



# IronWood Technologies

Railroad Accident Reconstruction

## Federal Railroad Administration

False Proceed Signal Database

January 1, 1995 through May 3, 2004

All Reports - Canadian Pacific Railway

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
<b>458</b>	2/17/1995	CP	CTC			8654	RTR	Signal 139.2	N
<b>Maintenance - Improper Adjustment, Track Circuit</b>									
<p>On February 17, 1995 at approximately 1630 CNW south bound train no. 8654 was located at south end of siding Farmington and reported signal 28R at the Farmington holding signals had cleared from Red to Yellow to Green for about 15 seconds and returned to Red while CNW southbound train 8018 was in 2nd block ahead.</p> <p>Upon investigation, it was determined when CNW train 8018 had passed signal 139-2, the directional stick relay had picked to allow a clearing code to generate to the rear causing signal 28R to display an APPROACH aspect and immediately after passing signal 139-2, the train lost shunt allowing a clearing code to be generated back to signal 28R causing signal 28R to display a CLEAR aspect for about 15 seconds. Possible cause found to be RT track circuit was not adjusted properly causing track circuit to pick up momentarily under the train.</p> <p>Corrective Action: All track circuits between Rosemount and Comus will be inspected for adjustment and assure shunting with .06 ohm shunt.</p>									
<b>522</b>	10/11/1995	CP		Automatic		See Below	4RC & 4L Signals	Dewey Indiana	N
<b>Human Error - Improper Circuit Jumper in Place</b>									
<p>At approximately 1400 hrs on October 11, 1995, CP Rail System Maintenance of Way employees were raising the crossing at N. 25th Street, CSX Dewey Diamond, in Dewey, Indiana. The gang was working under Form B authority obtained by the foreman. Because of the intermittent shunting of the equipment, the Signal Maintainer held up the 2 LT relay. CSX trains were operating over the Diamond, on signal indication with the 2 LT relay held up.</p> <p>It has been explained to the Maintainer that this is not an acceptable practice. Disciplinary action will be taken.</p>									

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**526**    10/30/1995    CP          Remote       CP 5502       Equip. VHLC - 2WB Sig.       Nasohata West (MP 114.8), Oconomowoc,       N

**Scenario Reenacted, Unable to Duplicate, No Defects Found**

Train #571 (CP 5502) reported that the signal out of the siding at West End of Nashatah (MP 114.8) with switch lined for normal move (main line). Engineer reported signal came in for second then went Red.

Dispatcher had Amtrak #7 (westbound) go thru Nashotah West and was going to bring #571 out of siding after #7 but forgot to line switch reverse before requesting a signal clear with a call-on. When he realized what he had done he sent out cancel signal request. We had Electronic Tech in Control Office pull the logs on the Nashotah West location and they confirmed what the dispatcher said that he had done. It showed that the 1WA which is the main line signal, did clear for a second before the dispatcher sent out the signal cancel request. The location at that time, went into time because the East End of Nashotah was lined into the West End of Nashotah.

We tried to duplicate the moves that took place with the dispatcher and shunts but were unable to get the 1WB to show CLEAR. Also tried with another west bound train. All batteries at location showed free of any grounds.

The logs pulled showed that the 1W B signal never showed CLEAR until the switch was lined reverse and then dispatcher requested the signal. Also pulled logs from VHLC and they agreed with logs from office.

The following day when the Engineer came back on duty, I talked with him and told him of our testes [sic] and logs he said that he would hate to think that he was looking at the wrong signal but could have been. The train was sitting back from the signal five or six car lengths. It was also dark and they had been sitting in siding for about one hour twenty minutes.

After talking with the Engineer and making all tests and checking logs I put the 1WB signal back in service.

No further problems have occurred.

**650**    11/13/2000    CP    CTC       CP8500       OS Track Circuit       Minneapolis, MN       N

**Insufficient Information in Report to Assign Cause**

See reverse side of this page [reverse side of page not photocopied by FRA].

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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654	12/18/2000	CP	CTC			CP8507	X-Over Switch	South Milwaukee, WI	N
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**Cause**  
**Human Error - Improper Circuit Jumper in Place**

**Narrative**  
Nature of Failure:

On Dec. 18, 2000 at approx. 1300 CP8507, with Engineer Skotartzak and Conductor Franklin, proceeding east on #2 main track approaching control point at Lake had a CLEAR signal to proceed east on #2 main track with the east end of the west crossover (#5) lined reverse.

