

10.APTA PR-IM-S-010-98

Standard for Passenger Car Brake Disc Periodic Inspection and Maintenance

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Abstract: This standard covers the basic procedures for the periodic inspection and maintenance of the brake discs of passenger cars, with emphasis on maintenance of safety appliances and other safety critical systems.

Keywords: brake discs, brake disc maintenance, brake disc periodic inspection and maintenance, brake system, brake system maintenance

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Introduction

(This introduction is not a part of APTA PR-IM-S-010-98, Standard for Passenger Car Brake Disc 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 discs on passenger cars. It is intended for the following:

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

Participants

The American Public Transportation Association (APTA) greatly appreciates the contributions of the following individual(s), who provided the primary effort in the drafting of the *Standard for Passenger Car Brake Disc Periodic Inspection and Maintenance*:

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APTA SS-I&M-010-98

Standard for Passenger Car Brake Disc Periodic Inspection and Maintenance

1. Overview

This document establishes a standard for brake disc inspection and maintenance of passenger cars.

1.1 Scope

This standard for disc inspection and maintenance applies to all passenger cars. Periodic inspection and maintenance of passenger locomotive brake systems remains governed by *49 CFR, Part 229, Railroad Locomotive Safety Standards*¹. However, railroads may wish to use some of the procedures in this standard to supplement the federal requirements.

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

1.2 Purpose

This standard is intended for use by rail properties to apply basic procedures for periodic inspection and maintenance of brake discs of passenger cars, with emphasis on 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 publications 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.

3. Definitions, abbreviations, and acronyms

3.1 Definitions

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

¹ For references in Italics, see Section 2

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 railroads 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.).

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 Section 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

Calipers, micrometers, and/or gauges, in addition to the standard tools carried by maintenance personnel, are required for this maintenance task. No specific materials are required.

5.2 Safety/personal protective equipment

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

5.3 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.

² For references in Italics, see Section 2

6. Inspection and maintenance procedures

CAUTION--Safety hazard

Ensure that equipment is secured against uncontrolled movement before commencing inspection and maintenance procedures.

6.1 Brake discs

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

- a) Visually inspect the disc faces for damage, cracks, or nicks along the outer periphery of the disc. Some radial checks and thermal checks are normal during operation. Refer to original equipment manufacturer instructions (OEM) on disc inspection and the railroad standard maintenance procedure (SMP) for condemning and inspection requirements.
- b) Visually inspect hub for cracks, broken or missing tangs, or damage. Refer to OEM/SMP for condemning and inspection requirements.
- c) If applicable, visually inspect disc mounting hardware (such as bolts, nuts, washers, and retaining mechanisms) for proper attachment and broken or missing components. Refer to OEM/SMP for condemning and inspection requirements.
- d) Measure the disc wear locations. Refer to OEM/SMP for condemning and inspection requirements.
- e) Visually inspect the disc for any fin obstructions or damage. Refer to OEM/SMP for condemning and inspection requirements.