

IMPORTANT NOTICE: THIS LANGUAGE IS FOR DISCUSSION PURPOSES OF THE GENERAL PASSENGER SAFETY TASKFORCE, THE PASSENGER WORKING GROUP, AND FULL RSAC ONLY. IT DOES NOT REPRESENT THE OFFICIAL POSITION OF THE FEDERAL RAILROAD ADMINISTRATION (FRA).

I. DEFINITIONS

Subpart A – General

§ 238.5 Definitions.

Intent – To create definitions for new passenger door safety regulations which apply to powered side doors.

Exterior side door safety system – A system or subsystem of safety features that enable the safe operation of the exterior side doors of a passenger car or train. The exterior side door safety system includes appurtenances and components that control, operate, and display the status of the passenger car exterior side doors, and is interlocked with the traction power control. The exterior side door safety system is capable of functioning within each passenger car or group of passenger cars coupled to form a train.

Door isolation lock – A cutout/lockout mechanism installed at each exterior side door panel to secure a door in the closed and latched position, provide a door-closed indication to the summary circuit, and remove power from the door motor or door motor controls.

Seal – An instrument, which when properly applied, provides a visual indication of the intended position of the device.

Traction summary circuit – Electric circuit used to prevent the development of traction power.

End-of-train feature – A feature used to determine the end of the train or the last passenger car in the train for the door summary circuit.

Fail safe – A design feature which will result in and maintain a safe condition in the event of a malfunction or system failure.

No-motion system – A system that detects the motion of the train or vehicle.

Trainline door circuit – A circuit used to convey door signals over the length of the train.

Door summary circuit – A trainline door circuit that provides an indication to the controlling cab of the train that all exterior side doors are closed and latched, and/or locked out with a door isolation lock.

Intent – FRA is proposing to adopt the following definitions used in the proposed APTA Door Standard. FRA wants to use the same definitions in order to create continuity between the consensus language and the proposed APTA Door Standard.

By-Pass – A device designed to override a function.

Cut-Out – A device designed to remove a feature or function from operation.

Diagnostic Monitor – A monitor that displays the fault status of the systems on a car or a car within the train consist.

Door Control Station – A control panel, activated by a crew key, which provides the train crew the ability to control exterior power operated side doors either locally and/or via trainline.

Door Pocket – A compartment into which a door panel is retracted when in the open position.

Door Status Indicator – A device visible to the train crew and/or passengers that provides an indication of the status (open or closed) of the door.

Door Summary By-Pass – A device designed to override the door summary circuit.

Enable – A design feature controlled automatically or manually by the train crew's operation of the door.

Inhibit – Prevent the operation of a feature or function.

Interface – A point at which two or more systems, subsystems, or structures meet, transfer energy and/or information.

Latch – A mechanical device used to secure a door in the closed position in normal operation.

Leading Edge – Edge of the door leading during the closing movement.

Lock – A mechanical device, used to secure a door in the closed position when that door is taken out of service.

Power Operation – Door capability that results in the door opening or closing by means of an electric or pneumatic mechanism or a combination thereof controlled from one or more locations.

Push-Back – A door function that allows the door panel to be moved a specified distance in the open direction, by applying a force to the leading edge.

II. INTEGRITY OF THE TRAIN EXTERIOR POWERED SIDE DOOR SAFETY SYSTEMS

Subpart B – Safety Planning and General Requirements

§ 238.131 Door safety systems.

Intent – All railroads operating passenger trains must ensure that all exterior side doors are properly positioned and door safety system devices are functioning, properly positioned, and sealed to ensure the integrity of the train and prevent unintentional use or intentional misuse.

(a) **Taking control of the train** - A member of the crew must verify that all door by-pass devices which can affect the safe operation of the train, are sealed in the normal (non-by-pass) position, except in instances of face-to-face relief.

(1) If any door by-pass device in trailing passenger cars or locomotive can affect the safe operation of the train, in lieu of a visual inspection of the devices the railroad may develop a functional test to determine that the door summary indication is functioning as intended. The functional test plan developed by the railroad shall be made available for inspection by FRA.

(b) **Unsealed door by-pass device** – A crewmember must notify the railroad's designated authority if a door by-pass device is found unsealed during the train's daily operating cycle. If the train crew can test the door safety system and determine that the door summary indication is functioning as intended, the train can travel in service until the next forward repair point where a seal can be applied by a qualified maintenance person (QMP), if not, the train crew must follow the procedures outlined in 238.131(c).

