



IronWood Technologies

Railroad Accident Reconstruction

Federal Railroad Administration

False Proceed Signal Database

January 1, 1995 through May 3, 2004

All Reports - State of Indiana

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?	
			Cause							
			Narrative							
451	1/27/1995	CR	AB			Engine 3521	Signal 2082E	Winchester, Indiana	N	
			Failed Equipment or Device - Relay							
			Engineer on train NLP17 reported that signal 2082E displayed STOP AND PROCEED with train ML 460 ahead in the block. After ML460 cleared block of 2082E, signal displayed CLEAR aspect instead of APPROACH. Cause was found to be defective 2082EDHR relay, due to polar armature failing to move to the reverse position account frozen in normal position. Relay removed from service, signal system tested, and placed back in service.							

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developing an AC voltage parallel to the track relay. See figure 2.

As NITCD cannot possibly locate sources of AC grounds other than those on its own supply, it was found necessary to develop a means whereby the effects of foreign AC sources would be negated. To this end, a cut section was installed to shorten track circuit 472. This arrangement presents a higher impedance to a foreign source of energy than does a single, longer track circuit. Furthermore, an adjustment procedure was developed to raise the release value of track relay 472 and cut section track relay A472 to a value more than twice that of the foreign voltage.

Shunt tests and applicable block signal tests were performed upon completion of the modifications to track circuit 472.

18	7/16/1995	CSXT	AB			Train Z49115	Signal 272.1	Campbellsburg, IN	N
<p>Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)</p> <p>On July 16, 1995, Train Z49115 reported the signal at the 272.1 M.P. was displaying a clear signal north and south.</p> <p>The signal system was removed from service. Signal personnel investigated the incident and discovered the control wire for Sycamore Street crossing was wrapped with HD control for Signal 272.1.</p> <p>Line wires were unwrapped, operational tests completed, and signal system was returned to service.</p>									

28	7/25/1995	NS		Remote		Unknown	Design	Spriggsboro, IN	N
<p>Human Error - Signal Circuit Design Error, Inadequate Service-Testing</p> <p>At approximately 4:00 PM, Train No. 308 received and took a DIVERGING CLEAR indication on the eastward signal from the Ft. Wayne District to the Chicago District at the West End Spriggsboro. Their route was lined onto the Chicago District Main Track and in the same plant into the siding. The crew had a STOP indication on the eastward signal at the east end of the siding. The train was stopped before passing the STOP signal, and the crew reported the improper signal they had received at the West End Spriggsboro. Signals at Spriggsboro were kept in STOP position for train movements until the signal system could be verified.</p> <p>Signal personnel investigated, and found that with the mainline eastward signal cleared at the East End Spriggsboro, the eastward signal off the Ft. Wayne District would display DIVERGING CLEAR instead of the correct DIVERGING APPROACH on a route lined into the siding. The "D" relay for this signal was energized by circuitry for an alternate route.</p> <p>Signal changes installed earlier in the year had a design error that was not found during cut-in tests on this untypical line-up of signals. The design error was corrected and the interlocking was completely tested before being returned to service.</p>									

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522	10/11/1995	CP		Automatic		See Below	4RC & 4L Signals	Dewey Indiana	N
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Human Error - Improper Circuit Jumper in Place

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.

It has been explained to the Maintainer that this is not an acceptable practice. Disciplinary action will be taken.

542	12/30/1995	GTW	APB			6419	Block Line	Kingsbury, IN	N
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Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)

High wind conditions caused signal control wires to wrap. On December 30, 1995, at 22:30 hours, GTW train 172 East following behind train 144 East reported that ABS signal 75.4 went from a RESTRICTED SPEED indication (GTW Rule 290) to a PROCEED indication (GTW Rule 281). Split arm damaged by tree at MP 77.2 forced signal control wire "H" wire to make contact with signal control wire "D."

