



IronWood Technologies

Railroad Accident Reconstruction

Federal Railroad Administration

False Proceed Signal Database

January 1, 1995 through May 3, 2004

All Reports - State of Illinois

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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Cause

Narrative

25	2/12/1995	NS		Remote		4144	Signal	Chicago, IL	N
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Phantom Signal - Due to Sun Angle

At approximately 5:30PM, Train No. LC29 was prepared to head off the Pullman Branch eastbound through Pullman Junction. Signal 16RF was the governing signal for this move, and the crew reported they observed it displaying SLOW APPROACH (Yellow over Red for this dwarf signal). The engineer proceeded on this signal indication into the plant at Pullman Junction, but stopped the move when he and the conductor observed the power switches were lined against the move. The move was stopped short of any switch. After reporting the incident to the operator at Cummings, the train received permission to make a reverse movement on the Pullman Branch to where they cleared the "OS." The operator had stated that he had never lined the signal for LC29's move. Once they cleared the "OS," the crew still observed the same signal aspect displayed on 16RF. They got off the engine and shaded the signal and observed that the signal was displaying STOP (a single Red).

Signal personnel were called to investigate. On arrival, the signal was properly displaying a STOP indication, however the sun had begun to set and was not affecting the signal. Other operational tests were performed with no exceptions taken. The signal was taken out of service until the phantom signal situation could be investigated with proper sunlight conditions.

The following day a complete locking test was performed at Pullman Junction along with ground tests and applicable meggering and relay tests. Again, no exceptions were found. With sunny conditions available, sight tests were performed between 5:00 PM and 6:00 PM and the presence of a phantom aspect was confirmed. 16RF is a 2 position colorlight dwarf signal designed to display a STOP or RESTRICTING aspect (Yellow on top, Red on bottom). The sun was shining directly into the signal and made it appear to display Yellow over Red when only the red unit was energized. It took the installation of three (3) phankill devices to remove the phantom aspect. The signal was returned to service in that condition.

471	3/27/1995	CNW	AB			SPMPA 6850	143ATR	Peoria, IL	N
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Vandalism - Instrument Case, Cable, or Junction Box Damaged

On 3/27/95 at approximately 1500 hrs. SPMPA reported southbound signal #143 Green with cars parked in the block south of the signal.

Investigation revealed that vandals had attempted to knock over an instrument case at MP 72.8 by rocking it back and forth. The track relay and others were dislodged from their trays and tipped over as a result. This prevented the signal from going to Red. A report (95-9341) was filed with the Peoria Police Dept.

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
			Cause						
			Narrative						
43	7/26/1995	UP	CTC	Manual		SP FHOCHQ	None	Lennox, IL	N
			Human Error - Signal Circuit Design Error, Inadequate Service-Testing						
			On July 26, 1995, at 19:16 (CDT) on the Pana Subdivision at Lennox Interlocker, eastbound SP FHOCHQ reported a Red over Green over Red home signal with a trailing point switch lined against them.						
			An investigation revealed the signal circuits were not designed to check trailing point switches in the control network.						
			Circuit plans have been revised and the switch position relay contacts are being installed in the proper control circuits.						
			The signal system was restored to proper operation, and all applicable tests were performed.						
44	8/9/1995	UP	AB			PRBME	None	Des Plaines, IL	N
			Failed Equipment or Device - Relay						
			On August 9, 1995, at 12:00 (CDT) on the New Line Subdivision at M.P. 8.8, PRBME reported eastbound signal 22 displaying a Yellow indication with 22's block occupied.						
			An investigation revealed the 22H relay had a burnt contact jumpered around in the signal lighting circuit.						
			The signal system was restored to proper operation, and all applicable tests were performed.						
519	9/30/1995	CR		Automatic		Engine #2	4W Signal @ Burnham	Burnham, IL	N
			Human Error - Improper Circuit Jumper in Place						
			Engineer on NICTD train 509 observed signal 4W CLEAR with M/W crane occupying 2CT track circuit in interlocking. Cause was determined to be jumper placed on 2TPR relay by signal maintainer who was working with M/W equipment. Jumper removed after train moves were completed.						

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528	11/2/1995	EJE					Track Relay	Vernon Hills, Illinois	N
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Human Error - Field Wiring Error, Inadequate Service Testing

On subject interlocking, a track circuit BNWLP, in the fouling section is so arranged that when the Electric Lock installed on the switch allowing movements from the siding onto the main and into interlocking limits is unlocked or opened 1/4" from full normal, the track circuit is de-energized. Once de-energized, it de-energizes a relay that is used as the OS track. All signals on all routes are effectively slotted off with the OS relay down.

Shunt fouling wires were inadvertently installed from the main to the fouling section. When the electric locks were unlocked or opened 1/4" from full normal, the track relay BNWLP remained energized through the OS track battery, not effectively slotting off all signals.

Shunt fouling wires were removed correcting the failure.

2	11/6/1995	BNSF	CTC			Train #1347	Signal 2136.3	Galva, IL	N
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Vandalism - Pole Line

Dispatcher reported an unsolicited CLEAR aspect on the westbound absolute signal at Galva on Main track #2. Amtrak #1347 westbound on Main #1 verified to Signal Supervisor that the approach signal on Main #2, Signal #2136.3, displayed an APPROACH MEDIUM aspect with the absolute signal at Galva displaying a STOP aspect. Amtrak had been instructed to stop at Galva even though the train was not on the track affected.

Wire thieves stole copper communication wires at MP 136.9. There were (12) twelve spans of wire stolen. The tails of the copper wire that were left were laying in the signal wires. This caused the 2136-FYR relay to falsely energize thus causing the signal at 2136.3 to be display an APPROACH MEDIUM aspect in lieu of an APPROACH aspect.

Correction: Removed all copper wires that were hanging down in the open signal wires. Made operating tests and left working ok.

51	11/18/1995	UP	AB	Manual	ATS	EX140	None	Barrington, IL	N
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Human Error - Signal Circuit Design Error, Inadequate Service-Testing

On November 18, 1995, at 09:15 (CST) on the Harvard Subdivision, southbound train EX140 had a Red over Green signal for movement from No. 3 track to No. 2 Track at CP T031, Barrington, with a northbound train lined into No. 2 track at CP N019, Seeger.

An investigation revealed a circuit design error in the traffic locking circuit at CP T031.

