

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड Railway Board

(E file no. 3324599)

No.2010/M(C)/650/2 NMG

New Delhi, dt. 27.12.2024

General Managers
All Zonal Railways

Sub: Maintenance of NMG/NMGH/NMGHS rakes.

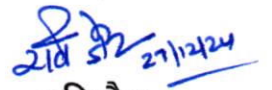
Ref : i. Railway Board's letter of even no. dated 26.05.2022 & 06.07.2023.

ii. Railway Board's letter no. 2020/M(C)/650/2 dated 06.12.2024, 08.11.2024, 22.10.2024 and 18.07.2024.

iii. Railway Board's letter no. 2020/M(C)/650/2Pt dated 04.12.2024.

iv. RDSO letter no. MC/BLB dated 30.10.2024.

1. Vide letters under references (copy enclosed), various policies and instructions regarding maintenance of NMG/NMGH/NMGHS rakes have been issued by Railway Board & RDSO including the maintenance schedules, loading/lashing procedures, maintenance of buffers, bogies etc.
2. In view of the recent incidents involving NMG type coaches, **all Zonal railways are advised to launch a comprehensive 2-week long safety drive for examination of NMG type rakes from the point of view of bogies, under-frame, coupling arrangement etc. across maintenance depots.**
3. **In addition, the following instructions may also be ensured:**
 - a. No overdue IOH/POH NMG/NMGH/NMGHS coaches should be permitted from the nominated depots.
 - b. Limiting the speed of NMG trains to 10 kmph while moving over 1 in 8.5 turnouts.
 - c. During formation of rakes, NMG coaches should not be intermixed with NMGH/NMGHS. Generation of BPC on CMM is not being permitted for such rakes.
 - d. Proper loading and lashing of the vehicles must be ensured after loading as per RDSO guidelines.
4. Inspections and super checks by Officers and Supervisors of Mechanical, Safety and Commercial branches from HQ and Division should be done and report of the same should be shared with Railway Board by 13.01.2025.



(रवि जैन)
कार्य.निदेशक / यांत्रिक इंजी. को.
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Copy to:

- PCMEs, PCCMs and PCSOs/All Zonal Railways- for kind information and necessary action please.
- PED/TT(M)/RB & PED(Safety)/RB- For kind information please



भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड Railway Board



(E-File No. 3324599)

No. 2010/M(C)/650/2NMG

New Delhi, Dated- 26.05.2022

General Manager
All Zonal Railways

Sub: Maintenance pattern for NMG/NMGH/NMGHS Automobile Cars over IR.

Ref.: (i) Railway Board letter no. 2010/M(C)/650/2 NMG dated 04.11.2020
(ii) CAMTECH REPORT letter no. IRCAMTECH/M/GWL/NMG dated 08.10.2021

In order to optimize utilization of NMG/NMGH/NMGHS rakes, the Maintenance Pattern for NMG/NMGH/NMGHS is issued as **Annexure I**, in consultation with Traffic Directorate.

This supersedes all the instructions issued earlier for maintenance of NMG/NMGH/ NMGHS Cars/rakes.

The above has the approval of the Board (MTRS and MOBD)

(सुमन कुमार ताता)
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C/- PCMEs/All Zonal Railways for kind information and necessary action please.

Guidelines for Operation and Maintenance of ICF design NMG/NMGH/NMGHS

1. Following depots are nominated as base depot for NMG/NMGH/NMGHS automobile Cars/rakes as Examination points in the respective Railways:

Sr. No.	Railways	Workshop Nominated	IOH target	POH target	Adjoining Railways	Sr. No.	Nominated Examination Points (Coaching depots)
			Per year				
1	CR	PR	250	250		1	Bhusaval(BSL),
						2	Manmad(MMR)
						3	Miraj Jn. (MRJ),
						4	GCMC (Ghorpuri Coaching Maintenance complex)
					KR		
2	NR	JUDW	350	350		5	Ambala (UMB)
						6	Amritsar(ASR)
						7	Shakur Basti (SSB)
						8	Delhi Sarai Rohilla (DEE)
					NWR		
3	NER	GKP	100	100		9	Lalkuan (LKU)
						10	Kasganj (KSJ)
					NCR		
4	NFR	NBQS	50	50		11	Alipurduar Jn. (APD)
						12	Bongaigaon (NBQ)
					ER		
					ECR		
5	SR	GOC	250	250		13	Tondiyarpet(TNPM),
						14	Tambaram (TBM),
						15	Madurai(MDU)
					SCR		
					ECOR		
					SER		
6	SWR	MYS	100	100		16	SMVT Bengaluru,
		UBL	100	100		17	Yashwantpur (YPR)
7	WCR	CRWS	25	25		18	Rani Kamalpati (RKMP)
					SECR		
8	WR	Lower Parel	200	200		19	Udhana
						20	Valsad
						21	Sabarmati (SBI)
						22	Kankaria (KKF)

2. Zonal Railways to make exclusive rakes of NMG/NMGH/NMGHS cars to the extent possible.
3. While formation of rakes, it should be ensured that NMG coaches are not intermixed with NMGH/NMGHS Coaches.
4. NMG/NMGH/NMGHS rakes will normally be examined only in the 22 Coaching depots, as nominated above.
5. The examination of NMG/NMGH/NMGHS rakes in yard and on non-Pit lines is not permitted.
6. The nominated depot as mentioned above may issue Premium examination BPC with validity of 6000 KMs or 15 days whichever is earlier (12 Days+03 days as grace period for last loading) after pit line examination for **NMGH/NMGHS** rakes only.
7. From the above 22 nominated depots, BPC for **NMG** rakes may be issued with validity for 5000 KMs or 12 days whichever is earlier (10 Days+02 days as grace period of last loading) after pit line examination.
8. In exceptional circumstances only, Pit line Examination of **NMG/NMGH/NMGHS** may also be done at any other coaching depots/any other pit line examination points, other than the above nominated depots.
9. However, from any other depot other than the above 22 depots, BPC will be issued for NMG/NMGH/NMGHS with validity for **only one** next loading and unloading cycle within 3500 KMs or 07 days, whichever is earlier (05 Days+02 days as grace period of last loading) after pit line examination.
10. **NMG/NMGH/NMGHS** Automobile Cars becoming POH/IOH due within 7 days will never be permitted from any of the above 22 nominated examination points and accordingly such cars shall be detached at these nominated examination points only.
11. Whereas, from examination points other than the above 22 nominated points, POH/IOH Overdue/Due **NMG/NMGH/NMGHS** automobile cars **may be permitted up to one month from due date of IOH/POH**. This is basically to avoid higher in-effective due to scattered detachments of NMG/NMGH/NMGHS.
12. Full composition of NMG/NMGH/NMGHS rake shall be ensured at all of these above examination points.
13. NMG/NMGH/NMGHS Automobile Cars whenever becomes defective and detached in adjoining Railways, should be sent to the nearest nominated depot in nominated Zonal Railways only.
14. BPC for all NMG/NMGH/NMGHS rakes in operation must be issued through CMMS without fail.
15. All workshops should to convert eligible NMG coaches necessarily into NMGH/NMGHS as per the directives issued by Board vide letter no. 2020/M(C)/650/2 dated 03.01.2022.
16. All data related to conversion into NMG/NMGH/NMGHS from ICF coaches, and subsequent attentions in IOH/POH/A-schedule/B-schedule, pit line examinations Etc. should scrupulously be uploaded on CMMS, including Corrosion diagram. GM/CRIS and PCMEs/Zonal Railways to ensure this.
17. Adequate material and infrastructure including provision of additional pit line in the above nominated depots and in the workshops of nominated Railways should be planned on priority to ensure proper maintenance of **NMG/NMGH/NMGHS**.




