



IronWood Technologies

Railroad Accident Reconstruction

Federal Railroad Administration

False Proceed Signal Database

January 1, 1995 through May 3, 2004

All Reports - Cause: Maintenance - Wiring Chewed by Rodents

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
530	11/7/1995	SP	AB			SP 1BSMFF-05	Signal 14619	Ancho, NM	N
<p>On November 7, 1995 at approximately 7:40 AM, Engineer operating train no. 1BSMFF-05 traveling west, reported that signal 14619 at W. Ancho remained Green while the 1WCKCQ-04 traveling east was occupying all 3 track circuits on the main track at W. Ancho, and that the signal had remained Green the whole time that the 1WCKCQ-04 was approaching the West End of Ancho.</p> <p>The Signal Engineer investigated and found that a mouse had eaten through the battery and lamp wires insulation, inside the signal junction box. A battery wire was touching the Green lamp wire which could cause the lamp to display Green even when the block is occupied.</p> <p>[Signal personnel] replaced the bare wires, sealed the box, made full operational tests with shunts, tested relays, and meggered cables. The signal system was then working as intended and was returned to service.</p>									
130	1/24/1997	CSXT	AB			Train Z49022	Intermediate Signal	Intermediate Signal 259.2, Mitchell, IN	N
<p>On January 23, 1997 Soo Line Train Z49022 reported a CLEAR signal at intermediate 259-2 with CSX train Q564-22 ahead.</p> <p>Signal system was removed from service. Investigation revealed that the signal control wires for this signal had been damaged by rodents. Voltage present on one of these wires was demonstrated to recreate this problem.</p> <p>Train Control personnel made repairs to the signal control wires, conducted operational test and returned the signal system to service.</p>									
582	2/27/1997	CR		Remote		6749	Home Sig. 4E @ CP Tara	Rutherford, PA	N
<p>4E signal at CP Tara observed at Advance Approach with automatic signal 1022E ahead at STOP AND PROCEED. Cause was the 432 HGP relay being falsely energized at signal 1022E. False energy on the 432HGP circuit was caused by rodents chewing through the insulation of the conductors which control the signal mechanism. All damaged conductors were replaced, all appropriate tests were completed and the signal system was returned to service.</p>									

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219	11/28/1998	UP		Automatic		SP 6866	None	West Point, TX	N
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On November 28, 1998 at 14:08 CST, on the Smithville Subdivision at West Point, TX, southbound RDTPA-27 reported the southbound Interlocking Home Signal at mile pole 78.00 displayed a Red over lunar aspect with a westbound train occupying the interlocking.

An investigation revealed a rodent had chewed through the wire insulation in the signal mast which resulted in shorting the voltage from the red signal head wiring to the lunar signal head wiring.

The signal system was restored to proper operation, and all applicable tests were performed.

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614	4/15/1999	KCS	CTC			BN 6307	Wiring	Mulberry, MO	N
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At 17:20 hrs on 04/15/98 train #076214 North with engine BN6307 with Engineer, Conductor, and a consist of 0 loads, 79 empties, 2471 tons and 4854 feet, was traveling northbound at Mile Post 116, North Mulberry where he received a Green signal. This is the approach to the KCS/BN Interlocker, Mile Post 114.6 at Arcadia, KS. Upon arrival at the interlocker they had a Red signal and shortly after a BN train pulled through the interlocker. Signal Supervisor, Signal Maintainer, and Signal Inspector investigated the report and were able to reproduce the reported failure. Please find attached statement of findings by Signal Supervisor and a train report for the reporting train.

[Statement by Signal Supervisor]

At about 17:30 hrs. on 04/15/99 I was notified by the Signal Desk that a northbound train had reported receiving a CLEAR northbound signal at North Mulberry; which is the northbound approach signal to the KCS/BN interlocking at Arcadia, KS. When the train got to where it could see the color of the interlocking home signal, it was Red. The KCS train also reported that it was only a very short time before a BN train went across in front of them.

The Signal Desk contacted the BN to have their personnel to check the interlocking tapes as the interlocking is their maintenance.

I contacted our Signal Maintainer to go check on our approach signal to verify that it would be no better than Yellow when the home signal was Red. While I was still in route to North Mulberry, [redacted] contacted me by cell phone and informed me that the approach signal would come up CLEAR (Green) with the interlocking home signal at Red. I confirmed that we would not have any other KCS train moves that would be affected by this condition and instructed [redacted] to remain there and wait until I arrived.