(c) **En-route failure** - In the event that it becomes necessary to activate a door by-pass device, the train may continue to its destination terminal, provided that the train crew adheres to all the requirements of 49 C.F.R. § 238.132. After the train has reached its destination terminal, the train may continue in passenger service until arrival at the next forward repair point or its next calendar day inspection, whichever occurs first, provided that prior to movement of equipment with a door by-pass device activated:

(1) A qualified maintenance person (QMP) on-site shall determine if it is safe to move the equipment in passenger service. If a QMP is not available on site, these determinations may be made based upon a description of the condition provided by the on-site qualified person (QP) to a QMP off-site.

(2) The QP or QMP shall notify the crewmember in charge of the movement of the train that the door by-pass device has been activated. A safety briefing must be held and shall include the location(s) where crewmembers will position themselves on the train in order to observe the boarding and alighting of passengers.

(3) The railroad shall maintain a record of door by-pass activation and the subsequent repair in the defect tracking system required in § 238.19.

Intent – FRA believes it is important that passenger railroads maintain records to track any occurrence of unintended powered side door openings. FRA believes these records will be invaluable to ensure that unintended powered side door openings are infrequent or a nonoccurrence when operating a passenger train.

(4) The railroad shall maintain a record of unintended powered side door openings and the subsequent repair in the defect tracking system required in § 238.19.

Subpart C – Inspection, Testing, and Maintenance Requirements for Tier I Passenger Equipment

§ 238.305 Interior calendar day mechanical inspection of passenger cars.

Intent – To ensure the integrity of the train by verifying the position and securement of door safety override devices.

(c) As part of the interior calendar day mechanical inspection, the railroad shall verify conformity with the following conditions, and nonconformity with any such condition renders the passenger car defective whenever discovered in service, except as provided in paragraphs (c)(9) through (c)(13) and paragraph (d) of this section.

(13) All exterior side door safety system override devices that could adversely affect the door safety system must be inactive and sealed in all locomotives and cab cars in the train consist, if they are so equipped with such devices.

§238.322 Doors control panels.

Intent – To prevent unauthorized access to the door control system which could result in an undesired door opening while the train was in motion.

(a) Exterior side doors cannot be operated from a door control panel when the key is removed.

238.323 End-of-train.

(a) Provisions shall be included to denote the end-of-train so that all side passenger doors are protected by the door summary circuit.

(b) If end-of-train switches are used, then the switches shall be secured in a manner to prevent access by unauthorized personnel.

II. PROMOTING PASSENGER SAFETY/OPERATING PRACTICES

Subpart B – Safety Planning and General Requirements

§ 238.132 Operating practices relating to exterior side door safety systems.

Intent – To ensure that all the people that are connected to the function of a train understand their roles and responsibilities as well as the condition of their equipment.

(a) At the beginning of his or her duty assignment prior to a train's departure, each crewmember must participate in a safety briefing that identifies each crewmember's responsibilities as relating to the safe operation of the exterior side doors on the train.

(b) All passenger train exterior side doors and traps must be closed when a train is in motion between stations except when:

(1) Making up or splitting a train.

(2) Departing or arriving at a station when:

(i) A crew member needs to observe the station platform; and

(ii) The open door is attended by a crew member.

(3) A crew member must perform on-ground functions, such as, but not limited to lining switches, providing crossing protection, inspecting the train.

(4) Passenger railroads must receive special approval from FRA's Chief Safety Officer to operate with passenger train exterior side doors open between stations. The request for special consideration must include:

(i) A written justification explaining the need to operate a passenger train with its exterior side doors and/or traps open.

(ii) A detailed hazard analysis with specific mitigations, based on the railroad's System Safety Program.

(iii) Be signed by a CEO or equivalent of the organization(s) making the request.

Intent – Ensure a mechanism exists to communicate a defect with a critical safety system and ensure continued passenger safety when a critical safety system is overridden.

(c) Each railroad shall adopt and comply with operating rules on how to safely override a door summary circuit and/or a no-motion system in the event of an en route door failure or malfunction. Railroads shall provide these written rules to their employees and make them available for inspection by FRA. These written rules shall include:

(1) Instructions to crewmembers describing what conditions must be present in order to override the door summary circuit and/or the no-motion system may be overridden.

(2) Steps crewmembers must take after the door summary circuit and/or no-motion system has been overridden to ensure continued passenger safety.

Intent – Training employees is necessary to ensure passenger safety and the realization of the design level of safety or capability of the equipment's door safety system. Employees who are tasked with providing passenger safety and operating passenger car doors shall understand the safety risks. As part of each railroad's training and qualification designation program, employees must demonstrate knowledge of the door safety systems including the continued safe operation with malfunctioning equipment and the associated risks.

