



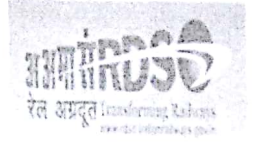
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Government of India - Ministry of Railways
Research, Designs & Standards Organization,
LUCKNOW - 226011



No. EL/ 2.2.9/10

Dated: 14/01/2019

Principal Chief Electrical Engineers,

1. Central Railway, Mumbai, CST-400 001.
2. East Central Railway, Hazipur-844101.
3. East Coast Railway, Chandrashekharpur, Bhubaneswar-751016.
4. Eastern Railway, Fairlie Place, Calcutta-700001.
5. North Central Railway, Subedarganj, Allahabad- 211033.
6. Northern Railway, Baroda House, New Delhi-110001.
7. North Eastern Railway, Gorakhpur-273 001.
8. South Central Railway, Secunderabad-500 071.
9. South East Central Railway, Bilaspur-495004.
10. South Eastern Railway, Garden Reach, Calcutta-700 043.
11. Southern Railway, Park Town, Chennai-600 003.
12. West Central Railway, Jabalpur-482001.
13. Western Railway, Church gate, Mumbai-400 020.
14. Chittaranjan Locomotive Works, Chittaranjan, Burdwan-713 331

Sub: Minutes of Meeting for Performance review meeting of ESMON held at RDSO on 09/01/2019 with OEMs of ESMON & Railways.

Ref: This office letter of even no. dated 20.12.2018.

Reference above, find enclosed herewith the copy of subject Minutes of Meeting for your information & further necessary action, please.



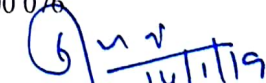
(Sudhir Ranjan)

Encl: As above

for Director General Std. /Electrical

Copy to:

- (i) Secretary (Electrical), Railway Board, Rail Bhavan, New Delhi-110001
- (ii) M/s Autometers Alliance limited, C-63, Sector-57 Noida-200 307
- (iii) M/s Laxven Systems, Plot No. 188/A, Lane-1, Phase-II, Sector-III, IDA Cherlapally, Hyderabad-500 051
- (iv) M/s Medha Servo Drives Ltd., P4/5-8, I.D.A. Nacharam, Hyderabad-500 076



(Sudhir Ranjan)

Encl: As above

for Director General Std. /Electrical

**Minutes of meeting for Performance Review Meeting of ESMON at
RDSO on 09/01/2019 with OEMs of ESMON & Railways**

Members Present

RDSO

(S/Shri)

1. Sudhir Ranjan, EDSE(System)
2. Arvind Pandey, DDSE(System)
3. Girish Meena, SSE(System)

Railways

(S/Shri/Smt.)

1. Muralikrishna P., ADEE/RS/ELS/RPM/SR
2. A. Koteswara Rao, ADEE/ELS/LGD/SCR
3. Madhuri Chauhan, SSE/ELS/AQ/CR
4. Jaivinder, SSE/ELS/SRE/NR
5. Manish Kumar, SSE/ELS/GZB/NR
6. Sushil Kumar, SSE/ELS/LDH/NR
7. Devendra Kadve, Technician/ELS/AQ/CR

FIRMS

(S/Shri)

1. R.K. Singhal, M/s AAL
2. D.K. Maharana, M/s AAL
3. Ankur Tiwari, M/s AAL
4. Sumit Wahi, M/s AAL
5. K.N. Anjaneyulu, M/s Laxven
6. Rammilan Nishal, M/s Medha
7. P. Venu, M/s Medha
8. J.P. Sharma, M/s Medha

In line with MOM dated 28.08.2018, a meeting was convened at RDSO on 09.01.2019 to discuss the performance of ESMON & compliance of decisions taken in said meeting on 28.08.2018, and other related issues.

The brief summary of discussions is as under:-

At the outset, EDSE (System) welcomed all the members for attending the meeting. EDSE (System) requested Railways to furnish their views on the performance data of ESMON of various make in their Railways. OEMs were requested to furnish their action plan to improve the reliability of their make of ESMON.

1. RDSO presented the population & failure statistics of various make of ESMONs. As per failure data, the major failures were of Card failures, PG failures & Stepper Motor failures which were contributing 65-70% of total failures.

2. Discussion on failures of M/s AAL make ESMON

- 2.1 M/s AAL stated that the 80% of failure reported by Railways are for the units which have completed their codal life of 10 years.
- 2.2 M/s AAL stated that most of the card failures are of CPU card failures which are due to non-replacement of battery in 3 years & non-uploading of modified firmware. M/s AAL informed that firmware has been modified in 279 units & 268 units are yet to be modified by sheds. The firmware in balance units shall be modified by end of Feb'19. Railways stated that the CPU card failures have not been observed after uploading of modified firmware.
- 2.3 Railways stated that M/s AAL has yet not submitted the maintenance manual for TELPRO-EL (Metallic) model of ESMON in some sheds. M/s AAL confirmed that they will provide the maintenance manual to concerned sheds within a week time.
- 2.4 NR raised the issue of testing of healthiness of speed sensors. M/s AAL stated that the Railways may depute the personnel at their premises for

the purpose & Railways may develop the test bench accordingly for testing of sensors alone.