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

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
53	12/8/1995	UP	CTC			SP8353	None	Menard Junction, IL	N
<p>Cause</p> <p>Narrative</p> <p>Human Error - Improper Equipment Installed</p> <p>On December 8, 1995, at 10:00 (CST) on the Chester Subdivision, northbound FHOCH-06 had a Green signal at CP D061 with intermediate northbound signal 58.3 displaying Red and the track north of Signal 58.3 occupied.</p> <p>An investigation revealed a neutral relay was installed in lieu of a biased relay in the "D" circuit at CP D061.</p> <p>The signal system was restored to proper operation, and all applicable tests were performed.</p>									
35	12/22/1995	NS	CTC			3920	Signal	Jacksonville, IL	N
<p>Phantom Signal - Due to Sun Angle</p> <p>At approximately 12:58 PM, Train No. D33D westbound was waiting in the siding at Arnold to meet an eastbound train. Train D33D was stopped about four (4) car lengths east of the westward signal, 56L. After the eastbound train passed on the Main Track, the crew on D33D observed signal 56L display Yellow over Yellow, ADVANCE APPROACH, for their move. The engineer started his train moving out of the siding. Just before reaching the power switch, the engineer observed that it was lined against his movement, made a normal stop but ran through the switch with his entire train. The dispatcher had not requested a route for D33D to leave the siding.</p> <p>Signal 56L is a double mast bracket signal located to the right of the Main Track. Westbound movements on the main are governed by signal heads 56LA & 56LB on the right mast; the siding by signal heads 56LD & 56LE on the left mast. All heads are US&S H-2 with 9 volts (AC or DC) on the bulbs, and only the D & E heads (the siding signal) equipped with 30-degree deflecting lenses. A long sweeping right-hand curve is transversed approaching the west end of the siding. ADVANCE APPROACH is a valid signal to leave the siding.</p> <p>The false Yellow over Yellow was observed on the 56L E&D heads by the investigating signal personnel. When compared to the Main Track signal Red over Red, the siding signal did appear Yellow over Yellow from an engine until it backed more than 150 feet back from the shunting joints. Tests revealed that this was a phantom signal, caused by sunlight reflecting off the snow covered ground in the early to mid-afternoon. Further experimentation showed where the removal of the deflecting lenses was the only sure way to prevent this phantom signal from occurring. The lenses were removed and the signals re-aligned to compensate. Signals were placed back in service.</p>									
55	1/29/1996	BNSF	CTC			P-CHLA1-29	Engin FR-2	Edelstein, IL	N
<p>Failed Equipment or Device - FR-2</p> <p>Westbound Train P-CHLA1-29 reported passing Signal 1361 displaying a Green aspect and next signal, westbound control signal at Edelstein, was Dark over Red. Maintainer and Inspector found the FR-2, the device that supplies lamp voltage, was partially failing, causing the top lamp on the westbound control signal to be very dim, but enough current to hold the light out relay. The defective FR-2 was replaced, the light out relay tested for proper operation and signal system tested.</p>									

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553	2/6/1996	IHB		Remote		CP 5665	Absolute Signal 8E	CP Hill, Bellwood, IL	N
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Scenario Reenacted, Unable to Duplicate, No Defects Found

At approximately 1:15 PM, Tuesday, February 6, 1996, the Engineer of a CP train, Engine 5665, reported that absolute signal 8E momentarily cleared from Red to Green and back to Red with an opposing train setting at the opposing signal on the same track.

Our dispatcher stated and review of the control machine tapes verified that no attempt was made to clear signal 8E for his movement.

Signal personnel were dispatched to the scene and conducted a complete inspection of the interlocking and signal in question with no exceptions found. Attempts to duplicate the existing situation could not reproduce the alleged failure.

All tests and inspections were completed with no exceptions taken and no cause found.

It should be noted that at approximately 5:15PM that same day, this crew passed an absolute signal displaying a STOP indication at Grand Trunk Interlocking, Riverdale, IL, and were removed from service by CSX Transportation Management.

We have no results of any investigation or reports on their status since this is a CSX crew and Grand Trunk Interlocking is not under IHB control.

61	4/3/1996	BNSF	CTC			None	Track Circuits	Bristol, IL	N
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Maintenance - Improper Adjustment, Track Circuit

Amtrak 1347-3 on the North Track west of Bristol, IL., lost shunt and allowed the westbound signal on the North Track at Bristol to momentarily clear. The dispatcher had entered a stack for this signal behind Amtrak. Shunt test were performed with no exceptions. No train was present near Bristol to observe the westbound signal at Bristol to momentarily clear. Adjustments to track circuits between Bristol and MP 48.7 were made to reduce the voltage on the track relays for better sensitivity.

560	6/1/1996	CC	AB			2002	FP	West End Duncombe	N
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Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)

Number 51's train 2002 reported CLEAR at the west end of Duncombe with no. 50's train at MP 370.

50 reported CLEAR eastbound Lake Ole MP 369 Red cab, then CLEAR at 368.5.

Cause was found to be a storm damaged pole and crossarm (hit by lightning) holding pin 4 H wire into pin 5 H wire at MP 368.

Maintainer cleared line and tested system.

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			Cause						
			Narrative						
68	6/26/1996	BNSF	CTC			491-26	None	Galesburg, IL	N
			Human Error - Field Wiring Error, Inadequate Service Testing						
			Train 491 reported having a Red over Green on the 2WCD signal at Graham and a Red signal at CP 1699. Testing revealed that incorrect wiring changes were made causing the problem. Corrections were made to the wiring and signals tested for proper operation.						
104	7/17/1996	UP	AB			HOCHT-16	None	Glenwood, Illinois	N
			Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)						
			On July 17, 1996, at approximately 1840 CDT, on the Chicago Subdivision, the northbound HOCHT-16 accepted an APPROACH aspect at signal 250, Milepost 24.9, on the northward main track and proceeded north stopping short of the northbound UGCCH-17 stopped ahead in the block.						
			An investigation revealed that a tree had fallen through the pole line at Milepost 22.3 wrapping the northward HD wires with the HD wires for the southbound main track and energizing the northward HD wires falsely.						
			The signal system was restored to proper operation, and all applicable tests were performed.						
106	8/28/1996	UP	CTC	Automatic	ATC	CNW6905	None	Rochelle, Illinois	N
			On August 28, 1996, at approximately 0145 CDT on the Geneva Subdivision, westbound ELNP-27 was proceeding west on No. 2 Track at restricted speed east of M.P. 74.0 with a Restricting cab signal aspect. The cab signal aspect was Restricting as the home signal at the BN interlocking at M.P. 75.3 was displaying a Stop aspect. At approximately M.P. 74.0, the cab signal changed to a Clear aspect and remained Clear until changing back to a Restricting aspect at approximately M.P. 74.25.						
			An investigation revealed a high level of 120 Hz energy on the track originating from a track rectifier at the battery end of a DC track circuit which operated in combination with the feed transformer for the 100 Hz ATC.						
			The wiring for the track rectifier, battery, and ATC feed transformer was revised to a standard arrangement which minimizes the 120 Hz energy on the track circuit. The signal system was restored to proper operation, and all applicable tests were performed.						
74	10/2/1996	BNSF	CTC			1260	Insulated Joints and Lightning Arrestors	Hinsdale, IL	N
			Failed Equipment or Device - Insulated Joint(s)						
			Signal employee observed signal 318.8 display a CLEAR aspect with train 1260 in block. Supervisor and Maintainers found an insulated joint shorted and two gas lightning arrestors shorted allowing enough current to pick up the track relay with shunt on track. Replaced defective insulated joint and lightning arrestors.						

