




DCA16MR011
NJT
Collision of Train 1614
Hoboken Station
Hoboken, NJ
September 29, 2016

Attachment 5
Cab Car 6036 Alerter Test Report

		<i>Alerter Indicating Panel and Controller Functionality Testing Report</i>
Report Type:		
Subject:		Cab Car 6036
Location:		S&I Shop
Date:		10/08/2016

Background:


On October 8th 2016, the Alerter Indicator Panel and the Alerter Indicator Control Unit (AICU) were removed from the 6036 and installed on a fully functional cab car that was coupled to, and connected electrically to, the consist that was involved in the Hoboken Incident. The Alerter Indicator Panel and Control Unit work in tandem to keep the Engineer alert during the course of train operation. This is accomplished by periodically requiring the engineer to acknowledge an audible and visual alarm displayed on the Alerter Indicator Panel. If the alarm remains unacknowledged, the AICU will initiate a full service brake application.

In addition to displaying the audible and visual alarm, the Alerter Indicator Panel also displays other essential information to the engineer such as: End Door/Center Door Closed, Traction Cut-Out, Sanding, Wheel Slip, HEP On, Alarm, Epic Fault, HEP Ground, Pantograph Up, Pantograph Down, Handbrake, Power Cut-Out Switch (PCS), and ATC Fault.

The following testing procedure was carried out in order to determine if the Alerter Indicator Panel and Control Unit were operating as originally designed. Representatives from the NTSB, FRA, NJT Technical Services Department, and NJT Mechanical Department were present during testing.

Test procedure performed to qualify Alerter Indicator Control Unit and Panel on fully functional Cab Car:

- 1.) Installed Alerter Indicator Panel and Control Unit onto functional cab car.
- 2.) Activated the cab by placing the reverser into the forward position.
- 3.) Placed Alerter Test Switch into the TEST position in order to ensure that all indicating LED's were functional.
- 4.) Placed Alerter Test Switch into the NIGHT position in order to ensure that all indicating LED's dimmed to half intensity as designed.
- 5.) Placed Epic Brake Stand Handle into Lap and then Cut-In the Brake Stand. Ensured that the PCS light extinguished.
- 6.) Activated the following cab control functions and ensured that the corresponding lights illuminated: Pantograph Up, Pantograph Down, Sanding, and Hand Brake.
- 7.) Placed Epic Brake Stand Handle into the Release position.
- 8.) Watched to ensure that the audible and visual alarms cycled in 20 sec increments.
- 9.) Acknowledged audible and visual alarm with: Acknowledge Push Button, Acknowledge Foot Pedal, Bell, Epic Brake Application.

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- 10.) Allowed the Alerter to fully cycle and penalize. Ensured that the brakes went into a full service application.
- 11.) Placed Epic Brake Stand into Lap.
- 12.) Acknowledged Alerter Penalty.
- 13.) Placed Epic Brake Handle into Release position in order to recover brakes.
- 14.) Reapplied brakes and cutout Reverser and Epic Brake Stand.
- 15.) Conclusion of Test

Conclusion

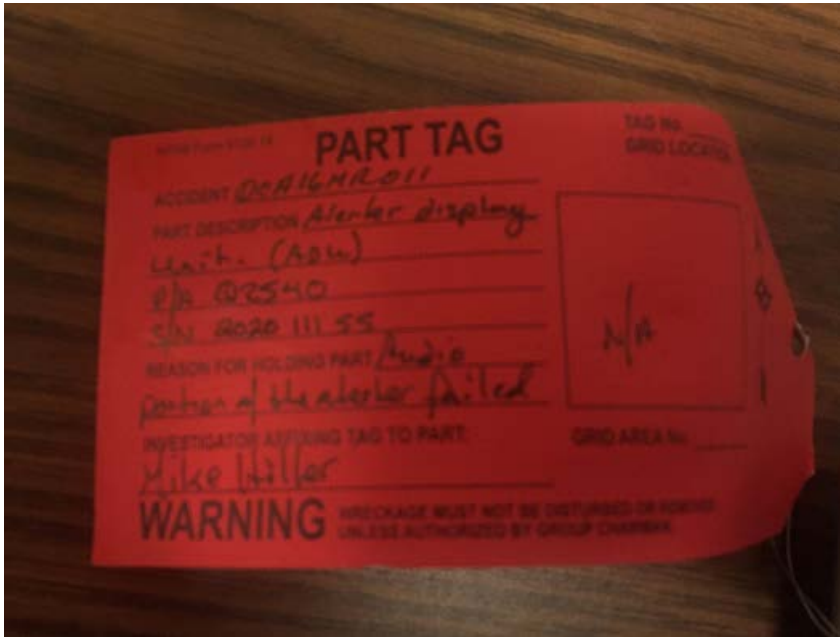
During the course of testing it was discovered that the audible alarm located inside of the Alerter Indicator Panel was non-functional. To verify this, the Alerter Indicator Panel from the 6036 was replaced with a known functional panel and paired with the Alerter Indicator Control Unit from the 6036. The test was then repeated. This time the audible alarm was clearly present. From this it was determined that the fault was with the Alerter Indicator Panel and not the Control Unit.

It should be noted that the Alerter system passed all other tests and was still able to initiate a Penalty Brake Application even though the audible alarm was faulty. The fault was noted by the NTSB, FRA, and NJT, and it was agreed that further investigation into the panel was needed.


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6036 Alerter Indicator Panel

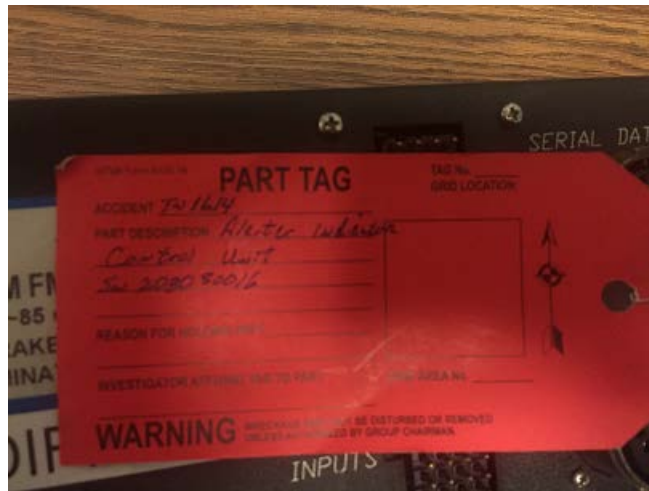


Alerter Indicator ID Tag


		Alerter Indicating Panel and Controller Functionality Testing Report
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Alerter Indicator Control Unit (AICU)



Alerter Indicator Control Unit ID Tag

 Technical Services		<i>Alerter Indicating Panel and Controller Functionality Testing Report</i>
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