

# Developing Safety and Operating Standards for Rail Transit

ONLINE, ON TIME,  
AND ON TRACK

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The increasing popularity and demand for rail transit has led many systems to plan expansions and a growing number of cities to plan rail transit startups. Leaders of the public transportation industry agree that now is the time to develop guidance for growth and to establish uniform standards for state oversight of rail transit safety.

Under the umbrella of the American Public Transportation Association (APTA), the rail transit industry has united to develop standards and recommend practices to improve safety and increase operating efficiency. The effort is spearheaded and funded by the leaders of 25 rail transit systems working with the Federal Transit Administration (FTA) and Wabtech, a manufacturer of rail car components.

This project will help rail transit systems meet the public responsibility to improve an already excellent record of safety and reliability. A Rail Transit Standards Policy Committee, chaired by Jack Leary, General Manager of the Southeastern Pennsylvania Transportation Authority, sets the policy and provides top-level guidance for the project.





### Assuring Consensus

APTA intends to use an industry consensus process to develop, implement, and maintain standards and recommended practices covering rail transit system design, operation, and maintenance. APTA has patterned the project after a highly successful program conducted by commuter railroad members—the Passenger Rail Equipment Safety Standards (PRESS) program.

The effort is expected to produce uniform and visible safety oversight programs for the states, a best practices resource for the entire industry, guidance for new-start systems, and improved communications among rail transit systems and government agencies.

To be successful, any consensus process involving organizations with diverse interests must have definite rules and procedures. APTA has developed a set of bylaws to govern the process, incorporating the following basic principles:

- ◆ Open membership to represent the industry at large;
  - ◆ An open meeting process;
  - ◆ A public comment period via the APTA website;
  - ◆ Response to all reasonable comments;
  - ◆ Final approval with one vote per organization;
  - ◆ Maximum use of electronic communication;
- and
- ◆ Implementation through the authority of the APTA Rail Transit Standards Policy Committee.

### Structuring the Committees

The Policy Committee has directed APTA to focus on

- ◆ Vehicle inspection and maintenance;

## APTA Committees for Developing Rail Transit Standards

### Vehicle Inspection and Maintenance Committee

#### Subcommittees

- ◆ Daily Inspections;
- ◆ Training and Qualifications;
- ◆ Car Body Periodic Maintenance;
- ◆ Electrical Systems Periodic Maintenance;
- ◆ Mechanical Systems Periodic Maintenance; and
- ◆ Reliability Methodology To Set Periodic Maintenance Intervals.

#### Contacts

The committee chair is Jay Shah, General Superintendent, Car Equipment, MTA New York City Transit (718-927-7822, shahjayn@aol.com). David Phelps is the APTA staff support (202-496-4885, dphelps@apta.com), and Gordon Campbell of LDK Engineering provides technical advice (905-577-1052, ldkgeng@worldchat.com).

### Operating Practices Committee

#### Subcommittees

- ◆ Emergency Preparedness and Accident Investigations;

- ◆ General Rules;
- ◆ Train Operations; and
- ◆ Control Center and Communications.

#### Contacts

The committee is chaired by Peter Tereschuck, Vice President, Operations, for San Diego Trolley (619-595-4902, ptereschuck@sdti.sdmts.com). Tom Peacock serves as APTA staff support (202-496-4805, tpeacock@apta.com) and Ken Korach of Transportation Resource Associates offers technical support (215-546-9110, ken@traonline.com).

### Fixed Structures Inspection and Maintenance Committee

#### Subcommittees

- ◆ Track;
- ◆ Signals and Communications;
- ◆ Structures (Tunnels, Bridges, etc.);
- ◆ Power; and
- ◆ Stations.

#### Contacts

The chair for the committee is James Dwyer, Director, Technical Support, Port Authority of Allegheny County (412-488-3072, jdwyer@portauthority.org). Frank Cihak provides APTA staff support

(202-496-4880, fcihak@apta.com) and Peter Gentle of STV serves as technical adviser (215-832-3524, gentleps@stvinc.com).

### Grade Crossings Committee

#### Subcommittees

- ◆ Public Outreach and Education;
  - ◆ Gated Crossings;
  - ◆ Nongated Crossings; and
  - ◆ Safety Assessment Methodology.
- Grade Crossing Inspection and Maintenance.

#### Contacts

Ron Swindell, Assistant Vice President, Engineering, for Dallas Area Rapid Transit, chairs the committee (214-749-2936, rswindell@dart.org). Phil Olekszyk of World Wide Rail, Inc., provides staff support on behalf of APTA (410-544-0053, wwrail@aol.com), and Nicholas Bahr of Booz Allen & Hamilton offers technical support (703-377-0372, bahr\_nicholas@bah.com).

