

AMERICAN PUBLIC TRANSPORTATION ASSOCIATION

MANUAL OF STANDARDS AND RECOMMENDED PRACTICES FOR RAIL PASSENGER EQUIPMENT

Volume I

Introduction and Appendices

2004

*Compiled under the direction
of the Passenger Rail Equipment
Safety Standards Task Force.*



**AMERICAN
PUBLIC
TRANSPORTATION
ASSOCIATION**

**American Public Transportation Association
Member Services Department**

**Manual of Standards
And
Recommended Practices
For
Passenger Rail Equipment**

Issue of January 1, 2004

Compiled under the direction of the Passenger Rail Equipment Safety Standards Task Force.

**Published by
The American Public Transportation Association
1666 K Street, NW
Washington, DC 20006**

Introduction

This is the first volume of a six volume set comprising the American Public Transportation Association *Manual of Standards and recommended Practices for Passenger Rail Equipment*. The standards and recommended practices contained in this manual were developed through a consensus process and represent a common viewpoint of those parties concerned with its provisions, namely: passenger railroads, rail labor, manufacturers and suppliers, consultants, government agencies, and general interest groups.

The design and operating standards and recommended practices contained in this manual were developed under the sponsorship of passenger railroads in the United States to improve safety, reliability, and operating efficiency of passenger rail equipment.

This volume contains the introduction and appendices. This volume describes the process used to develop the standards and recommended practices contained in the other five volumes.

The entire set is comprised of the following volumes:

Volume 1-Introduction and Appendices

Volume 2-Construction and Structural Standards and Recommended Practices

Volume 3-Electrical Standards and Recommended Practices

Volume 4-Inspection and Maintenance Standards and Recommended Practices

Volume 5-Mechanical Standards and Recommended Practices

Volume 6-Passenger System Standards and Recommended Practices

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American Public Transportation Association
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Washington, D.C. 20006-1215
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Mission Statement

APTA's Mission is to serve and represent its members in making public transportation an effective path to economic opportunity, personal mobility and improving the quality of life through partnerships, communication, technology and advocacy.

Policy on Diversity

APTA recognizes the importance of diversity for conference topics and speakers and is committed to increasing the awareness of its membership on diversity issues. APTA welcomes ideas and suggestions on how to strengthen our efforts to meet these important diversity objectives.

Preface

This Manual of Standards and Recommended Practices for Rail Passenger Equipment is developed, approved and maintained by the Passenger Rail Equipment Safety Standards (PRESS) Task Force of the American Public Transportation Association (APTA).

APTA passenger rail equipment standards and recommended practices are developed by the technical committees of the PRESS Task Force. With the exception of APTA staff advisors, members of these committees serve voluntarily and without compensation. The standards and recommended practices developed through the PRESS Task Force represent a consensus of the broad expertise, including railroads, builders, suppliers, rail labor and government officials, within the industry on the subject.

The American Public Transportation Association (APTA) developed this manual through a diverse group of experts, arriving at consensus positions, using the procedures defined in the APTA PRESS By-Laws. APTA recognizes that many of the provisions of this manual are new and have not withstood the test of time. Some of them may lead to unanticipated impacts.

APTA expects the manual to be subject to considerable scrutiny by the passenger rail industry. As part of this scrutiny, APTA welcomes criticism, comments and suggestions intended to improve clarity of the document, to increase its technical accuracy or to reduce its implementation costs.

APTA, APTA's member organizations and the PRESS Task Force do not assume any duties or responsibilities of users of this manual. By publishing the manual, APTA does not insure anyone using the information contained in the manual against any liability resulting from that use.

While APTA intends that the standards and recommended practices contained in this manual be invoked as part of passenger rail equipment procurement contracts, APTA cautions against blind application of the provisions of this manual without considering the specific application of the equipment being procured. The provisions of the manual represent a safety floor but are not a substitute for sound engineering judgment.

Requests for official interpretations, comments or suggestions should be addressed to:

American Public Transportation Association
PRESS Staff Advisor
1666 K Street, NW
Washington, DC 20006-1215

Commuter Rail Executive Committee

The APTA Commuter Rail Executive Committee authorized this Manual of Standards and Recommended Practices. At the time of publication, the committee consisted of the following members:

David Solow, Chair	Southern California Regional Rail Authority-Metrolink
Kathryn D. Waters	Trinity Railway Express
James Dermody	Long Island Rail Road
Anna Barry	Massachusetts Bay Transportation Authority
Joseph Giulietti	Tri-County Rail Authority
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Karen King	North County Transit
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Peter Cannito	Metro North Commuter Railroad
Simon Taylor	MARC Train Service

Canadian Members:

Gregory Percy	GO Transit
Raynald Masse	Agence Metropolitaine de Transport
Doug Kelsey	West Coast Express Ltd.

