



IronWood Technologies

Railroad Accident Reconstruction

Federal Railroad Administration

False Proceed Signal Database

January 1, 1995 through May 3, 2004

All Reports - Cause: Failed Equipment or Device - Electrocode Module

Report #	Date	Reporting Carrier	Block System	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
70	9/3/1996	BNSF	CTC			Q-CVLI1-02 Eng. 8	EC-4, 213A Module	Avard, OK	N
<p>At approximately 0720 hours on 9-3-96, train Q-CVLI1-02, engine 8534, traveling eastbound on the North track of the Panhandle Subdivision of the Oklahoma Division between Avard and Waynoka, Oklahoma observed intermediate CL signal 3382 pumping from Dark over Dark to Yellow over Yellow with a train in the block ahead. Supervisor of Signals and Signal Maintainer were called to investigate.</p> <p>The investigation revealed that the condition existed as follows, the signal would display a Yellow over Yellow aspect for 2 seconds then display a Dark over Dark for 40 seconds then repeat. Further investigation revealed a Bad Order Electrocode-4, 213A, Lamp Driver Module and a burst signal bulb in the Top Green position. Suspect a lightning strike close to the signal account heavy storms in the area.</p> <p>The 213A module and bulb were replaced and a complete operational test performed. The system was left operating as intended.</p>									
157	6/8/1997	UP	CTC			UP3924	Electrocode Unit	Valentine, AR	N
<p>On June 8, 1997, at 4:30 AM CDST on the Hoxie Subdivision, southbound MCHHO-06 on track 1 observed southbound Signal 3343 at MP 334.5 Green with the next southbound Signal 3367 at MP 336.7 Red.</p> <p>An investigation revealed that, with the block occupied south of southbound Signal 3367, the Electrocode unit at 3367 was transmitting a Code 4 north to southbound Signal 3343 instead of a Code 2.</p> <p>The Electrocode unit at 3367 was replaced. The signal system was restored to proper operation, and all applicable tests were performed.</p>									
201	1/10/1998	UP	AB			UP 6060	AK Card in Electrocode Unit	5 Miles South of Ogden Jct., TX	N
<p>On January 10, 1998, at 06:00 CST, on the Austin Subdivision, south of Ogden Jct., Texas, northbound MLDLI 09, on track 2, observed northbound signal at Mile Post 241.6 Green with the next northbound signal at Mile Post 238.4 Red and the track north of Mile Pole 238.4 occupied.</p> <p>An investigation revealed a defective 4K card in the Electrocode unit at Mile Post 241.6.</p> <p>The signal system was restored to proper operation, and all applicable tests were performed.</p>									

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198	9/29/1998	NS	AB			UP-9247, NS-8736	Connection	Millard, MS	N
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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.

232	10/3/2000	BNSF	CTC			BNSF 9819, C-BTM	EC II Unit	Humboldt, NE	N
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Signal cable had been damaged by a backhoe at E. Humboldt, NE, MP 135.65. In the process of repairing the cable the train crew reported that they observed the eastbound signal go from an APPROACH aspect to a CLEAR aspect at W. Humboldt, MP 137.3 for 5-10 seconds then drop back to the APPROACH signal. Signal personnel determined that a portable radio being used for the testing of E. Humboldt caused the codes being transmitted to W. Humboldt from the Electrocode II box to upgrade. The radio was a Motorola HT 600, 5 watt.

Corrective Action Pending: Harmon/GE Harris Corp. has been notified in regards to the failure.

293	7/29/2001	BNSF	CTC			SCWSLBP1 28	CL-5483	Amarillo, TX	N
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WB train SCWSLBP1 28, on MT 1 reported westbound signal 5483 MT 2 Green with eastbound train, HBARKCK1 28, on the eastbound approach to signal 5484/5483 on MT2.

Upon arrival signal 5483 was observed to be dark. A shunt was placed on the eastbound approach to signal 5484/5483 on MT2 signal 5484 was Yellow and signal 5483 was dark/dark. 40 seconds later signal 5483 went Dark/Green for @ 3 seconds then went back to dark/dark. This scenario repeated itself every 40 seconds. The 213 module in the Electrocode 4 cabinet had been damaged by lightning storms that had been in the area was changed and required tests performed. The signal system was then returned to service working as intended.

Report #	Date	Reporting Carrier	Block System Narrative	Interlocking	Auto. Systems	Loco or Train No.	Device that Failed	Location	Collision or Derailment?
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332	11/28/2001	UP	AB			BNSF 4742	Electrocode II Unit	Palestine, AR	N
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On November 28, 2001 at 17:22 CDT, at Palestine, AR on the Brinkley Subdivision, westbound QMECVJ/28, on the main track at MP 51.90, reported that the westbound signal at MP 51.90 was Flashing Yellow, and the next westbound signal at MP 51.00 was Red.

An investigation revealed that the 5K module in the Electrocode II unit at the westbound signal at MP 51.90 was intermittently failing causing the HD relay to pump causing the signal to display a Flashing Yellow.

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

336	4/30/2002	BNSF	CTC			BNSF 4958	ECII-5K Module	Moorcroft, Wyoming	N
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At approximately 0937 AM MDT eastbound VTACMEM827M-BNSF 1117 reported to dispatcher that intermediate signal 574.6 dropped from APPROACH MEDIUM Flashing Yellow to Red, while following a eastbound. BNSF 1117, after stopping and reporting to dispatcher, proceeded at restrictive speed to intermediate 572.8 which displayed Flashing Yellow, APPROACH MEDIUM and continued eastbound to Moorcroft.

At approximately 1000 AM MDT eastbound XVAWHON927A - BNSF 4958 with 3 units no loads 107 empties 3300 tons, no hardous cars, following the BNSF 1117 reported intermediate signal 574.6 at Flashing Yellow, APPROACH MEDIUM, and as they approached intermediate signal 572.8 which was Yellow, APPROACH, at a distance of approximately 1300 feet it began flashing Yellow at a rate of 25-27 flashes per minute. BNSF 4958 passed intermediate 572.8 at 27 mph and stopped at intermediate 570.8 which was Red, with the BNSF 1117 in advance at approximately 20 car lengths. Crew reported incident to dispatcher at 1005 AM. Dispatcher did not hold the BNSF 1117 nor the BNSF 4958.

Maintainer was called to investigate dropped signal at intermediate 574.6 at 943 AM, Supervisor Signal and Inspector were called at 1010 AM and arrived at approximately 1030 AM. Maintainer arrived at intermediate 574.6 at 1020 AM and Supervisor and Inspector arrived at intermediate 572.8 at 1030 AM.

Signal employees reenacted the train movements of the BNSF 1117 and the BNSF 4958 and determined at intermediate signal 572.8 the Electrocode IIC cabinet was outputting from 3 VDC to 13.4 VDC to the HER relay at a rate of 25-27 fluctuations per minute, while receiving a Code 2 from the intermediate at 570.8. Both the Supervisor and Inspector observed the HER relay releasing and picking, and observed signal 572.8 flashing in correspondence with the HER relay, at a rate of 25-27 flashes per minute. Signal displayed a normal Yellow with 9.0 VDC on the GEM bulb, then a dim Yellow with Approximately 3.9 VDC on the bulb during the release and pickup of the HER relay and did not display Red. 5K Code 2 decoder module was replaced and signal system tested for proper operation.

Suspected bad order 5K module will be sent to manufacturer for inspection and disposition.

Incident occurred on 4 aspect CTC territory with Electrocode IIC coded track circuits, Safetran colorlight signals, and WABCO PN150 relays.

No. of Reports Shown in this Listing: **8**