18. IOH of NMG/NMGH/NMGHS shall be carried out in any of the 22 Nominated depots as mentioned above only, as per total target of the Zonal Railways. ICF Trolley for IOH schedules should be provided by the workshop as nominated above.
19. POH of NMG/NMGH/NMGHS shall be carried out in any of the 08 workshops as mentioned above only, as per total target of the Zonal Railways.
20. Oiling of dashpot and side bearer should be checked and topped up if required without fail during Pit line examination and records should be maintained.
21. Only SLR/SLRD will be used as last vehicle for the NMG/NMGH/NMGHS rakes.
22. The maintenance of NMG/NMGH/NMGHS will be done as per the maintenance schedule mentioned in Appendix F of maintenance manual for BG coaches of ICF design.
23. At Non TXR points, Driver and Guard will ensure pressure continuity before starting. Guard and driver will ensure that there are no loose or missing fitting in the under gear (such as brake blocks, safety brackets, brake gear pins etc.) which may endanger the safe running of the train. Driver and guard will then prepare the memo jointly on the plain paper in triplicate and both Guard and Driver will sign it. The Driver and Guard will retain one copy and handover the third copy to Station Master/Yard Master.
24. After each loading/unloading the rake will be examined by Guard and Driver before commencement of journey and observations will be recorded under the relevant columns of the brake power certificate. In case of mechanized loading/unloading examination of rake to be done by (SSE/JE/C&W).
25. Premium NMG coach will run in rake form only at a maximum speed of 75 KMPH and NMGH/NMGHS may run up to 110 KMPH.
26. All the cases of violation of this limit shall be analyzed by the concerned Division /Zone where such rake gets detected, either on run or during subsequent examination, for adequate corrective and/ or preventive action (if necessary).
27. In case Km / Days limit is breached due to lack of monitoring or otherwise, and the rake is in empty condition, it shall be pushed for examination point for Pit line examination.

28. GDR Check

GDR check is an important check for ensuring safety in trains operations. Instructions issued from time to time on GDR check are summarized below:

- a. Kilometers earned are logged properly on the backside of BPC without fail by crew & Guard after each run. In case distance is not recorded, BPC will be deemed valid for only 7 days from the date of issue.
- b. GDR check should be done post loading/back loading of rake.
- c. If a rake is stabled at non-C&W point for more than 24 hours or BPC has become invalid, GDR check should be done before clearance of stabled load.
- d. In case of attachment/detachment of the NMG/NMGH/NMGHS or reversal of power at non C&W point, continuity of the brake pipe pressure should be ensured by Guard and Driver.
- e. In case of a premium end to end rake the observation by Guard and Loco Pilot will be recorded under the relevant Para of the Brake Power Certificate.

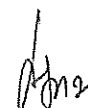


- f. In partial modification to Railway Board's earlier letter no.2005/M(N)/951/13 dated 08.02.2006, GDR check sheet is modified with respect to NMG/NMGH/NMGHS and items to be checked during Guard and Driver checks are as under:-

1.	All couplings and Air hoses pipes are properly coupled and locked.
2.	All the angles cock are in open position.
3.	The last angle cock is in closed position.
4.	There is no loose fittings/hanging parts like Brake Beam, Safety brackets, Brake Blocks etc. which may endanger safe running of the train.
5.	Hand brakes are released.
6.	All the doors of NMG/NMGH coaches should be locked.
7.	There should not be any fall plate missing/Damaged.
8.	Check the springs should be intact and there should be no broken spring.
9.	Lock and latches of doors are closely secured.
10.	The brake blocks should be in good condition.
11.	Check the continuity of air pressure before starting.

- g. It is primary responsibility of the Guard (Being in-charge of the train) as well as of Loco Pilot & Station Staff for not allowing train running on invalid BPC in violation of the existing instructions.
- h. If any unusual situation arises, the train will be started after GDR check and will run to the next C&W examination point in the direction of movement.
- i. SS/Dy.SS/Loco pilot/Guard will hand over the Last trip BPC to the C&W staff after completing the trip. In case of Non C&W point it is the responsibility of SS/Dy.SS to collect the BPC with all relevant document and hand over the BPC to the coaching depot before the next examination.
- j. These instructions do not amend any provisions contained in IRCA, ICF coaching manual and GR&SR and the same may be brought to the notice of Railway Board.
- k. The BPC should be linked with Rake id of NMG/NMGH/NMGHS. BPC generated only through CMM and it should have rake id mentioned over it.
- l. Workshops converting ICF coaches into NMG/NMGH/NMGHS should make entries in WISE/CMM before rolling out of coach.

29. The above maintenance regime to be followed scrupulously without any kind of compromise.





भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड Railway Board



(E-File no. 3325657)

No. 2020/M(C)/650/2

New Delhi, Dated-06.07.23.

General Managers,
All Zonal Railways

Sub: Maintenance of NMG/ NMGH/ NMGHS rakes.