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574	11/1/1996	AMTK		Manual			52R Signal	21st St. Int., Chicago, IL	N
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Human Error - Field Wiring Error, Inadequate Service Testing

On Friday, November 1, 1996, Amtrak's Signal Engineer received a report at approximately 7:30 a.m. that train crews were observing the 52R signal, at 21st Street Interlocking in the Chicago Terminal area, display a SLOW CLEAR aspect when the 4R signal at CP Cermak belonging to the Illinois Central system was lit at STOP. Under normal conditions the 52R will display a SLOW APPROACH to the 4R in the STOP position.

Investigation of this report by Amtrak's Signal Engineer revealed that 15 VDC energy was being incorrectly fed from CP Cermak to the 52R control circuit at 21st Street Interlocking when the 4R signal was in the STOP position. The 52R control circuit was immediately opened so as not to allow unwanted foreign energy into the circuit.

Amtrak and Illinois Central signal management met and found that at the signal bungalow for CP Cermak, incorrect wiring had occurred by Illinois Central personnel after that location had been tested due to a recent signal cutover.

Although the false clear aspect was on Amtrak's 52R signal at 21st Street Interlocking the cause for that failure was due to improper wiring of the Illinois Central signal network.

75	11/16/1996	BNSF	CTC			Suburban 1268	Lightning Arrestors	Westmont, IL	N
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Failed Equipment or Device - Lightning Arrestors, Shorted

Suburban train 1268 reported signal 319.6 went from Red, to Yellow, to Green and then back to Red while train 1294 was east of the signal. Signal Supervisor found shorted lightning arrestors on Track Isolation Units. While the last set of trucks in train 1294 were in the stagger of the insulated joints and with the two shorted lightning arrestors, the insulated joints were in effect bypassed. This allowed the track relay on the east side of the insulated joints to be energized by the track battery on the west side of the joints until the last set of trucks were east of the effective insulated joint, at which time the track relay was again de-energized. This allowed the signal to momentarily go to Yellow, Green and then back to Red. The defective lightning arrestors were removed and the circuits tested for proper operation.

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
			Cause						
			Narrative						
576	11/30/1996	SP	CTC			SP 1MNGVC-30	Signal 30	Ridgley, IL	N
			Failed Equipment or Device - Aerial or Underground Cable, Shorted or Grounded (not due to vandalism or digging)						
			On November 30, 1996 at approximately 2:30 AM, Engineer operating train no. 1MNGVC-30 traveling west, reported that signal 30 cleared Yellow while the C.I.M. train was flagging across the Interlocking.						
			The Signal Supervisor was notified and he had the Dispatcher hold all trains in their position until he arrived. Upon arrival at the Interlocking, he confirmed that the 30 signal was Yellow. The cable was meggered and was found to be bad. The cable was replaced from the tower to the westbound home signals and the signal system was thoroughly tested. All tests showed the system to be working as intended with no exceptions.						
			The signal system was returned to service on November 30, 1996 at 7:00PM.						
578	12/30/1996	CR	AB			UP2455	Signal 2E @ CP-154	St. Elmo, IL	N
			Human Error - Signal Circuit Design Error, Inadequate Service-Testing						
			Engineer on eastbound NLINO observed a CLEAR signal on 2E with signal 152E STOP AND PROCEED ahead. Investigation revealed that the switch repeater 1520NWPR did not open the 2EHR relay, which allowed a CLEAR code to be generated from the micro unit at signal 152E. Circuit was reissued with 2EHPR relay contact located in input circuit of Microcode unit. Failure was due to unauthorized field change. Plans reissued as originally designed.						
			Signals tested and returned to service.						
161	8/10/1997	UP	CTC	ATC		UP5071	None	Nelson, IL	N
			Phantom Signal - Due to Sun Angle						
			On August 10, 1997, at 17:45 CDST, on the Geneva Subdivision at Nelson, IL, eastbound worktrain WNEKCR, at mile post 105, while making a switching move from track 2 through track 3 and track 5 to the yard, ran by a dwarf signal that should have displayed a Red indication but the bulb was burnt out. The train crew claimed the dwarf signal displayed a lunar indication.						
			An investigation revealed with the sun shining in the signal, it gave the appearance of a lunar indication.						
			The dwarf signal is being changed out to a two position colorlight signal on a five foot mast.						

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118	9/11/1997	BNSF		Automatic		E-MEACDM023	None	Shattuc, IL	N
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Scenario Reenacted, Unable to Duplicate, No Defects Found

Train E-MEACDM023 reported that the approach signal to the Shattuc Automatic Interlocker was Green and that the absolute signal at the Shattuc Interlocker was Red and a CSX train was occupying the interlocker. E-MEACDM023 was traveling eastbound and got by the absolute signal. Signal Dept. forces from both the BNSF and CSX responded to conduct signal tests, review the information from the event recorder and simulate the event with track shunts. All tests reproduce the event with the timing shown on the event recorder were negative, and tests for cross and grounds, relay values, approach locking and inspection of signals and equipment showed no defects. The interlocker is maintained by the CSX and the BNSF approach signal and track circuits are maintained by BNSF.

167	9/18/1997	UP	CTC		ATC	175	None	Chicago, IL	N
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Loss of Shunt - Possible Rust or Foreign Material on Rail

On September 18, 1997, at 11:00 CDST, on the Geneva Subdivision at Chicago, IL, the Switch Tender reported the eastbound signal 3.8 on #1 Main Track was Green with the track occupied east of the signal.

An investigation revealed a rusty rail condition was preventing the track circuit from shunting while occupied.

The track relay was adjusted and a stainless steel bead will be welded to the rail. The signal system was restored to proper operation, and all applicable tests were performed.

192	3/10/1998	NS	CTC			UP 2961	Poleline	Sidney, IL	N
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Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)

At approximately 8:55 PM, westbound train No. 71 reported the distant signal to East Sidney, displayed ADVANCE APPROACH and the East Sidney home signal displayed STOP. The 325.8 signal should have displayed APPROACH because East Sidney had not been lined for No. 71's move due to train No. 409 working between the switches at Sidney.

Signal personnel called to investigate confirmed the ADVANCE APPROACH aspect into a STOP. This was caused by false energy on the 3258BH relay that controlled the bottom yellow. The false energy was the result of a line wrap between the 3258BH wire and the 32695TP wire at milepost B-327.1. Though the two line wires were tight and tied-in, we suspect the 50 MPH + wind gusts on the previous day had blown something into the line resulting in the wrap. The wrap was removed, the signal system verified to be working as intended, and signals were returned to service at 12:45 AM, 3/11.

To keep this from recurring, the ADVANCE APPROACH aspect has been eliminated on this signal. Instead of getting an ADVANCE APPROACH when East Sidney is APPROACH, signal 325.8 will repeat the yellow at East Sidney. This is a temporary fix since the poleline is to be eliminated and aspects will change in conjunction with a new NS/UP connecting track to be installed here in the near future.