Document Numbering Nomenclature

A prefix of “SS” designates a mandatory safety standard while recommended practices carry the prefix “RP”. A designation of the PRESS Task Force Committee that developed the document follows the “SS” or “RP” prefix. The document numbering system includes the following committee designations:

C&S	=	Construction and Structural Committee
E	=	Electrical Committee
I&M	=	Inspection and Maintenance Committee
M	=	Mechanical Committee
PS	=	Passenger Systems Committee

A unique—to each committee—three-digit number that indicates the order in which the PRESS Task Force approved the document follows the committee designation. A two-digit number indicating the year that the Task Force approved the document completes the standard or recommended practice designation number.

For example, a designation number of APTA SS-M-001-98 means an APTA mandatory safety standard developed by the mechanical committee that was the first mechanical committee document approved by the PRESS Task Force in 1998.

REQUESTS FOR REVISIONS

Requests for revisions of APTA standards and recommended practices are welcomed from any interested party. Suggestions for changes to documents should be submitted in the form of a proposed change to the text along with the appropriate supporting documentation/rationale for the change.

Occasionally, questions may arise concerning the meaning of portions of these standards as they are specifically applied. APTA will resolve such issues through the PRESS Task Force Executive committee.

Comments on standards, questions on interpretation or requests for changes should be addressed to:

American Public Transportation Association
PRESS Staff Advisor
1666 K Street, NW
Washington, D.C. 20006

Acknowledgements

The American Public Transportation Association (APTA) acknowledges the special contributions to railroad passenger safety made by the following organizations and individuals. Without their leadership and on-going support, this manual would not have been possible.

The Association of American Railroads for quickly resolving legal issues concerning handing off responsibility and documentation for passenger equipment safety standards to APTA.

The Federal Railroad Administration for recognizing the role that voluntary industry standards can play in the nation's rail safety program, when combined with federal regulation.

Volpe National Transportation System Center for providing technical expertise and quick turn-around investigation to questions posed by the Task Force.

The Institute of Electrical and Electronic Engineers for their permission to use the IEEE Standards Style Manual.

The APTA Commuter Rail Executive Committee for the financial resources and strong support of the PRESS project that made this manual possible.

Donald Nelson, past President of Metro North Railroad and Thomas Pendergast, past President of Long Island Rail Road for championing the PRESS project during Rail Executive Committee debates.

Daniel Foth, former APTA staff member, for leadership in planning and budgeting the PRESS project.

Dennis Ramm, former Metra Chief Mechanical Officer and first PRESS Chairman, for organization and technical leadership of the PRESS Task Force.

Mike Wetherell, second PRESS Chairman, for continuing the technical leadership of the Task Force and for building an effective working relationship with rail labor members.

And most of all to the members of the PRESS Task Force –and the employers who supported their participation--who spent countless uncompensated hours debating complex issues to reach a consensus on these standards and recommended practices which will enhance rail passenger safety.

DISCLAIMER

The American Public Transportation Association (APTA) developed this manual in consultation with a diverse group of experts, arriving at consensus positions, using the procedures defined in the APTA PRESS Bylaws. APTA strives to provide accurate, complete, and useful information. The information contained in this detailed manual is based upon technical information that is believed to be reliable, but for which no responsibility is assumed.

Neither APTA nor any person or organization contributing to the preparation of this document makes any warranty, expressed or implied, with respect to the usefulness or effectiveness of any information, method or process disclosed in this material. Nor does APTA assume any liability for the use of, or for damages arising from the use of, any information, methods, or process disclosed in this document.

No information or suggestions shall be deemed to be a recommendation to use any specific manufacturer's product(s) or any system in conflict with an existing patent right, code or regulations. This manual should not serve as a substitute for sound engineering judgment.

Comments for revision of PRESS standards are welcome from any interested party, regardless of membership affiliation with APTA or PRESS. Suggestions and requests for interpretations will be handled in accordance with APTA PRESS Bylaws.

Requests for official interpretations, comments, or suggestions should be addressed to:

American Public Transportation Association
PRESS Staff Advisor
1666 K Street, NW
Suite 1100
Washington, DC 20006

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Introduction & Background

The last revision of the Association of American Railroads (AAR) *Manual of Standards and Recommended Practices, Section A, Part III, Passenger Car Requirements* occurred in 1984. After that final revision, the AAR made the decision to no longer devote any of their resources to passenger rail equipment standards. For more than fifteen years after that date, the passenger rail industry did not develop or maintain up-to-date standards and recommended practices for passenger rail equipment.

Also in 1984, the Federal Railroad Administration (FRA) reported to Congress that due to the agency's special relationship with Amtrak, Federal safety standards specifically addressing passenger rail equipment were not necessary.