556	4/25/1996	CR		Remote		Train ELBN-5, Eng.	4W Signal at CP-Hick	Indiana Harbor, IN	N
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Human Error - Signal Circuit Design Error, Inadequate Service-Testing

Engineer on ELBN5, westbound on #3 track, received a LIMITED CLEAR aspect on the 4W signal at CP-Hick with the rear car of BRSE5 occupying #2 track foul of his route. Upon investigation, it was found that the location of the fouling point insulated joints east of #13 switch on #2 track did not provide sufficient track centers through the fouling section to prevent interference with trains on the adjacent track. Changes were made in the home signal network to prevent a signal from being displayed if this section of track is occupied (8T circuit #2 track).

Signal system was tested and returned to service.

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98	7/22/1996	NS	CTC			2822	N/A	Peru, IN	N
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Phantom Signal - Due to Object in Foreground or Background

At approximately 1:57 PM, Train No. 068 was traveling eastbound when each member of the crew called the eastward signal ahead at milepost D-197.3 CLEAR. About one minute later they saw that this signal was Red over Red and were able to stop short of the signal. They reported to the dispatcher that the signal fell in front of them. The dispatcher then lined the signal up for their move, and No. 068 proceeded on signal indication after inspecting their train.

The dispatcher had not lined the signal for No. 068 at the time they reported they had first seen it (verified later with recordings) so he called signal personnel to report a possible false clear. Signal personnel arrived and could not duplicate the incident. All appropriate signal tests were performed with no exceptions taken and the signal itself appeared to have no physical defects. A phantom signal was suspected but could not be checked until the sun conditions were right. The signal was placed back in service with instructions that it not be cleared east until eastbound trains had reported they were stopped at the signal.

The next day at the same time and with the same engine and road foreman engines, an attempt was made to recreate the incident. The engine approached the signal (at STOP) from the west with instructions to the crew to call out the signal indication as soon as they could interpret the aspect. Two crew members called a CLEAR two miles from the signal. The third crew member called a CLEAR 1.5 miles from the signal. The engine was stopped at the 1.5 mile point where all three were in agreement that it was a CLEAR indication. The signal maintainer right at the signal location confirmed that the signal was displaying Red over Red at this time and throughout the test. Signal personnel on the engine agreed that they saw glimmering green light. As the engine was moved toward the signal a red over red aspect was seen by all personnel at about one mile from the signal. The bright green had faded to become a dark green spot above the signal. As the engine neared the signal it was noticed that the green spot was the sun shining on the leafy limbs of a sumac tree located 40 yards behind the signal and about 15 yards off the south rail. Based on this test it was determined that the crew had seen a phantom signal produced by sun reflection off the tree leaves. The tree was cut down and the signal returned to normal service after confirming that the phantom no longer was seen.

86	8/9/1996	CSXT	APB			Train 361	Semaphore	Salty Block Signal, Rushville, IN	N
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Failed Equipment or Device - Semaphore Signal

On August 9, 1996 Train 361 reported a CLEAR signal at signal E67-31, this signal should have been Red. Signal system was removed from service. Signal personnel investigated the incident and determined that the ratchet pawl was engaged with no battery applied. Ratchet pawl assembly was replaced.

88	8/23/1996	CSXT	APB				Lamp Unit	Signal 1711, Salem, IN	N
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Failed Equipment or Device - Semaphore Signal

On August 9, 1996 Soo Line Train Crew reported a more favorable aspect than desired at signal 1711. Signal system was removed from service. Signal personnel investigated the incident and determined that lamp unit had deteriorated and was obstructing the semaphore arm. The lamp unit was replaced and operational test performed. The signals were placed back in service.