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			Cause							
			Narrative							
207	5/27/1998	UP	AB			SP 7798	None	Pence, IL	N	
			Vandalism - Signal Damaged, Caused Phantom Aspect							
			On May 27, 1998 at 17:59 CDT, on the Chicago Subdivision at CP 1050, southbound ZYCFW 27 had a CLEAR signal through the Pence interlocker, while a westward Conrail crew reported a Green over Red home signal at Pence interlocker.							
			An investigation revealed that Conrail's westbound high green signal's back door was open, and the sun shining through gave a Green indication.							
			The signal system was restored to proper operation, and all applicable tests were performed.							
602	6/5/1998	CR		Remote		CSXT 913	Home Signal 8W	Buffington, IN	N	
			Vandalism - Signal Damaged, Caused Phantom Aspect							
			Crew on CSXT 913 reported signal 8W at CP 501 displayed Red over Lunar White (RESTRICTED PROCEED) with a westbound Amtrak train occupying interlocking. Investigation found that vandals had broken the lock and hasp and removed the cover from the center lunar light unit on signal 3W allowing sunlight to enter the rear of the unit which illuminated the white lens. Cover was replaced and local police notified.							
608	10/30/1998	METX		Manual			38RAHDR	Tower A-2, Chicago, IL	N	
			Failed Equipment or Device - Relay							
			Train took signal 38R after past insulated joints in plant signal stayed Yellow. Mtr. Took track 2 out of service and started to trouble shoot. Found relay 38RAHDR not dropping with no battery on it. Replace relay, tested system and put back in service.							
			Time out: 11:30 AM							
			Back in Service: 2:30 PM							

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609	11/11/1998	IC	CTC			GCG2CH	NBH Sig.	South Edgewood, IL	N
<p>Cause</p> <p>Narrative</p> <p>Human Error - Signal Circuit Design Error, Inadequate Service-Testing</p> <p>Crew of train observed NBH at CP South Edgewood display Yellow over Green in approach to the home signal at Edgewood Jct. displaying Red over Red.</p> <p>Investigation found the Light Out Relay was de-energized for the top Red marker at Edgewood Jct. With the LOR down, the lower aspect was set Red; however, the outgoing code to the approach signal was not downgraded and continued to send a code for Yellow over Green.</p> <p>Interim circuits were made by disabling the codes for the approach aspects when the LOR is de-energized. When the interim circuit changes were completed, tests were performed and signals observed to insure integrity. Permanent changes require programming and circuit changes, and these changes are being installed.</p>									
620	9/20/1999	CN		Automatic		N/A	Home Signal	Waltonville, Illinois	N
<p>Phantom Signal - Due to Sun Angle</p> <p>Phantom signal created by sunlight on Green aspect of CN/IC home signal. Red lamp also burned out. Installation of snow shields and improving site distance for correction.</p>									
221	1/3/2000	BNSF	CTC			Amtrak 1006	3E Signal, Congress Park Control Point	Brookfield, IL	N
<p>Human Error - Train Crew Took Wrong Signal</p> <p>Amtrak 1006 EB main 3 was lined main 3 to 2 at Congress Park (CP) control point through 1 switch reverse. Engineer alleges approach signal was CLEAR and controlled signal was G/R/R. Train took diverge route as intended. Tested all signal mechs (all signals were searchlight), switch correspondence relays, and signal control relays in route. All circuitry free of grounds. Indication locking tested. Signal system found to be working as intended. After the interview with the crew, it is felt the engineer and Road Foreman mistook the EB signal on the opposite end of the plant governing movement over a switch onto main 3 for his high green and missed the R/G/R at the West end of the plant.</p>									
625	1/30/2000	WC				COKEX	Signal 2WA Color Light	Lake Villa West, Lake Villa, Illinois	N
<p>Phantom Signal - Due to Foreign Light Source</p> <p>Train COKEX observed a Yellow over Red aspect on signal 2WA for 10 seconds during a meet with train T048 while opposing signal 2EB was CLEAR.</p> <p>Simulations and tests resulted in no defects.</p> <p>A yard light for Snyder Trucking may have caused a phantom signal.</p>									

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
			Cause						
			Narrative						
630	4/14/2000	IMRL	APB			IMRL 355	Stick Circuit	Kittredge, IL	N
			Human Error - Signal Circuit Design Error, Inadequate Service-Testing						
			On April 14, 2000, Engineer on train M264D14 reported the eastbound signal at East Kittredge as displaying an APPROACH aspect with westbound train ICHLB14 occupying the same block east of Kittredge. The proper aspect for the eastbound signal at East Kittredge at this time was Red.						
			Signal Department personnel were notified and immediately investigated this incident. Signal Department duplicated this incident and found stick relays energized at MP 114.8. This condition prevented the opposing east bound signals to tumble back to Kittredge when train ICHLB14 passed Adeline.						
			Signal personnel released the stick circuits and performed the appropriate tests. Subsequent to tests, signal system was returned to operation at 22:52 hours on April 14, 2000.						
225	4/24/2000	BNSF	CTC			BNSF 4970, ZWSP	Line Wire and Inverter	Kernan, IL, Signal 811	N
			Maintenance - Pole Line (storm, excessive vegetation, rotting poles, excessive slack in wires, etc.)						
			Train ZWSPNBY9-24B, Engine BNSF 4970, operating westward on main track No. 1 approaching control point at Kernan went by the approach signal at MP 81.64 (Sig 811) displaying APPROACH MEDIUM. The home signal at Kernan was at STOP. The Signal Supervisor and two Maintainers responded and put all signals to STOP. Investigation revealed that a 480V AC wire had come untied from its insulator with the tie wire still attached to it. The high winds blew the 480V AC line wire off the crossarm and it dropped down to the area of the secondary arms below. The tie wire that was still attached to the 480V AC line wire allowed it to touch the "NMR" line wire. When this happened, the 480V AC fed back into the control point, burning up an inverter, causing a ground on the battery that feeds the "NMR" circuit. The ground allowed current to bypass the circuits at Kernan and energize the "NMR" relay at Signal 811, causing it to display APPROACH MEDIUM. The linewire was restored to its insulator, the inverter was replaced and signal system tested for proper operations and returned to service.						
631	5/2/2000	IMRL	APB			UP 9730	None	Byron, Illinois	N
			Scenario Reenacted, Unable to Duplicate, No Defects Found						
			On May 2, 2000, Engineer on westbound train ICHLB 02 reported that while operating on Red signals and after passing eastbound signal 891 he looked toward the rear of his train and observed signal 891 displaying a CLEAR aspect. The Engineer reported that his train was occupying the block for signal 891 when the CLEAR aspect was observed. The proper aspect for signal 891, at this time, was Red.						
			Signal Department personnel were notified at 10:00 PM and immediately began a complete investigation of this incident. Personnel tested relays, meggered cables, and inspected signal light wires and the pole line. Attempts were also made to recreate this incident by shunting tracks and with actual train movements. Signal would not clear until shunts or train was completely by signal 891. Subsequent to tests, signal system was functioning as intended and returned to service at 04:40 AM on May 3, 2000. Signal Department personnel were unable to duplicate this alleged false proceed report.						