Ref: i. Railway Board letter no. 2010/M(C)/650/2NMG dated 26.05.2022.

ii. Railway Board letter no. 2020/M(C)/650/2 dated 15.09.2022.

iii. Railway Board letter no. 2022/M(W)/814/2 dated 27.03.2023.


In reference to the list of nominated coaching depots mentioned under references above, Nos. of nominated maintenance depots for examination of NMG/NMGH/NMGHS rakes have further been reviewed, in view of traffic requirements and accordingly 31 Nos. of Coaching depots are now being nominated as indicated under **Annexure I**.

Further in view of the increased population of NMG/NMGH/NMGHS, the POH targets have also been reviewed in consultation with workshop directorate and accordingly revised POH/IOH targets are issued as indicated under **Annexure I**.

The above has the approval of the Board (MTRS).

Considering requirement of NMG rakes, Zonal Railways are advised to execute POH/IOH as per targets and follow the maintenance regime for NMG/ NMGH/ NMGHS as per directives issued vide letter under references above strictly.

For necessary action please.


(सुमन कुमार ताती)
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C/- AM/TT/RB and PEDW&D/RB for kind information and necessary action please.

- All PCMEs and PCOMs/ Zonal Railways for kind information and further action please.
- GM/CMMS/CRIS for kind information and necessary action please.
- PED/CAMTECH and PED/RS/RDSO for kind information and necessary action please.

Annexure-I (Railway Board letter no. 2020/M(C)/650/2, Dated-06.07.2023)

Zone	POH target for 2023-24 as per POH programme	Revised IOH Target	Revised POH Target	Sr. No.	Examination Points (Coaching Depots)	Adjoining Railways
CR	250	300	300	1	PUNE	KR
				2	DD	
				3	MMR	
				4	MRJ	
				5	BSL	
NER	200	250	250	6	LKU	NCR
				7	KSJ	
NFR	50	50	50	8	KIR	ER ECR
				9	NBQ	
				10	APDJ	
NR	350	500	500	11	FZR	NWR
				12	SSB	
				13	UMB	
				14	DEE	
				15	CDG	
				16	HW	
				17	ASR	
SR	250	400	400	18	TNPM	SCR ECoR SER
				19	MDU	
				20	TBM	
				21	KZJ	
SWR	200	200	200	22	SGWF	
				23	SBC	
				24	SMVB	
				25	YPR	
WCR	25	50	50	26	HBJ	SECR
WR	100	100	100	27	KKF	
				28	BL	
				29	UDN	
				30	SBI	
				31	PRTN	
Grand Total	1425	1850	1850			

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड Railway Board

No. 2020/M(C)/650/2

E office no. 3325657
New Delhi, Date: 06.12.2024

General Managers
All Zonal Railways


Managing Director
CRIS

Sub: Maintenance of NMG/NMGH/NMGHS coaches over IR

Ref: i) RB letters no. 2010/M(C)/650/2NMG dt. 26.05.22, 15.09.22, 02.12.22

ii) RB letter no. 2020/M(C)/650/2NMG dt. 06.7.23 and 12.8.24

1. Vide letters under reference, the maintenance pattern for NMG type coaches has been circulated to Zonal Railways with the approval of **Board** (MTRS and MOBD).
2. During interaction with field and upon analysis of unusualls pertaining to NMG coaches, the following issues have been noticed:
 - a. Rakes are being formed by intermixing NMG coaches with NMGH/NMGHS coaches
 - b. Some coaches with overdue maintenance schedules (IOH, POH) were permitted in rakes, both from nominated and non-nominated depots, beyond the limits prescribed (i.e. 7 days for nominated depots and one month from non-nominated depots). As on date, 205 overdue POH and 647 overdue IOH NMG type coaches are there over IR.
 - c. Intermediate schedules (like A-schedule, B-schedule) were not attended and fed into CMM properly in some cases: as a result, the tracing of next schedule due-dates was not done accurately
 - d. Maintenance of buffers was not done as per laid down instructions.
3. In this regard, Zonal Railways are again advised to ensure strict compliance to Board policy under reference for NMG/NMGH/NMGHS type coaches in rakes.
4. Further, CRIS is advised to provide an interlock on CMM such that BPC with inter-mixed coaches is not issued.


06/12/24

(प्रांजल मिश्रा)

संयुक्त निदेशक/यांत्रिक इंजी. कोचिंग-II
रेलवे बोर्ड

Copy:

- PCMEs and PCOMs/All Zonal Railways- For kind information and necessary action please.
- GM/CMM/CRIS – For kind information and necessary action please.

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड Railway Board

(E-File No.:3325657)

No.2020/M(C)/650/2

New Delhi, Date: 08.11.2024

General Managers,
All Zonal Railways

Sub: Board Meeting held on 30.10.2024- Issue related to derailment of NMG coaches.


Ref: RDSO letter no. MC/BLB dated 30.10.2024.

The case of derailment of NMG Coach in Delhi Division/NR on 25.10.2024 was discussed in the Board meeting held on 30.10.2024 and the following decision was taken:.

- In case of NMG trains, it must be ensured that side buffers are maintained properly. Appropriate instructions detailing precautions to be observed be issued.
- While forming the train with NMG coaches with screw coupling, the couplers should be properly tightened.

In this regard, RDSO has issued instructions regarding the Maintenance of side buffers (ICF coaches) vide letter under reference (ii) above which may be referred for the maintenance of the NMG side buffers also.

All Zonal Railways are advised to ensure that the above Board's instructions are immediately implemented in all workshops and depots.


(रवि जैन)

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- PCMEs/ All Zonal Railways- for kind information and necessary action please.
- PED/RS/RDSO - for kind information and necessary action please.