Just previous, a westbound Amtrak train had crossed over from #2 main track to #1 main track at the west crossover (#5) at Lake.

After Amtrak had passed control point at Lake, Dispatcher requested west crossover (#5) to be lined normal and requested an eastbound absolute signal on #2 main track at Lake to be cleared. The switch on the west end of the west crossover (#5) went normal and the switch at the east end of the west crossover (#5) did not move, staying reverse. The west crossover (#5) indicated both ends were lined normal and the eastbound absolute signal cleared.

Signal Maintainer K.D. Huebner noticed the malfunction and stopped train CP 8507 before running through the switch.

Cause and Corrective Action:

Further investigation revealed a jumper wire in the GRS 5F switch machine on the east end of crossover had been applied across terminals 1 and 8 which would allow the crossover to indicate normal or reverse dependent upon position of the crossover switch on the west end of crossover. It is unknown why the east end of the crossover (#5) did not move to normal as requested but frost in contacts or armature is suspected.

Corrective action taken was removal of the jumper from contacts 1 and 8 and crossover tested by removing power from each end simultaneously requesting opposite end of crossover to go normal or reverse and verifying if either end is not in correspondence and it will not indicate. Immediately all crossovers on the CP Railway (Soo Line) utilizing GRS Model 5F switch machines were inspected and found to be correct. CP Railway (Soo Line) is presently drafting a test procedure to be done every 2 years in conjunction with RS&I Rule 236.380 Indication Locking test utilizing the above testing procedure.

677	7/27/2001	CP		Manual		CP 5653	Signal 3WB	Bryn Mawr Interlocking	N
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**Scenario Reenacted, Unable to Duplicate, No Defects Found**

It was reported that signal 3WB indicated CLEAR (Green) for a call on move by crew of CP 5653. All data & info was retrieved & all tests performed. Indicated no defects. Please see following attachments [nothing attached].

Report #	Date	Reporting Carrier	Block System	Interlocking System	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
<b>680</b>	9/6/2001	CP	CTC			CP6055E	45L Sig.	Buffalo, MN	N
<p><b>Cause</b></p> <p><b>Failed Equipment or Device - Interior Wiring</b></p> <p>On 9/6/01 at 1933 hrs. train CP6055 East with Conductor and Engineer was moving thru Buffalo East Control Point, Conductor looked back at the westbound absolute signal and observed signal 45L displaying a Red over Yellow aspect. This signal should have been Red. Through investigation by Signal Supv and Signal Mtr, it was found to have the yellow light wire pinched under the nuts and washers of the red light wire in the jct. box of the color light head. The yellow wire was replaced and the balance of the other wires were inspected in all the signals at this control point. Signal 45L is a 4-position colorlight signal.</p> <p>Corrective Action: Mtrs to inspect all stackable colorlight heads to assure proper spacing and placement of wires. Review incident with all Suprv. And with construction crews review the proper procedures and practices when doing wiring in close confined areas.</p>									
<b>684</b>	12/10/2001	CP		Manual		Amtrak 41, CP 605	2R Signal	Milwaukee, WI	N
<p><b>Insufficient Information in Report to Assign Cause</b></p> <p>See attached [nothing attached].</p>									
<b>696</b>	6/18/2002	CP		Remote		CSXT 7911	CL	Portage, WI	N
<p><b>Phantom Signal - Due to Sun Angle</b></p> <p>After changing the outer clear plastic lens to a glass outer clear lens, the signal maintainer failed to secure the lunar CL head. Train 614 (CSXT 7911) was on the siding at Portage Jct. The train was about 10 cars west of 2EA signal when they observed what they thought to be a DIVERGING CLEAR aspect. Train 614 passed the signal and stopped short of a power switch lined against them.</p> <p>We are reviewing FRA Rule 236.3 (locking of signal apparatus housings) with all concerned.</p>									

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697	7/2/2002	CP		Manual		730 Transfer	Sig. 5EA/5EB	Milwaukee, WI	N
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**Human Error - Signal Equipment Improperly Installed**

Switch engine (730 Transfer) with Engineer [redacted] and Conductor [redacted] sitting on #3 track at Merrill Park just west of the EB absolute signal (5EB) governing movement into Cutoff Interlocking. The crew requested the signal (5EB) to proceed east from Merrill Park #3 track with the hand throw switch lined for their route into Cutoff Interlocking. The signal (5EA) governing movement from Merrill Park #2 track into Cutoff Interlocking cleared which is not correct. When the hand throw switch is lined reverse, the signal (5EA) governing movement from Merrill Park #2 should clear when requested. When the hand throw switch is lined normal, the signal (5EB) governing movement off Merrill Park #3 should clear when requested.