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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242	5/11/2000	CSXT	CTC			IHB Run 518	Design	CP Francisco, Blue Island, IL	N
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Human Error - Signal Circuit Design Error, Inadequate Service-Testing

On Thursday, May 11, 2000 at approximately 1022 hours Indiana Harbor Belt (IHB) Train Run 518 received a RESTRICTING signal at CP Francisco MP DC 14.9 (IHB MP 15.4) to proceed west on Track 1. At the same time, eastbound IHB Train NP 11 accepted an opposing approach signal at CP 123 (IHB MP 17.5) to proceed east on Track 1. Each train proceeded into the block until they viewed the opposing train and stopped. The signals were removed from service and Train Control personnel were dispatched.

Further investigation revealed that the false proceed was caused when the Call-on feature was initiated by the dispatcher, which permitted a RESTRICTING signal to be displayed at CP Francisco with an opposing signal already lined into the block.

Temporary wiring changes were made to disable the Call-on circuit, and signals were returned to service following operational testing.

The cause was found to be a design error.

632	5/15/2000	METX		Manual		Unknown	Signal 2-0	Chicago, IL	N
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Human Error - Field Wiring Error, Inadequate Service Testing

Signal 40R was reported Green and signal at 2-0 was reported Red. Found wires on RSRIT on print A1-2-1A contact #16 and 13 reversed. Repaired same signal 5/15/00 2:50 PM.

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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634	6/6/2000	CN	AB			IC 1026	85 Signal	Cicero (Hawthorne), IL	N
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Human Error - Signal Circuit Design Error, Inadequate Service-Testing

At approximately 1100 hours on June 6, 2000, westbound train CHWL-06 reported that signal 85 displayed a Yellow aspect with the hand-throw switch lined reverse, within the block at Mile 8.8.

Signal 85 was removed from service by the Signal Supervisor. Upon arrival at the location, the investigation found that the location had not been vandalized or damaged and that the incident was reproducible.

On June 2, 2000 the hand-throw switch at Mile 8.8 had been placed in service. The crossover track circuits 1AXT and 2AXT had been inadvertently omitted from block repeater circuit 85BP, which allowed signal 85 to display an aspect less restrictive than intended when the crossover switch was lined reverse. The omission was not discovered during the in-service testing.

Corrections to the 85BP circuit were made to include the 1AXT and 2AXT in the block repeater circuit 85BP. The circuits were then tested to determine that they were operating as intended.

Signal 85 was returned to service at 1800 hours.

275	7/9/2000	UP	CTC			AMT 28	None	Madison, IL	N
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Human Error - Signal Circuit Design Error, Inadequate Service-Testing

On July 09, 2000 at 11:15 CDT, at Madison, Illinois on the Springfield Subdivision, northbound 1AMT22.08, on track #2, had a Yellow (APPROACH DIVERGING) northbound signal at CP GM278, with the northbound home signal at WR Tower, MP 275.60 displaying a Red over Yellow (RESTRICTING) indication.

An investigation revealed differences in signal aspect rules between the TRRA and the UPRR resulted in a signal design error.

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

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
229	7/25/2000	BNSF	CTC			Train SLGBNYC6-2	None	Ormonde, IL (Chillicothe Sub)	N
<p>Cause</p> <p>Scenario Reenacted, Unable to Duplicate, No Defects Found</p> <p>Train SLGBNYC6-22, operating eastbound on Main track 2 reported that he had a CLEAR (Green) signal displayed at Signal 1942 and then had a DIVERGING CLEAR (Red over Green) at Ormonde control point. The Signal Supervisor, Signal Inspector and Signal Maintainer responded to interview the train crew, recreate the lineup and perform tests to verify the conditions of the signal system. When the lineup was made to simulate the conditions as reported by the train crew, the proper aspect (Flashing Yellow) was displayed at signal 1942. After performing cross and grounds, visual and operating characteristics of appropriate relays, megger tests of cables and visual inspections of the pole line and instrument cases, no exceptions were taken. Signal 1942 was observed for alignment and visibility with no exceptions taken. The Signal Supervisor interviewed the train crew prior to beginning testing. They stated that they could see signal 1942 without any problem. It was also noted that the train crew was not completing the Signal Awareness Form as required by BNSF System Special Instructions.</p>									
644	8/16/2000	WC		Manual			2LA	Lake Villa, Illinois	N
<p>Failed Equipment or Device - Aerial or Underground Cable, Shorted or Grounded (not due to vandalism or digging)</p> <p>Northbound #2 main displayed Red and Yellow aspects at the same time. Upon notification took plant out of service.</p> <p>Upon investigation found bridge piling was driven through cable crossing the wires.</p> <p>Replaced cables.</p>									
647	11/2/2000	CN		Remote		Amtrak #51	8W Signal	Thornton, IL	N
<p>Human Error - Signal Circuit Design Error, Inadequate Service-Testing</p> <p>8W signal displayed a SLOW CLEAR (R/G) into STOP (R/R) at UP home signal on the UP wye at Thornton Junction.</p> <p>Cause: Wire/design error and insufficient testing at time of installation.</p> <p>Corrective Action: Wire/design change to give a RESTRICTING signal (R/Y) at 8W to the UP wye track.</p>									

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?	
			Cause							
			Narrative							
235	11/9/2000	BNSF	AB			Train SCHCTAC2-0	S-Code Approach Lighting Module	Galena, Illinois	N	
			Failed Equipment or Device - S-Code							
			Train SCHCTAC2-09 @ 2016 hours on November 9, 2000 was westbound near Galena, Illinois on Track #1, Minnesota Division, Aurora Subdivision, when Engineer and Conductor reported an APPROACH MEDIUM signal at MP 169.7 into a Red signal at MP 171.4, Galena. Upon arrival by signal personnel, the reported signal aspect could not be duplicated after repeated attempts to simulate the events described by the train crew and the SOC Signal Call Desk in Ft. Worth, Texas. All affected signal equipment at 169.7 was tested with no exceptions immediately noted. A replay of the events leading up to the report did not lend any support to the reported signal aspect. After nearly completing all signal testing on the affected signal network, an intermittent failure was observed by signal personnel. An intermittent failure in the S-Code Approach Lighting Module #72718-20 at signal 169.70 allowed a "flickering" from Yellow to Dark. The "flickering" was not at any measurable code rate, but was displaying Yellow to Dark intermittently. The signal displaying this intermittent aspect is a GRS Searchlight signal. As a result of observing this failure, the S-Code cabinet was replaced and a new Approach Lighting Module was installed followed by complete operational tests.							
649	11/13/2000	BRC		Remote		2R		Lemoyne Interlocking	N	
			Phantom Signal - Due to Foreign Light Source							
			Engine reported 2R signal with a Red over Lunar. Engine backed up one engine length in front of signal 2R, signal 2RR had a Red over Dark signal when the engine turned on its headlight on full bottom Dark head seemed to display a near Lunar color, (phantom color). Engineer thought that signal 2R displayed a Red over Lunar. Because of where signal was positioned, south of ship canal bridge which was obstructing view of signal until train was closer to signal. Signal was also located as close to the track as possible to give most range of sight possible. Actions taken: Have relocated to approximately 100 feet north of ship canal bridge and installed twelve feet from center of track allowing maximum visibility.							
652	12/1/2000	WC		Manual		EJE Train	OS Circuit	EJE - Diamond, Leithton, Illinois	N	
			Human Error - Improper Circuit Jumper in Place							
			Dispatcher observed a westbound train cross the Leithton plant without indicating an OS circuit occupied. After investigation it was found that an EJE RR signalman had left a temporary jumper on the OS relay. The temporary jumper was immediately removed.							
			The EJE RR is conducting an investigation of this - how the temporary jumper was left on.							