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99	9/13/1996	NS	CTC			1639	Signal	Clemer, IN	N
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Cause
Narrative

Phantom Signal - Due to Unpainted Signal Hood or Background

Train No. 144 was traveling westbound and had been informed that they were to meet eastbound Train No. 206 at Clemer. At approximately 8:07 AM Train No. 144 called westward signal B-417.9 APPROACH DIVERGING. Approximately two minutes later Train No. 144 called an APPROACH for the westward signal at East End Clemer, which was the correct signal since they were lined to take and hold the main track. Train No. 144 should have seen an APPROACH at B-417.9 with a westward APPROACH displayed at the East End Clemer. A route had been lined for Train No. 206 to take the siding so the B-423.5 signal was correctly displaying APPROACH DIVERGING. TC logs at Ft. Wayne verified these routes were set up for the meet.

Signal personnel were called to investigate and were unable to duplicate the incident as reported. All appropriate tests and inspections were made with no exceptions taken. Numerous attempts to duplicate the problem were made with nothing out of the ordinary seen. The B-417.9 colorlight signal has a three-position head on top and a single Green head that is lit only for the Yellow-over-Green APPROACH DIVERGING indication. The bottom head was observed to be dark as intended unless a route was lined westward into the Clemer siding. A phantom aspect was then suspected but would have to be checked under the sunlight conditions encountered by Train No. 144.

The next morning, right after 8:00 AM, the same crew and engine were used to check for a phantom aspect. During the recreation, two separate occurrences of a phantom signal were observed. At MP 417.2 a faint Green could be seen that was found to be caused by reflection off the aluminum colored mast between the two signal heads. At MP B-417.7 the signal looked proper - Yellow over Dark. About 200 feet from the B-417.9 signal sunlight was seen to be reflecting through the bottom Green lens. The problems were corrected by painting the part of the mast between the heads flat black and by using an extended hood on the bottom head.

89	9/17/1996	CSXT	APB			N/A	Pole Line Control Wires	Signal 2655, Salem, IN	N
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Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)

On September 17, 1996 a credible report was made that northbound signal at M.P. 265.5 was displaying a CLEAR as a southbound train was approaching a CLEAR southbound signal.

Signal system was removed from service.

Signal personnel performed operational test and determined that a tree had fallen into the pole line at M.P. 259.0 causing the control wires for signal 2655 to become wrapped with a crossing signal start circuit.

Repairs were made, signal system functioned as intended.

Signal system was returned to service.

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Cause
Narrative

90 9/18/1996 CSXT APB Train PO5017 Semaphore Indianapolis Subdivision, IN N

Failed Equipment or Device - Semaphore Signal

On September 18, 1996 Train PO5017 reported that when approaching and passing a CLEAR eastbound signal at MP 102.5 that the Westbound signal at the same location was in the CLEAR position.

Signal system was removed from service. Signal personnel performed operational test and determined that semaphore blade was stuck in the clear position with hold clear mechanism and track relays deenergized.

Repairs to semaphore signal were made and signals performed as intended.

Signal system was returned to service.

92 11/6/1996 CSXT CTC East Bound Train Grounded Cable E. Garrett, Garrett, IN N

Failed Equipment or Device - Aerial or Underground Cable, Shorted or Grounded (not due to vandalism or digging)

On November 6, 1996 at East Garrett, Indiana, an Eastbound Train Crew reported the dwarf signal on adjacent track was displaying a STOP AND PROCEED signal.

Signal system was removed from service.

Repairs were made, operational test performed and signals placed back in service.

130 1/24/1997 CSXT AB Train Z49022 Intermediate Signal Intermediate Signal 259.2, Mitchell, IN N

Maintenance - Wiring Chewed by Rodents

On January 23, 1997 Soo Line Train Z49022 reported a CLEAR signal at intermediate 259-2 with CSX train Q564-22 ahead.

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.

Train Control personnel made repairs to the signal control wires, conducted operational test and returned the signal system to service.

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Cause
Narrative

131 1/29/1997 CSXT AB Train J770 Semaphore Mechanism Intermediate 147.7, Crawfordsville, IN N

Failed Equipment or Device - Semaphore Signal

On January 29, 1997 northbound train J770 reported their northbound signal was CLEAR and observed the opposing southbound signal at APPROACH.