When I arrived, I confirmed [redacted] observations and we began to investigate the system. In our test we were able to determine that the 44YGPR relay in the KCS case at the interlocking was being held up by stray battery. The relay repeats the Yellow and Green aspects of the northbound home signal at the interlocking. It also determined the codes to be transmitted to the northbound approach signal. It was determined that there were no grounds on the circuit, but there was stray positive battery. Through further investigation, it was determined that a rodent had chewed into one of two four-conductor unshielded cables used between the junction box at the bottom of the home signal pole and the SA signal head at the top. There were no signs of the rodents in the junction box or the signal head, but they had gotten into the pole itself from the opening at the bottom of the spider-type foundation and chewed through the insulation of the cable that contained the B10 and the 44YGPR wires. They also chewed some of the actual wire strands and frayed them enough that there were strands of one conductor touching the other and introducing the B10 battery onto the YGPR wire all of the time.

We replaced the cables in the pole and made follow up tests. We sealed the foundation bottom and base openings.

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264	9/7/2000	NS	CTC			KCS6629	Wire	McConnell, AL	N
<p>At 11:34 a.m. CST, train 339A7 reported that the south home signal (7RA) at McConnell, AL, MP 269.7, Alabama Division was at STOP and then upgraded to APPROACH with southbound train 21KA7 occupying the block ahead. Train 339 notified the dispatcher and train movements were protected. Signal personnel arrived on the scene and also observed the south signal (7RA) at McConnell was at APPROACH with train 339 occupying the block ahead.</p> <p>It was discovered through ground testing that the wire insulation in the south signal had been removed by rodents causing battery to energize the search light signal, resulting in the false signal.</p> <p>Wires were replaced and signal tested and placed back in service.</p>									
337	4/7/2001	BNSF	CTC			ID # EMLMEBM001,	1WA Signal	Napier, MO	N
<p>At approximately 19:23 hours the train crew on the BNSF 9956 reported that as they approached the westbound absolute signal governing movement from Main Track Two to the Main Track at West Napier the signal went from a STOP indication to an APPROACH indication, back to STOP. It did this several times with a train in the block ahead. The train ahead was a westward train ID # EMAHCDM001A, that had made a movement from Main Track One to the Main Track. The Dispatcher had entered a stack that would automatically throw the switch and request the 1WA signal, when the OS was unoccupied. Investigation by signal personnel could not recreate the problem, however, the data recorder within the code unit, a Harmon Logic Controller and the train logger in Fort Worth verified the report. Further investigation revealed that mice had eaten the insulation off several of the flex wires going from the junction box of the signal to head. Insulation was missing off the WA-RP (Red Repeater) and the WA-NHD (control for the APPROACH aspect). This is a GRS H2 searchlight signal with a Safetran junction box and mast. The flex wire was replaced and the signal system tested with no other problems found.</p>									
698	7/6/2002	CN	AB			CN 2528	CLS-20	Greendale, IL	N
<p>A southbound train, CN2528 was holding in siding at South Greendale, a spring switch Electrocode style end-of-siding. As a northbound train approached South Greendale, the train crew on CN2528 observed the signal on the southbound trailing main, which should have been displaying Red was displaying a Yellow. The Signal Supervisor was notified and South Greendale was removed from service. While investigating the southbound absolute signal on the trailing main track, it was discovered that mice had been in the signal mast. They had eaten away the insulation on the pullman light wires and the red wire had deteriorated and the yellow light wire shorted to the remains of the red causing the yellow to illuminate instead of the red. The pullman wire was replaced, the signal mast was re-sealed to keep the mice out, and the signal location was tested and placed back in service.</p>									

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703	11/15/2002	CN	CTC			CN5427	Absolute Signal 10E	Port Huron, MI	N
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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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421	8/2/2003	UP	CTC			UP 4425	None	Tornillo, TX	N
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On August 02, 2003 at 07:13 CDT, in Tornillo, TX on the Valentine Subdivision, eastbound ILBNS 31, on the side track at MP 792.5, reported the eastbound signal in the siding went Green for several seconds before downgrading to Yellow, with a train ahead of him east of Tornillo.

An investigation revealed rodent damage to the circuit wiring causing a battery wire to intermittently false pick the EDR relay giving a Green signal.

The damage was repaired and all applicable tests were performed.

No. of Reports Shown in this Listing: **10**