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
653	12/4/2000	WC		Manual		BYFDIT	Signal 10LA - Case	Schiller Park, IL - B12 Interlocker	N
<p>Cause</p> <p>Narrative</p> <p>Human Error - Signal Circuit Design Error, Inadequate Service-Testing</p> <p>Northbound train BYFDIT reported a CLEAR aspect at approach signal 139 into a STOP (Red) absolute signal 10LA at B12.</p> <p>After testing and investigation it was discovered that Code 7 (CLEAR) was being transmitted to the south from 10LA to 139 while the IHB route was lined northbound. This was the result of a defective circuit design. The circuit was repaired to send an APPROACH code (C-2) to the approach 139 when the IHB is lined for a northbound route.</p>									
659	2/28/2001	METX	AB			Train 730 (MU)	22 HD Relay	Richton Park, Illinois	N
<p>Failed Equipment or Device - Relay</p>									
320	4/4/2001	UP	CTC			UP3958 North	None	Gorham, IL	N
<p>Human Error - Signal Personnel Introduced False Energy into Signal System During Testing</p> <p>On April 4, 2001 at 11:00 DST, at Groham, IL on the Chester Subdivision, northbound QNLPI-03 received a northbound DIVERGING CLEAR signal (Red over Red over Green) at CP D085 at MP 84.8 into a dark signal at CP C338.</p> <p>An investigation revealed that a signal gang, while cutting over new CP D338 had inadvertently applied battery to the 48DPR circuit which caused the DIVERGING CLEAR signal at CP D085.</p> <p>The signal system was restored to proper operation, and all applicable tests were performed.</p>									
664	5/9/2001	IMRL	APB			IMRL 358	None	Savanna, IL	N
<p>Scenario Reenacted, Unable to Duplicate, No Defects Found</p> <p>On May 9, 2001, Engineer on train I 111B 07 reported that while proceeding eastward on No. 2 Track to run around train occupying the Main Track, both eastward signals at Plum (No. 2 Track and Main Track signals) displayed CLEAR aspects simultaneously. At this time the proper aspect for the eastward signal governing movement on the Main Track was CLEAR and the eastward signal governing movement on No. 2 Track should have displayed a Red.</p> <p>Signal Department personnel immediately investigated this incident and determined the signal system functioned as intended. Personnel meggered all underground cables, tested relays, performed ground tests, performed switch tests, performed fouling tests and tested searchlight signals. Personnel also performed operating tests multiple times to recreate this incident. Subsequent to tests, signal system functioned as intended.</p>									

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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670	6/19/2001	METX		Manual		EJ&E #666	Tested/No Defects (see attached)	Spaulding Interlocking, MP 32.6, Chicago, Illin	N
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Scenario Reenacted, Unable to Duplicate, No Defects Found

Westbound EJ&E locomotive #666 reported a CLEAR signal at Spaulding, signal 10L. Train proceeded past signal for head-room to shove back into Spaulding Yard. Operators claim that no signal was displayed for that move.

Signals at Spaulding Plant were put to STOP until Plant could be inspected. The following tests were performed: 236.102, 236.107, 236.109, 236.378, 236.379, 236.380. Test results were recorded and plant was found to be working as intended. (results attached) Plant was placed back in service at 12:01 AM with no restrictions.

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].

294	8/21/2001	BNSF	CTC			M KCKIHB1 19, Eng	None	Ransom, IL	Y
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Scenario Reenacted, Unable to Duplicate, No Defects Found

Train M KCKIHB1 19, Engine ATSF 663, alleges that while operating eastbound on Main Track 2 near Ransom, Illinois, they proceeded past block signal 812 displaying a Flashing Yellow aspect and then collided with the rear end of train Q LACNYC1 17, which was stopped just beyond signal 782. The train crew did not know the aspect displayed by signal 782. The signal instrument housings in the area were locked until the arrival of a FRA representative. The signal housings were jointly entered by the FRA representative and signal supervision of BNSF. The position of relays were noted with no exceptions taken. Testing of the signal system was initiated to simulate the train movements with no exceptions taken. Cross and grounds, megger and relay visual and electrical tests were performed on associated apparatus with no exceptions taken. The wiring in the signal mast at Signal 812 was removed for visual inspection with no exceptions taken.

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
			Cause						
			Narrative						
331	9/12/2001	UP	CTC			UP6822	None	Kress, IL	N
			Vandalism - Cable Damaged by Digging						
			<p>On September 12, 2001 at 01:48 CDT, at Kress, IL on the Geneva Subdivision, westbound CMHVC 12, on track #3 at MP 32.1, reported their cab signal cleared for their train on track #3, when the westbound signal on track #2 was CLEAR (cab signals on track #3 should display RESTRICTING when westbound train is cleared on track #2).</p> <p>An investigation revealed that required track wires were still connected to tracks #2 and 3. These wires were shorted together while performing directional boring, and fed cab signal energy intended for track #2 to track #3.</p> <p>The signal system was restored to proper operation, and all applicable tests were performed.</p>						
297	10/22/2001	BNSF	CTC			MGALCNI1-22, Eng	None	Verona, Illinois	N
			Maintenance - Rodent Nest in Signal Apparatus						
			<p>At approximately 7:20 PM on October 22, 2001, the MGALCNI1-22 reported that eastbound main 2 Signal 732 was displaying a CLEAR aspect and that the home signal at Verona on main 2 was Red. A Signal Maintainer had been sent to the location on another issue (controlled signal would not clear), when this report was generated. Through follow up conversations with the Ft. Worth control office technicians, the Signal Maintainer investigated the original report as the signal slotting off in the field and not a false proceed aspect. Subsequently, another report was generated and the Signal Supervisor and Signal Inspectors were dispatched to the location to perform tests and investigate the cause. Their findings were that a mouse had built a nest containing steel wool in the junction box base of the 4R Signal (Eastbound Signal on Main 2) at Verona, causing a crossing between the 4RNP, 4RAHDP, and 4RBHDP terminals. The nest was removed and further testing of the signal system was performed to verify proper operations.</p>						
686	12/27/2001	IMRL	APB			MRL 265	None	Savanna, IL	N
			Insufficient Information in Report to Assign Cause						
			<p>See attached [nothing attached].</p>						