No. MC/ BLB

Dated: 30.10.2024

महाप्रबन्धक (यांत्रिक)

1. मध्य रेलवे, छत्रपति शिवाजी टर्मिनस, मुम्बई – 400 001.
2. पूर्व रेलवे, फेयरली प्लेस, कोलकाता – 700 001.
3. उत्तर रेलवे, बड़ौदा हाउस, नई दिल्ली – 110 001.
4. दक्षिण रेलवे, पार्क टाउन, चेन्नई – 600 003.
5. दक्षिण मध्य रेलवे, रेल निलायम, सिकन्दराबाद – 500 071.
6. दक्षिण पूर्व रेलवे, गार्डेन रीच, कोलकाता – 700 043.
7. पूर्वोत्तर रेलवे, गोरखपुर – 273 012.
8. पूर्वोत्तर सीमान्त रेलवे, मालीगौ, गुवाहाटी – 781 011.
9. पश्चिम रेलवे, चर्चगेट, मुम्बई – 400 020.
10. पूर्व मध्य रेलवे, हाजीपुर – 844 101.
11. पूर्व तटीय रेलवे, बीडीए रेंटल कालोनी, रेलवे काम्प्लेक्स, चन्द्रशेखरपुरा, भुवनेश्वर, उड़ीसा – 751 016.
12. उत्तर मध्य रेलवे, हास्टिंग रोड, इलाहाबाद – 211 001.
13. उत्तर पश्चिम रेलवे, जयपुर – 302 006.
14. दक्षिण पश्चिम रेलवे, हुबली – 580 023.
15. पश्चिम मध्य रेलवे, जबलपुर – 482 001.
16. दक्षिण पूर्व मध्य रेलवे, आर ई आफिस काम्प्लेक्स, बिलासपुर – 495 004.
17. कोंकण रेलवे कार्पोरेशन लि., कार्पोरेट आफिस, बेलापुर भवन, नवी मुम्बई – 400 614.

Sub: Maintenance of side buffers (ICF coaches).

Proper maintenance of side buffers (ICF coaches) is essential for reliability in train operation. In this regard, it is to advise that maintenance instructions for side buffers (ICF coaches) are placed in chapter 9, page 5 to 8 of CAMTECH maintenance manual for B G coaches of ICF design. However, the important maintenance instructions are reiterated below for necessary compliance.

A. Inspection and Maintenance in Workshops (Schedule: Every POH)

1. After dismantling, cleaning of the components by any suitable method (Bosch tanks, hot water jet etc.) thoroughly before inspection and check for cracks, distortions, wear, corrosion & pitting. Further, the components worn beyond limit are to be discarded. Wear limits for various components are contained in table given below:

Wear limits for Buffer Casing		
Wear location	Wear limit	Suggested gauge
Buffer casing body wall thickness 11.5 mm	5.5 mm in wall thickness	Inside micrometer
Fixing hole in the base 26 mm dia	2 mm on dia	28 mm flat

Wear limits for Buffer Plunger		
Wear location	Wear limit	Suggested gauge
Buffer plunger tube wall thickness 9 mm	4mm	Micrometer
Plunger face/face plate 19 mm	11 mm	1905 mm curvature gauge with depth measurement

Wear limits for Buffer Spindle		
Wear location	Wear permitted	Suggested No Go gauge
Buffer spindle body 40 mm dia	5 mm	35 mm snap
Threads M 39	0.5 mm	Thread profile gauge

2. Maintenance of Buffer Pad Assembly:

- Buffer pads should invariably be changed as a set at every alternate POH. The set should not be formed from different supplies.
- Free height of a set of buffer pad pack to is to be measured and if required, parting plates to be added so that it should be in the range of 484 +/- 2 mm.
- Furthermore, the pads should be checked every POH for perishing or permanent set to a length below 424 mm. Individual pad as per RDSO Drg. no. SK-K2048 (Copy attached) to be tested and same should be more than 106 mm. Rubber buffer pads are to be procured and used as a pack from approved suppliers.

3. The dimension of Recoil Spring should be maintained as 78 mm (RDSO Sketch-98145 is attached).

4. Check the destruction tube for bulging, corrosion. Replace the damaged/corroded destruction tube

5. The Disk lock washer(M-24), Nylock nut (M-24) & Hex HD Bolt (M-24x90) required to be replaced with new during overhauling.

B. Examination and Repair Practice in Carriage Maintenance Depot (in Schedule – A&B and IOH)

1. During maintenance at Carriage maintenance depot, examination and repair of buffer assembly required to be done as follows:

- Checking of tightness of buffer fixing bolts, drooping of buffers and slackness in buffer plunger to ensure destruction tubes are not damaged.
- The projection of buffer from head should be within 600 mm to 635 mm.
- Inspect buffer plunger face plate for wear and profile.

2. During maintenance at Schedule A & B following shall be examined and repaired:

- Visually examine buffer plungers for damage/drooping/stroke length.
- Examine buffer mounting bolts, attend if necessary.
- Examine buffer casing for cracks/ damage.
- Greasing shall be done on buffer plunger and face plate of buffer.

Zonal Railways are required to ensure compliances of above instructions as well as other instructions stipulated in the CAMTECH Manual for ensuring reliability of the side buffer in train operation.