Much has changed since 1984. The rail passenger industry experienced great growth and change since 1984. State and local governments established new commuter rail service in several areas of the country. Ridership grew on existing commuter railroads. Train density on passenger rail routes increased dramatically. Speeds increased. Many types of new equipment became available. The introduction of new technology accelerated the rate of change within the industry. Dramatic increases in new equipment costs took place.

The U. S. passenger railroads have maintained an enviable safety record while coping with these sweeping changes within the industry. Passenger railroads achieved this safety record by adapting freight car safety standards to passenger equipment and by voluntary compliance with the traditional North American practice for the design of rail passenger equipment. As passenger cars became radically different in structure from freight cars and as more equipment not designed to North American practice became available, the industry could no longer rely on these traditional cornerstones to ensure safety.

In 1994, this fact became apparent to Congress. That year, Congress included a requirement in the Federal Railroad Safety Authorization Act of 1994 that FRA develop regulations that set minimum standards for the safety of cars used by railroads to transport passengers. Congress directed FRA to specifically consider crashworthiness of cars, interior features that may affect:

- passenger safety;
- maintenance and inspection; and
- emergency response procedures and equipment.

In addition, Congress gave FRA important flexibility to help develop these regulations: Congress allowed FRA to consult directly with the industry. Congress also directed all Federal regulatory agencies to adopt industry consensus standards, where available, rather than develop separate Federal regulations.

In response to this Congressional directive, FRA invited a cross section of organizations representing the passenger rail industry to participate in a working group to focus on issues related to passenger equipment safety and to assist FRA to develop Federal safety standards. In addition, to minimize the need for Federal intervention, FRA strongly urged the industry to organize itself to develop industry standards for passenger rail equipment.

Believing that industry standards could benefit its commuter rail members, APTA agreed to take on the responsibility to develop an updated *Manual of Standards and Recommended Practices for Passenger Rail Equipment*. APTA proposed an approach, a schedule and a budget for this effort to the Commuter Rail Executive Committee. The Commuter Railroad Chief Executive Officers approved the plan and committed funding on a pro-rated basis by the APTA railroad members to initially develop the manual. Subsequently, the committee approved additional funding to maintain the standards, to develop training to prepare the industry for the standards and to conduct additional research on rail passenger safety.

To accomplish this task, APTA established the Passenger Rail Equipment Safety Standards (PRESS) Task Force. To organize and structure the standards development process, APTA took the following steps:

- developed formal by-laws for the Task Force;
- organized the Task Force into committees and working groups;
- elected Task Force Officers;
- selected the IEEE Style Guide as a format for standards;
- issued guidance on standards vs. recommended practices; and
- developed a formal commenting/balloting process to approve standards.

Separate sections of this manual discuss publication of the first manual in 1999, the PRESS Task Force by-laws, organization and membership.

First Publication of Manual of Standards and Recommended Practices—1999

On July 1, 1999, APTA released the first version of the Manual of Standards and Recommended Practices for Rail Passenger Equipment. The passenger rail industry agreed to a six month phase-in period, so the standards and recommended practices contained in the first version of the manual took effect on January 1, 2000.

As part of the PRESS process, passenger railroads committed to keep the manual up-to-date as technology and operating environments change. In the four years since APTA released the initial version of the manual, enough changes have taken place to warrant a major up-date--resulting in this 2004 version of the manual.

Changes from 1999 to 2004 Versions of the Manual

The following changes occurred between the 1999 and 2004 version of the Manual of Standards and Recommended Practices for Rail Passenger Equipment:

- A. The single volume 1999 Manual has been reorganized into the following six volumes for the 2004 Manual:
 - Volume 1—Introduction and Appendices
 - Volume 2—Construction and Structural Standards and Recommended Practices
 - Volume 3—Mechanical Standards and Recommended Practices
 - Volume 4—Electrical Standards and Recommended Practices
 - Volume 5—Maintenance Standards and Recommended Practices
 - Volume 6—Passenger Systems Standards and Recommended Practices

B. The following new standards and recommended practices approved by the PRESS Task Force and authorized by the APTA Commuter Rail Executive Committee after July 1, 1999 are included in the 2004 Manual:

- APTA RP-E-015-99, Recommended Practice for Head End Power Source Characteristics;
- APTA RP-E-016-99, Recommended Practice for 480 VAC Head End Power System;
- APTA RP-E-017-99, Recommended Practice for 27-Point Hardware Control and Communication Trainlines for Locomotives and Locomotive Hauled Equipment;
- APTA RP-E-018-99, Recommended Practice for 480 VAC Head End Power Jumper and Receptacle Hardware;
- APTA RP-E-019-99, Recommended Practice for 27-Point Jumper and Receptacle Hardware for Locomotives and Locomotive Hauled Equipment;
- APTA SS-I&M-017-02, Standard for Third Rail Current Collection Equipment Periodic Inspection and Maintenance,
- APTA SS-I&M 016-02, Standard for Pantograph Current Collection Equipment Periodic Inspection and Maintenance,
- APTA SS-I&M-015-00, Standard for Inspection and Testing of Roller Bearings on Passenger Equipment After a Derailment;
- APTA SS-I&M-014-99; Standard for Modification Methodology for Periodic Inspection and Maintenance of Passenger Coaches
- APTA RP-PS-005-00; Fire Safety Analysis of Existing Passenger Rail Equipment;
- APTA SS-C&S-034-99, Standard for the Design and Construction of Passenger Railroad Rolling Stock,
- APTA SS-C&S-020-03, Standard for Passenger Rail Vehicle Structural Repair

