

**सुनील कुमार**

प्रधान कार्यकारी निदेशक मानक विद्युत

**Sunil Kumar**

Principal Executive Director Stds. Electrical



सत्यमेव जयते

भारत सरकार – रेल मंत्रालय  
अनुसंधान अभिकल्प और मानक संगठन  
मानक नगर, लखनऊ – 226011

Government of India - Ministry of Railways  
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D.O.No.EL.8.5.10.1

Dt: 01.06.2021

प्रिय श्री जैन,

**Sub: PCDO for the month of May, 2021.**

**1.0 HIGHLIGHTS**

Nil

**2.0 RELIABILITY IMPROVEMENT**

- 2.1 M/s Yash Capacitors, Nasik was advised to submit the point wise action plan taken to improve the reliability of three phase electric locomotive Harmonic Filter Capacitor vide this office letter no. EL/11.5.5/21 dated 13.05.2021.
- 2.2 A virtual meeting was held between RDSO & M/s Schunk on 28.05.2021 regarding reliability issues of High Reach Pantograph & other issues.

**3.0 DEVELOPMENTAL ACTIVITIES**

- 3.1 Western Railway has been requested vide letter no. EL/3.1.35/17 (Siemens) dated 21.05.2021 to conduct Rating Performance, Adhesion and Signal Interference trial on loco no. 33062 WAG 9HC equipped with M/s Siemens make propulsion equipment.
- 3.2 CLW was requested to provide detailed plan/procedure to standardize the scheme for easy fitment of composite converter and Hotel Load Converter by Zonal Railways.
- 3.3 Design review documents of Traction and Aux. Converter for 25 kV AC microprocessor controlled IGBT based three phase propulsion for On Board MEMU of M/s TWL make has been scrutinized and comments informed to M/s Titagarh Wagon Limited through PS/EMU Dte. Vide note no. EL/11.5.5/1/OBMEMU/TWL dated 03.05.2021 & 07.05.2021.
- 3.4 Comments to Testing Dte. on draft report of rating, performance & adhesion trials of WAG9HH locomotive no. 90001 fitted with up gradation kit of M/s Medha has been sent vide note no. EL/3.1.35/4 dated 03.05.2021.
- 3.5 A letter to CLW with rating , performance, adhesion trial report of WAG9HH locomotive no. 90001 fitted with up gradation kit of M/s Medha has been sent vide letter EL/3.1.35/37 dated 12.05.2021.
- 3.6 The STR verification and capability assessment of M/s. Black Stone Terry Engg. Company regarding fresh registration of high reach pantograph has been conducted on 24.02.2021 and found capable of development of the item. Firm has been advised to submit Design document, Drawing & BOM vide letter no. EL/2.2.1/High Reach/Black stone dtd. 05.05.2021.
- 3.7 M/s. Sequoia application regarding high reach pantograph has been accepted for further processing. Officer nominated for capability assessment vide letter no. EL/2.2.1/High Reach/Sequoia dated 04.05.2021. Firm has requested to give two weeks time for completion of fabrication of jigs and fixtures before capacity assessment. Reply awaited.