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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692	5/17/2002	AMTK		Automatic			Switch Detector Locking	Chicago, IL	Y
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Human Error - Improper Circuit Jumper in Place

On May 17, 2002 at approximately 8:30 AM-CT METRA Commuter train 2116 operating in a shoving move with 2 locomotives and 9 cars derailed the lead locomotive at the switch (37-MPF) entering track number nine. There were no injuries to passengers or crew. Investigation determined that the (37-MPF) switch had been thrown normal while the last locomotive was traversing over the switch. Investigation revealed that a 39-foot section of rail located between the N37 switch and the R40 signal had been removed to facilitate the replacement of long switch ties on track two. This rail removal caused the 37-track circuit to be down and the 37 & 39 switches to be detector locked. Engineer C&S revealed that jumpers had been applied bridging contacts in the 37 & 39 switch lock circuit, which disabled the switch locking circuits on the 37 & 39 switches. This condition allowed the train director to throw the 37-switch under the METRA train. This accident caused considerable damage to the interlocking infrastructure (Track & Signal) and on-board equipment which was estimated at \$30,000 cost. Track and signal restoration was completed by 2-PM on Sunday, May 19, 2002. Record of jumper permission was found in [redacted] office per AMT-23, section number eight that indicated that [redacted] authorized the jumper to be applied (copies attached). This accident was caused by an employee failing to follow proper procedures in the application of jumpers, per Amtrak AMT-23 Rules number 300 thru 304 & 407. Rule number 302 reads: "The guiding principle at all times must be that any protection temporarily defeated by the jumper must be provided by some other means until the removal of all jumpers is assured and original protection is restored." Rule number 407 which reads in part "... When necessary to disconnect or impair the function of locks, circuits, or other safeguards in an interlocking, all switches affected must be safely secured before any train or engine is permitted to pass over them..." [redacted] failed to ensure that protective measures were in place. The Division Engineer has indicated to this writer that the events that caused this incident are not normal procedure. He has initiated new procedures for the application of jumpers that require his or [redacted] the Manager C&S authority. He has also scheduled instructional meetings with C&S employees to re-enforce jumper procedures, as well as checking C&S employee AMT-23 & 27 qualifications. He has also discussed discipline against [redacted] (who has accepted full responsibility for this accident), and is requiring [redacted] to meet with all C&S employees to discuss his involvement in this accident. The C&S system office will be issuing an advisory on the use of jumpers and attaching a paper copy of the Electronic Jumper Permission Log currently in use on the Northeast Corridor for distribution to other areas of the Amtrak system.

698	7/6/2002	CN	AB			CN 2528	CLS-20	Greendale, IL	N
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Maintenance - Wiring Chewed by Rodents

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.

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?	
			Cause							
			Narrative							
699	8/24/2002	CN	APB			Rail Grinder	Signal 2EA	Round Lake Beach, IL	N	
			Failed Equipment or Device - Loose Components							
			On Sat. Aug. 24, 2002 at Round Lake Beach, IL at 1845 a false proceed signal was observed by the crew on the Railgrinder.							
			The Rail Grinder on the #2 Main had a CLEAR signal for the #2 Main (Signal 2EB lined to converge). The switch was lined reverse for a move from #2 Main to Main Track. The rail grinder observed that the SB signal on #1 Main (Signal 2EA) appeared to be a Flashing Red aspect.							
			Upon arrival, signal maintainer observed erratic flickering of Red to Dark on signal 2EA.							
			After investigation supervisor found the plug strip behind lamp module was pushed back and loose from its anchor point. Module plug was secured and module was reseated tightly.							
368	10/8/2002	UP	CTC		ATC	METX 159	None	West Chicago, IL	N	
			Human Error - Signal Circuit Design Error, Inadequate Service-Testing							
			On October 08, 2002 at 18:30 CDT, in West Chicago, IL on the Geneva Subdivision, westbound METX 159, on track 3 at MP 28.50, reported that he received a CLEAR ATC cab signal after he had passed a Yellow westbound signal at Y028.							
			An investigation revealed a design error. The Electrocode program of a new cut section located 1200 feet west of MP 28.50 applied ATC energy to the rails east, when receiving Code 4 from the rails west. When passing the Yellow signal the train should have received no ATC energy.							
			The cut section was removed, pending redesign, and all applicable tests were performed.							
344	11/26/2002	BNSF	AB			VMCISBD8-25	None	Coal City, Illinois	N	
			Scenario Reenacted, Unable to Duplicate, No Defects Found							
			Train crew on westbound VMCISBD8-25 allege that they went by automatic signal 511 which displayed a Green aspect, then observed the next signal, 541, displaying a Red aspect, which then upgraded to Yellow and then Flashing Yellow. Signal 511 should have displayed a Yellow aspect due to a train ahead. Signal department employees responded and performed tests to simulate the position of the trains involved, with no exceptions taken to the aspects displayed by signal 511. Further testing was conducted including cross and grounds, electrical tests of all relays, shunting sensitivity tests of track circuits and megger tests of all cables. Visual inspections were performed of all junction boxes and the poleline with no exceptions. The internal wiring in the signal mast at signal 541 was removed for visual inspection with no exceptions taken. At the conclusion of all tests, inspections and shunting, no exception to the operation of the signal system was taken.							

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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705	1/14/2003	CN	AB				113N Trk Relay	Broadview, IL	N
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Human Error - Field Wiring Error, Inadequate Service Testing

A westbound train, WC 349 on main track #2 reported signal 11.3W CLEAR and signal 13.3W RESTRICTED. Upon investigation, the 11.3W westbound approach signal displayed CLEAR when it should have displayed APPROACH. The transmit battery wire was transposed on the 113 Normal Track Relay which was energized when it should have been deenergized, and the 113 Reverse Track was deenergized when it should have been energized. Prior to the incident a construction gang was replacing track wires at Des Plaines Ave. on the Freeport Subdivision near Broadview, IL. After replacing the track wires, the crossing was tested, however the foreman failed to test the wayside signal system, which consisted of back to back BH relays and line circuits.

707	2/21/2003	CN		Manual		STCBCHI1	33 Crossover	Brighton Park, IL	Y
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Human Error - Improper Circuit Jumper in Place

On February 21 at approximately 1730 hours eastward train STCBCHI1 derailed 2 cars at #33 switch at 33 crossover at Corwith Interlocker. The route given displaying a permissive signal at 35 signal was 33 reverse, 39 normal, and 43 reverse to Santa Fe Yard. A second incident had also occurred with the BNSF local reporting that after proceeding past a permissive signal switch 75 was lined reverse, against the established route. At the time of the derailment being reported, the Operator, was verifying in the field that 75 switch was lined reverse.

