



APTA STANDARDS DEVELOPMENT PROGRAM

RAIL STANDARD

American Public Transportation Association
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APTA Rail Transit Standards Operating
Practices Working Group

Safe Operations in Yards

Abstract: This document provides standards for the safe operation of rail transit vehicles in rail yards, maintenance facilities or storage tracks. It is applicable to both heavy and light rail systems, and provides standards for employees responsibilities for the safe movement of trains.

Keywords: maintenance facilities, rail transit operations, safe operations, storage tracks, yards

Summary: The operation of trains in a yard requires coordination of activities to ensure the safety of personnel and the protection of equipment. This document provides standard operating procedures (SOPs) for employee responsibility for the safe movement of trains.

Scope and purpose: This standard established the minimum requirements for the safe operation of rail vehicles in yards, in maintenance facilities, and on storage tracks. It identifies rail transit systems (RTS) and employee responsibilities and specific safety practices that can be adapted for both heavy and light rail systems.

This *Rail Standard* represents a common viewpoint of those parties concerned with its provisions, namely, transit operating/planning agencies, manufacturers, consultants, engineers and general interest groups. The application of any standards, 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. APTA recognizes that for certain applications, the standards or practices, as implemented by individual transit agencies, may be either more or less restrictive than those given in this document.

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Introduction

(This introduction is not a part of APTA RT -OP-S-003-02 Rev 1, Standard for Safe Operations in Yards)

The Standard for Safe Operations in rail Yards represents a common viewpoint of those parties concerned with its provisions, namely, transit operating/planning agencies, manufacturers, consultants, engineers and general interest groups. The application of any standards or recommended practices contained herein is voluntary. In some cases, Federal and/or State regulations govern portions of a RTS operations. In those cases, the government regulations take precedence over this standard. APTA recognizes that for certain applications, the standards or practices, as implemented by individual RTS may be either more or less restrictive than those given in this document.

Note on alternate practices

Individual RTS may modify the practices in this standard to accommodate their specific equipment and mode of operation. APTA recognizes that some RTS may have unique operating environments that make strict compliance with every provision of this standard impractical. As a result, certain RTS may need to implement the standards and practices herein in ways that are more or less restrictive than what this document prescribes. A RTS may develop alternates to the APTA standards so long as the alternates are based on a safe operating history and are described and documented in the system's safety program plan (or another document that is referenced in the system safety program plan).

Documentation of alternate practices shall:

- identify the specific APTA rail transit safety standard requirements that cannot be met;
- state why each of these requirements cannot be met;
- describe the alternate methods used; and
- describe and substantiate how the alternate methods do not compromise safety and provide a level of safety equivalent to the practices in the APTA safety standard (operating histories or hazard analysis findings may be used to substantiate this claim).

Safe Operations in Yards

1. Background

The operation of trains in a yard requires coordination of activities to ensure the safety of personnel and protection of equipment. The adherence to rules and standard operating procedures (SOP) are required for safe operations.

2. Requirements

“Safe operations” is a term that defines and encompasses all those activities necessary for the safe movement of trains and on-track equipment. Safe operations require all employees to be familiar with and comply with the rules and SOPs that govern the movement of trains and on-track equipment in yards and maintenance facilities. Communication between RTS staff members of different departments (as required) operating within the yard is a key component of safe operations and helps ensure coordination among all personnel. Safe operation may also encompass other elements, such as conducting a pre-trip/departure inspection prior to moving a train and operating trains at safe speeds, checking switches and performing safety stops. Safe operations mandate that employees perform their respective duties in a safe manner while using proper safeguards and with a general understanding of how their actions may affect others.

2.1 RTS responsibilities

Each rail transit system (RTS) shall develop and implement rules and procedures and/or develop a roadway worker protection program that specifically governs the actions of employees while performing their duties in yards, maintenance facilities and on or near yard tracks. These rules and procedures shall be appropriate for the RTS, taking into consideration the operating environment, train operating speed, equipment, geographical location, climatic conditions and track layout of the yard. Procedures shall also describe specific safety precautions for train operators, on-track equipment operators and maintenance workers while performing safety-sensitive duties in the yard, and shall identify safety precautions associated with energized third rails, energized overhead wires or fueling facilities. The RTSs shall develop procedures for ensuring that all trains are safe and are ready for service. Typically, this includes an appropriate physical inspection of the train. Employees assigned to this task shall receive the appropriate training and be proficient at the task.

