

# 'Crashworthiness' in context

FRA panel votes to change safety standards for US passenger railroading



A Denton County Transportation Authority GTW DMU 2/6 railcar, made by Switzerland's Stadler Rail AG, rests at the authority's Lewisville, Texas, yard in May 2013. TRAINS: Steve Sweeney

**New alternate crash standards** under review could mean that German, Swiss, Japanese, and other international transit cars may be coming to a commuter line near you. In June, members of the Federal Railroad Administration's Railroad Safety Advisory Committee unanimously endorsed new crash standards for Tier II and III high-speed passenger equipment, as well as alternate standards for lower-speed Tier I commuter-type trains.

The safety committee has been working on alternate standards since 2009. The rules would leave car manufacturers relatively free to decide the materials, construction, and design of their products, so long as passengers remain safe during a wreck.

Committee members' proposed rules need to pass scrutiny from the Office of Management and Budget as well as the FRA before the agency makes a draft version available for public comment. Depending on the level of scrutiny required by law, a draft of the rules could be available as soon as August or as late as 2014.

"Together with (the committee) and its Engineering Task Force, we have achieved total consensus among all the (committee) members, including international rail manufacturers, on new crashworthiness standards," says Joseph C. Szabo, FRA administrator. "Once codified, these standards will better align our approach to passenger safety and the use of rail equipment with the rest of the world."

growth, officials looked to avoid cutting service by finding cars that were legal to operate alongside the Budds and freight trains.

Jim Cline, the Denton authority's president, says he and other officials searched the international railcar market and chose to purchase European cars because of their quiet running and low-to-ground entrances, which would appeal to Denton's residential customer base. He says they specifically chose Stadler Rail AG articulated trainsets because they met FRA's alternate Tier I standards with minimal modification.

That means Denton's A-train vehicles can run anywhere on their existing route, alongside freight trains elsewhere, or on shared-service routes with neighbors DART and Trinity Railway Express. Cline says that flexibility gives the authority the option to expand passenger service when needed.

If the alternate rules become administrative law, Denton's trainsets and similar "alternate Tier I" vehicles traveling at speeds up to 125 mph would not need safety waivers to operate on U.S. railroads, opening the door to new products from makers like Siemens AG, Alstom, and Nippon Sharyo Ltd.

Under the proposed standards, Tier I trainsets and Tier II and III equipment, operating up to 150 and 220 mph, respectively, would be equally crashworthy. The law would enable equipment in each tier to operate with freight on the same tracks and connect to already-built urban networks.

## Comparing cars and crash standards

**Tier I Alternate Standard Vehicle**  
**Stadler GTW DMU 2/6 (as built 2011)**  
**Empty weight:** 159,200 pounds  
**Length:** 134 feet  
**Top speed:** 75 mph  
**Power rating:** Approx. 600 hp  
**Stopping power:** 2.9 mph/second  
**Passengers:** 104 seated

**Meets "alternate" crash standards:**  
**Forces:** "Survival cells" for the passenger area would withstand at least 1.2 million pounds of force and keep passengers safe; or 800,000 pounds of force without permanent structural damage to the car; or 1 million pounds of force that compresses the car no more than 1 percent in 15 feet.  
**Anti-climbing:** Trainsets will not climb more than 4 inches in a collision.  
**Passenger seating:** Unchanged.

**Tier I Standard Vehicle**  
**Colorado Railcar\* DMU (as of 2003)**  
**Empty weight:** 175,000 pounds  
**Length:** 85 feet  
**Top speed:** 100 mph  
**Power rating:** Approx. 1,200 hp  
**Stopping power:** 2.0 mph/second  
**Passengers:** 98 seated

**Meets "original" crash standards:**  
**Forces:** Equipment must take 800,000 pounds of force without structural damage.  
**Anti-climbing:** Cars and locomotives required to resist a minimum of 100,000 pounds up or down force on both ends; 200,000 pounds for locomotive front ends.  
**Passenger seating:** Must withstand four times the weight of gravity individually and eight times the weight of gravity in a collision.

\*Colorado Railcar ceased operations in 2008

# New regulatory hurdles for PTC, AAR says

Federal railroad, communications agencies to collaborate with rail carriers on radio tower installations



A positive train control radio tower stands next to a signal bridge on the BNSF main line at Cajon Pass. Carl Massart

**Railroads are facing** new hurdles before they can meet a December 2015 start date for positive train control operations.

Speaking in front of the U.S. Senate's Committee on Commerce, Science, & Transportation in June, Association of

American Railroad's President Ed Hamberger said the Federal Communications Commission will require railroads to meet National Environmental Protection and National Historic Preservation acts standards before installing radio towers. The mandate covers up to 20,000 separate radio antennas, Hamberger said.

The acts, related to protecting the environment and historical heritage, require applicants for federal licenses to disclose what affects, if any, their license will have in a community. It is expected that each permanent PTC radio tower will require FCC operating licenses or registrations. Hamberger says this means railroads will need more paperwork to comply with the laws. An FCC spokesperson tells TRAINS that the FCC is working "diligently" with railroads and the Federal Railroad Administration to find solutions that reconcile the Congressional mandate with other applicable federal statutes.

Hamberger says his organization is working on behalf of the railroads for a clear path to PTC implementation. The

AAR is still urging Congress to extend the deadline for PTC implementation nationwide to at least 2018.

"This was a challenge that arose as a step in the implementation process, and a clear example of the uncharted territory railroads have faced in implementing PTC," Hamberger tells TRAINS. "It's fair to say there may still yet be other unforeseen issues or challenges that could arise as railroads continue to move forward with their implementation plans."

## >> TECHNOLOGY BRIEF

### SEPTA buys digital radios from Ritron

Ritron Inc., of Carmel, Ind., says Philadelphia's Southeastern Pennsylvania Transportation Authority is using 350 Ritron NXDN digital radios it delivered in June. The radios are a mix of 72- and 36-volt D.C. units designed to meet federal narrow-band standards.

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