Sample C^{3}RS Corrective Actions from Different Carrier Peer Review Teams (PRTs)

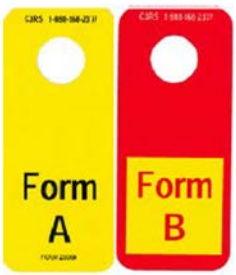
1. **Improved visibility of yellow boards**
   Temporary speed restrictions could not be installed in winter because the ballast was frozen. Rail-mounted yellow flag brackets were an easy fix.

Credit: PRT image

2. **Improved platform visibility**
   To improve platform visibility at night the carrier replaced tinted vestibule windows with clear windows.

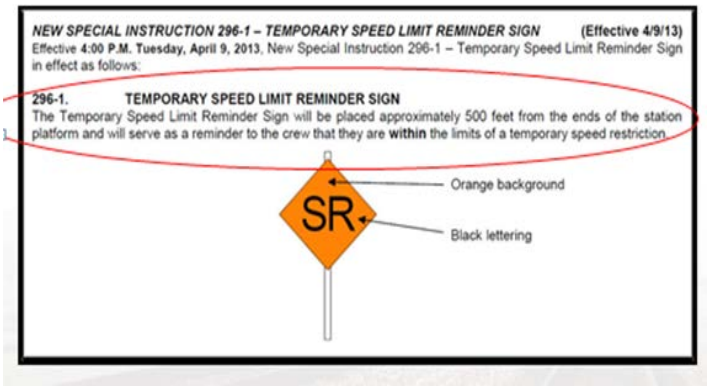
Credit: PRT image

3. **Job aid hang tags**
   Hotel-style "do not disturb" tags hang on the throttle handle as a visual reminder to perform an activity or to point out important information.



Credit: PRT image

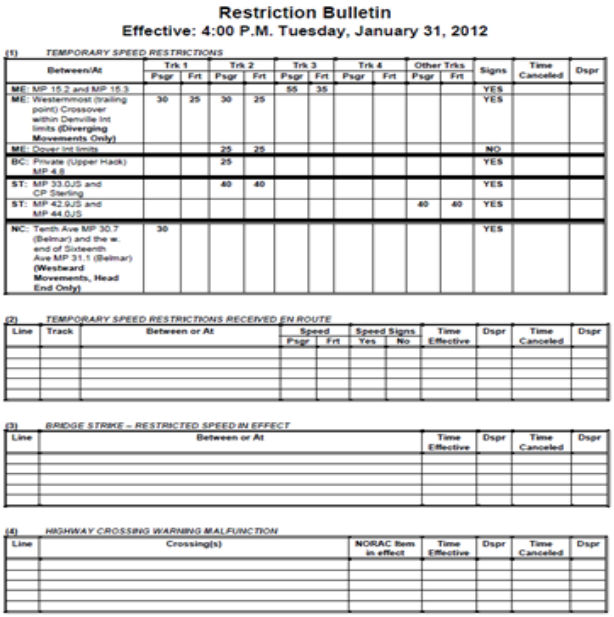
4. **Speed restriction reminder signs**
   New speed reminders at the end of the platform provide visual alerts and reinforce speed restriction bulletin instructions.



Credit: PRT image

5. **Consolidated speed restriction bulletins**
   Separate bulletins reduce the number of errors in speed restrictions listed in written directives. Temporary speed restrictions are added in the order received, making it difficult to follow the sequence by milepost.

   Combining speed restrictions over one track onto a single bulletin, ordered sequentially by milepost, makes it easier to identify restrictions in the order in which they occur.



Restriction Bulletin
Effective: 4:00 P.M. Tuesday, January 31, 2012

(1) *TEMPORARY SPEED RESTRICTIONS*

Between/At	Trk 1		Trk 2		Trk 3		Trk 4		Other Trks		Signs	Time Canceled	Dspr
	Psgr	Frt	Psgr	Frt	Psgr	Frt	Psgr	Frt	Psgr	Frt			
ME: MP 15.2 and MP 16.3					55	35					YES		
ME: Westernmost (trailing point) Crossover within Denville Int limits (Diverging Movements Only)	30	25	30	25							YES		
ME: Dover Int limits			25	25							NO		
BC: Private (Upper Hack) MP 4.8			25								YES		
ST: MP 33.0JS and CP Sterling			40	40							YES		
ST: MP 42.9JS and MP 44.0JS									40	40	YES		
NC: Tenth Ave MP 30.7 (Belmar) and the w. end of Sixteenth Ave MP 31.1 (Belmar) (Westward Movements, Head End Only)	30										YES		

(2) *TEMPORARY SPEED RESTRICTIONS RECEIVED EN ROUTE*

Line	Track	Between or At	Speed		Speed Signs		Time Effective	Dspr	Time Canceled	Dspr
			Psgr	Frt	Yes	No				

