

TECHNICAL INSTRUCTION

TI 169

Issue 1

12/04/2012

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NETWORK RAIL - SIGNAL ENGINEERING

Halogen Lamps in Bombardier Fibre Optic Signals & Indicators

Relevant Standards

NR/SMS/SG15, NR/SMS/SG11 & NR/SMTH/ PART 4/ EL04

Purpose

This TI is being issued to address a failure mode associated with the type of lamp used in Bombardier fibre optic signals & indicators. This TI mandates a check of the lamp orientation during routine maintenance and when replacing lamps under SMT.

Scope

This TI applies to all Bombardier fibre optic signals & indicators that utilise the Philips 12V, 50W quartz halogen matrix signalling lamp.

Compliance requirements

On publication of this TI.

Background

A Wrong Side Failure occurred where it was possible to clear a route with no indication displayed by the theatre indicator. Investigation found that lamp proving was maintained even though the halogen lamp had failed. The filament had failed in such a way as to create a short circuit that permitted sufficient current flow to satisfy lamp proving.

Figure 1 shows how the filament failed creating the short circuit.

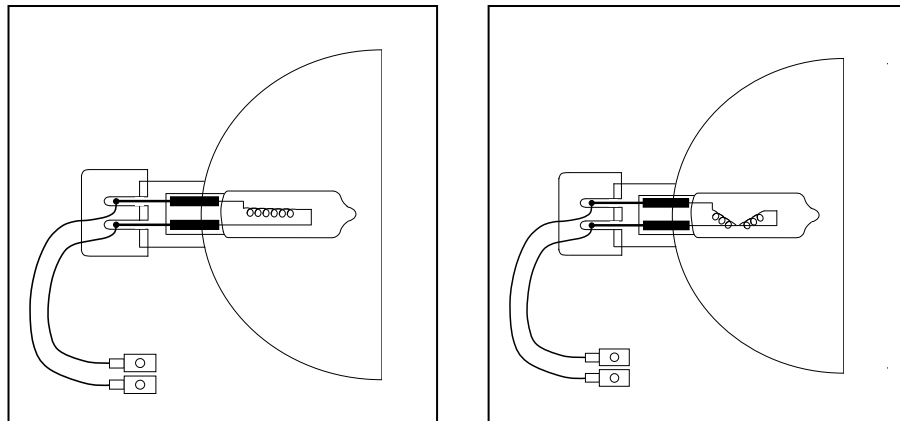


Figure 1 – Intact & failed filament

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Documents

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This failure mode can be eliminated by paying careful attention to the orientation of the lamp when installing it. The lamps shall be installed so that the leads protrude from the bottom of the lamp assembly.



Figure 2 – Quartz Halogen Lamp Assembly

Action Required

When undertaking maintenance on Bombardier fibre optic signals and indicators [Check](#) that the replacement lamp is correctly installed.

A correctly installed lamp will have the wires protruding from the bottom of the lamp assembly

This requirement is applicable to the following SMS & SMTH items:

- [NR/SMS/SG15](#) - Route Indicators
- [NR/SMS/SG11](#) - Main Colour Light Signals with Filament Type Lamps
- [NR/SMTH/Part 04/EL04](#) - Replace a Filament Lamp

Staff to be Briefed

Role	Responsible for Briefing
Head of Asset Management [S&T]	Author
Route Asset Managers [Signalling]	Head of Asset Management [S&T]
Senior Commissioning Engineer	Author
Workforce Development Specialist	Author
Signal & Telecoms Maintenance Engineer	Route Asset Managers [Signalling]
Section Manager (Signals)	Signal & Telecoms Maintenance Engineer
Signal Technicians Signalling Technical Support Staff	Section Manager (Signals)
S&T Training Manager	Author

End