C. The following existing standards and recommended practices published in the 1999 Manual had a major revision approved by the PRESS Task Force are republished in revised form in the 2004 Manual:

- APTA SS-I&M-008-98 Rev1, Standard for Electrical Periodic Inspection and Maintenance of Passenger Coaches;
- APTA SS-I&M-005-98, Rev 1, Standard for Passenger Compartment Periodic Inspection and Maintenance;
- APTA SS-C&S-007-98, Rev 1, Standard for Fuel Tank Integrity on Non-Passenger Carrying Locomotives; and
- APTA SS-M-012-99, Rev 1, Standard for the Manufacture of Wrought Steel Wheels for Passenger Cars and Locomotives
- APTA SS-C&S-016-99, Rev 1, Standard for Row-to-Row Seating in Commuter Rail Cars.
- APTA SS-PS-002-98, Rev 2, Standard for Emergency Signage for Egress/Access of Passenger Rail Equipment,

- APTA SS-PS-004-99, Rev 1, Standard for Low Location Exit Path Marking.
- D. To assist railroads and car builders used to using former Association of American Railroads (AAR) standards for the construction of rail passenger equipment, several APTA construction and structural standards were combined into a single document— APTA SS-C&S-034-99, Standard for the Design and Construction of Passenger Railroad Rolling Stock. This document parallels and replaces AAR S-034. The following APTA construction and structural standards are incorporated in their entirety into APTA SS-C&S-034-99:
- APTA SS-C&S-002-98, Standard for the Attachment of Major Equipment to the Car Body Structure of Passenger Railroad Equipment;
 - APTA SS-C&S-005-98, Standard for Car Body End Strength for Railroad Passenger Vehicles;
 - APTA SS-C&S-008-98, Standard for Truck to Car Body Attachment Strength;
 - APTA SS-C&S-010-98, Standard for Car Body Roof Strength;
 - APTA SS-C&S-013-99, Standard for Corner Post Structural Requirements for Railroad Passenger Equipment;
 - APTA SS-C&S-014-99, Standard for Collision Post Structural Requirements for Railroad Passenger Equipment;
 - APTA SS-C&S-018-99, Standard for Car Body Side Strength for Railroad Passenger Equipment.
- E. In addition to incorporating the APTA standards given above in their entirety, APTA SS-C&S-034-99, Rev 1 addresses the following new subjects:
- Low Alloy, High Tensile Steel;
 - End Frame Sheathing and Horizontal Members;
 - Climb, Bypass and Overturn Resistance;
 - Truck Rotation Stops;
 - Structural Connections;
 - Crash Energy Management;
 - Structural Analysis; and
 - Structural Tests.
- F. Abstracts of IEEE Rail Transit Standards that apply to commuter rail equipment have been added to Volume III
- G. Several errors discovered in the 1999 Manual are corrected in the 2004 Manual.

PRESS Task Force By-Laws

The Press Task Force first adopted a set of By-Laws to govern the conduct of Task Force business in December, 1996. The By-Laws can be amended with the approval of 75% of the voting members of the Task Force. On several occasions, the Task Force did approve amendments to the By-Laws.

Appendix A of this manual contains the By-laws governing the operation of the PRESS Task Force. Amendments to the By-laws are documented through the use of strike-outs to text that has been eliminated and ***bold italics*** to indicate text that has been added. The date the Task Force approved each amendment is included in parentheses after the revised text.

PRESS Task Force Organization

To undertake the development of passenger rail equipment standards and recommended practices, the PRESS Task Force organized itself into five technical committees:

- Construction and Structural
- Electrical
- Inspection and Maintenance
- Mechanical
- Passenger Systems

A senior passenger railroad mechanical department officer served as the chair of each committee. An experienced railroad industry technical consultant served as the staff advisor to each committee. Each committee determined its own list of documents to develop and divided into sub-groups to draft the documents.

In addition, the PRESS Task Force Executive Committee--consisting of the Task Force Chair and Vice-Chairs, the Task Force staff advisor, the committee chairs and committee staff advisors served as a guiding body to resolve disputes, develop or clarify needed procedures, and make recommendations to the Full Task Force on courses of action.