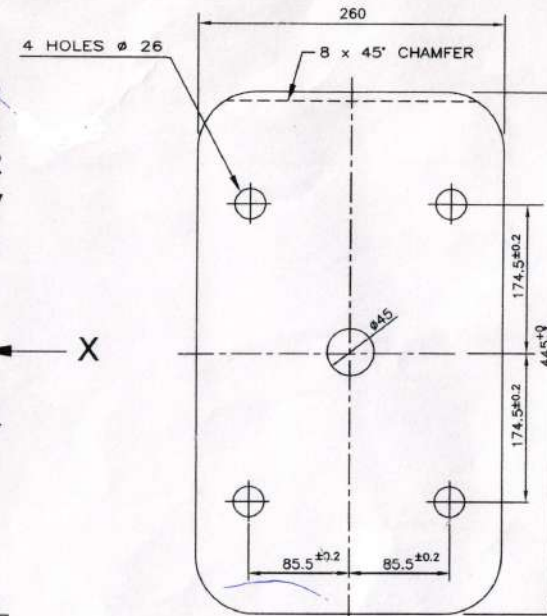
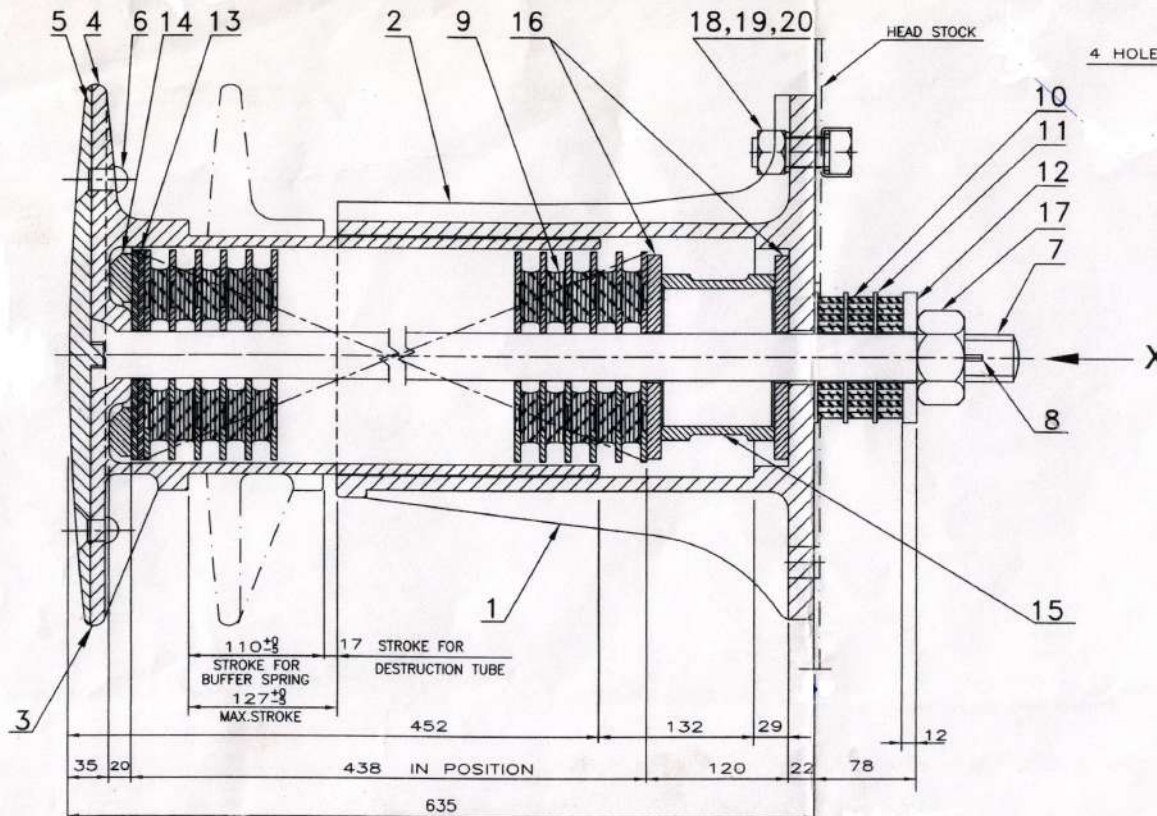
DA: As above.

ANIL KUMAR
SINGH

(A.K.Singh)

Executive Director Standard/Carriage

CC: EDME/Chg./RB: For kind information



VIEW FROM 'X'

20	DISK LOCK WASHER M-24	16	IS-7002-2005	10-9	PHOSPHATE COATED
19	NYLOCK NUT M-24	16	IS-1364-2002	P-1-10.9	GALVD.
18	M-24X90 HEX.HD. BOLT	16	IS-1364-2002	P-1-10.9	
17	HEX. NUT M-39	4	IS-1875-1992	STEEL CL-4	
16	END PLATE M 12 X #170	8	T-2-2-602		(ITEM-6)
15	DESTRUCTION TUBE	4	T-2-2-602		(ITEM-4)
14	WASHER	4	T-2-2-602		(ITEM-1)
13	BUFFING SPRING PARTING PLATE	8	SK-K3008		
12	RECOIL SPRING WASHER	4	W/BD-350		
11	SIDE BUFFER RECOIL SPRING PARTING PLATE	12	W/BD-2253		
10	SIDE BUFFER RECOIL SPRING	12	W/BD-2252		
9	RUBBER BUFFER SPRING	16	SK-K2048	C-K210	
8	BULB COTTR	4	WD-94068-S-1		(ITEM-2)
7	BUFFER SPINDLE	4	W/BD-353		
6	FLAT CSK HD. RIVET (FORGED)	24		IS-1929-82	TAB 2 & IV
5	FACE PLATE FOR BUFFER PLUNGER	4	SK-94254		
4	BUFFER PLUNGER (FORGING)	4	SK-94256		
3	BUFFER PLUNGER (CASTING)	4	SK-94255		
2	SIDE BUFFER CASING (FORGING)	4	SK-94044		
1	SIDE BUFFER CASING (CASTING)	4	SK-94043		

ITEM	DESCRIPTION & DIMENSIONS	No OFF PER COACH	REF DRG	WT. OF ONE KG	MTL & SPEC	REMARKS
------	--------------------------	------------------	---------	---------------	------------	---------

SUPERSEDED BY:-

SUPERSEDES:-

SCALE: 1:5

DATE: 03/08

GROUP: 31330012

SKETCH - 98145

BG RDSO (C)

NOTE:-

1. MANUFACTURER SHOULD COMPLY WITH STR NO. ICF/MD/SPEC-252.

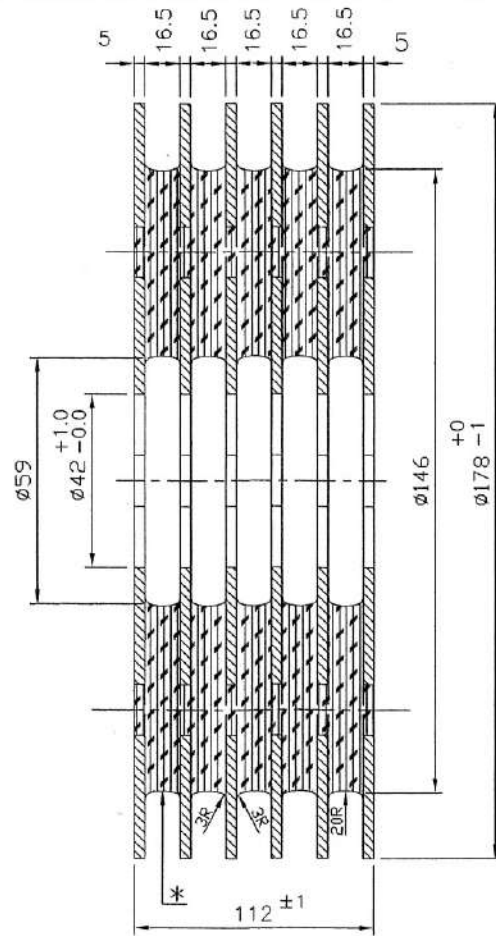
CAST STEEL BUFFER CASING SK-94043 & PLUNGER SK-94255 SHOWN IN LOWER HALF.
FORGED STEEL BUFFER CASING SK-94044 & PLUNGER SK-94256 SHOWN IN UPPER HALF.