(d) Each crewmember must be trained on:

(1) The requirements outlined in 238.132 of this part.

(2) How to identify and isolate equipment with a malfunctioning exterior powered side door.

(e) Each railroad to which this part applies shall periodically conduct operational (efficiency) tests and observations of its operating crewmembers and control center employees to determine the employees knowledge of the railroad's exterior powered side door safety procedures.

Intent – This new language would require railroads to develop operating rules to ensure that passengers do not get stuck in an exterior side door when boarding the train and subsequently dragged when the train leaves the station platform.

(f) Each railroad shall adopt and comply with operating rules requiring crew members to determine that it is safe for the train to depart the station. These rules shall require that crew members determine there are no obstructions to the exterior side doors.

§ 238.134 Mixed Consist (Operating equipment with incompatible exterior side door systems)

Intent – This language was added so train crews would be notified when they are using incompatible equipment. These requirements are necessary so train crews will be alerted that they may need to take extra measures to provide an adequate level of safety due to the mixed consist. Some of these extraordinary measures include operating as the most restrictive type of equipment.

(a) The railroad shall develop operating rules to establish an equivalent level of safety when equipment with incompatible exterior side door systems are utilized in a mixed consist.

(b) A train with incompatible exterior side door systems shall be operated within the constraints of each car's door safety system.

III. NEW PASSENGER EQUIPMENT WITH EXTERIOR SIDE DOORS AND LOCOMOTIVES OPERATED WITH SUCH EQUIPMENT

Subpart B – Safety Planning and General Requirements

§ 238.130 New Passenger Equipment With Exterior Side Doors and Locomotives Operated With Such Equipment

Intent – To create uniform door safety standards for new passenger equipment.

(a) All powered exterior side passenger doors shall:

(1) Be built in accordance with SS-M-18-10 APTA Standard For Power Door System Design For New Passenger Cars.

(2) Be equipped with a door safety system designed subject to a Failure Modes, Effects, Criticality Analysis (FMECA)

- (3) Contain an obstruction detection system sufficient to detect and react to both small and large obstructions in the door.
- (4) Be designed so as to prohibit the train from developing traction power if an exterior side door, other than a powered exterior side door used for crew access only, is not closed.
- (5) If a passenger car or locomotive is equipped with a door by-pass feature, activation of the feature shall not affect the operation of the obstruction detection system.
- (6) Be connected to interior and exterior door status lights.
- (7) Be connected to a manual override device that is capable of opening the exterior side door when the door is locked out.
- (8) React in a manner that will allow the obstruction in the exterior side door to be released when an obstruction is detected.

Intent – This language is being added to correct an oversight. The consensus language already has multiple requirements involving door control panels and door control panel keys. This language just adds an obvious but overlooked provision: That all new passenger train equipment is designed so its exterior powered side doors cannot be operated without a door control panel key.

- (9) Require a door control panel key or other secure device to directly interact with the door control panel in order for the exterior powered side doors to open or close.
- (10) Not be operated from a door control panel when the key is removed.
- (11) Be connected to a door summary status indication which is readily viewable to the engineer from the normal operating position in the operating cab.
- (12) Door by-pass, if equipped, which can be activated only from the operating cab of a train.

Intent – This new language will prevent train operators from opening and closing the exterior side doors simply by just using the throttle of the train. FRA believes this requirement is necessary to prevent an unsafe condition.

- (13) Locomotive or cab car throttle movement shall not have an effect on door safety systems.

- (a) Throttle position shall neither open or close doors, or have any effect on exterior side door systems.

Intent – To cover operation of manually operated exterior side doors separately from powered exterior side doors.

- (b) Manually operated exterior side doors, in commuter passenger service shall:

(1) Be designed with a door summary circuit to prohibit the train from developing traction power if a door, other than an exterior side door used for crew access only, is not closed.

(2) Be connected to an interior and exterior door status light for each side door.

Intent – To eliminate or reduce the confusion due to different nomenclature and indicators.

(c) Each railroad shall adopt a uniform nomenclature and color for door status indications to train crew for cab cars, coaches, and locomotives within the same contract order or model.

Intent – To indicate door status readily to crew members that are tasked with operating train.

(d) Door summary status shall be provided to the locomotive engineer and be readily viewable from the normal operating position of the engineer in the operating cab.

(e) Door summary circuit by-pass can be activated only from the operating cab of a train

Note – The Taskforce agreed that the applicability of this part does not include private equipment. Door closed/open indication shall be provided to the Conductor.