At the time of publication of this manual, the PRESS Task Force Executive Committee consisted of the following members:

Name	Task Force Position	Parent Organization
Dave Elliott	Chair	Long Island Railroad
Ed Murphy	Vice-Chair	SEPTA
Tom Peacock	Task Force Staff Advisor	APTA
Dave Carter	Mechanical Chair	New Jersey Transit
Chris Holliday	Mechanical Staff Advisor	STV
Ken Barnish	Structural Chair	Metro-North Railroad
Cliff Woodbury	Structural Staff Advisor	LTK
Bill Lydon	Passenger Systems Chair	SCRRA
Susan Madigan	Passenger Systems Staff Advisor	TSM
Rich Conway	Maintenance Chair	Metro-North Railroad
Doug Warner	Electrical Chair	Altamont Express
Dave Phelps	Electrical Staff Advisor	APTA

PRESS Task Force Members

The PRESS Task Force consists of approximately 200 contributing members. These members represent commuter railroads, Amtrak, car builders, component suppliers, rail labor organizations, trade associations and government agencies. Appendix B includes a complete list of the current, active PRESS Task Force Members.

Document Format

The PRESS Task Force selected the Institute of Electrical and Electronics Engineers (IEEE) Standards 1996 Style Guide to serve as guidance on the format of APTA rail passenger equipment standards and recommended practices. APTA acknowledges and thanks the IEEE for the assistance and encouragement that they provided during the development of this manual.

The PRESS Task Force decided on the following convention for all units used in APTA rail passenger equipment standards and recommended practices:

- the English system will be used as the primary system of units;
- the metric system will be the secondary system of units; and
- all units will be expressed in the English system followed by the metric system equivalent in parenthesis.

Standards vs. Recommended Practices

During the development of this manual, the decision by the PRESS committees to develop a document as a mandatory standard or as optional recommended practice became controversial. To help minimize the controversy and increase the consistency involved in making this decision, the PRESS Task Force adopted the guidance given in this section of the manual.

Characteristics of a Standard

A standard should be developed when the document:

- a) Covers a system, component, process or task that is safety critical, or
- b) Ensures interoperability between parts or equipment, or
- c) Standardizes a design or process, or
- d) Addresses an FRA or NISB concern, or
- e) May become part of a regulation.

Characteristics of a Recommended Practice

A recommended practice should be developed when:

- a) The document describes only one of several acceptable approaches, or
- b) The document is tutorial in nature, or
- c) The document does not meet one of the characteristics for a standard, or
- d) Consensus could not be reached that the document should be a standard.

Definitions of Safety Critical

Safety-critical component or system means a component or system that, if not available, increases the risk of damage to equipment or injury to a passenger, crewmember or other person (*From FRA Notice of Proposed Rulemaking on Passenger Equipment Safety Standards*).

Safety-critical task means a task that, if not performed correctly, increases the risk of damage to equipment or injury to a passenger, crewmember or other person (*From FRA Notice of Proposed Rulemaking on Passenger Equipment Safety Standards*).

Safety Critical – A designation placed on a system, subsystem, element, component, device, or function denoting that satisfactory operation of such is mandatory to assurance of patrons, personnel, equipment or facility safety. Such a designation dictates incorporation of special safety design features (*from APTA 1979 Guidelines for Design of Rapid Transit Facilities*).

PRESS committees used the flow chart in Figure 1 as an aid to implement this guidance on how to make the decision to develop a document as a standard or as a recommended practice.

**PRESS Document Classification Decision Tree
Mandatory Standard or Recommended Practice**

Draft PRESS Document

Ensures interoperability between parts or equipment*

Yes

Mandatory Standard

No

Standardizes a design or process*

Yes

Mandatory Standard

No

Addresses specific FRA or NTSB concern

Yes

Mandatory Standard

No

Covers a safety critical component or system

Yes

Mandatory Standard

No

Covers a safety critical task or process

Yes

Address what to do, or how to do it

What

How

No

Recommended Practice

No

Only one way to safely perform?

Yes

Mandatory Standard

Safety Critical Component or System means a component or system, if not available, increases the risk of damage to equipment or injury to a passenger, crewmember or other person. (*FRA NPRM on Passenger Equipment Safety Standards*)

Safety Critical Task means a task, if not performed correctly, increases the risk of damage to equipment or injury to a passenger, crewmember or other person. (*FRA NPRM on Passenger Equipment Safety Standards*)

Examples of What FRA May Consider Safety Critical:

- Brakes
- Brake Tests & Inspections
- Suspension Systems
- Emergency Communications
- Emergency Exits
- Wheels
- Cab Signals
- Emergency Lighting
- Back-up Power
- Daily Mechanical Inspection (many, but not all items)
- Periodic Maintenance (many, but not all items)
- Safety Appliances

* APTA does not intend to require interoperability that prevents individual properties from procuring equipment with unique features such as non-standard couplers. If a railroad chooses to have interoperability, then the standard will ensure that it is achieved.