The signal system was removed from service. Investigation revealed condensation had formed inside the semaphore mechanism housing. Due to extremely cold temperatures the brushes of the semaphore mechanism froze to the armature, preventing the mechanism from displaying the proper aspect.

The condensation was removed from the motor brushes and armature assembly. The seals of the semaphore housing were replaced with new seals and the armature and brushes were cleaned with contact cleaner. An operational test was satisfactorily completed and the signal system was returned to service.

136 7/19/1997 CSXT CTC Q591-18 None S.E. Ames, Ames, IN N

Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)

On July 18, 1997, southbound train Q591-18 was located between the switches at the south end of Ames. The south bound signal was STOP and the train crew observed the north bound signal to be APPROACH. The train was held in position until signal personnel arrived. The signal personnel confirmed the false APPROACH indication.

Upon investigation, the signal personnel found the line wire one span north of the north bound signal wrapped. The XC circuit and the 149.6CHD were wrapped, thereby placing 8.8 volts reverse polarity to the north bound signal.

The north bound signal went to the proper Red aspect when the wires were unwrapped.

The signal personnel were unable to duplicate the problem after clearing the line wrap. The south bound signal continued to stay at Red. After further investigation, signal personnel found the CHD wrapped with the line common at MP 152.2 and MP 152.5. Clearing these wraps cleared the Red southbound signal. The signals were returned to service after testing for proper operation and found to be functioning properly.

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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139	8/13/1997	CSXT	APB			Q564-13	None	Mitchell, IN	N
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Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)

On August 13, 1997, north bound train Q564-13 occupied the main line between the switches at Mitchell in preparation for a reverse move onto the Indiana subdivision. After stopping short of the north end of Mitchell, the train crew observed the south bound semaphore signal at the north end of Mitchell indicating an APPROACH aspect into their occupied block. The train continued on its route and notified the dispatcher. The signals were removed from service and signal personnel dispatched to investigate.

Signal personnel simulated the train movement and observed the south bound at the north end of Mitchell display a Yellow aspect. Investigation revealed that a line wrap with bare wire and heavy brush and rain had caused the false proceed. The negative lock control line wire (L5RGPN) wrapped with HD circuit wire 255.1HD1. The line wrap was combined with a ground due to the brush to give the false proceed.

This segment has FRA approval for abandonment. After the line wrap was cleared, the coil wires for all signals were removed and DTC operation was put in place.

193	3/16/1998	NS	CTC			8945-6678	Poleline	Clymers, IN	N
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Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)

At approximately 3:45 PM, train No. 183, running westbound, reported receiving a CLEAR signal at the East End Clymers and then a STOP signal at the West End Clymers. Being in radio contact with opposing train D93 west of Clymers, they were aware of the false signal and were able to stop before passing the STOP signal.

Signal personnel were called to investigate and found from TC loggers that there was an indication of a westward signal lined at West End Clymers, not requested by the dispatcher, at the time that train 183 saw the CLEAR at East End Clymers. In the field, the same scenario was set up and proved that a westward CLEAR was displayed at East End Clymers while a STOP was displayed at West End Clymers. The cause was a falsely energized 500 ohm relay (LAYGP) at West End Clymers which resulted in the improper pole change back to East End Clymers. The relay was falsely energized by three volts caused by two separate line wraps in two different spans within the plant at West End Clymers. The LAYGP also tumbled down the eastward signals on train D93 and gave the false indication of a westward signal at West End Clymers.

The wraps were corrected and the system retested to verify proper operation. The line wires involved were properly slacked and tied in. It was suspected, but never proved, that a truck hit a pole and caused at least one of the wraps. High winds in this area on previous days were suspected of causing the first wrap. Neither wrap on its own would have caused this problem.