**NOTE:** The APTA Rail Transit Standards Policy Committee, chaired by Jack Leary, General Manager of the Southeastern Pennsylvania Transportation Authority, provides overall guidance for the project committees.

- ◆ Operating practices;
- ◆ Fixed structure inspection and maintenance;
- ◆ Grade crossings; and
- ◆ Vehicle crashworthiness.

APTA established a working committee to develop standards and recommended practices in each area except vehicle crashworthiness. The American Society of Mechanical Engineers, a professional group active in setting standards, will draft rail transit vehicle crashworthiness standards with assistance from APTA.

APTA has assigned an experienced staff member and has hired a recognized rail transit industry consultant to facilitate and assist the work of each committee. In November 2000, APTA invited the participation of rail transit agencies, rail transit system integrators and car builders, major component suppliers, rail labor organizations, and government agencies with an interest in the rail transit industry.

More than 180 individuals have volunteered to participate on one or more of the committees—including representatives from the United Transportation Union, FTA, the Federal Railroad Administration, and the National Transportation Safety Board. APTA actively continues to seek volunteers, particularly from other rail labor organizations and from businesses supporting the rail transit industry.

Each of the four committees held an initial organizational meeting to elect a chairman, organize working groups, set priorities, and develop work plans and timelines. The sidebar on page 4 shows how the committees have organized to execute their work plans.

APTA staff and the consultants assist each working group and its subcommittees. Nonetheless, the consensus process is a “roll up the sleeves” effort—every member of a subcommittee contributes expertise and knowledge to the subcommittee’s product.

## Facilitating Participation

To curtail costs for travel and mailings, APTA plans to use the Internet to communicate with committee members and to post work products for review. The first meeting of each committee included a tutorial on how to use a version of Webworks customized for this project by Booz Allen and Hamilton. Each subcommittee has a website for posting reference documents. Subcommittee members also can post work for comment or for use by other subcommittee members.

To spread the travel burden equally, APTA plans to rotate locations across the country for the meetings of each committee. To volunteer to participate or to obtain more information about the activities of a

## TCRP Project Comes Aboard

In June, the APTA Rail Transit Standards Policy Committee allocated funds to begin incorporating into its work the efforts of Transit Cooperative Research Program (TCRP) Project G-4, *Developing Standards for System and Subsystem Interfaces in Electric Rail Passenger Vehicles*. TCRP launched this project in 1996 to provide a process for the transit industry to establish standards voluntarily. The project employs procedures established by the Institute of Electrical and Electronics Engineers (IEEE) and the American Society of Mechanical Engineers (ASME) to develop industry consensus standards.

To date, 15 working groups involving more than 300 representatives of transit agencies, vehicle and component manufacturers and suppliers, consultants, government agencies, and others have met to develop technical standards. IEEE has balloted, approved, and published nine standards covering

- ◆ Communications Protocol on Trains (IEEE 1473-1999);
- ◆ Communications-Based Train Control Performance and Functional Requirements (IEEE 1474.1-1999);
- ◆ Functioning of and Interfaces Among Propulsion, Friction Brake, and Trainborne Master Control on Rail Rapid Transit Vehicles (IEEE 1475-1999);
- ◆ Passenger Train Auxiliary Power Systems Interfaces (IEEE 1476-2000);
- ◆ Passenger Information Systems for Rail Transit Vehicles (IEEE 1477-1998);
- ◆ Environmental Conditions for Transit Car Electronic Equipment (IEEE 1478-2000);
- ◆ Rail Transit Vehicle Event Recorders (IEEE 1482.1-1999);
- ◆ Verification of Vital Functions in Processor-Based Systems Used in Rail Transit Control (IEEE 1483-2000); and
- ◆ Rotating Electric Machinery for Rail and Road Vehicles (IEEE 11-1999).

Work is continuing on 11 other IEEE standards. In addition, two ASME working groups are developing crashworthiness standards for light rail and rapid transit vehicles. The American Society of Heating, Refrigeration, and Air-Conditioning Engineers also is considering assistance in the development of a standard for railcar heating, ventilating, and air conditioning. The rail transit industry has applauded the standards-development efforts sponsored by the TCRP project.

committee, please contact the committee chair or the APTA staff support person listed in the sidebar on page 4.

The schedule calls for the first few standards and recommended practices to be ready for a vote by November 2001. As other standards follow, the benefits of the project will begin to have an impact on the entire rail transit industry.

This consensus effort is a bold step to improve safety and operating efficiencies for rail transit in the United States. The time is right. The partnerships APTA has established will help the rail transit industry meet its challenges in a time of unprecedented growth and opportunity.