11	-	CD/01/14	ITEM 18, LENGTH ADDED.	01/14
10	-	CD/8/13	ITEM 18 REVISED.	08/13
9	-	CD/6/13	ITEM 1, 3, 6, 19 & 20 REVISED AND NOTE NO. 1 ADDED	07/13
8	-	CD/3/06	ITEM 1 & 3 REVISED & REDRAWN.	03/13
7	-	CD/4/06	ITEM 8 SPLIT COTTR CHANGED TO BULB COTTR AND ITEM 19 & 20 ADDED.	07/07
6	-	CD/1/06	MATERIAL REVISED OF ITEM 17.	03/07
5	-	CD/5/06	REFERENCE POINT FOR DIMENSION 35 mm CORRECTED AND DRG. No. OF ITEM 7 CORRECTED.	11/06
4	-	CD/9/05	ONE PARTING PLATE (ITEM 13) DELETED.	09/05
3	-	SS/19/03	DIMENSION CORRECTED.	04/03
2	-	SS/7/03	ITEM 9 AND 13 REVISED. DIMENSION ADDED. DIMENSION & CAPACITY CORRECTED.	03/03
1	-	CD/10/2000	PITCH OF ITEM-17 ADDED.	10/00
0	-	CD/1/2000	END PLATE DIMENSION CORRECTED.	1/00

ALT	ITEM	AUTHY.	DESCRIPTION	DATE
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REFERENCE:-

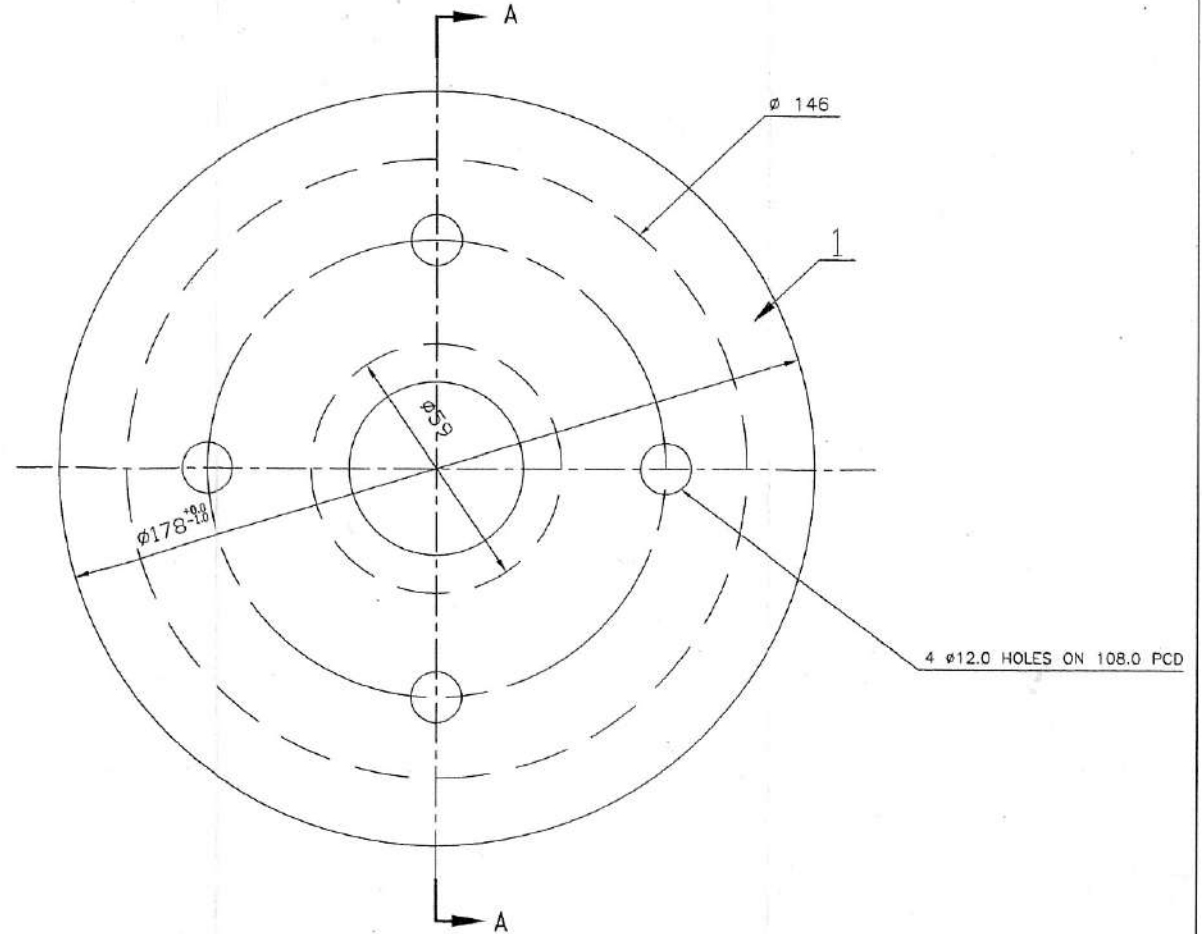
©
 "यह (कोई) अनुसंधान अभिरूपण में मानक संयोजन (रेल मंत्रालय) लखनऊ-2258011, भारत
 के संयोजन है और यह लिखित अनुमति के बिना इसका अधिक या पूर्ण रूप से प्रयोग नहीं है."



SECTION-AA

NOTE:-

- IDENTIFICATION PARTICULARS TO BE EMBOSSED IN 5 mm. TYPE AT LOCATION MARKED THUS *
 a. DRAWING NUMBER
 b. MANUFACTURER'S NAME/INITIAL/TRADE MARK.
 c. QUARTER AND YEAR OF MANUFACTURE IN FIGURES.
- TOP & BOTTOM SURFACE OF THE STEEL PLATE AS WELL AS OTHER EXPOSED SURFACES OF THE STEEL PLATE TO BE COATED WITH RUBBER 0.25 mm THICKNESS (MIN.) EDGES OF THE STEEL PLATES, IF NOT COVERED WITH 0.25 mm. THICK RUBBER SHALL BE PROTECTED WITH ANTI CORROSIVE SOLUTION.