Figure 1

Standard/Recommended Practice Approval Process

Reaching consensus and gaining approval of standards or recommended practices from a large group with diverse interests is an extremely difficult process. As the Task Force worked with this issue, a formalized process evolved for the Task Force membership to comment on draft documents, for the PRESS committees to respond to member's comments and for the voting members of the Task Force to approve final versions of the documents. This section of the manual describes this commenting and balloting process.

First, a working group of a PRESS committee debates and prepares a draft document to present to the full committee. The full committee meets to discuss the draft and make the changes necessary for all the committee members to accept it. The committee votes to send the draft out to all Task Force members for comment.

If the vote passes, the committee sends the approved draft to the APTA Task Force advisor. The Task Force advisor mails proposed drafts to all Task Force members—giving them a minimum of 21 days to comment. The Task Force members use the comment form given as Figure 2 to return their comments on each draft to the APTA staff advisor.

The APTA staff advisor forwards all the comments received from Task Force members to the committee that proposed the standard/recommended practice. The committee meets to discuss and resolve each comment. The committee then votes on a revised document that includes the changes made in response to members' comments. The document is then ready to be presented to the entire Task Force for an approval vote.

The primary author of the document presents it to the entire Task Force including a description of the changes made in response to the members' comments. Members not satisfied with the changes made by the committee may voice their objection to the entire Task Force only if they commented in writing to the committee. New objections, not submitted to the committee in writing for consideration, may not be brought up at a full Task Force meeting.

After presentation of the document and any debate of dissenting positions, the voting members of the Task Force--using a ballot given as Figure 3--formally vote on the document. PRESS By-laws require a 75% affirmative majority of non-abstaining voting members for a standard or recommended practice to be passed. The ballots are kept on file by APTA as a record of the vote. The minutes of the Task Force meetings reflect the results of all balloting.

**American Public Transportation Association (APTA)
Passenger Rail Equipment Safety Standards
PRESS Comment Sheet**

This comment sheet is to be used by all PRESS members to comment on standards or recommended practices brought before the PRESS Task Force. Please return your comments to: American Public Transportation Association, 1666 K Street, NW , Washington, D.C. 20006-1215

APTA recommends that the attached document be commented on as:

- A Mandatory Safety Standard** (the document contains safety critical provisions)
- A Recommended Practice** (the document provides guidance on good practice for non-safety critical tasks or design criteria)

Title of Document: _____

Approval of Author

Approval of PRESS Committee Chairman

Approval of APTA PRESS Staff Advisor

Approval of APTA PRESS Task Force Chairman

Name and Organization of PRESS Member: _____

Please indicate how you comment on this document.

- I accept the document as written.**
- I can accept the document with attached revisions of a minor or editorial nature.** (*Attach recommended revisions*)
- I reject document due to a major concern, but I could accept it if my concern is addressed.** (*attach description of concern and how you recommend that it be addressed*)
- I reject the document in concept or on principle.**
- I chose not to review the document.**

Signature of PRESS Member

Date

Figure 2

**American Public Transportation Association (APTA)
Passenger Rail Equipment Safety Standards
PRESS Ballot**

This ballot is to be used only by PRESS voting members for a formal vote on all standards or recommended practices brought before the PRESS Task Force.

APTA recommends that the attached document be voted on as:

A Mandatory Safety Standard (the document contains safety critical provisions)

A Recommended Practice (the document provides guidance on good practice for non-safety critical tasks or design criteria)

Title of Document: _____

Name and Organization of Voting Member: _____

Please indicate how you vote on this document.

I accept the document as written.

I can accept the document with attached revisions of a minor or editorial nature. (*Attach recommended revisions*)

I reject document due to a major concern, but I could accept it if my concern is addressed. (*attach description of concern and how you recommend that it be addressed*)

I reject the document in concept or on principle.

I abstain from voting

Signature of Voting Member

Date

Figure 3

PRESS Task Force Voting Members

The PRESS Task Force By-Laws permit a maximum of 20 railroad voting members, 12 supplier voting members and 5 rail labor voting members. The voting members at the time of publication of this manual included:

Railroad Voting Members	Supplier Voting Members	Rail Labor Voting Members
Amtrak	Alstom	Brotherhood Locomotive Engineers
CalTrain	Bombardier	Brotherhood of Railway Carmen
ConnDot	General Electric (GETS)	International Brotherhood of Electrical Workers
Trinity Railway Express	General Motors (EMD)	United Transportation Union
Long Island Railroad	Knorr	
MARC	Nippon Shariyo	
MBTA	Railroad Progress Institute	
Metra	Siemens	
Metro-North Railroad	Wabtech	
New Jersey Transit	Talgo	
SCRRA	Kawasaki Rail Car Inc.	
SEPTA		
Tri-Rail		
Virginia Railway Express		
Altamont Commuter Express		
North County Transit		
NICTD		
Central Puget Sound Regional Transit Authority		

Implementation of Standards and Recommended Practices

After the Task Force has approved a standard or recommended practice, the PRESS committee that proposed it must make a recommendation to the Commuter Rail Executive Committee on how to implement the standard or recommended practice.