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			Cause						
			Narrative						
599	5/14/1998	CR	AB			SFEL3	Sig. 425.4	Elkhart, IN	N
			Failed Equipment or Device - Insulated Joint(s)						
			Automatic signal 425.4 displayed APPROACH aspect with train in block. Cause was found to be two shorted insulated joints and an open track wire from switch circuit controller allowing 9ct track relay to become energized with battery from adjacent track circuit.						
			Corrective Action: Installed biased track relay and insured opposite polarity across insulated joints.						
237	2/4/2000	CSXT		Automatic		Q13501	None	Columbia Ave., Hammond, IN	N
			Human Error - Field Wiring Error, Inadequate Service Testing						
			On February 4, 2000, Q33501 reported to the dispatcher that he had received a MEDIUM APPROACH indication at the WAS #1 Track at Columbia Avenue with train engine J701 in the block ahead. The signals were removed from service and Signal personnel were dispatched.						
			Signal personnel simulated the movement and verified the false proceed indication. The westbound signal on #1 track at Columbia Avenue upgraded from STOP to MEDIUM APPROACH when the west end of the eastbound crossover from #1 to #2 track was reversed. Further investigation revealed that a pair of Safetran Dual Wideband Shunts were improperly applied around both insulated joints between the track circuits on #1 track. The improperly applied shunts acted as a DC shunt, allowing battery from the adjacent track circuit to pick the track relay when the shunt & break circuit broke the track circuit battery feed.						
			The wiring error was corrected and the signals were returned to service following operational testing.						
626	2/9/2000	CN		Remote			Signal Wires	Wellsboro, Ind.	N
			Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)						
			At 05:30 on 2/9/00 a CN train approaching the interlocking at Wellsboro, Indiana, South Bend Subdivision MP 71.1 reported that westward home signal WB2w had a CLEAR aspect when the crew knew that the signal should have been APPROACH. The investigation of the signal system found that the root cause of the false proceed was intermittent foreign voltage on the "H" control wire. The foreign voltage was traced back to a short on the line. The wrapped wire was removed and all circuits tested.						
			Remedial Action: All control wires will be inspected monthly.						
			Note 1: Locomotive number unknown, train crew notified FRA.						

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?	
			Cause							
			Narrative							
643	8/7/2000	CN	AB			CN2540	Signal 1063	Mishawaka, IN	N	
			Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)							
			A tree had fallen on the pole line near Fir Rd. at milepost 105.8 on the Southbend Subdivision. The "H" wire and "D" wire crossed causing the signal to be falsely cleared. This was reported by CN 2540 at 0130 on August 7, 2000. The tree was removed, the line wire was repaired, and signal was tested and back in service on August 7, 2000 at 0600.							
248	8/24/2000	CSXT	APB			J769-24	Int Signals 762 & 738	N.E. Rensselaer, Rensselaer, IN	N	
			Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)							
			On August 24, 2000, the train crew on northbound Train J773-24 was clearing the main into the siding through a reversed switch at MP Q72.9 in order to allow northbound Train J769-24 to pass. While the switch was still reversed, J769-24 received a CLEAR signal at Q76.2 (which should have been APPROACH) and a CLEAR signal at Q73.8 (which should have been STOP). The signals were removed from service and Train Control personnel were dispatched.							
			The cause was found to be an open line wire wrap of the CHD wire (part of the 3-wire HD circuit) and CE1 positive battery wire (part of the approach circuit between the Rensselaer siding switches). The line wrap was removed, signal and switch checks were made with no exceptions, and the signals were returned to service.							
266	8/26/2000	NS	CTC			BN 9647, BN 9648	Relay	Hammond, IN	N	
			Failed Equipment or Device - Relay							
			At approximately 6:40 p.m., Saturday, 8/26/00, the crew of eastbound CSX train #939 with Engineer, Conductor, and Engineer Trainee, was moving on track #2 and went by signal 2E at CP 507 which was displaying a STOP aspect. Crew reported they had a CLEAR aspect at CP 508, the approach to CP 507, and were unable to stop.							
			Upon investigation, C&S personnel did observe the 508-2E signal display a CLEAR indication on track #2 EB with a train in the block immediately ahead.							
			It was determined that the 1EHPR signal control relay was sticking up when no energy was being applied to the coil due to worn and pitted contacts. Relay was replaced and signals restored to service.							