- 3.8 Internal test report of M/s. ACCEL regarding high reach pantograph has been found in order. Firm has been advised to submit test protocol & schedule vide letter no. EL/2.2.1/High Reach/ACCEL dated. 04.05.2021.
- 3.9 Prototype test Scheme, Internal Test report & QAP of Computer/microprocessor controlled Air Brake System developed by M/s Hind Rectifiers Mumbai, submitted by firm. Same examined, deficiencies noticed & intimated to firm vide this office letter no. EL/3.2.19/3-Phase/Hind dated 25.05.2021.
- 3.10 Clearance for Regular cut in of CCB Brake System with re-mapped auxiliary manifold panel for 3-Phase Electric Locomotives was accorded to M/s Knorr-Bremse India Pvt. Ltd vide letter no. EL/3.2.19/3-Phase (CCB) dated 27.05.2021.
- 3.11 M/s Hind rectifiers Limited, vide their letter no. HRL/PSP/EoTT/15321 dated 15.03.2021, has submitted detail design documents and technical proposal for End of Train Telemetry (EoTT) as per RDSO's FRS/0025. Comments on design documents have been communicated vide letter no. EL/4.2.15/EoTT/HRL dated 04.05.2021.
- 3.12 M/s Lotus Wireless vide their email dated 16.04.2021 has submitted revised system design document No. LWT/RD/014/SDD/V1.1 dated 02.04.2021 for End of Train Telemetry (EoTT) has been scrutinized and comments on design documents has been communicated vide RDSO's letter no. EL/4.2.15/EoTT/Lotus dated 13.05.2021.
- 3.13 Communication Protocol for procurement & Development of End of Train Telemetry (EoTT) system on IR has been finalized and issued to all stake holders vide letter no. EL/4.2.15/EoTT dated 13.05.2021
- 3.14 Guidelines for Comprehensive Annual Maintenance Contract for End of Train Telemetry (EoTT) System has been prepared and issued in form of Schedule of Maintenance Instruction No. RDSO/2021/EL/SMI/0329 Rev '0' dated 21.05.2021 and circulated to all concerned vide RDSO's letter no. EL/4.2.15/EoTT dated 21.05.2021.
- 3.15 Type test & Routine test protocol for End of Train Telemetry (EoTT) System submitted by M/s PPS vide their letter No. dt. 26.05.2021 has been examined and observations were communicated vide letter No. EL/4.2.15/EoTT/PPS dated 31.05.2021. Firm has been requested to submit the revised Type & Routine test protocol.
- 3.16 Online application ID No. 1353 dated 11.02.2021 of M/s Vajra, Thrissur for fresh vendor registration for manufacturing and supply of Elastic Ring used in Three Phase Electric Locomotive has been scrutinized and observations/ comments/deficiencies have been communicated to firm vide letter no. EL/3.1.35/12 (Vajra) dated 10.05.2021.
- 3.17 Online application ID No. 1383 dated 25.02.2021 of M/s R S Technologies, Kolkata for fresh vendor registration for manufacturing and supply of Elastic Ring used in Three Phase Electric Locomotive has been scrutinized and observations/ comments/deficiencies have been communicated to firm vide letter no. EL/3.1.35/12 (RST) dated 11.05.2021.
- 3.18 CLW, SCR as well as firm (M/s Timken and M/s SKF) have advised to submit the progress for development of modified MSU for WAP-7/WAG-9 locomotive to ensure separate lubrication system of MSU bearing and Gear and Pinion being high viscosity lubricant to reduce their wear rate.

#### **4.0 SPECIFICATION/STR**

- 4.1 Final Specification No. RDSO/2021/EL/SPEC/0144 Rev '0' dated 11.05.2021 for "End of Train Telemetry (EoTT) system on IR" has been issued vide letter no. EL/4.2.15/EoTT dated 12.05.2021. Specification has also been uploaded on RDSO's website.

## **5.0 PROTOTYPE TESTING/QUALITY AUDIT**

- 5.1 Prototype inspection of M/s Medha, Hyderabad make TM type TME 49-35-4 for Under-Slung EMU/MEMU for 3 phase propulsion system has been carried out at firm premises from 04.04.2021 to 10.04.2021. Prototype clearance for fitment & field trial of above Traction motor has been communicated to PS & EMU Directorate vide note No. EL/3.2.182/Under-Slung EMU/MEMU/Medha dated 03.05.2021.