In making this recommendation, the PRESS committees must consider such practical factors as:

- avoiding change orders with contracts in progress;
- phasing in options to existing contracts;
- time required to procure material;
- time required to train personnel; and
- potential safety impact of implementation lead times.

The Commuter Rail Executive Committee authorizes each approved standard and recommended practice when it approves how that standard or recommended practice is to be implemented. The Commuter Rail Executive Committee approved the following implementation strategy for the standards and recommended practices contained in this manual:

- The industry had a six-month phase-in period from July 1 to December 31, 1999 for Mechanical, Electrical and Maintenance Standards and Recommended Practices. These standards and recommended practices took effect January 1, 2000.
- Due to the long lead time required to order, to build and to accept new passenger equipment, implementation of Construction and Structural Standards and Recommended Practices can not be tied to a calendar date without introducing a significant risk of costly mid-contract change orders. To avoid this cost risk, APTA implemented construction and structural standards on a procurement contract by procurement contract basis.
- Construction and Structural Standards and Recommended Practices do not apply to equipment procured under the terms of any of the contracts listed in the following table.

List of Passenger Rail Equipment Procurement Contracts Exempt from APTA Construction and Structural Standards

Procuring Railroad	Equipment Builder	Contract Number	Equipment Being Procured	Number Of Units	Notice to Proceed Date	Contract Status As of 1/1/04	Anticipated Date of Completion
Long Island Rail Road	Kawasaki	5494	Bi-Level Coaches and Cab Cars	134	3/15/95	Coaches Accepted	Complete
Long Island Rail Road	EMD	5502	DE-30 Locomotives	23	3/15/95	Locomotives Accepted	Complete
Long Island Rail Road	EMD	5540	DM-30 Locomotives	23	1/16/95	Locomotives Accepted	Complete
MARC	Kawasaki		Bi-Level Coaches and Cab Cars	49	1/95	Coaches accepted	Complete
MARC	Bombardier		High Speed Electric Locomotives	6	7/97	Manufacturing completed	Complete
VRE	Kawasaki		Bi-Level Coaches and Cab Cars	13	1/95	Coaches accepted	Complete
Metro-North Railroad	GE	9200	P32AC-DM Locomotives	39 max.	Base Third Opt.	Units Delivered	Complete
New Jersey Transit	AAI Corp.	99RS-705	Comet II Refurbishment	116	2/1/99	Complete	Complete
Amtrak San Diego	Alstrom		Cab Cars and Coaches	9 cab cars 31 coaches	3/98	Complete	Complete
Amtrak	Alstom/ Bombardier		High Horsepower Electric Locomotive	15	5/96	Complete	Complete
Caltrains	Sumitomo	JP BC-6028	Bi-Level Coaches	20	6/98	Complete	Complete
Caltrains	Sumitomo		Refurbish Bi-Level Coaches	51	9/99	Complete	Complete
Metra	Wabtec		New Type Passenger Locomotive	27	8/99	22 Locomotives Delivered	June 2004
MBTA	Unknown	MBTA CAP 4598	In Kind Overhaul of F40PH-2C Locomotives	25	7/99	Overhaul Complete	Complete
Puget Sound	Bombardier	RT-A-8198	Bi-Level Coaches and Cab Cars	38	7/98	Coaches delivered	Complete
Dart	Bombardier		Bi-Level Coaches and Cab Cars	4		Coaches delivered	Complete
SCRRA-Metrolink	Bombardier		Bi-Level Coaches and Cab Cars	35		Delivered	Complete
Metro North Railroad	Bombardier	9139	Single-level push-pull Coaches	50	9/97	Coaches delivered	Complete
NICTD	Nippon Sharyo	36245	EMU Cab Cars	8	April 1999	Cars delivered	Complete

- The Construction and Structural Standards and Recommended Practices do apply to equipment procured under any contract with a notice to proceed date subsequent to the original date of publication of this manual (7/1/99) that is not included in this table of exempt contracts.
- Some Passenger System Standards will be implemented by date and some will be implemented by contract. Refer to the scope section of each individual Passenger System Standard for a description of how that standard will be implemented.

The scope section of each individual standard and recommended included in this manual contains a statement describing how that document will be implemented.