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			Cause						
			Narrative						
265	10/7/2000	NS	CTC			BNSF 9730	Relay	Pinola, IN	N
			Failed Equipment or Device - Relay						
			At approximately 8:30 a.m., October 7, 2000 the train crew of #41M were stopped at the 2W signal at CP 466 when they observed the signal upgrade to APPROACH with a train setting, and visible, in the block ahead.						
			Investigation by C&S personnel confirmed what the train crew saw and it was confirmed that signal 2W improperly displayed an APPROACH aspect with track ahead occupied. From the tests and simulations we identified a failure of the 4661 WHPR relay, a GRS 194 ohm Slow Release Relay, which remained stuck "up" when the battery to its coils was removed. Relay was replaced and signal 2W was returned to service at 10:30 p.m., October 7, 2000.						
249	10/13/2000	CSXT	APB			Q598-13	Semaphore Sig 147.0	Sugar Creek Bridge, Crawfordsville, IN	N
			Failed Equipment or Device - Aerial or Underground Cable, Shorted or Grounded (not due to vandalism or digging)						
			At approximately 1200 on October 13, 2000, northbound Train Q598-13 reported that the signal at MP 147.0 was displaying a Yellow 45 degree signal (APPROACH) with northbound Train Q642-13 ahead in the block.						
			The cause was found to be damage to a temporary cable that had been installed across the bridge decking to facilitate bridge department crane work. The damaged cable was replaced with open line wire and placed back on the pole line. Signal checks were made with no exceptions, and the signals were returned to service.						

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655	1/12/2001	IHB		Manual		CSX Train X747-11	Signal 7	Hohman Tower, Hammond, IN	N
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Human Error - Train Crew Took Wrong Signal

Light power from CSX train X747-11 was traveling from IHB Gibson Yard to CSX Barr Yard. Train was stopped at westbound home signal no. 7 at Hohman Tower, Hammond, IN. Operator made the line up for IHB train BA3, also westbound, to proceed west from Track 4 to Track 3 and pulled signal lever 9 to clear signal for IHB train BA3's movement from Track 4 to Track 3.

CSX crew on train X747-11 claims that signal 7 cleared to RESTRICTING aspect (R/Y) for Track 3. Upon receiving this signal, train X747-11 proceeded west and ran through the reverse side of the west end of crossover 15 which was lined against their movement. During interviews following this incident, the CSX crew repeatedly claimed that they had a "bottom yellow" on signal 7. IHB crew on train BA3 claimed they could see the RESTRICTING signal (R/Y) but could not determine which track it was for. As information, both signal 7 and signal 9 are located above the Engineer's rail on a signal bridge.

Signal Department was notified and responded to the scene to investigate. Signal personnel found that the control lever for crossover 15 was locked in the reverse position and the control lever for signal 9 was in the CLEAR position as described by the Tower Operator. The control lever for signal 7 was locked in the STOP position.

After the damaged rods in the switch machine were replaced, signal personnel attempted to re-create the situation as described by the crew of CSX train X747-11. In each instance when the control lever for signal 9 was pulled with crossover 15 reversed, signal 9 cleared to RESTRICTING (R/Y) as intended and signal 7 remained at STOP.

After failing to re-create the alleged false proceed, signal personnel then performed all appropriate tests on the signals, switches and cables with no problems found and no exceptions taken to any test results.

The train crew waived formal investigation and accepted discipline.

