



IronWood Technologies

Railroad Accident Reconstruction

Federal Railroad Administration

False Proceed Signal Database

January 1, 1995 through May 3, 2004

All Reports - State of Michigan

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
11	2/21/1995	CSXT	CTC			Train R322-21	None	Plymouth Road, MI	N
<p>Cause</p> <p>Narrative</p> <p>Scenario Reenacted, Unable to Duplicate, No Defects Found</p> <p>On February 21, 1995, at 1:15 p.m., Train R 322-21 reported they had a CLEAR indication on eastward absolute signal at Plymouth Road, and a STOP indication at the intermediate in advance, with train ahead in block. This route was not requested.</p> <p>Signal system was removed from service. Signal personnel performed all operational tests. Incident could not be duplicated. Signal system was determined to be functioning as intended, and signal system returned to service.</p>									
13	4/2/1995	CSXT	CTC			Train Y20502	None	Plymouth, MI	N
<p>Scenario Reenacted, Unable to Duplicate, No Defects Found</p> <p>On April 2, 1995, Train Y20502 reported they had a SLOW APPROACH at the eastward absolute signal at the Toldeo Wye with switch lined against their movement.</p> <p>Signal system was removed from service. Signal personnel performed all operational tests. Incident could not be duplicated. Signal system was determined to be functioning as intended and returned to service.</p>									
503	8/4/1995	GTW	AB			5858	Block Line	Shaftsburg, MI	N
<p>Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)</p> <p>Severe storm conditions toppled trees into pole line, resulting in damage to signal control wires. On August 4, 1995 at 0200 hours, GTW train 456B, Extra 5858 East reported PROCEED indication (GTW Rule 281) at ABS signal 2312 and PROCEED AT RESTRICTED SPEED indication (GTW Rule 290) at signal 2344. Fallen tree at MP 233.0 forced signal control "H" wire to make contact with signal control "D" wire. Trees in pole line in advance of signal 2344 had broken "H" and "D" wires, causing Red aspect at signal 2344.</p>									

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583	4/6/1997	CR		Remote		1681	Home Signal 8E	Wayne, Michigan	N
<p>Cause</p> <p>Narrative</p> <p>Phantom Signal - Due to Sun Angle</p> <p>Home signal 8E at Wayne Jct. Interlocking was passed in Red position by Engine 1681. Engineer and Conductor both stated that signal appeared to be displaying RESTRICTING. Investigation revealed that sunlight reflecting off of signal lens caused a Yellow aspect. Signal did have proper hood and lens configuration. Signal mechanism and lens were replaced with no noticeable improvement. Phankill was installed which improved situation. A different style of lens assembly was also installed. Signal was returned to service.</p>									
238	2/13/2000	CSXT	CTC			Q57911	Searchlight Mechanism	South Orange Grove, Pascagoula, MI	N
<p>Vandalism - Signal Damaged, Caused Unintended Signal Aspect</p> <p>On February 12, 2000, at 2347 hours the Southward Absolute Signal from the siding at Orange Grove, Signal #6, went into time without a control. At 0012 hours on February 13, the dispatcher reported the signal hung in time and maintenance personnel were dispatched to investigate. At 0040, when southbound Q57911 occupied the siding, the dispatcher had the train crew report the signal aspect. Upon receiving the report that the signal was indicating Red over Yellow while the dispatcher had ordered it to stop, the dispatcher immediately removed the signal from service.</p> <p>Upon arrival, Signal personnel verified the improper indication. Further investigation revealed that the searchlight signal mechanism had been vandalized. The outer compound lens had been broken, and pieces of the shattered lens were lodged in the signal mechanism causing the mechanism to be stuck in the Yellow position.</p> <p>The signal mechanism was replaced, and the signal was placed back into service following operational testing.</p>									
257	3/9/2000	NS	AB			CR2898	Audio Frequency Overlay	Taylor, MI	N
<p>At approximately 3:45 p.m., Train L60L59 was leaving Oakwood Jct. on the Detroit District, Lake Region on an APPROACH indication into single direction ABS territory. They were following train L64. As train L60 approached automatic signal D-10.2, they observed a CLEAR signal. Aware that train L64 was working ahead, they passed this signal prepared to stop.</p> <p>They stopped short of an open hand throw trailing point switch at MP D-11.2 and notified the Ft. Wayne Dispatcher.</p> <p>C&S personnel investigated and determined that the circuit used to indicate the switch point position would not deenergize when power was removed from the transmitter. The switch indication is transmitted from the switch location to the signal location by a 1.2 kHz Audio Frequency Overlay (AFO) circuit. This area has high voltage transmission lines parallel to the track that may be a factor in the failure of the receiver unit to deenergize. The equipment will be sent to our Signal Repair Facility for further analysis.</p> <p>A Phase Selective Overlay (PSO) circuit was installed in the place of the AFO and the signal system was tested and returned to service.</p>									

