

11.APTA PR-IM-S-011-98

Standard for Passenger Car Tread Brake Unit and Brake Cylinder Periodic Inspection and Maintenance

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Abstract: This standard covers the basic procedures for the periodic inspection and maintenance of the tread brake unit and brake cylinder of passenger railcars; with emphasis on the maintenance of safety appliances and other safety critical systems.

Keywords: brake cylinder, brake cylinder maintenance, brake system, brake system periodic inspection and maintenance, tread brake unit, tread brake unit maintenance

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Introduction

(This introduction is not a part of APTA PR-IM-S-011-98, Standard for Passenger Car Tread Brake Unit and Brake Cylinder Periodic Inspection and Maintenance.)

This introduction provides some background on the rationale used to develop this standard. It is meant to aid in the understanding and application of this standard.

This standard describes the basic maintenance and inspection functions for tread brake units and brake cylinders on passenger cars. It is intended for the following:

- a) Individuals or organizations that maintain tread brake units and brake cylinders on passenger cars;
- b) Individuals or organizations that contract with others for the maintenance of tread brake units and brake cylinders on passenger cars; and
- c) Individuals or organizations that influence how tread brake units and brake cylinders are maintained on passenger cars.

Participants

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Standard for Passenger Car Tread Brake Unit and Brake Cylinder Periodic Inspection and Maintenance

1. Overview

This document establishes a standard for the tread brake unit and brake cylinder inspection and maintenance of passenger cars.

1.1 Scope

This standard for tread brake unit and brake cylinder inspection and maintenance applies to all passenger cars. The periodic inspection and maintenance of passenger locomotives (including cab cars and MU equipment) remain governed by *49 CFR, Part 229 Railroad Locomotive Safety Standards*¹. This standard adds on to but does not replace existing federal regulations.

The passenger rail industry phased this standard into practice over the six-month period from July 1 to December 31, 1999. The standard took effect January 1, 2000.

1.2 Purpose

This standard is intended for railroads in order to apply basic procedures for periodic inspection and maintenance of tread brake unit and brake cylinder of passenger cars, with emphasis on the maintenance of safety critical systems.

These systems (if applicable) are essential in the safe operation of passenger cars.

2. References

This standard shall be used in conjunction with the following publications. When the following standards are superseded by an approved revision, the revision shall apply.

APTA PR-IM-S-013-99, Rev. 1, Standard for Passenger Car Periodic Inspection and Maintenance.

Original equipment manufacturer instructions (OEM).

Standard maintenance procedure (SMP). (See 3.1.3)

49 CFR, Part 229, Railroad Locomotive Safety Standards, October 2000

¹ For references in Italics, see Section 2

3. Definitions, abbreviations, and acronyms

3.1 Definitions

For the purpose of this standard, the following terms and definitions apply:

3.1.1 original equipment manufacturer (OEM): The technical documentation produced by the organization that built or manufactured a specific piece of passenger rail equipment describing maintenance procedures and frequencies for that piece of equipment.

3.1.2 periodic maintenance: The performance of selected inspection and maintenance actions on systems or sub-systems. Regulatory agencies or the railroad may set the frequency of these actions. The frequency may be expressed as a function of time (i.e. days, weeks, or months) or of utilization (i.e., mileage, cycles, etc.).

The scope of these inspection and maintenance actions must be in full compliance with all applicable federal, state, and local regulations.

3.1.3 standard maintenance procedure (SMP): The internal railroad document giving specific instruction on how to perform maintenance on a specific system or compound.

3.2 Abbreviations and acronyms

APTA	American Public Transportation Association
CFR	Code of Federal Regulations
OEM	original equipment manufacturer instructions
PRESS	Passenger Rail Equipment Safety Standards
SMP	standard maintenance procedure (unique to individual railroads)

4. Frequency of conduct

The frequency of conduct of this task shall be as specified in and in compliance with the requirements of Clause 4 of *APTA PR-IM-S-013-99, Rev. 1, Standard for Passenger Car Periodic Inspection and Maintenance*².

5. Inspection and maintenance requirements

5.1 Tools/materials

Standard tools carried by maintenance personnel are sufficient for this inspection task. No specific materials are required. Safety/personal protective equipment

Personal protective equipment, as required by the operating property, shall be worn at all times in the performance of this maintenance task.

² For references in Italics, see Section 2

5.2 Training requirement

Railroads and their contractors shall develop and execute training programs that equip employees with the knowledge and skills necessary to safely and effectively perform the tasks outlined in this standard.

6. Inspection and maintenance procedures

CAUTION--Safety hazard
Ensure that equipment is secured against uncontrolled movement before commencing inspection and maintenance procedures.

6.1 Tread brake units

The inspection and maintenance procedure for tread brake units consists of the following steps:

- a) Visually inspect the tread brake units for damaged or loose components. Correct any damage found and secure loose components. Inspect mounting brackets and
- b) Visually inspect brake cylinder and listen for air leaks. Repair as necessary. Inspect the condition of air hoses and fittings.
- c) Apply and release the tread brake and verify:
 - Proper piston travel per original equipment manufacturer instructions (OEM);
 - No indication of binding or fouling of the tread brake unit's levers and/or pins;
 - Proper alignment and shoe making contact with the wheel;
 - Correct operation of automatic slack adjuster.
- d) Lubricate the tread brake unit as required by the OEM/SMP.

6.2 Brake cylinders

The inspection and maintenance procedure for brake cylinders consists of the following steps:

- a) Visually inspect the brake cylinder for damaged or loose components. Correct any damage found and secure loose components.
- b) Visually inspect brake cylinder and listen for air leaks. Repair as necessary.
- c) Apply and release the brake cylinder and visually verify:
 - Proper piston travel per OEM;

- No indication of binding or fouling of the brake cylinder levers and/or pins;
- Correct operation of automatic slack adjuster.