(3) *BRIDGE STRIKE – RESTRICTED SPEED IN EFFECT*

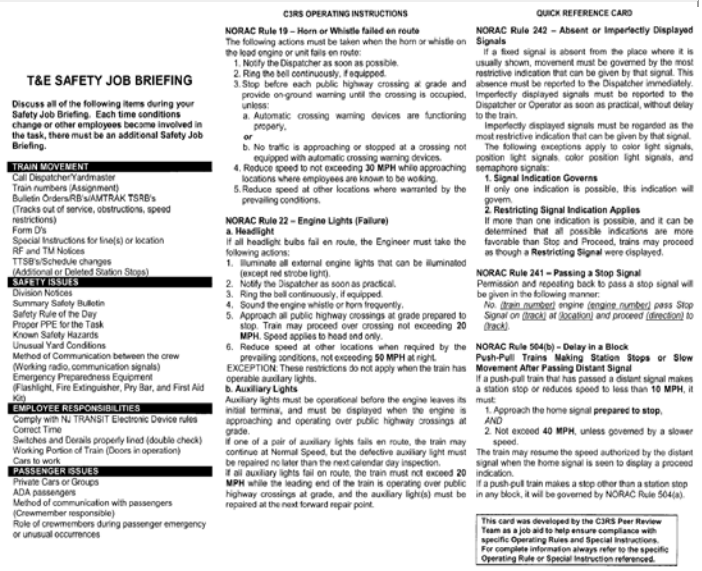
Line	Between or At	Time Effective	Dspr	Time Canceled	Dspr

(4) *HIGHWAY CROSSING WARNING MALFUNCTION*

Line	Crossing(s)	NORAC Item in effect	Time Effective	Dspr	Time Canceled	Dspr

Credit: PRT image

6. **Increased focus on Job Safety Briefings**
   A new Job Safety Briefing (JSB) checklist identifies everyday work-related risks and assignments. This checklist is invaluable for new trainees and seasoned veterans alike. Conducting a JSB consistently, clearly, and professionally helps ALL of us become better train and engine service professionals.



T&E SAFETY JOB BRIEFING

Discuss all of the following items during your Safety Job Briefing. Each time conditions change or other employees become involved in the task, there must be an additional Safety Job Briefing.

TRAIN MOVEMENT
Call Dispatcher/Yardmaster
Train numbers (Assignment)
Bulletin Orders/RB's/AMTRAK TSRB's (Tracks out of service, obstructions, speed restrictions)
Form D's
Special Instructions for line(s) or location
RF and TM Notices
TTSB's/Schedule changes (Additional or Deleted Station Stops)

SAFETY ISSUES
Division Notices
Summary Safety Bulletin
Safety Rule of the Day
Proper PPE for the Task
Known Safety Hazards
Unusual Yard Conditions
Method of Communication between the crew (Working radio, communication signals)
Emergency Preparedness Equipment (Flashlight, Fire Extinguisher, Pry Bar, and First Aid Kit)

EMPLOYEE RESPONSIBILITIES
Comply with NJ TRANSIT Electronic Device rules
Correct Time
Switches and Derails properly lined (double check)
Working Portion of Train (Doors in operation)
Cars to work

PASSENGER ISSUES
Private Cars or Groups
ADA passengers
Method of communication with passengers (Crewmember responsible)
Role of crewmembers during passenger emergency or unusual occurrences

C3RS OPERATING INSTRUCTIONS

NORAC Rule 19 – Horn or Whistle failed en route
The following actions must be taken when the horn or whistle on the lead engine or unit fails en route:
1. Notify the Dispatcher as soon as possible.
2. Ring the bell continuously, if equipped.
3. Stop before each public highway crossing at grade and provide on-ground warning until the crossing is occupied, unless:
   a. Automatic crossing warning devices are functioning properly,
   or
   b. No traffic is approaching or stopped at a crossing not equipped with automatic crossing warning devices.
4. Reduce speed to not exceeding **30 MPH** while approaching locations where employees are known to be working.
5. Reduce speed at other locations where warranted by the prevailing conditions.

NORAC Rule 22 – Engine Lights (Failure)
a. Headlight
If all headlight bulbs fail en route, the Engineer must take the following actions:
1. Illuminate all external engine lights that can be illuminated (except red strobe light).
2. Notify the Dispatcher as soon as practical.
3. Ring the bell continuously, if equipped.
4. Sound the engine whistle or horn frequently.
5. Approach all public highway crossings at grade prepared to stop. Train may proceed over crossing not exceeding **20 MPH**. Speed applies to head end only.
6. Reduce speed at other locations when required by the prevailing conditions, not exceeding **50 MPH** at right.

