



North American Section

Institution of Railway Signal Engineers

Positive Train Control Standards and Manual Parts

Omaha, NE May 17, 2009

Quest and Convention Center

David Thurston, P.E., FIRSE



PTC Design and Standards Documents

The (not so) recent Legislation requiring PTC began a mobilization of resources to address issues related to design, installation and testing of PTC

The ITC Committee formed by the Class 1 RRs engaged AREMA with investigating potential Manual Parts that could be used for PTC rollout.

Thus, Committee 39 was formed.



IRSE
INSTITUTION OF
RAILWAY SIGNAL
ENGINEERS

PTC Design and Standards Documents

Committee 39 Mission Statement

“The purpose of AREMA Committee 39 is to continually review current and new technology addressing the installation, testing and maintenance of Positive Train Control wayside equipment and systems and develop recommended "industry practices" with the overall goal of improving the safety and reliability of train operations.”



PTC Design and Standards Documents

The focus of the Committee is the WIU, and not any of the locomotive mounted or BOS equipment.

The Committee was divided into four sub groups to review and generate Manual Parts

1. Installation
2. Configuration Management
3. Testing and Maintenance
4. Communications



PTC Design and Standards Documents

Committee Meeting held:

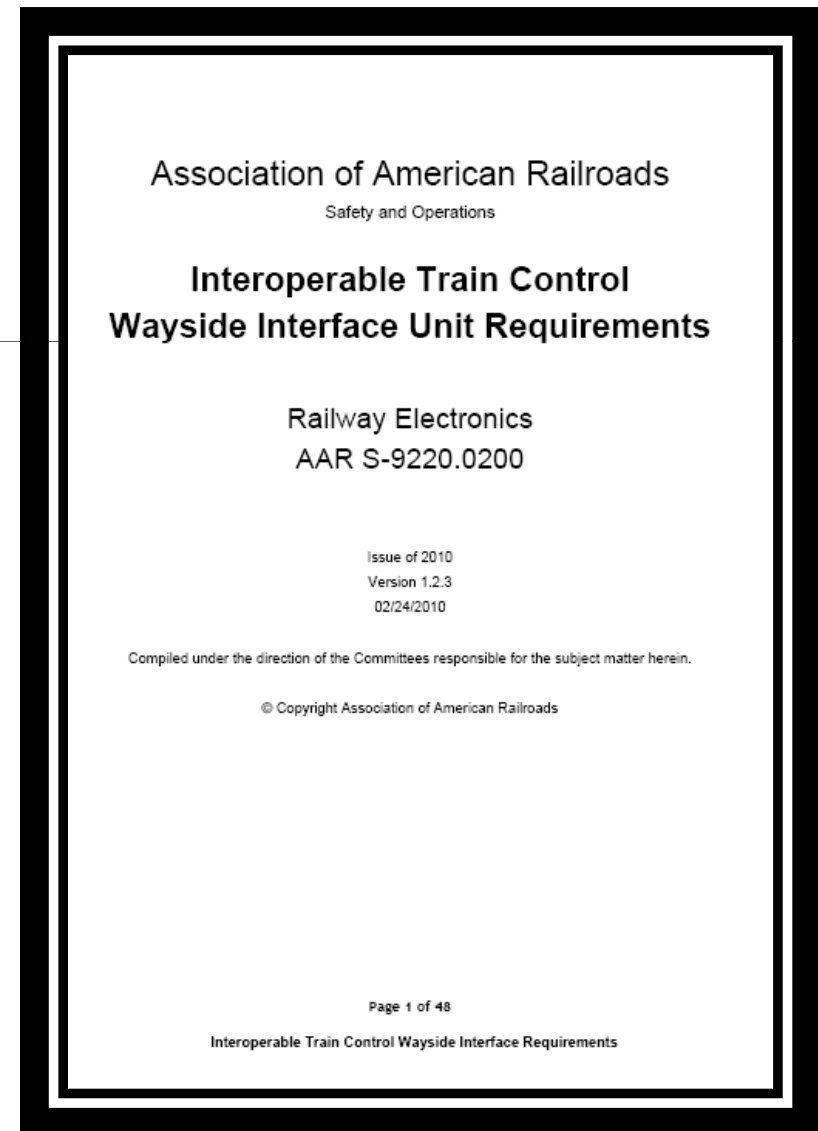
-
- May 20, 2009 in Nashville, TN
 - October 12, 2009 in Germantown, WI
 - March 10 2010 in Cocoa Beach, FL
 - May 20, 2010 in Omaha, NE

Along with several teleconferences with members and sub committee chairs.



PTC Design and Standards Documents

The Committee receives regular updates from the ITC groups concerning the ITC Standards to be published by the AAR.





PTC Design and Standards Documents

The results so far for PTC Manual Parts:

24.1.1 Recommended Practices for Incorporating Hand Throw Switches into Non-signaled territory, ITC TYPE - PTC Systems

This is to address the unique features associated with PTC without track circuits or Automatic Block Signals



PTC Design and Standards Documents

The results so far for PTC Manual Parts:

24.2.1 Configuration Management

Existing Configuration Management Manual Parts

17.5.1 and 17.5.2 were already addressed these issues.

The results so far for PTC Manual Parts:

**24.3.1 Recommended Instructions for Test of
Positive Train Control Wayside Interface Units
(WIU) before Placing in Service**

This addresses the testing of individual WIUs at the locations utilizing a laptop or similar device injected into the communications link between the WIU and the Data Radio.

The results so far for PTC Manual Parts:

- **24.3.1 Recommended Instructions for End to End Test of Positive Train Control Wayside Interface Units (WIU)**

This addresses the testing from the WIU and the BOS/Locomotive to confirm field devices are recognized.



PTC Design and Standards Documents

The results so far for PTC Manual Parts:

- **MP 24.4.1 Recommended Design Guidelines of the Maintainer Interface for PTC Communication Equipment.**
- **MP 24.4.2 Recommended Installation Practices for RF Transmission Systems**

New Manual Parts for Communications Systems



PTC Design and Standards Documents

The results from looking at existing PTC Manual Parts:

- **22.2.4 Recommended Practices for Installation of Digital Data Radio Systems for Wayside Applications**
- **MP 22.1.1 Recommended Clean Cab Radio Channel Designators and Railroad Radio Service VHF Frequency Table**

The results from looking at existing PTC Manual Parts:

- **MP 22.2.2 Recommended Functional/Operating Guidelines for Remote Control of Engine by Portable Radio**
- **MP 22.2.4 Recommended Design Criteria for Rack Mounted Frequency Modulated Transceiver and Accessories**



PTC Design and Standards Documents

Work to be Completed:

- Adapt to any ITC Spec changes
- Final Review and Ballot for M.P.

Comments are always appreciated.



IRSE
INSTITUTION OF
RAILWAY SIGNAL
ENGINEERS

Institution of Railway Signal Engineers



Thanks!