



IronWood Technologies

Railroad Accident Reconstruction

Federal Railroad Administration

False Proceed Signal Database

January 1, 1995 through May 3, 2004

All Reports - State of Mississippi

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

34	12/4/1995	NS		Automatic		Unknown ICG Engi	Design	Hattiesburg, MS	N
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Human Error - Signal Circuit Design Error, Inadequate Service-Testing

At approximately 1:00 AM, northbound Train No. 294, Engine NS 6651, stopped short of its track warrant limits at the approach signal to Hattiesburg automatic interlocking. Train 294 was held to allow an ICG switching move to be completed in the vicinity of the interlocking. As the ICG switching movement progressed, it moved out onto the NS main track through a switch facing away from the interlocking. This was done under track warrant authority by NS dispatcher at Birmingham, and when the switch was reversed by ICG, a stick circuit was set which would normally have been used to allow a key stand clearing for ICG movement across the interlocking. However, the stick circuit was held up by Train 294's presence on the approach circuit at the time the stick was set. Once Train 294 received a track warrant to proceed and observed they had a CLEAR indication at the approach signal, the engineer started movement toward the interlocking. Meanwhile, the ICG switching movement that had completed their switching came up to the interlocking on their track and checked the indication on their key stand. Because the stick circuit was still up, the ICG crew had a CLEAR indication that meant that they could activate the pushbutton. When the button was pushed the ICG got a signal to proceed across the interlocking, which they did. When the ICG move occupied the "OS" it illuminated a holding signal for Train 294, and that train again stopped until the ICG movement cleared the interlocking.

The design problem that permitted this scenario was corrected, the signals were checked out and returned to service.

56	2/11/1996	BNSF	CTC			Train #01-127-11	Signal 116R	South Amory, MS	N
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Scenario Reenacted, Unable to Duplicate, No Defects Found

Northbound BNSF 01-127-11 stated that northbound signal 116R, South Amory displayed a Green over Red aspect. The next signal, 124RA, North Amory displayed a Red aspect. At this time, North Amory was lined for a southbound move with a reverse switch.

Signal Supervisor and Maintainer investigated. Incident could not be duplicated. Signal operation center log indicated no exceptions.

Operational tests and inspections were performed with no exceptions noted.

A recorder was installed at South Amory to monitor signal operation.

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593	1/11/1998	KCS	CTC			NS 314 A7	A04XTR	Meridian, MS	N
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Failed Equipment or Device - Relay

At 02:30 hrs on 1/11/98 Norfolk Southern's NS 314 A7 was traveling north on the NS northbound main at Meridian, MS and reported they received a Yellow aspect at signal 04, when they reached the crossover they realized that #6 Switch was lined against their move.

Please see attached memo from Signal Supervisor for details of investigation, the problem found and the preventative action taken. Also attached is a track diagram of this location.

195	5/25/1998	NS	AB			9057	Design	Hattiesburg, MS	N
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Human Error - Signal Circuit Design Error, Inadequate Service-Testing

At approximately 4:30 AM train No. 314 reported a CLEAR signal northward at Hattiesburg Interlocking and a STOP indication at the next signal, N.E. Hattiesburg.

No. 314 had left part of its train on the main south of the interlocking and proceeded on signal indication north of the N.E. Hattiesburg. They then reversed the switch and made a reverse move into Hattiesburg Yard to make a pick up. After returning to the main and restoring the switch, No. 314 moved southward with the proper Red signals at N.E. Hattiesburg and Hattiesburg Interlocking to couple to their train. They then proceeded north with a CLEAR at the interlocking and found a STOP at the N.E. Hattiesburg.

Investigation revealed that a southbound movement at N.E. Hattiesburg when cars were occupying the track south of Hattiesburg Interlocking enabled a circuit path at N.E. Hattiesburg permitting a CLEAR code back to the interlocking while a STOP was displayed at the N.E. Hattiesburg. The design was corrected and the signals were thoroughly tested.

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198	9/29/1998	NS	AB			UP-9247, NS-8736	Connection	Millard, MS	N
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Failed Equipment or Device - Electrocode Module

At approximately 5:45 PM, train No. 131 was traveling southbound from Meridian, MS to New Orleans when the crew observed a CLEAR indication on signal 134.3. The crew knew they should have had an APPROACH indication because southbound train No. M30 was stopped in the second block ahead. They were aware of M30's location on account of radio conversation.

Signal personnel were called to investigate. The signals in this territory are controlled by Electrocode II electronic track circuits. Though the problem was not duplicated in the field, they did witness a more restrictive indication on the 134.3 signal under similar conditions. The code generator responsible for the 134.3 signal indication (at the next signal south) was found to be causing the false restricting when it was purposely vibrated in its socket. This code generator was never seen to cause a false clear in the field, even when vibrated. However, when the unit was bench tested at Birmingham with a code-two (APPROACH) continuously generated, it was able to get a receiver to decode a code-four (CLEAR) for about 9.5 seconds by wiggling the card. The unit was returned to the manufacturer for further analysis and their recommendations.

The manufacturer stated they were able to duplicate the problem and traced it to mechanical loosening of the connection at one end of a capacitor. This fault was found to only upgrade an APPROACH code to a CLEAR code or down grade to RESTRICTING, and then only sporadically and momentarily when the card was being vibrated. It would not upgrade from a red. It was not determined what could have been vibrating the case where the card unit was housed. Recommendations are to be provided by the manufacturer.

726	3/27/2004	CN	CTC			Unk	N/A	Crenshaw, MS	N
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Scenario Reenacted, Unable to Duplicate, No Defects Found

At approximately 1730 crew of southbound train G8869125 reported an alleged false proceed at signal 44.1 on the Yazoo Subdivision. This signal is the approach signal for southward movement to North Crenshaw control point located at MP 46.8. This is ATC territory, authorized speed 79 mph for passenger, 60 mph for freight trains.

Train crew advised they had received a Green over Red (CLEAR) indication for their movement and observed a Red over Yellow (DIVERGING APPROACH) at the North Crenshaw absolute signal, MP 46.8, for southward movement to the siding track. Upon arrival at the location, the Signal Inspector, Signal Supervisor and Manager S&C observed signal 44.1 to be displaying a Yellow over Red indication. The dispatcher was contacted, who advised the southbound absolute signal 46.8 was at STOP. Through coordination with the dispatcher, the investigative team operated the control point through all possible scenarios. In all cases, proper indications and code inputs were observed. All circuits at the location were then tested for grounds with an external battery source and were found to be free of grounds. ElectroLogic unit at the control point was then downloaded. This download indicated that as train G8869125 passed signal 44.1 with the switch at North Crenshaw in the reverse position, signal 44.1 was displaying a Yellow over Green (APPROACH DIVERGING) indication with absolute signal 46.8 displaying a Red over Yellow.

The investigation revealed no facts which would substantiate that the signal system was not operating as intended at the time of the alleged incident.

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			Cause						
			Narrative						

No. of Reports Shown in this Listing: **6**