1	RUBBER SPRING ELEMENT.	4	-	-	C-K210	
ITEM	DESCRIPTION & DIMENSION	No.OFF / ASSLY	REF. DRG.	WT. OF ONE kg	MTL.&SPEC.	REMARKS
SUPERSEDED BY:						
ASSEMBLY DRGS	SUPERSEDES	MAIN LINE COACHING STOCK				
REFERENCE :-	SCALE	P	RUBBER BUFFER SPRING			
	1:5	C	FOR 1225 KgM CAPACITY BUFFER			
		T				
		D				
		J.S.	SS/16/02			
FLOPPY No. :-	B.G.	R.D.S.O.	GROUP	SKETCH- K2048		
		[C]				

ALT.	ITEM	AUTH.	DESCRIPTION	CKD.	DATE

ORIGINAL

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड Railway Board

E Office: 3325657
New Delhi, Dated 22.10.2024

File NO.2020/M(C)/650/2

PCMEs
All Zonal Railways

PED/RS
RDSO

Sub: Issue of burning of hytrel washers in NMG coaches

In view of the recent cases of hytrel washers getting burnt in NMG type coaches during run, a review meeting was organized with RDSO and Zonal Railways on 10.10.2024

During the review, Railways reported that the possible causes for the burning could be rubbing of axle box (due to cant) with wheel, quick depletion of dashpot oil levels leading to frictional heating, faulty material of liner/washer or use of plastic protection covers. The exact cause and mechanism for failure were not established.

As discussed, RDSO is advised to take action on the following points, in consultation with NR/NER, and the same would be reviewed at Board after a period of one month:

- 1) Material testing of failed samples to be done to ascertain quality and compliance to properties as per specification
- 2) Trials to be conducted to ascertain the burning temperature of the washers, temperatures being reached during run (instrumented trial), by varying the level of oil in the dashpot or trying out loaded/unloaded condition of stock etc.
- 3) Establish the inflammability criteria for the material

Further, Zonal Railways are advised that special attention be paid to the maintenance of wheelsets in NMG stocks during pitline maintenance to control recurrences of these cases.

For necessary action please.



(प्रांजल मिश्रा)

संयुक्त निदेशक / यांत्रिक इंजी. कोचिंग-II
रेलवे बोर्ड

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड Railway Board

No. 2020/M(C)/650/2

(E-File No.- 3325657)
New Delhi, Date: 18.07.2024

PCMEs
All Zonal Railways

Sub: Lashing Procedure for securing automobiles inside NMG coach.

Ref: i. RDSO letter no. MC/MV/Maruti dated 15.12.2023.

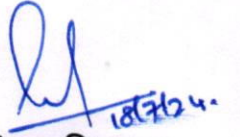
ii. RDSO letter no. MC/MV/Maruti dated 06.06.2024.

Vide letter reference (i) above, RDSO has issued brief lashing procedure & drawing indicating loading pattern, lashing methodology etc. for the NMGHS/NMGHSFS automobile carrier coaches.

The lashing procedure for securing automobiles inside NMG coaches has been detailed vide letter under reference (ii) above.

ZRs are advised to ensure the strict compliance and uniform implementation of lashing procedures and loading patterns as per letters under reference.

For necessary action please.



(प्रांजल मिश्रा)

संयुक्त निदेशक / यांत्रिक इंजी. कोचिंग-II

रेलवे बोर्ड

C/-PED/RS/RDSO - for kind information and necessary action please.



भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
EPBX (0522) 2451200
Fax (0522) 2458500

Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011
DID (0522) 2450115
DID (0522) 2465310



MC/MV/Maruti

Date: 06.06.2024

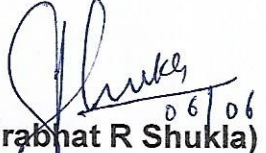
**JDME (Chg.-II),
Railway Board,
Rail Bhawan,
New Delhi**




Sub: Loading capacity of NMG Coaches.

**Ref: (i) Railway Board's letter no. 2020/M(C)/650/2 dated 20.05.2024
(ii) This office letter of even no. dated 11.03.2024**

In view of Railway Board letter at ref. (i) above, a trial scheme no. RDSO/CG/TRL/24095-
"Trial for Enhancing Loading Capacity of NMG Stock from 9.2T to 10T" along with brief
lashing procedure for securing automobiles inside automobile carrier coach [NMG] has been
prepared and the same are attached herewith as Annexure-I & Annexure-II.

DA: As above.


(Prabhat R Shukla)
Director/Std./Carriage
for Director General Carriage

Signature			
Name & Designation	SSE/Std./Carriage Prepared by:	SSE/Std./Carriage Checked by:	Director/Std./Carriage Approved by:

Trial for Enhancing Loading Capacity of Existing NMG Stock from 9.2T to 10T

1. Introduction:

- 1.1 Initially, the over aged ICF design Non-AC coaches who have completed their codal life were permitted to be converted in NMGs vide Railway Board letter no. 91/M(C)/650/1 dated March-1991 as per JUDW drawing no. JUDW/Mech.-28 with maximum payload of 8T. The maximum payload in NMG was further revised and fixed to 9.2 T vide Railway Board letter no. 91/M(C)/650/1 dated 29.05.2000.
- 1.2 Also, Railway Board vide letter no. 2016/M(C)/650/2 pt. IV dated 21.02.2017 advised conversion of ICF design coaches into NMGs, who are going for their last POH in their 24th year of codal life.
- 1.3 In view of Railway Board advice vide letter no. 2010/M(C)/650/2 NMG dated 07.08.2020 standardized drawings and conversion procedure for conversion of aged ICF coaches in NMGH & NMGHS have been issued to ZRs vide letter no. MC/MV/Maruti dated 24.03.2021 and 25.03.2022 separately.
- 1.4 Further, Railway Board vide letter no. 2020/M(C)/650/2 dated 03.01.2022 has advised ZRs to examine the existing NMG stock and accordingly NMGs which are badly corroded (beyond economic repair) may be condemned on actual condition basis. Railway Board has also advised that NMGs with more than 4 years of life remaining may be converted to NMGH during the next scheduled POH as per RDSO drawing. Accordingly, standardized drawings and procedure for conversion of existing NMG in NMGH has been issued to all ZRs vide letter no. MC/MV/Maruti dated 04.05.2023.