EXCEPTION: These restrictions do not apply when the train has operable auxiliary lights.

b. Auxiliary Lights
Auxiliary lights must be operational before the engine leaves its initial terminal, and must be displayed when the engine is approaching and operating over public highway crossings at grade.
If one of a pair of auxiliary lights fails en route, the train may continue at Normal Speed, but the defective auxiliary light must be repaired no later than the next calendar day inspection.
If all auxiliary lights fail en route, the train must not exceed **20 MPH** while the leading end of the train is operating over public highway crossings at grade, and the auxiliary light(s) must be repaired at the next forward repair point.

QUICK REFERENCE CARD

NORAC Rule 242 – Absent or Imperfectly Displayed Signals
If a fixed signal is absent from the place where it is usually shown, movement must be governed by the most restrictive indication that can be given by that signal. This absence must be reported to the Dispatcher immediately.
Imperfectly displayed signals must be reported to the Dispatcher or Operator as soon as practical, without delay to the train.
Imperfectly displayed signals must be regarded as the most restrictive indication that can be given by that signal.
The following exceptions apply to color light signals, position light signals, color position light signals, and semaphore signals:
1. Signal Indication Governs
If only one indication is possible, this indication will govern.
2. Restricting Signal Indication Applies
If more than one indication is possible, and it can be determined that all possible indications are more favorable than Stop and Proceed, trains may proceed as though a **Restricting Signal** were displayed.

NORAC Rule 241 – Passing a Stop Signal
Permission and repeating back to pass a stop signal will be given in the following manner:
No. (train number) engine (engine number) pass Stop Signal on (track) at (location) and proceed (direction) to (track).

NORAC Rule 504(b) – Delay in a Block Push-Pull Trains Making Station Stops or Slow Movement After Passing Distant Signal
If a push-pull train that has passed a distant signal makes a station stop or reduces speed to less than **10 MPH**, it must:
1. Approach the home signal **prepared to stop**,
   AND
2. Not exceed **40 MPH**, unless governed by a slower speed.

The train may resume the speed authorized by the distant signal when the home signal is seen to display a proceed indication.
If a push-pull train makes a stop other than a station stop in any block, it will be governed by NORAC Rule 504(a).

This card was developed by the C3RS Peer Review Team as a job aid to help ensure compliance with specific Operating Rules and Special Instructions. For complete information always refer to the specific Operating Rule or Special Instruction referenced.

Credit: PRT image

7. **Dedicated safety job briefing rooms**
   To be installed.

8. **Expanded car marker test site**
   PRTs are testing new marking procedures that spot the appropriate car at the leading end of the platform if the train length is longer than the platform.

©: 123RTF.com image

9. **New flagging procedures**
   A new checklist and instructions describe procedures for flagging/pilot/yard service duties.

©: 123RTF.com image

10. **Situational awareness training for distractibility**
    What causes the loss of situational awareness and how can it be prevented? PRT and carrier Offices of System Safety are teaming with Liberty Mutual Insurance—leaders in "risk reduction" and "situational awareness"—to identify tools, programs, and solutions to combat this very real problem.

    a) **Revised blue safety flag policies.** The highest percentage of close call cases reported to NASA (37 percent) relate to blue flags. A new system-wide initial safety alert and a revision of all blue flag policies should reduce this percentage and improve worker safety.
    b) **Refresher training**. To be developed for employees, where required, based on feedback from C3RS reports.
    c) **Enhanced training.** Provided to locomotive engineers, conductors, and dispatchers, based on errors reported in C3RS.

11. **Internet access**
    Improved communications by providing on board crews with Internet access.

Credit: Microsoft

12. **Enhanced inspections**
    Formalized and enhanced periodic inspections of emergency door handles.

13. **New form delivery**
    Installed a form delivery process in all sign-up locations.

14. **TMAC Updates**
    Multiple PRT-developed recommendations will be included in the next version of Train Management and Control (TMAC).

15. **New remote control switch procedure**
    Implemented a process for activating a remote-control switch prevents run-through switches in a location with frequent run-through problems. A flyer provides procedures and diagrams.

16. **New Crew Resource Management (CRM)**
    This system-wide human factors training helps reduce human factors-caused accidents. CRM is based on C3RS report analysis and covers improvements to rail safety, signal awareness, signals, and job briefings.

17. **Improved switch navigation**
Consistent designation of tracks and additional signs help engineers navigate through complex switch locations.

Credit: Volpe image

18. **Updated power yard switch operations**
Changed the process for controlling operations to line power yard switches.

19. **Consolidated restriction bulletins**
Streamlined paperwork requirements by limiting daily restriction bulletin updates to one page.

20. **Cab design changes**
Implemented changes to keep paperwork in the employee's sightline.

Credit: PRT image

21. **Other process improvements**
PRT recommendations for other local and system-wide processes include:

a) **Install "squawk boxes"** to improve communication between the yardmaster and dispatching.
b) Implement **mentoring** for new conductors.
c) Work with mechanical employees to ensure **uninterrupted radio communication.**
d) Instruct train crews on **how to back out of the yard.**
e) Improve **yard communication.**
f) **Paint problem switches** to make them more visible.