It was found that the switch circuit controller on the hand throw switch for Merrill Park #2 and #3 tracks was adjusted incorrectly causing the wrong signal to clear.

A formal investigation is scheduled to determine facts and place responsibility for this incident.

701	9/6/2002	CP	CTC			SOO 2032W	Insulated Joints	Brooten, MN	N
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**Failed Equipment or Device - Insulated Joint(s)**

About 1330 on September 6, 2002, Engineer [redacted] told the S&C Supervisor [redacted] at Glenwood that there may be a problem with the signal at MP 104.5 near the West House Track at Brooten, MN. Engineer [redacted] stated they stopped with a westbound wayfreight on September 1, 2002 about 1600 east of signal 104.5, cut off their train with 3 engines and two cars then proceeded west to the west house track switch. They reversed the switch and backed into the house track far enough to set out the cars and thought the signal 104.5 appeared to displayed a CLEAR aspect with the house track switch lined reverse.

S&C Supervisor [redacted] proceeded to the site and simulated the train move. He found by simulation when the west house track switch was open, signal 104.5 displayed a CLEAR aspect. Further investigation revealed the house track switch was wired per plan breaking the track circuit through the switch circuit controller with the polarity the same on both sides of the insulated joints with TJs around insulated joints for the warning devices on CSAH-18 (Central Ave.) and both insulated joints were shorted.

Method of train operation is freight with maximum speed of 60 MPH for expedited trains and all others 50 MPH in CTC territory on the Paynesville Sub.

Cause of failure was due to insulated joints shorted.

Corrective action taken: Temporarily switch was taken out of service with a shunt circuit wired in the circuit controller until insulated joints were changed out. All switches were inspected following this incident and any switches found to have two insulated joints breaking the track circuit through the switch circuit controller are being redesigned to have track leads transposed at all of these locations.

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715	8/21/2003	CP	CTC			CP 8526	Sig. 1W	MP 385.9, Vermillion, MN	N
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**Scenario Reenacted, Unable to Duplicate, No Defects Found**

[Text of e-mail message from Timothy L. Lyon (S&C Supervisor, LaCrosse, WI), to himself on 8/25/2003]

On Thursday night at about 2302 I was contacted by Operations Control Center that a train had reported a signal displayed a DIVERGING CLEAR and that the signal should have been a DIVERGING APPROACH.

I immediately had the local maintainer go to the site and test the signal. Maintainer arrived on site and had the Dispatcher request the same line-up as had been requested for the train. Signal displayed a DIVERGING APPROACH. Site was ground tested with no exceptions found. Signal head and junction box were inspected with no defects found.

On Friday morning I contacted the Technician in the Soo Line building for a copy of the logs from the CTC system for the timeframe involved in the accident. Those logs are attached to this message.

On Friday morning, after talking to the Technician, I then drove to the site and was met by the Signal Maintainer. We proceeded to retest the signal again. The line-up was duplicated from the previous evening when the incident occurred. We had the Dispatcher duplicate the entire move, including the stack request. The signal, when lined displayed a DIVERGING APPROACH.

We then meggered the cable from the house to the signal with no exceptions found. We also did another ground test with no exceptions noted. We also inspected the signal head and junction box with no exceptions noted.

Signal lamp voltages are as follows: Green 9.0, Yellow 9.0, Lunar 8.6, Red 9.0. With signal 1W lined for DIVERGING APPROACH, voltages are: Red 8.2, Yellow 8.6.

With signal 1W lined through the crossover from Main Track to Track #2, aspect was a DIVERGING APPROACH in all tests. Incoming codes from East Hastings during the test remained a Code 1 & 2 during the entire test.

Outgoing codes were a Code 1 & 3. All codes are as prescribed by the print.

Control point to the west is East Hastings, all signals were displaying Red aspects as no signals had been lined at this location as shown in the attached logs.

Train that reported this incident was train # 297-20 (CP 8526).

No. of Reports Shown in this Listing: 12