

Emergency Preparedness Notice of Proposed Rulemaking

The Federal Railroad Administration (FRA) issued regulations for Passenger Train Emergency Preparedness in May 1998, and Passenger Equipment Safety Standards in May 1999. In 2003, the Railroad Safety Advisory Committee established a Passenger Safety Working Group, which in turn, established an Emergency Preparedness Task Force (Task Force) to consider and recommend any necessary enhancements to emergency features of passenger equipment.

Emergency Window Exits and Rescue Access Windows

Emergency window exits are intended to supplement door exits, which serve as the preferred means of egress in an emergency situation, by providing an alternative means of emergency egress should doors be rendered inoperable and by providing an additional means of egress in life-threatening situations requiring rapid exit.

The regulations require that each single-level car and each main level of a multi-level passenger car have a minimum of four emergency window exits, either in a staggered configuration or with one exit located in each side of each end, on each level. These windows are to be designed to permit rapid and easy removal during an emergency without the use of a tool or other implement. Conspicuous photo-luminescent marking, as well as instructions, are required. Windows intended for rescue access are to be marked with retro-reflective material and instructions provided. FRA's current regulations do not specifically require any minimum number of rescue access windows for passenger cars, however.

On November 6, 2003, the National Transportation Safety Board (Safety Board) addressed Safety Recommendation R-03-21 to the FRA. This recommendation arose from the Safety Board's investigation of the collision between a Burlington Northern and Santa Fe Railway Co. freight train with a standing Southern California Regional Rail Authority (Metrolink) passenger train on April 23, 2002, near Placentia, California. As a result of the collision, the bulkhead end door and the stairway leading to the side door exits on the lower level of the Metrolink cab car were blocked, precluding the use of any of the three preferred exits (doors) by passengers in the intermediate level. Safety Recommendation R-03-21 provides in full:

Revise the language of 49 Code of Federal Regulations 238.113(a)(1) to reflect that appropriate exterior instructional signage describing the emergency removal procedure be required at emergency windows on all levels of a multiple-level passenger railcar.

The Task Force reviewed the Safety Board's recommendation and decided to address the issues of emergency window exits and rescue access windows on a broader basis, with the goal that windows for emergency egress and rescue access would be available on every level of a passenger car. To this end, the Task Force agreed to develop requirements for (1) emergency window exit on non-main levels and (2) rescue access windows on all levels.

Optimally, there would be a sufficient number of windows for emergency responders to access (1) every level with passenger seating of a multiple-level passenger railcar, (2) both sides of the car, in the event of a derailment where the exits on one side are compromised, and (3) each end, in the event that one end is crushed or the exits on that end are otherwise rendered inaccessible or inoperable. A constraint for both new and existing intermediate levels of multi-level passenger car designs is that there is limited space for side windows due to the presence of bathrooms, equipment closets, and side door exits. Thus, the Task Force agreed to make the requirements flexible and consistent with existing car designs and, in certain cases, provide for exceptions. The basic principle regarding requirements for both emergency window exits and rescue access windows has been to ensure that they may be used without having to go to another level of a car or through a door. The exceptions for new equipment are limited to situations that arise from the need to provide accessible accommodations under the Americans with Disabilities Act, in compartments where there are no more than four seats and a suitable alternative is provided. Greater flexibility was recommended for existing equipment to avoid costly relocations and window installations.

Last year, it became apparent that the phrase “rapid and easy” in the emergency window exit regulation was being interpreted in different ways by commuter railroads and car manufacturers. Central to the issue was the actual removal of the window to create an opening that could be used for egress, once the gasket was removed. The Task Force tried unsuccessfully to develop an actual measure of “rapid and easy,” but agreed that promoting “rapid and easy” removal of emergency windows was desirable. The combination of fixtures, such as headrests and luggage racks, as well as larger and heavier windows, can create a situation where the most effective and efficient method for removing a window is not immediately apparent. As a first step towards promoting rapid and easy removal of the window and to address the situation of particular concern, the Task Force recommended requiring that instructions specifically take into account potential hindrances.

