



U.S. Department
of Transportation

**Federal Railroad
Administration**

Memorandum

Date: June 15, 1998

Reply to Att. of: MP&E 98-38

Subject: Passenger Train Short Looping and Head End Power Enforcement Policy

From: Edward R. English
Director, Office of Safety Assurance and Compliance

To: Regional Administrators, Deputy Regional Administrators,
Motive Power & Equipment Specialists and Inspectors

Passenger train short looping is a practice used by the National Passenger Railroad Corporation (Amtrak) to avoid train delays due to certain head end power (HEP) conduction problems.

Short looping is accomplished by a short jumper cable that electronically connects the two adjacent HEP connectors located on one side of a passenger car or locomotive. The consequences of short looping are:

1. It removes train line complete (TLC) detection from all inter-car jumper cables located downstream from the short loop that are on the same side of the train as the short loop;
2. It requires inter-car jumper cables down stream from the short loop, but on the opposite side of the train as the short loop, to carry double the current;
3. It requires the under car HEP distribution cables of the first car after the short loop to carry double the current.

Short loping causes the inter-car jumper connections downstream from and on the same side of the train as the short loop to be hot and not to be protected by the TLC circuit. This means that there is a potential danger of arcing damage and injury in the event of disconnection of a jumper cable at one of these downstream locations with the HEP still on-line.

Furthermore, the TLC relay should not be bypassed. FRA views the 74 volt control circuit, which includes the TLC relay, as a safety circuit on Amtrak trains equipped with HEP. If the TLC relay is bypassed, it would be considered a noncomplying condition

under 49 CFR 229.7(a) Prohibited Acts, and a violation should be submitted. FRA would accept bypassing the TLC relay enroute, based only upon the necessity to restore the 480 volt circuit for train heating, lighting and/or air conditioning to protect the health and well being of passengers until the train reached the next point where repairs could be made. Amtrak's current policy does not approve of bypassing the TLC relay under any circumstances.

After extensive discussions with the FRA, Amtrak established the following policy to minimize short looping and to mitigate the potential danger caused to short looping:

1. No work will be done on electrical cables between cars or any portion of the HEP system unless the HEP system is shutdown and secured;
2. When making up passenger trains in yards, short looping passenger trains is totally prohibited;
3. If the train loses head end power after leaving the yard, attempts will be made to restore the power without resorting to short looping;
4. If the train must be short looped to avoid a significant delay, the engineer and conductor will be notified in writing;
5. If a train is short looped, the repair points enroute will be notified and the problem will be repaired at the train's destination.

This policy developed by Amtrak represents a compromise necessary to allow Amtrak a chance to meet schedules without introducing an unacceptable safety risk.

MP&E Inspectors should be aware of this policy, should be alert for instances where Amtrak does not follow it, and should notify both Headquarters and Amtrak when the policy is not followed.

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