666	6/4/2001	NICD	APB			2006	Line Circuit	Michigan City, IN	N
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Vandalism - Signal Damaged, Caused Unintended Signal Aspect

Foreign signal governing entrance to NICTD main line was vandalized causing false feed of line circuit controlling NICTD dwarf signal 317. False feed was removed and signal tested okay. Foreign line is now locked out of service. NICTD is developing plans for new NICTD-maintained dwarf signal governing entrance to mainline from foreign railroad.

Report #	Date	Reporting Carrier	Block System	Interlocking System	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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354	10/4/2002	CSXT		Automatic		NS-B46	Wiring	Warsaw Crossing At Grade, Warsaw, IN	N
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Human Error - Field Wiring Error, Inadequate Service Testing

At approximately 03:15 on October 4, 2002 the southbound train NS-B46 traveled across the Warsaw Interlocker (Railroad Crossing at Grade) in Warsaw, IN. The NS-B46 proceeded south into the siding at CP 33 (Claypool). The southbound train NS-175 followed the NS-B46 across the Warsaw Interlocker. The crew of the southbound NS-175 reported that they had received a CLEAR indication at the Warsaw Interlocker and a STOP indication at Signal 30 with the NS-B46 ahead. The Warsaw Interlocker was removed from service and Norfolk Southern signal personnel were dispatched. Norfolk Southern signal personnel contacted CSX signal personnel at 07:45. The Norfolk Southern signal personnel was able to re-create the False Proceed signal through standard field testing procedures. During the investigation it was discovered that a Code Following Relay with Frequency Decoding Contacts (STPAR) had the negative control wire for the relay device (SBDR) that supplies battery to the 4S signal on the number 4 (four) contact when it should have been on the number 1 (one) contact. The number 4 (four) contact is a non-tuned contact that follows the working action of the relay. The number 1 (one) contact is a tuned contact that follows the working action of the relay only when the action reaches a minimum of 115 code cycles through a maximum of 125 code cycles. The use of the number 4 (four) contact supplied battery to the SBDR. Further investigation revealed that the circuit plans for the location show that the wire was designed to be on the number 1 (one) contact on the STPAR and the condition was corrected. The appropriate tests were made and the Warsaw Interlocker was returned to service.

356	12/20/2002	CSXT	CTC			Y133-20	None - Phantom	CP Woods, Indianapolis, IN	N
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Vandalism - Signal Damaged, Caused Phantom Aspect

At about 1520, the Y133-20, lead engine CSX 2759 and two hoppers, reported a SLOW APPROACH at CP Woods while traveling eastbound on yard track "B" in the Chevrolet Transfer Yard. The crew of the Y133-20 questioned the IC dispatcher as to their route, when they were informed to stop their movement due to a signal not being requested at the control point. Signal personnel were dispatched to the scene and upon arrival, found the #2E-2 signal displaying a STOP indication. The #2E-2 signal is a two position color light signal that had a yellow aspect in the "A" head and a red aspect in the "B" head. Observations made 20 feet away from the signal found a faint yellow aspect visible and a red aspect displayed in "B" position with no signal requested. Further inspection revealed that vandals had damaged the outer lenses of the yellow and red aspects. All ground and cable integrity tested within FRA specifications. Lamp voltages on the red and yellow lamps were 9.5V, with no voltage/current evident on the yellow aspect circuitry with the signal at STOP. With the signal requested, depending on the route, either a Yellow/Red or a Yellow aspect illuminates. All routes were lined displaying the correct aspects. This signal displays only SLOW APPROACH, RESTRICTING or a STOP indication. The diagnostic logs from the Indianapolis Dispatching Center confirmed that the signal was not requested. Replaced the vandalized lenses, installed longer hoods and returned the signal to operation. We are reporting this event but we do not consider this to be a false proceed.