Each RTS shall establish procedures for the authorization of train and on-track equipment movements within yards, maintenance facilities and yard tracks, as well as movements into and out of yards. The level of control required will be determined by the size, complexity and operating practices of the RTS.

Train and on-track equipment movement authorization must be clearly defined and may be by general permission granted by operating rules or procedures, Central Control, Vehicle Maintenance Management, or from a yard supervisor. Train movements in the yard may also be controlled by signal, or trains may be operated by line of sight. In the absence of signal protection, each RTS shall develop specific operating procedures to ensure a safe operating environment in the yard. Regardless of the type of control or methodology used, each RTS shall develop clear procedures that inform all individuals of their responsibilities and level of authority.

Each RTS should classify all tracks according to their operating classification. This may include categories such as main tracks, running tracks, side tracks, test tracks, storage tracks, yard tracks, maintenance tracks or some other designation appropriate to that particular RTS. The RTS shall also designate the yard limit, determine how yard tracks can be used, and manage yard track access.

Each RTS shall establish rules and procedures for the safe, proper securement of a train or individual piece of rolling stock from unintended movement and work to ensure that tracks, trains, equipment, and facilities in the yard are secure and access to these assets is limited.

2.2 Employee responsibilities

Employees must operate trains in yards in accordance with RTS rules and procedures. It is the responsibility of all affected employees to know, understand and comply with all rules and SOPs associated with the safe movement of trains and on-track equipment in yards and maintenance facilities located within rail yards and on yard tracks. In addition, employees shall possess practical knowledge of track layouts, track switches, signals and their locations. It is the responsibility of all employees to report any dangerous, hazardous or defective conditions. The operator is responsible for the safe operation of trains and on-track equipment while in motion. When personnel are working on or near the tracks, the operator shall operate the train or on-track equipment at a safe speed as determined by the individual RTS's rules and procedures. Where yards are controlled by yard supervisors or controllers, operators must ensure that all moves in the yard and all moves in and out of the maintenance facilities are authorized, properly communicated, and executed in accordance with RTS's established safety criteria.

As determined by the RTS, designated employees shall visually check all cars of the train and identify any defects or restrictions to movement that may impact safe operation before a train is moved. A train operator shall perform all operational tests required by the RTS in the prescribed manner to verify that the train is capable of safely operating before moving the train. The operator shall sound an audible warning prior to moving a train or on track equipment to warn personnel that the train is about to move. When coupling or uncoupling cars, the train operator shall understand and comply with RTS coupling and uncoupling procedures, which may or may not be different from mainline tracks and shall properly secure all cars being added or cut from the train. Before moving a train, the operator shall ensure that the train has the correct number of cars assigned.

As determined by the RTS, employees operating trains in yards are responsible for knowing and practicing the safe and proper securement of a train or individual piece of rolling stock from unintended movement at the completion of a move.

Safety stops are required in advance of a RTS defined must-stop situation. Where yard moves are controlled by the train operator, the route of an assigned move shall not be changed without positive communications with other train operators, on-track equipment operators and any other employee who supervises train movements in the yard.

2.3 Movement of trains into and out of maintenance facilities

The RTS shall establish procedures for moving trains in and out of maintenance facilities. Where applicable, RTS shall address the following:

- clear identification of who can authorize train movement into and out of the maintenance facility;
- requirements to clearly communicate train moves into and out of the maintenance facility;
- maximum allowable speed inside the maintenance facility;

- flagging requirements, to include who is authorized to flag a train in or out of a maintenance facility;
- requirements to respond to and follow various hand signals;
- operator instructions on following fixed signals inside the maintenance facility, if equipped;
- requirements to fully open and secure maintenance facility doors;
- safe vehicle operation within the maintenance facility;
- walk-around inspections prior to moving a train;
- requirement to be aware of any train defects that could affect the safe operation of the train prior to moving the train;
- requirements to ensure that propulsion power is available inside the shop to make the desired move;
- precautions to take to prevent inadvertent and unintended energization of overhead wires or the third rail by bridging two sections of a power distribution system with a train;
- precautions to take to ensure train has a clear path to its destination prior to flagging a train inside the shop; and
- establish safety requirements for all personnel involved in the movement of trains and on track equipment or those within the safety envelope.
- Requirements for the proper securement of trains or rolling stock at the completion of movement.

