



# IronWood Technologies

Railroad Accident Reconstruction

## Federal Railroad Administration

### False Proceed Signal Database

January 1, 1995 through May 3, 2004

All Reports - Cause: Failed Equipment or Device - Electrical Ground (not in underground or aerial cable)

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
<a href="#">442</a>	7/20/1998	CSXT	CTC			Q59221	RCRE Cable	NE Lilly, Lilly, GA	N
<p>On July 20, train Q59221 reported observing a CLEAR signal on the main and a MEDIUM CLEAR on the dwarf signal at the north end of Lilly. The signals were removed from service and signal personnel were dispatched. Upon arrival, signal personnel found the train on the OS circuit. The signal on the main displayed STOP while the dwarf signal displayed a MEDIUM CLEAR.</p> <p>Investigation revealed that the RCRE cable had been pinched in the door to the dwarf signal the last time the signal was closed. The signal went to STOP when the door was opened and the cable moved. The RCRE cable was repaired and the flex wires inside the dwarf signal were replaced.</p> <p>The signals were returned to service after performing operational tests, megging cables and checking for grounds.</p>									
<a href="#">246</a>	8/8/2000	CSXT	CTC			P052-07	Signal 6L	Fredericksburg, VA	N
<p>On August 8, 2000 at approximately 0720, northbound L174 while moving on #3 track between Hamilton Interlocking and Fredericksburg Interlocking reported the Northbound Signal (6L) for #2 track at Fredericksburg displaying an APPROACH aspect with Train P308-08 ahead in the block. Signals were removed from service and Train Control personnel dispatched.</p> <p>Investigation revealed a 4.4 mA ground which caused the 6LBPR relay to remain energized with the block occupied ahead. The cause of the ground was found to be deteriorated insulation on house wires which were contacting the metal wire chaseway. All deteriorated house wires were replaced, signal checks were made with no exceptions, and the signals were returned to service.</p>									
<a href="#">263</a>	9/3/2000	NS	CTC			NS 6189, MRL 030	Case Wire	Glenvar, VA	N
<p>At 3:48 p.m., 9/3/00, train #185V402 was westbound on Track #1 east of Glenvar, VA when they observed the westbound signal L-102, Track #2, displaying an APPROACH aspect with train #755V403 in the block on Track #2 just west of the L-102 signal. L-102 should have been displaying a STOP aspect with the block occupied by #755V403. L-102 is a color position signal.</p> <p>C&amp;S personnel arrived and were to duplicate the scenario observed by the train crew of #185V402. Investigation found that the "H" relay was being falsely energized and held up by a 14 mil ground on the C-16 battery and a 4 mil ground on the B-16 battery. Several deteriorated case wires were replaced and the location was tested and returned to service at 7:40 a.m., September 4, 2000.</p> <p>This location was last checked for grounds on June 27, 2000 with no exceptions taken.</p>									

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690	5/14/2002	CN	CTC			IC 1116	SB Signal, Trk 1, Skip	St. Charles, LA	N
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Signal Supervisor was notified at 20:15. M320 train reported a false proceed at Skip. The approach signal to Skip was APPROACH DIVERGING and went to APPROACH then back to APPROACH DIVERGING. The signal aspect at Skip was Red over Flashing Red, then to a DIVERGING CLEAR, and back to Red over Flashing Red. Crew M320 knew that TL James crossover was Red lined against his movement, due to an empty grain train going through to track 2.

The Supervisor and Inspectors arrived at Martin Jct. and the signal was Red over Red over Red. They checked for grounds on the battery busses and found a 12mA negative ground on the B12 buss with AC power on, with the AC power off it read 500 mA. They lined the switch on track one for the TL James crossover Red. The Code 2 was lost going to Skip on the EC 4H unit, sending only a Code 1 and 5, but every few seconds the Code 4 would light up and stay on about 6 seconds then drop back out.

The ground was on 5RC and 5RA signal head. Any time the 5RALOR relay was down it would not produce a Code 4. If the 5RALOR was up with the 5RCEN or 5RCRE off it would not produce a Code 4. With a switch lined you dropped out the ANWPR which dropped the 1NBPR that took the path away from your reference to Code 4 with the relay down. The negative 12mA ground was making the unit think it needed to send a Code 4 out, which was why the DIVERGING CLEAR was falsely produced at Skip. It should have been a RESTRICTING signal, Red over Flashing Red because TL James crossover was lined Red. The cable to the 5R signal was megged. They found the 5RAEN and 5RCEN grounded. The signal heads were removed and the wires were repaired. They megged and tested the signal system, and it was placed back in service at 14:30, 5/15/02.

702	10/5/2002	LI		Manual		NA	Track Stick Relay (13TS)	Queens Interlocking, Queens, New York	N
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Sequence of events: On Saturday, October 5, 2002 at 8:25am the Block Operator at Queens Tower reported that the indication for 12R signal at Queens Interlocking remained lit after the passage of eastbound train #6710 on track 4. Block Operator was able to restore 12R lever to the center position and cancel signal. A restriction was immediately placed on the affected track and route. Signal personnel were immediately dispatched to the interlocking.

Failure cause: Upon arrival at the location, signal personnel simulated the train move. The route was 12R to 12L with 13, 21 & 23 switches normal. The simulated move included, displaying 12R signal, then shunting the track circuit in advance of the signal (4TR), then the tripping track circuit (13TR) and finally the leaving track circuit 12TR. While shunting the 13TR track circuit, signal personnel observed that aspect on 12R signal remained displayed at CLEAR. Further investigation determined that the 13TS (Track Stick) relay was falsely energized while the 13TM (Track Repeater) was de-energized. This caused the signal to remain at CLEAR.

The cause of the 13TS relay failure was found to be a grounded wire (13TS1) on the positive control. The wire ground measured 10mA and 12VDC. The 13TS relay is energized through a single broken circuit with common always on the relay.

Repair & testing: The wire was immediately replaced and the ground was removed. The train move/route was re-simulated and found to be working properly. In addition, all wires in similar single break circuits were replaced.

Recommendations: Due to this failure we are inspecting other interlockings that have similar single broken circuits for the same possible wire problems.

No. of Reports Shown in this Listing: 5