Report #	Date	Reporting Carrier	Block System	Interlocking System	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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392	1/25/2003	CSXT	CTC				Lock Rod Clip	E.E. Georgia, Georgia, IN	N
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Maintenance - Switch Circuit Controller

At about 1425 hours, Q554-25 heading westbound at the East End of Georgia on the Indiana Sub, while Q565-24 was stationary in the siding reported receiving an APPROACH signal. While occupying the OS section of the East End Georgia the crew on Q554-25 observed the switch aligned reverse toward the standing Q565-24. Q554-25 stopped short of the Q565-24. Signals were removed from service and signal personnel dispatched to the scene. Inspection revealed that the internal point detector rod broke leaving the point detector circuit controller indicating the switch in the normal position with the switch points physically reversed thereby allowing a signal request cleared to the standing train in the siding while the circuitry appeared to be lined for the main track resulting in a false proceed signal. Investigation also revealed that an improper installation (clip installed backwards) of the lock rod clip that ensures that the "H" contacts center in the event that the point detector rod breaks and doesn't follow the movement of the switch points. Signal personnel replaced the broken point detector rod, properly installed the lock and clips, performed all operational tests and upon satisfactory completion restored the signals to service. Subsequently, a system-wide instructional notice has been issued to all signal personnel to inspect all switch machines of similar make to ensure that there are no other improperly installed lock rod clips in service.

712	5/21/2003	CN		Remote		M393 3120	Plant Trap	Wellsboro, IN	N
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Human Error - Field Wiring Error, Inadequate Service Testing

Event: Dispatcher on Desk TD4 from [redacted] operations center reported westbound train M39331 20 accepted a signal 4L at the Wellsboro interlocker on the South Bend Subdivision, although his panel had shown an occupancy on track 2 on the CSX. This occurred on Wednesday, May 21, at 12:41 EDT. Plant was taken out of service to be investigated by the Signal Department.

Investigation: CSX was performing undercutter maintenance on their track, and created a track circuit wire to be severed, therefore creating a track occupancy on the TD4 panel. From the Digicon logs, signal 4L had been previously clear prior to the CSX severing the track wire. This track occupancy put signal 4L at STOP, until the CSX had repaired the track wire. Then the signal recleared even with the panel still reflecting an occupancy.

The occupancy shown on the panel was created by the CSX trap circuit (trap circuits are used for the 66-foot dead section of track where the CSX crosses the CN trackage. In a normal train move the track circuit gets released after the train passes through the entire interlocker. With the occupancy created by the undercutter only on the north side of the interlocker the trap did not release.

The investigation has revealed that planned additions were requested by CSX to this location in 1998. In the investigation we found that CN missed installing a portion of the modifications, also there was a software logic error introduced with the CSX electronic interlocker. Either of the railroads performing these changes correctly would have prevented this false proceed to occur. The CN has retrofitted the logic changes to its portion of the interlocker to correct the situation. The CSX will be correcting their software, to have a second method of preventing this condition from occurring.

It should be noted this interlocker worked properly for all normal through movements, the fault was found only on the trap circuit.

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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409	12/22/2003	NS	AB	Remote		NS 9752	Signal	Van Loon, IN	N
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Vandalism - Signal Damaged, Caused Phantom Aspect

On Tuesday, December 22, 2003 at 8:49 a.m., train 20E was traveling east on the Chicago District westbound main track. Engineer and Conductor on engine NS 9752 called the home signal at Van Loon interlocking, MP B-497.9 a SLOW APPROACH (Yellow over Red). The crew was contacted by the Chicago District dispatcher in Ft. Wayne, IN, after proceeding past Van Loon. The dispatcher informed the crew to bring their train to a stop. The crew of 20E walked back to observe the dwarf signal and reported the signal had been painted orange.

Investigation of the above incident verified that the 3 position color light dwarf signal had the top and bottom lenses painted orange and the can of spray paint was laying by the signal.

The incident was also reported to railroad police for further investigation.

The signal lenses were replaced and the signal was tested and placed back in service.

No. of Reports Shown in this Listing: **35**