## **6.0 OTHER ITEMS**

- 6.1 Expression of Interest (EOI) has been published for third party Audit and Certification of the modification carried out in Software/Hardware of WAP5/WAP7 locos for safe operation in Push-Pull mode vide EOI letter no. EL/3.1.35/4 dated 06.05.2021.
- 6.2 Railway Board vide letter no. 2020/E&R/7(14)/5 dated 10.03.2021 has sought information pertaining to closure of contract and recovery of payment from M/s IAG Automation Private Limited, Panchkula. RDSO, vide letter no. 3.2.182(ED-Lab) dated 13.05.2021, has sent the information pertaining to sanction of closure of work "Setting up a State of Art Electrical Laboratory in RDSO.
- 6.3 PS & EMU Directorate vide note no. EL/1.3.16.7/On Board MEMU/CGL dated 05.11.2020 had forwarded the design documents of Traction Motor of 'onboard MEMU' submitted by M/s CG power. These documents have been examined & comments were communicated to PS & EMU Directorate vide note no. EL/3.2.182 /On Board MEMU /CGL dated 18.05.2021.
- 6.4 Test report of Main Air compressor motor (M/s CGL make) used in 20 sets EMU project of ICF with M/s BHEL electrics received vide note no. EL/1.3.16.7/3-phase AC EMU/ICF/BHEL, dated 25.02.2021 has been scrutinized & comments on same has been given to Director/MRVC vide this office note no. EL/3.2.176/3, dated 06.05.2021.
- 6.5 Test report of Main Air compressor motor (M/s CGL make) used in 104 sets On Board 3-phase MEMU project of ICF with M/s BHEL electrics received vide note no. EL/1.3.16.7/3-phase MEMU/ICF/BHEL, dated 24.02.2021 & 31.03.2021 has been scrutinized & comments on same has been given to Director/MRVC vide this office note no. EL/3.2.176/3, dated 06.05.2021.
- 6.6 The documents of EPDM cable Transit System for 25kV AC On-board MEMU of M/s Titagarh Wagons Limited received vide PS & EMU Dte. Note no. EL/1.3.16.6/TWL/MEMU, dated 01.02.2021, have been scrutinized & found generally in order. Comments on same have been given to PS & EMU Dte. vide this office note no. EL/2.2.4/EPDM/3-phase EMU/MEMU, dated 24.05.2021.
- 6.7 The documents of EPDM cable Transit System for 25kV AC On-board EMU of M/s Titagarh Wagons Limited received vide PS & EMU Dte. Note no. EL/1.3.16.6/Titagarh, dated 01.02.2021, have been scrutinized & found generally in order. Comments on same have been given to PS & EMU Dte. vide this office note no. EL/2.2.4/EPDM/3-phase EMU/MEMU, dated 24.05.2021.
- 6.8 The documents of Inter Vehicular Coupler (Combined Electrical-Mechanical couplers) for 25kV AC On-board MEMU of M/s Titagarh Wagons Limited received vide PS & EMU Dte. Note no. EL/1.3.16.6/TWL/MEMU, dated 01.02.2021, have been scrutinized & found generally in order. Comments on same have been given to PS & EMU Dte. vide this office note no. EL/8.1.25.1/3-ph EMU/MEMU/TWL, dated 24.05.2021.
- 6.9 The documents of Inter Vehicular Coupler (Combined Electrical-Mechanical couplers) for 25kV AC On-board EMU of M/s Titagarh Wagons Limited received vide PS & EMU Dte. Note no. EL/1.3.16.6/Titagarh, dated 01.02.2021, have

been scrutinized & found generally in order. Comments on same have been given to PS & EMU Dte. vide this office note no. EL/8.1.25.1/3-ph EMU/MEMU/TWL, dated 24.05.2021.

- 6.10 Clearance to M/s EIPL make HT termination cable for 25 kV AC On-Board MEMU & EMU to be supplied by M/s Titagarh Wagons Limited against ICF PO no. 08/18/1848/1610/DO/F dated 29.04.2019 and ICF PO no. 08/18/1418/2629/DO/F dated 24.11.2018 respectively has been accorded vide this office note no. EL/3.2.1/3-ph EMU/TWL dated 06.05.2021.
- 6.11 Clearance to M/s EIPL make Metal Oxide Gapless Lightning Arrester type ZSP 0042 for 25 kV AC On-Board MEMU & EMU to be supplied by M/s Titagarh Wagons Limited against ICF PO no. 08/18/1848/1610/DO/F dated 29.04.2019 and ICF PO no. 08/18/1418/2629/DO/F dated 24.11.2018 respectively has been accorded vide this office note no. EL/3.2.1/3-ph EMU/TWL dated 06.05.2021.