Changes to a Standard or Recommended Practice

One of the attractive features of an industry consensus standards process over Federal rulemaking is that making changes in the standards to accommodate the constantly changing railroad environment can be made much more quickly and easily. Thus industry standards are much easier to keep current than Federal regulations.

The passenger railroads want the PRESS process to take advantage of this flexibility. Any concerned party may propose a change to an approved standard or recommended practice. The concerned party proposes specific changes by marking up the approved version of the text of the standard or recommended practice with strike-outs to indicate text to be eliminated and redlines or italics to indicate text to be added. A copy of the proposed changes and supporting rationale are submitted to the APTA PRESS Task Force staff advisor.

Once the proposed changes have been submitted to the staff advisor, an identical process to the process used to approve a new standard or recommended practice is followed.

Waivers

APTA does not intend to entertain requests for waivers to the standards included as part of this manual. APTA does not have the in-house staff and expertise to evaluate requests for waivers. The only remedy available to railroads that believe they should not have to comply with a standard is through the standards change process.

However, APTA recognizes that some transit agencies may feel compelled to propose operation of new equipment—such as diesel multiple-units (DMU’s)—that does not comply with all the structural design requirements contained in this manual. Before proposing such operations, APTA urges transit agencies to be certain that the service that they are planning cannot be met with grandfathered equipment or with equipment that complies with the structural standards contained in this manual.

Operation of such equipment will likely require a waiver from the Federal Railroad Administration (FRA). APTA has been a strong advocate urging the FRA to develop a logical, fair and objective process to evaluate the safety merits of requests for waivers from structural standards. FRA has proposed a concept of “safety equivalence” to evaluate requests for waivers from structural standards. This concept requires the transit agency to perform a risk assessment

of the proposed operation to demonstrate that other safety measures are planned—such as closing grade crossings, time separation of operation of light and heavy equipment or signal system improvements—to fully compensate for the added risk resulting from reduced structural protection of passengers and crew.

APTA intends to work closely with FRA to more clearly define specific requirements to demonstrate “safety equivalence”.

Enforcement

APTA does not have, nor does it intend to develop, an enforcement staff. Enforcement of these standards will be the responsibility of the individual operating railroads. APTA's rail safety audit program will include a detailed review of a railroad's compliance with the standards. The rail safety audit report will go to the railroad's top management. In addition, the FRA may choose to selectively enforce APTA's standards.

Recommended Practices are voluntary—but strongly advised. If a railroad chooses not to follow a recommended practice, that railroad should ensure that the practice it uses is at least equivalent to the recommended practice.

Definitions of Key Terms

Most of the definitions required for uniform application and consistent interpretation of APTA's passenger rail equipment standards and recommended practices are given in the individual standards and recommended practices. Appendix D is a compilation of all the definitions that appear in the individual standards and recommended practices. However, a small number of terms have such a broad application that they apply to most if not all of the individual documents. These widely applicable terms are defined as follows:

Cab Car

A locomotive intended to provide transportation for members of the general public that is without propelling motors but contains one or more control stands.

MU Locomotive

A self propelled locomotive by any power source other than steam intended to provide transportation for members of the general public.

New Passenger Equipment

Passenger Equipment ordered and built after the implementation period allowed for these standards and recommended practices.

Ordered or date ordered

The date on which a procuring railroad gives notice to proceed to a contractor or supplier to build new passenger equipment.

Passenger Car

A rail vehicle intended to provide transportation for members of the general public and includes a self-propelled car designed to carry passengers, baggage mail or express freight. This term includes a passenger coach, a cab car, and an MU locomotive.

Passenger Coach

A rail vehicle intended to provide transportation for members of the general public that is without propelling motors and without a control stand.

Passenger Equipment

Includes all powered and unpowered passenger cars and locomotives used to haul passenger cars. Baggage cars, express cars, auto-rack cars, roadtrailers and other types of normally unoccupied cars frequently used in intercity passenger trains are not passenger equipment. Passenger vehicle and passenger rolling stock are other terms with the same meaning.

Passenger Rail Vehicle

A coach, car, locomotive, or similar vehicle that travels on rails and is used in a passenger train.

Passenger Train

A train that transports or is available to transport members of the general public.

Rebuild Passenger Equipment

Means an investment of 60% or more of the replacement cost of a locomotive or coach to extend the life of that vehicle beyond its original designed useful life. Remanufacture means rebuild. Rebuilding or remanufacturing can serve as triggers for requirements that apply to new equipment.

Refurbish Passenger Equipment

Means a mid-life investment to replace worn or outdated components or systems necessary to achieve the designed useful life of the vehicle. Refurbishing does not trigger requirements that apply to new or rebuilt equipment.

Retrofit Passenger Equipment

Means the installation of a new component or system to give a vehicle a new capability or feature. Retrofitting is not an investment to achieve or increase the designed useful life of the equipment.