- 2.5 The problem of stepper motor is only in old models of M/s AAL ESMONs. Railway stated that the previous measures taken by M/s AAL to curb the failures of Stepper Motors i.e. use of current limiting adopter & lubrication of motor gears with soft grease during AOH are not able to curb the problem completely, sheds have informed that still few cases of failure of Stepper motors are taking place. M/s AAL stated that for reliable working of ESMON system, the stepper motor shall be replaced in IOH. However, Railways pointed out that firm should give details and reasons for its replacement since earlier no such condition was laid down by the firm.
- 2.6 The failures of CF cards are due to use of non-industrial grade. M/s AAL stated that the Railways shall procure & use industrial grade CF cards from authorized dealers. Railways were advised to ensure that only industrial grade CF cards are used while these are replaced in trip sheds/line.

3. Discussion on failures of M/s Laxven make ESMON

- 3.1 The person deputed for attending the meeting was from marketing department & was not aware of failures & action plan. As such, failures of M/s Laxven make ESMON could not be discussed. This is not acceptable. Intimation of meeting was given well in advance and firm should have sent competent representative(s).
- 3.2 CR raised the issue of compatibility of new models of ESMON with old models. M/s Laxven was advised to take necessary action for backward compatibility of their make of new model ESMON with old model ESMON.

4. Discussion on failures of M/s Medha make ESMON

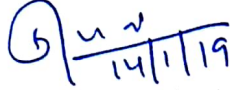
- 4.1 M/s Medha had the least FRPCPY (10%) among all the OEMs.
- 4.2 M/s Medha was advised to take further corrective measures to improve the reliability of Drive cards, PG & display (Mother Board) and shall bring down the FRPCPY in single digit i.e. less than 5%.

5. Discussion on compliance of decisions taken during MOM dated 28.08.2018

- 5.1 Railways shall ensure timely replacement of battery in M/s AAL make ESMONs to avoid the failures of CPU cards.
- 5.2 Railways shall confirm the completion of uploading of modified firmware in M/s AAL make ESMON by end of Feb'2019. Firm has already supplied the programming kit & firmware to Railways for the purpose. In case of any problem in uploading of modified firmware, Railways shall contact M/s AAL under intimation to this office.
- 5.3 M/s AAL stated that to curb the failures of Power Supply Card, Railways shall ensure the replacement of Capacitors in Power Supply Cards which are 6 years old.
- 5.4 Firms stated that the Railways are not following the Railway Board's letter no. 98/Elect(G)/138/6 dated 29.05.06 for replacement of

unserviceable over aged ESMONs to improve the reliability of ESMONs. Railways are requested to strictly follow the aforesaid RB letter to improve the reliability of ESMONs.

- 5.5 Only M/s AAL has provided the chart for energy calibration to RDSO. Other OEMs are advised to furnish the same & point wise compliance to the last MOM within a week time.
6. To improve the reliability of ESMONs, RDSO is of opinion that Railways shall go for AMC of ESMON with respective OEMs as per SMI No. RDSO/2016/EL/SMI/0289(Rev.0) issued by RDSO to have effective & timely maintenance of ESMON.
7. OEMs stated that there is no segregation of warranty failures/out of warranty failures & over-aged failures instead Railways are reporting the combined failures leading to projection of high FRPCPY of their make of ESMON. To address the issue, RDSO suggested to have a standard failure reporting format for reporting of defects including warranty & out of warranty failures. The standard failure reporting will help in analysis more accurately. The failure reporting format was discussed & finalized with OEMS/Railways and enclosed for implementation by Railways.
8. The issue of taking speed inputs from TM speed sensors instead of Pulse Generator (PG) in 3-phase electric locos was discussed. The purpose of tapping speed signals from TM speed sensors is to eliminate the requirement of PG which will improve the reliability of ESMON by avoiding the failures of ESMONs caused due to PG defects. M/s Laxven has developed such system of ESMON wherein the speed inputs to ESMON have been taken from TM speed sensors. The scheme is under trial in one 3-phase loco based at ELS/LGD. M/s Laxven scheme for tapping the speed inputs from TM speed sensors was discussed & it was decided that other OEMs shall furnish their scheme to RDSO by end of Jan'19 for initiating further action regarding trials etc.
9. OEMs were advised to develop a regular mechanism for collecting the performance of their equipments by periodically visiting the sheds. Further, the feasibility of incorporating the retrieval of failure log through on line server may also be explored by OEMs.
10. It was decided that the next meeting shall be held on 12.04.2019 to review the compliance of decisions taken in this meeting. Further; it was decided that technical representative(s) dealing the subject shall be deputed by firms to attend the meeting.


(Sudhir Ranjan)
EDSE (System)

Encl.: As above

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Population data for ESMON

Firms model name	No. of equipment in service	No. of equipment failed within warranty	No. of equipment failed after warranty	Total no. of equipment failed	Failure rate(FRPCPY)
MRT 912					
MRT 915					
MRT 921					
MRT 922					
Telpro Z					
Telpro ZC					
Telpro EL					
Telpro ELC					
Telpro MTEL					
LAX E1					
LAX E2					
LAX E3					