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648	11/5/2000	CN	AB			CN2415, CN5724	1614	Scotts, MI	N
			Human Error - Field Wiring Error, Inadequate Service Testing						
			On Sunday, November 5, 2000 at 1555 hrs, train M398-71-04 reported that ABS 1614 displayed a CLEAR with train E254-61-05 occupying the next block governed by ABS 1628. The ABS 1614 should have displayed an APPROACH. Failure to follow proper testing procedures resulted in this false proceed. A newly installed coded track circuit at ABS 1614 was miswired. The code 2 caused the signal to display CLEAR rather than APPROACH. The coded track circuit at 1614 was rewired and tested properly.						
671	6/20/2001	CR					As Information Only.	CP Mill, Ecorse, MI	N
			Human Error - Improper Circuit Jumper in Place						
			Jumper applied to 2TPR for track work, not removed when Track Department finished. Jumper removed and employees responsible disciplined.						
682	11/21/2001	CR	AB			NS69T, 5412	143 SIS	Detroit Line	N
			Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)						
			Train NS69T engine 5412 reported signal 143 at CLEAR G/R and interlocking signal at FN Tower STOP R/R. Upon investigation, a maintainer found a pole down and tried to straighten it. In doing so, we believe he cleared a line wrap, which caused the HD relay to be falsely energized. When the supervisor arrived on the scene, he tried to recreate the problem, but he could not.						
685	12/17/2001	CN	CTC			CN 5780	Approach Signal	Flint, MI	N
			Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)						
			At 02:00 on 12/17/01 eastbound train with leading engine CN 5780 had an APPROACH MEDIUM aspect at signal 2676 on the Flint Subdivision, this aspect was less restrictive than APPROACH aspect the engine crew should have received. When investigating the cause of the discrepancy, it was found that two line wires had come in contact with each other at MP 269.27 (Pins 4 and 5). This failure caused voltage to be present on the "B" mech. Control coil.						
			Corrective action was taken by separating the line wires, and making repairs to pin 5.						

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359	5/30/2002	NS	CTC			560C329	Human Error	CP-207, Elyria, OH	N
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Human Error - Signal Personnel Introduced False Energy into Signal System During Testing

On Thursday, May 30, 2002 at 11:00 a.m., Dearborn Division train 560C329, lead unit NS 9451, westbound on track 2 at MP-CD205.7, reported intermediate signal 205-2W to display a CLEAR aspect for its movement. This signal should have displayed an APPROACH aspect due to the next signal, the 2W home signal at CP-207, displaying a STOP aspect account train 15JB129 ahead in the block.

Train 560C329 was aware of a train ahead in the block and therefore stopped short of the 2W signal at CP-207.

Investigation revealed that a signal testman was performing relay testing at CP-207 at the time of the incident. The maintainer performed testing on the 2WAHR relay during the time that train 15JB129 was in the block, which involved false battery being applied to this relay. Testing on this relay had been performed without obtaining the proper track time authority, and without appropriate measures taken to insure safety of train movements.

Dispatcher logs indicate that the 2W home signal displayed a permissive aspect without being requested, and remained in that state for 41 seconds. Tests after the incident proved that the 205-2W signal would display a CLEAR aspect when false battery was applied to the 2WAHR relay at CP-207.