Encl: Annexure I ,II & III

सादर,

Yours sincerely,

(Sunil Kumar)

**Shri Rahul Jain,  
Member Traction & Rolling Stock,  
Railway Board, Rail Bhavan,  
New Delhi - 110 001**

Copy for kind information to-  
Additional Member (Electrical), Railway Board, Rail Bhawan, New Delhi.

**(Sunil Kumar)  
Pr.Exe.Dir.Stds. Electrical**

**Status of un-modified motor support in WAP7 & WAG9/9H three phase locomotives**

Rly	Shed	TM location	WAP7	WAG9H	Total no. of bogies	Balance to be modified	PDC
CR	AQ	3	30	257	287	153	June'21
	KYN	3	0	29	58	23	June' 21
SCR	LGD	3	0	116	116	31	June' 21
	KZJ	3/4	0	200	200	20	June'21
SECR	BIA	3/4	0	57	114	15	June' 21

**Note:** Following sheds have already modified motor support in all locations of bogies.

HWH, WAT, LDH, CNB, BRC, ED, BNDM, SRC, ET, NKJ,RPM,TKD, BSL, GZB, GMO.

**Annexure- II****Status of modified/unmodified brake lever of WAG-9/9H locomotive as per MS 455 issued on Dec'16.**

SN	Shed	No. of WAG-9/9H locos	Modified with TBU/PBU	Un-Modified with TBU/PBU	Converted to conventional rigging
1	BSL	30	13	0	17
2	AQ	161	92	58	9
3	KYN	29	8	15	6
4	GMO	239	03	162	74
5	WAT	185	22	108	55
6	LDH	129	22	0	107
7	CNB	95	12	0	83
8	LGD	130	28	50	52
9	KZJ	100	38	14	48
10	TATA	133	0	113	20
11	BIA	94	38	56	0
12	TKD	103	82	0	21
13	NKJ	08	03	01	04
14	BNDM	82	0	19	63

