



Passenger and Crew Emergency Brake Device in New Passenger Cars/MU Locomotives

Abstract: This document provides standards for the application and functionality of passenger and crew emergency brake device for new passenger cars/MU locomotives for the passenger railroad industry.

Keywords: conductor's valve, emergency brake valves, emergency brake device

Summary: This document provides standards for the application and functionality of passenger and crew emergency brake device for new passenger cars/MU locomotives for the passenger railroad industry, including the design, activation and reset.

Scope and purpose: The passenger rail industry phased Conductor's Valve standard into practice over the six-month period from July 1 to Dec. 31, 1999. The standard took effect Jan. 1, 2000. The purpose of this *Standard* is to provide for common configuration and operation of passenger and crew emergency brake device on passenger rail equipment, as it promotes safe and reliable initiation of an emergency brake application. It was renamed to Passenger and Crew Emergency Brake Device in the second revision.

This document represents a common viewpoint of those parties concerned with its provisions, namely operating/planning agencies, manufacturers, consultants, engineers and general interest groups. The application of any standards, recommended practices or guidelines contained herein is voluntary. In some cases, federal and/or state regulations govern portions of a transit system's operations. In those cases, the government regulations take precedence over this standard. The North American Transit Service Association and its parent organization APTA recognize that for certain applications, the standards or practices, as implemented by individual agencies, may be either more or less restrictive than those given in this document.

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Introduction

This introduction is not part of APTA PR-M-S-007-98, Rev. 2, “Passenger and Crew Emergency Brake Device in New Passenger Cars/MU Locomotives.”

APTA recommends the use of this document by:

- individuals or organizations that operate FRA compliant passenger equipment;
- individuals or organizations that contract with others for the operation FRA compliant passenger equipment; and
- individuals or organizations that influence how FRA compliant passenger equipment are operated (including but not limited to consultants, designers and contractors).

Passenger and Crew Emergency Brake Device in New Passenger Cars/MU Locomotives

1. Technical information

The emergency brake device shall be located no more than 45 feet (13.7 m) from a seated passenger and preferable near an exterior door on each passenger car/MU locomotive. Emergency brake devices shall be accessible to passengers in the passenger compartment.

Single-actuated emergency brake devices shall be directly attached to a slip-resistant operating handle.

Dual-actuated emergency brake devices shall be connected to slip-resistant operating handles by cables or linkage designed to preclude the possibility of jamming, loosening or other malfunctions that could impede the device's operation. Cords of any type are not permissible.

With a properly charged system, each valve shall be capable of reducing brake pipe/emergency pipe pressure at a sufficient rate to initiate an emergency brake application under all operating conditions, including when brake systems employ a brake pipe pressure maintaining feature.

For brake schedules employing an Emergency Pipe function (BP manipulation does not create a service brake application or release), testing shall be performed with the EP pressure close to the air compressor cut-in point.

The distance from the floor to the top of the device operating handle shall not exceed 73 in. (1850 mm). Device actuation shall not require more than 30 lbs. force (133 N) of force applied to its operating handle.

The means to reset the device after actuation shall be performed manually from the point of actuation.

The words "Emergency Brake" shall be legibly stenciled or marked near each device's handle or shall be shown on an adjacent badge plate.

Device installation shall be arranged to prevent actuation from accidental contact.

Annunciation of the emergency brake device should be considered during the passenger car /MU locomotive design. Annunciation may be local and/or in the operating cab.

Related APTA standards

None applicable.

References

49 CFR, Part 229.47, Locomotive Safety Standards

49 CFR, Part 238, Passenger Equipment Safety Standards

MIL-STD-1472E, October 31, 1996, “Table XIX Anthropometric Data for Common Working Positions - 5th Percentile Woman”

MIL-STD-1472E, October 31, 1996, “Table XXV Static Muscle Strength - 5th Percentile Woman”

Definitions

brake pipe pressure: Air pressure that exists in a system of piping including trainline connections used for connecting locomotives and all cars for the passage of air to control the locomotives and car air brakes.

emergency brake application: An irretrievable brake application resulting in the maximum retarding force available from the train brake system.

Emergency brake device: A manually actuated device that can initiate an emergency brake application.

Emergency pipe pressure: An alternate term for air pressure that exists in a system of piping including trainline connections used for connecting locomotives and all cars for the passage of air to control the locomotives and car emergency air brakes.

Abbreviations and acronyms

m	meters
mm	millimeters
N	Newtons
NATSA	North American Transportation Services Association

Summary of document changes

- Addition of reference
- Nomenclature changes for consistency and readability
- Format changes to align with current formatting requirements
- Renaming of document from “Conductor’s Valve in New Passenger Cars/MU Locomotives” to “Passenger and Crew Emergency Brake Device in New Passenger Cars/MU Locomotives”.

APTA PR-M-S-007-98, Rev. 2
Passenger and Crew Emergency Brake Device in New Passenger Cars/MU Locomotives

Document history

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