The signal system was tested for proper operation and restored to normal service at 2:00 p.m.

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703 11/15/2002 CN CTC CN5427 Absolute Signal 10E Port Huron, MI N

Maintenance - Wiring Chewed by Rodents

Mouse had built a nest in the red unit of a colorlight signal and had eaten the insulation off of the wires supplying energy to the bulbs in the red and yellow lenses. The nest pushed these wires into contact with each other causing the bulb in the yellow lens to light. This produced a R/Y aspect even though the dispatcher did not request the signal.

The nest was removed, the wires replaced, signal mast sealed to prevent further intrusion. Signal cables were meggered and found to be above 500k ohms. Proper operation of the signal was confirmed with route and aspect testing to ensure that correct aspects were displayed and were upgraded as intended.

(see attached letter to Brian Eisel for further details)

[Following text from letter to Brian Eisel, RR Safety Inspector, Signal & Train Control, FRA:]

On Friday, November 15, 2002 at 0836 hours, CN train #380 received a PROCEED indication more favorable than intended at signal 10E, Tappan Interlocking, MP 332.20, Flint S/D. Train #380 was a northward train on the Mt. Clemens Subdivision. Its destination was into track #1 at Port Huron.

Train #380 approached signal 10E and accepted a signal that displayed a R/Y indication. The Troy dispatcher (TD3) had not issued a control to clear the signal for this movement.

The incident was reported to the Signal Department around 0930 hours. Replays of the event were made from both the Toronto and Troy RTC computer equipment. Signal Department personnel arrived at Tappan at 1200 hours.

Upon investigation by the Signal Department the signal displayed a R/Dark. This is a colorlight signal. The signal foreman working on this investigation climbed the signal and removed the back cover and found that a mouse had recently built a nest in the red lens housing which obscured the visibility of the bulb shining through the red lens.

He then discovered that the mouse had eaten the insulation off of the light wires that provided battery power to the bulbs in the red and yellow lenses and that they were in such close proximity to each other that the slightest movement touched them together and both bulbs would light.

Both of these wires showed abrasion in the areas where they could touch indicating that they had been making contact. These facts indicated that train #380 did receive an indication more favorable than intended.

No other trains passed this signal in this condition. Repairs were made by the signal inspector and foreman by 1600 hours. The signal was tested and placed back in service around 1800 hours. Further testing was conducted and concluded by 2000 hours. Testing that was performed insured that the proper aspects were displayed for all the routes that this signal governed, and that the correct signal upgrade was made as intended.

This activity was observed by FRA Inspector Brian Eisel from beginning to end.

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727	5/3/2004	AMTK				CP 226		Michigan City, MI	N
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Human Error - Field Wiring Error, Inadequate Service Testing

On May 3, 2004 the Engineman operating train number 351 westbound reported to the train dispatcher that signal 224W was displaying a CLEAR signal aspect up against a STOP signal at CP-226 in Michigan City. Signal Department personnel dispatched to investigate this report were able to verify and reproduce the false proceed signal aspect observed by train number 351 at the intermediate signal 224W. An improperly wired GRS SA-1 signal mechanism at CP-226 allowed the 2RRGPR (Red Mechanism Repeater) and the 2RAHDGPR (Yellow/Green Repeater) to become energized at the same time. This resulted in track circuit Code-4 being transmitted from CP-226 to 224W signal location. This caused the 224W to display a CLEAR signal aspect into CP-226 STOP signal. The improperly wired GRS SA-1 signal mechanism located at CP-226 was corrected, and is now wired according to the signal circuit plans. Signal aspect tests were completed, and the signal system is now functioning as intended. It is not known how this error in wiring occurred. This CP has not been modified since its cutover around 1979. Checking the internal wiring of a signal mechanism is not a normal field activity unless there is a problem, and there is no reason to believe that circuits had been modified by field forces for any reason. As a precautionary measure signal department personnel will conduct tests at all locations on the Michigan Line to ensure that this type of incident doesn't occur in the future.

No. of Reports Shown in this Listing: 13