Signal Supervisor [redacted] contacted Manager [redacted] of the situation and the interlocker was taken out of service. At approximately 1930 hours [redacted] and Field Engineer [redacted] arrived to investigate the incident. It was confirmed in the tower that levers 33, 35, 43, and 41 were pulled, which is correct for signal 35 to display a signal to proceed. Upon inspection of the derailment, it was determined that the #33 switch of the 33 crossover had moved from the reverse position to a position one inch from normal, while the other end of the crossover was still lined reverse. It was also discovered that [redacted] and the Corwith Maintainer were replacing a polar relay for switch 34 while trains STCHCHI1 and the BNSF local were moving across the interlocker. The relay change out started at approximately 16:30 hours and was completed at approximately 1700 hours. While the relay was pulled the Santa Fe main breaker (140VDC), which supplies control battery to the switch machines, was tripped open. At approximately 17:30 hours the main breaker had been reset. At this moment the Supervisor stated he had heard a couple of clicks for the control machine in the tower and within five minutes STCBCHI1 reports they had derailed at #33 switch at the crossover.

Further investigation of the interlocker included resistance testing on all cables, ground tests, and verification of all routes. No exceptions were found during these tests. The incident could not be reproduced. Cause was determined to be human interference during the relay change out.

[Note from editor: The above description is unclear as to exactly how the human interference could have occurred (jumper, etc.). Since it doesn't mention errors in circuit design or field wiring, this false proceed is being charged to Human Error - Improper Circuit Jumper in Place.]

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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717	9/15/2003	CN				NS 278	21L Signal	Gilman, IL	N
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Cause

Narrative

Phantom Signal - Due to Sun Angle

NS278 crew reported at approximately 1840 during sunset that 21L signal B head was Yellow. NS crew was on the Gilman Sub at 23L signal going to the Chicago Sub. A southbound IC M34241 was also going across the interlocking on the main. The dispatcher questioned the crew if it was the sun but they said it wasn't. The dispatcher told the Maintainer that 21L signal was not called for.

The maintainer, supervisor and inspector meggered the signal cables and tested for grounds. The relays were also tested. The interlocker was placed in remote control to do a reenactment and test the signal. The approach to 23L signal was shunted and remained shunted during the suration of the tests, because this is where the NS train was located. 1R and 13R signals were lined and 18T was shunted north then south of the diamond, 21L signal remained Red. We also shunted 21RT and lined 21L signal to verify the call on (B head Yellow) and got the signal indication. 21L signal was cleared and shunted 18T, 21L signal went to Red. Gilman Interlocker Harmon Logic Controller was downloaded. We verified that 21L signal was not called for or true.

The next evening during sunset the supervisor and maintainer went and inspected the signal. The weather conditions were similar to the day before. It appeared to be lit. We climbed up the signal mast and opened up the door and verified the bulb was not lit. Within 30 minutes it no longer appeared to look lit. A light diffuser was ordered for this signal to remedy the problem.

718	9/17/2003	TRRA		Remote		NS 115D817	Interlocking Signal #54	SH Interlocking, Venice, IL	N
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Human Error - Signal Circuit Design Error, Inadequate Service-Testing

At 11:18am, September 17, 2003, interlocking signal #54 displayed a less restrictive signal than intended for movement of Norfolk Southern (NS) train 115D817. 115D817 was following Gateway Eastern (GWE) train GWE17 southward on the northbound main track between SH Interlocking and CP Junction Interlocking. At 11:24am, NS train 115D817 reported the GWE train ahead in the same block and the improper signal indication observed on interlocking signal #54. The NS train 115D817 was able to stop short of the GWE17 train without incident.

Signal #54 was taken out of service immediately by the TRRA Merchants Dispatcher. Investigation of incident by Signal Department revealed that signal #54 had displayed an APPROACH, Rule 285B (Yellow over Red) for the following movement of the NS 115D817. The correct aspect should have been RESTRICTING, Rule 290B (Red over Yellow).

The cause of failure was determined to be an error in the signal control circuit design that was not detected during in-service testing. Immediate corrective action was to disable the "following stick relay" (58FSR) which would normally allow a RESTRICTING signal only for a following train movement into an occupied block. Signal #54 was then retested and restored to service at 1:00 pm on same date. The following stick circuit will remain disabled until the signal control circuit is modified and retested.

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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721	1/15/2004	CN	CTC				HT Switch 40.08 NWP	N. Mundelein, IL	N
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Human Error - Field Wiring Error, Inadequate Service Testing

At 11:30AM on 01-15-04 a defect was found in the signal system a N. Mundelein, IL on the Waukesha Sub. The South Dispatcher [redacted] train to hand operate the hand throw switch at MP 40.08 (near Maple St.) on the #1 main. When train operated HT switch Dispatcher noticed a track light on the #2 main. Signal Dept. was notified and HT switch was spiked and 20 MPH HER was applied.

After investigation it was discovered that the 40.08 NWP was wired into wrong MicroTrax unit at N. Mundelein/ 40.08 NWP switch is on the #1 main, however, it was wired into the #2 coded track unit in error. This 40.08 NWP should have been moved from the #2 unit to the #1 unit during the 11-09-03 cutover, when the N. Mundelein's power turnout was converted from a RH to LH turnout.

Corrective Action:

1. The NWP was wired into the correct track and tested on 1-15-04. All other HT switches in cutover area were also tested. 40.08 was then returned to service.
2. The CN is currently reviewing its testing procedures to prevent any future incidents.

724	3/3/2004	CN		Manual		WC 3012	Interface Circuit w. METRA	Forest Park, IL	N
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Human Error - Signal Circuit Design Error, Inadequate Service-Testing

On March 3, 2004 at approximately 1515 hours, L50191-03, northbound on single track out of Forest Park (Junction 11) off #2 Main Track reported a CLEAR signal at the approach (CM013.9), then a Red signal at B-12 while E24961-02 was coming off the IHB connection and occupying B-12.

Upon arrival of Signal Supervisor, Testman and Maintainer, download of ElectroCode 4H was obtained and confirmed indications as reported. Check for grounds proved negative. False proceed was reproduced under reported conditions. Circuit plans were reviewed and a defect was found in the Code 4 reference in the ElectroCode 4H. This defect allowed Code 4 to be added to Code 2 already present when the IHB is lined for the WC Main through a contact of the 10LDPPR, sending a Code 7 to the approach signal. To correct this situation, a front contact of the 10LAHPPR was added to the W-C4 reference.

After changes were made to the wiring, all signals involved were tested for proper operation and the approach signal was returned to service.

No. of Reports Shown in this Listing: **68**