARS
Upgrades for tankers carrying ethanol and crude oil

Stronger housing
Designed to prevent top-fitting damage in the event of a rollover.

Head shields
Protects the head or end of the car from impacts

New operating handles
(located under the car)
Designed to break free instead of opening in the event of a crash.

Source: Chicago Tribune, GBX Marketing
What kind of inspections and maintenance are necessary, and how is maintenance performed?

The railroad performs a basic worthiness inspection whenever a car is assembled into a train.

Bad Order, Reassignment, and Requalification all trigger Inspection and Maintenance.

Tank Car Maintenance must be performed only in Licensed Facilities.
What services are these non-pressure cars in?

- 68,000 Crude & Ethanol Service
- 100,000 Non-Hazardous Service
- 104,000 Other Hazardous Service

Examples:
- Caustic Soda
- Sulfuric Acid
- Sodium Alkalis
- Alcohols
- Nitrogen Fertilizer
- Residual Fuel Oils

272,000 Non-Pressure Cars

Source: University of Illinois