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Government of India  
Ministry of Railways  
Research, Designs &  
Standards Organization,  
LUCKNOW - 226011



No. EL/3.2.19/3-Phase

Date 30.01.2018

**Principal Chief Electrical Engineer,**

1. Central Railway, Mumbai CST-400 001.
2. Northern Railway, Baroda House, New Delhi-110001.
3. North Central Railway, Subedarganj, Allahabad- 211001
4. North Eastern Railway, Gorakhpur-273 001
5. Eastern Railway, Fairlie Place, Kolkata -700 001.
6. East Central Railway, Hazipur-844101.
7. East Coast Railway, Chandrashekharpur, Bhubaneswar-751016.
8. Southern Railway, Park Town, Chennai-600 003.
9. South Central Railway, Secunderabad-500 371.
10. South Eastern Railway, Garden Reach, Kolkata -700 043.
11. South East Central Railway, Bilaspur-495004
12. Western Railway, Churchgate, Mumbai-400 020.
13. West Central Railway, Jabalpur-482001.
14. Chittaranjan Locomotive Works, Chittaranjan-713331 (WB)

**Sub: Minutes of Meeting to discuss reliability related issues of E-70 Brake system of M/S.  
FTRTL held at RDSO Lucknow, on date 29.01.2018**

Zonal Railways reported non application of brake through A9 in service zone (Except emergency position) in E70 brake system of 3-phase electric locomotives. A meeting was held to discuss the reliability related issues of E-70 and chalk out action plan to eliminate such failures. In this regard please find enclosed minutes of meeting.

*30/01/2018*  
(Aseem Kumar)

For Director General/Elect

Encl: MOM (02 pages)

Copy to:

- Secretary (Electrical), Railway Board, Rail Bhawan, New Delhi-110001  
(Kind attn.: Shri A. K. Goswami, DEE/RS/RB) for kind information please.
- M/s. Faiveley Transport Rail Technologies India Limited, P.B. No. 69, Harita, HOSUR,  
Tamil Nadu- 635 109

*30/01/2018*  
(Aseem Kumar)

For Director General/Elect



**Minutes of Meeting to discuss the issue of Non application of brake through DBC(A9) in service zone of E70 Brake System of M/S. FTRTIL held at RDSO Lucknow, on date 29.01.2018**

**Members present:**

RDSO		Zonal Railways		M/s FTRTIL	
Name (Shri)	Designation	W Siddiqui	DEE/TRS/SRC/SER	V. Chandrasekar	VP Engg
O P Kesari	PEDSE	G M Chandekar	SEE/AQ/CR	P Chaudhary	DGM
Aseem Kumar	DSE	K Gautam	JE/ELS/LGD/SCR	Shivkumar S.	ED-Engg
Mahendra Pal	JE/Elect	N Santosh Kumar	JE/ELS/KZJ/SCR	S kali	Asst. Manager
		M Shankar	Tech/ELS/KZJ/SCR		

The issues discussed during meeting were as below:

**1. Non application of brake through DBC(A9) in service zone:**

SER flagged this issue of Non application of brake through DBC in service zone except emergency position in following locomotives. The cases with root cause analysis by OEM are listed below:

**1.1 Loco/31835/WAG9/SER/BNDM: Root cause Identification:**

- RL4 Relay physically damaged. Contacts intermittently making due to damage.

**1.2 Loco/30547/WAP7/SER/SRC: Root cause Identification:**

- Mother board of control card no. A17003 checked and noticed a strand of wire touching on nearer pin between point "221" and "224" shorting supply voltage from the Pot to Transducer. The Pot works between voltage 1.195 to 13.545 Vdc from Release to Emergency positions whereas the Transducer works from 0-7.25 Vdc for the pressure range 0-5 bar.

**1.3 Loco/30540/WAG9/SER/TATA: Failure Identification:**

- Failure reported ref. letter RS/TATA/T/3phase/95 dated 15-01-2018. FT representative attended the problem on 16th Jan'18 and replaced the control card.
- Control card G16013 is under investigation with M/s FTRTIL.

**1.4 From above cases it appears that soldering/wiring works of equipments in Electronic cards are poor. The quality needs improvements at M/s FTRTIL.**

**1.5 Action Plan: Field Check of all E70 brake panel in SER for any loose connection, break of strands in any cables on brake plane to be done by M/s FTRTIL. M/s FTRTIL should improve the quality of present supplier and also explore feasibility of developing other reputed suppliers of cards.**

*Handwritten signature*  
30/1/2018



- 1.6 When any sub vendor changed, the system OEM supplier may get approval from RDSO after checking the capability of sub vendor.

**2. Proposal to fail safe E70 system:**

M/s FTRTIL proposed the "System Operated Automatic Emergency Brake' (SOAEB) for E70 system to address the issue under para 1. In case when BP not dropped by A9 in service zone, then penalty brake will be activated through SOAEB. It was decided to provide SOAEB in one WAG9 type loco each at ELS/TATA and ELS/AQ for extensive field trial.

3. It was pointed out that resistance (R62) of control card (47 Ohm) as well as RL5 burnt due to down steam loco system components short circuiting, resulting in overheating. Instructions were given to use 6 amps MCB in place of 10 amps by RDSO. Since control card is very important for reliability of system, M/s FTRTIL is advised to evaluate the possibility of enhancing the rating of RL5 as well as R62 so that better factor of safety is available for the brake system.
4. It is advised that the entire component used in Brake Electronic cards (PS, Control, LPO & Blender card) should be MIL grade. M/s FTRTIL should use these for better reliability. They have to give details of MIL grade components used in E70.

**5. Issues raised by ELS/AQ:**

- **Availability of modified push rod for DBC:** ZRs reported air leakage from Auto Brake Controller (DBC or A9) during neutral position. M/s FTRTIL stated that they have redesigned Release valve spindle (Modified push rod) to address this problem. Modified pins were supplied to ELS/AQ-75nos., ELS/RPM-75nos., ELS/LGD-75 nos., & ELS/SRC-50nos as up to 24.01.2018.
- **AFI Gauges:** ZRs reported that field performances of gauge glass of Air Flow indicator have improved after certain modifications. The firms have incorporated modifications and consequent to that failures have also reduced. M/s FTRTIL is advised to include all the good quality suppliers of AFI gauge in addition to other approved sources to ensure wide vendor base as well as to create competitive environment in quality and price.

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30/01/2018