2.4 Storage tracks

The RTS shall develop procedures governing the use of storage tracks outside of the Yard.

2.5 Audible and hand signals

The RTS shall develop rules/procedures for audible and hand signals. These signals shall apply consistently to train operators and maintenance facility employees. As a minimum, the following audible and hand signals shall be used:

- **Audible signals:**
 - Alarm for people on the track
 - Acknowledgement or answer to any signal not otherwise provided
 - Call for signals (request for directions)
 - Stand clear, the train is about to move
- **Hand signals:**
 - Stop or remain standing
 - Reduce speed
 - Proceed
 - Back up

2.6 Restrictions

The RTS shall establish a procedure to prevent the movement of a vehicle while individuals are working on or around the vehicle or for other specific requirements.

The RTS shall establish a procedure to restrict access or remove track(s) from service.

3. Definitions

For the purposes of this standard, the following terms and definitions apply. The job titles listed below are used in this standard for informational purposes only. It is up to the individual RTS to determine and utilize titles as it finds appropriate.

controller: An employee, usually stationed in the control center, who is authorized and responsible for all rail operations. Duties may include, but are not limited to, train control, train dispatching, train supervision and related field activities.

control center/central control/operations control center: The facility where rail operations such as train control, train dispatching, train supervision and related field activities are accomplished for the entire rail transit system or for specific segments of a system if there is more than one such facility.

flagperson: Field personnel assigned to control movement of trains by the display of hand signals, flags or lights.

maintenance facility: The location within defined limits utilized by the RTS for the maintenance and repair of rail transit vehicles.

on sight/operation on sight/line of sight: A mode of train operation in which the operator must visually ensure that it is safe to operate a train under various operating conditions and be able to stop the train prior to any obstruction.

rail transit system (RTS): An organization that operates passenger train service and its supporting activities.

safety stops: Stops made to verify the braking capability of a train to enhance safety in advance of an RTS-defined must-stop situation.

storage tracks: Those tracks upon where trains are stored.

train: A rail revenue service vehicle such as any motorcar, locomotive or other self-propelled on-rail vehicle, with or without other cars coupled.

train operator: An authorized onboard employee who controls the movement of a train.

yard: A facility within defined limits that has a system of tracks used for making up trains, storing trains and other purposes. A maintenance facility may be included.

yard tracks: All tracks, other than mainline tracks, contained within the limits of the yard.

yard supervisor: One who oversees the activity of work or workers in the yard.

4. Abbreviations and acronyms

APTA	American Public Transportation Association
RTS	rail transit system
SOP	standard operating procedure

5. Summary of changes

- a) Document reformatted to a new APTA standard
- b) Sections have been renumbered and moved around
- c) Scope and summary moved to the front page
- d) Updated list of committee members
- e) Minor changes to spelling and capitalization
- f) The definitions section had many changes. This was due to a separate sub-committee initiative where a review was undertaken to ensure that there was consistency among all the operating practices standards and recommended practices. The following are a summary of the changes/clarifications made to definitions in this document:
 - i) Controller
 - ii) Control Center/Central Control/Operations Control Center
 - iii) Deleted the term derail as it is not referenced in this standard
 - iv) Flagperson
 - v) Maintenance Facility
 - vi) On-sight/Line of sight
 - vii) Rail Transit System (RTS)
 - viii) Deleted the term restricted speeds as it is not referenced in this standard
 - ix) Deleted the term restricted speed as it is not referenced in this standard
 - x) Safety Stops
 - xi) Deleted the term track cars as it is not referenced in this standard
 - xii) Train
 - xiii) Deleted the term train controller/supervisor
 - xiv) Train Operator
 - xv) Yard tracks
 - xvi) Yard Supervisor