The Task Force also recommended requiring two windows for rescue access (versus four as is required for emergency exit) for several reasons. For instance, on many cars, zip-strips installed to facilitate rapid removal of a window, can be installed either on the interior or the exterior of the car, but not both. In this case, requiring more rescue access windows could result in fewer emergency window exits, which are the more preferred means of egress. Flexibility for installing rescue access windows in doors was added for existing equipment.

Existing requirements for emergency window exits in sleeping compartments or similar private compartments remain unchanged. Although proposed rescue access window requirements for such compartments are new, they reflect current practice.

Emergency Communications - Public Address (PA) and Intercom Systems

Traditionally, conductors and assistant conductors have been relied upon to communicate with passengers through face-to-face interaction or by use of the PA system to relay information to passengers in both normal and emergency situations. However, with smaller crew sizes, passengers may not be able to communicate to the crew a medical emergency, safety issue, or

security threat as quickly as may be necessary. For instance, a passenger in the last car of a train needing to communicate a safety/security threat could ostensibly have to walk the entire length of the train to communicate with the conductor (assuming the crew is composed of an engineer and one conductor). Furthermore, if the conductor were to become incapacitated, it would be necessary for passengers to communicate with the engineer.

The Passenger Equipment Safety Standards issued in 1999 contain requirements for two-way emergency communication systems for Tier II equipment (trains operating at speeds exceeding 125 mph, but not exceeding 150 mph). There are no such requirements for Tier I equipment. The Task Force agreed that all cars should have PA systems. It also agreed emergency communication systems in new cars should include intercom systems intended to promote safety by enabling passengers to quickly communicate emergency situations to the train crew.

Amtrak and various commuter railroads that operate cars with intercom systems indicated that they have successfully implemented measures to deter misuse. Passenger cars that currently do not have PA systems are scheduled to be retired before the requirement to have PA systems on existing equipment would become effective. The recommended requirements developed by the Task Force generally reflect current practice for Tier I equipment and existing requirements for Tier II.

Emergency Roof Entrance - Roof Hatches or Structural Weak Points

Car rollover or tilt has a propensity to result in more severe occupant injuries and, thus increases the potential need for rescue access versus self-evacuation. Although rescuers could enter a car that is on its side via a rescue access window, the removal of an injured occupant through a side window could be difficult. End doors may be blocked, jammed, or otherwise become unavailable for use.

As required by 238.441, Tier II single-level passenger cars and power cars must have at least one roof hatch for emergency roof entrance or at least one structural weak point for properly equipped emergency personnel. Many new multi-level cars are being manufactured with structural weak points in the roof. The American Public Transportation Association Passenger Rail Equipment Safety Standards Committee issued a "Recommended Practice for Roof Emergency Access," which, along with the requirements for Tier II equipment, served as a basis for the recommended requirements.

The Task Force agreed that two emergency roof access locations (roof hatches or structural weak points) could be especially useful in situations where passenger cars roll onto their sides following certain collisions and derailments. Railroads would have the choice of installing roof hatches or structural weak points with minimum dimensions of 24 inches by 26 inches.

To be consistent with the recommended requirements for Tier I, the Task Force is proposing to increase the dimensions of the roof access point and the number of locations for Tier II passenger cars (power car requirements would remain unchanged).

Inspection Testing and Maintenance

Sections 238.17, 238.303, and 238.305 (which contain standards for movement of passenger equipment with other than power brake defects, inspection, and repair) were modified, as necessary, to include requirements for inspecting and repairing emergency communication systems, emergency roof access points, and rescue access markings. To allow railroads sufficient time to repair the equipment with minimal disruption to normal operations, the Task Force added flexibility for operating equipment in passenger service with certain non-compliant conditions. However, the train crew must be notified if such condition involves an inoperable door or PA system.

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