## Position of Provision of 2 High Reach Pantograph in electric locomotives as on 28.05.2021

RLY	Shed	Cummulative position. How many locos with type of loco and its number provided with 2 HRPTs so far	Population of HRPTs
CR	AQ	<b>28 WAG-9</b> 32005, 31264, 32032,32052, 31114,31116, 32073, 31271, 31276, 31981, 31110, 32374, 31280, 31027, 31270, 31277, 31439, 31273, 31484, 31359, 31076,31464, 31224, 31278,31259, 31104,31111, 31115	58
CR	KYN	<b>16 WAG9 (32262, 32242, 31584, 31450, 32194, 31382, 31648, 32107)</b>	17
CR	BSL	<b>23 WAG9</b> (31560, 31406, 31738, 31642, 31403, 31516, 32401, 31402, 31404, 31405, 32432, 32273, 32429, 31645, 32274, 32377,32270, 41043, 32278, 31769, 32381, 32355, 41047)	47
NR	LDH	<b>23 WAG9</b> (32142, 32387, 32455, 31665, 32166, 32286, 32315, 32263, 32246, 32317, 32436, 32454, 32585, 32283, 32252, 32397, 32584, 32261, 32680, 32186, 32383, 32193, 32313) <b>3 WAG-7</b> (24590, 24583, 24580)	50
NR	TKD/D	<b>10 WAP1</b> (22024, 22028, 22029, 22036, 22039, 22040, 22049, 22050, 22056, 22076) <b>1 WAP4</b> (22345)	33
NR	GZB	<b>21 WAP5</b> (30001, 30011, 30014, 30018, 30021, 30022, 30024, 30030, 30043, 30098, 30100, 30132, 30133, 30135, 30146, 30149, 30163, 30164, 30165, 30187, 30188) <b>13 WAP7</b> (30600, 30747), 37054, 37264, 37314, 37320, 37324, 37326, 37336, 37378, 39006, 39039, 39097)	62
NR	KJGY	<b>4 WAG-9</b> (32805, 32714, 32804, 32803 )	8
NCR	JHS		21
NCR	CNB	<b>25 WAG9</b> (32265, 32394, 32233, 32229, 32433, 32291, 32308, 32268, 32338, 32645,32266, 32346, 32244, 32446,32256,32309,32255, 32448, 32550,32287.)-Both side HRPTs Rev-2 (32549,32318,32307,32545,32398-PT2 HRPTs Rev-1 )	50
ER	ASN	0	0
ER	HWH	0	0
ER	BWN	16 WAG9 (31619, 31416, 32515, 32563, 32516, 32560,31418,31409, 32557, 32451,34015, 34011,32450, 32562, 31551, 32449)	33
ECR	GMO	<b>In 17 WAG9 Locomotive both side high reach Pantograph provided.</b> (1. 32289, 2. 32339, 3. 32652, 4. 31853, 5. 31473, 6. 31859, 7. 31857, 8. 31509, 9. 31533, 10. 31488, 11. 31413, 12. 31834, 13. 31508 14. 31489, 15. 31546, 16.31532, 17. 31467)	35
ECR	MGS	<b>3(WAG7-27038, 27032,27057)</b>	6
ECR	BJU	<b>5 WAG-9</b> (32334,32444, 32445,32457,32340)	10
ECOR	ANGL	0	2
ECOR	VSKP	<b>4 WAG-9</b> (31625, 31623, 32693, 31987) at both sides.	8
SCR	KZJ	<b>23 WAG-9</b> (34001, 34002, 32542,32247, 32458, 32325, 32718, 32280, 32408, 32410,32649, 32389 GY,32279,32520,32461, 32282,32456, 32044 GY, 32695 32720,32322,32323) (32066 GY HRPTs Provided by ELS/LGD)	46
SCR	LGD	<b>15 WAG9</b> (31143, 32367, 32480, 32418, 32413, 32481,32670,32363,32798,32512,32513,31618,31444,32928,41019)	33
SCR	BZA	<b>04 WAG-7 (28249,28424,28464,28255(PT2))</b>	7
SER	BKSC	<b>2 WAG-9</b> - 32755, 32672	11
SER	BNDM	<b>4 WAG9</b> -32655,32681,32653,32700	11
SER	SRC	<b>0</b>	<b>2</b>
SER	TATA	<b>09 WAG9</b> (32324, 32647, 32582, 31432, 32576, 31716, 31899, 31425, 31603)	19

SER	ROU	03 <b>WAG9</b> (32597,32281,32302)	29
SECR	BIA	10 <b>WAG-9H</b> (32688, 31844,31806,32679,32757,32807, 32807, 31886)	32
SR	AJJ	0	0
SR	ED	6 <b>WAG7</b> ( 27460 , 27486 , 28027,27491 , 27471, 27492)	12
SR	RPM	0	0
WCR	ET	3 <b>WAG 9 (31943,32468,32070 )</b>	10
WCR	NKJ	4nos <b>WAG-9</b> ( 32027,32031,32290,32223)	10
WCR	TKD	29 <b>WAG9</b> (31170,31181,31183,31186,31196,31210,31297,31415,31471,31503,31607,31610,31614,31634,31807,32170,32251,32264,32294,32295,32303,32321,32331,32332,32335,32654,32656,32773,32775)	60
WR	BL	08 <b>WAG-7</b> (28727, , 28752, 24691,28726,24689,28640,28619,28649 and 10 <b>WAG-9</b> -31575,32431,31453,31384,31981,32005,32032,32052,32073,32374)	79
WR	BRC	1 <b>WAP-5</b> (30185) 29 <b>WAP-7</b> (30470, 30473, 30474, 30480, 30526, 30527, 30531, 30569, 30574, 30585, 30598, 30634, 30637, 30719, 30759, 30761, 30767, 37111, 37126, 37128, 37163, 37164, 37175, 37302, 37303, 39018, 39027, 39065, 39103)	122
TOTAL	IR	<b>WAG9=263 WAP7=42 WAP5= 22</b> <b>WAG7=24 WAP4=1 WAP1=10</b>	923