2. Object of Trial:

- 2.1 As per Railway Board letter no. 2020/M(C)/650/2 dated 20.05.2024, following are the objective of trial;
 - 2.1.1 Feasibility to enhance the maximum payload of NMG from 9.2T to 10T.

3. Number and Type of Coach

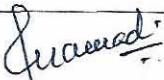


- 3.1 05 nos. NMG rakes (as suggested to Railway Board vide letter no. MC/MV/Maruti dated 11.03.2024).

4. Period of Trial:

- 4.1 12 months i.e. up to IOH of NMG (as suggested to Railway Board vide letter no. MC/MV/Maruti dated 11.03.2024).

5. Responsibility of Nominated Railway Official:

- 5.1 Zonal Railway to nominate competent technical railway officials responsible for monitoring, collecting feedbacks, liaising and reporting. The nominated railway official should responsible for the following:
 - 5.1.1 Maximum load in each NMG should not exceed 10T in any condition.

Signature			
Name & Designation.	SSE/Std./Carriage Prepared by:	SSE/Std./Carriage Checked by:	Director/Std./Carriage Approved by:

- 5.1.2 Systematic and uniformly distributed of load on both bogies to be ensured.
- 5.1.3 The maximum vertical variation between two side bearers of one end of the coach body shall be within 250Kg (i.e. total 500Kg) and variation in load between two side bearers of the same half of the coach longitudinally shall be within 750Kg.
- 5.1.4 Adequate and proper lashing and locking through the hooks provided in NMGs to be ensured as per brief lashing procedure for securing automobiles inside automobile carrier coach [NMG] at Annexure-II.
- 5.1.5 To ensure that the above conditions are complied with.
- 5.1.6 To monitor any damages or any abnormalities or unusual sick marking of NMG on account of coach structural members.
- 5.1.7 To prepare and relay the results of trials in time.

6. Selection of NMG stocks for trial:

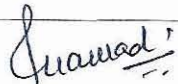

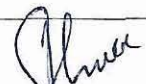
- 6.1 In view of clause 1.4 above, following points to be taken into consideration during the selection of NMG stock for trial:
- 6.1.1 NMG stocks that have been turned out after POH from workshop should only be taken for trial.
- 6.1.2 NMG stock should be given extensive corrosion repairs during POH in workshops as per prevailing RDSO CMI / instructions as these NMGs have been converted in end of their codal life. Special attention during POH should be paid for structural strength of NMGs.
- 6.1.3 Camber of NMG stock on arrival in workshop and at the time of turn out should be measured. The final camber should be within permissible limit as specified in RDSO technical pamphlet C-8904.
- 6.1.4 All mandatory clearances in bogie, draw & buffing gear, rolling gear, brake gear etc. should be maintained as per CAMTECH maintenance manual.
- 6.1.5 All the deficiencies in NMG should be made good. For proper lashing of automobile, sufficient no. of lashing hooks on floor should be available.
- 6.1.6 The integrity of rake of NMG should be maintained up to extent possible.
- 6.1.7 Maintenance and operation of these NMGs in open line should be ensured as per Railway Board guideline issued vide letter no. 2010/M(C)/650/2 NMG dated 26.05.2022.

7. Monitoring:

7.1 During Every Pit Examination:

Apart from the schedule maintenance of NMG on pit line as per CAMTECH maintenance manual, following should also be ensured:

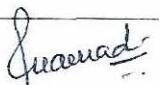

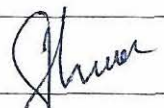
- 7.1.1 Any visible sign of hitting/grazing of wheel flange with underframe member in head stock area.

Signature			
Name & Designation.	SSE/Std./Carriage Prepared by:	SSE/Std./Carriage Checked by:	Director/Std./Carriage Approved by:

- 7.1.2 Any sign of low buffer height or visible sign of camber loss.
- 7.1.3 If sign of camber loss/ issue of low buffer height/ hitting of wheel flange on underframe member is observed, the NMG coach should be withdrawn for camber measurement & recording in depot sick line.
- 7.1.4 Any visible hitting mark of crown bolt on axle box crown. If hitting marks are observed, bogie clearances should be measured and recorded.
- 7.1.5 Any visible defect in underframe members like crack, distortion, weld open, broken/sagged floor etc.
- 7.1.6 Any visible damage/bend/crack/ open weld etc. in shell structure like side wall, side wall pillars, end wall, roof members and roof support angle etc.
- 7.1.7 Any other observation / defect relevant to this trial.
- 7.2 During IOH:**
- 7.2.1 All items mentioned in clause 7.1 above should be examined intensively.
- 7.2.2 Buffer height of the coach on arrival should be measured and recorded.
- 7.2.3 Camber of the coach on arrival should be measured and recorded.
- 7.2.4 Underframe, floor and shell structure should be examined intensively. Any damage/open weld/sagging in member etc. should be recorded.
- 7.2.5 Bogie clearances on arrival should be measured and recorded.

8. Submission of trial report:

Trial report on quarterly basis should be submitted by Zonal Railway in proforma given at Annexure-I.

Signature			
Name & Designation.	SSE/Std./Carriage Prepared by:	SSE/Std./Carriage Checked by:	Director/Std./Carriage Approved by:

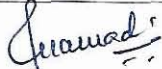

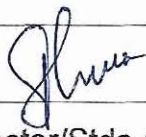
ANNEXURE-I

TRIAL PROFORMA

S. No	Observations/Parameters	Remarks
1.	Authority	Railway Board
2.	Stock under trial	NMG
3.	Purpose of trial	For enhancing loading capacity of NMG stock from 9.2t to 10t.
4.	Period of trial	12 months (i.e. up to IOH)
5.	Base Depot/Rly.	
6.	Rake No.	
7.	No. of NMGs/rake	
8.	Report submitted for (Three monthly / Six Monthly / Nine Monthly / IOH)	
9.	Observations during trial (other than usual sick marking of NMG) like followings:	
9.1	Wheel grazing / hitting with underframe members (specify the location)	Yes/No
9.2	Buffer height dropping significantly or	Yes/No
9.3	Sign of body bulging in NMG shell structure	Yes/No
9.4	Crack or open weld joint of body pillar with sole bar, waist rail, light rail, cant rail and cant rail with carline (specify location accordingly).	Yes/No
9.5	Cracks / distortion / weld open / broken / sagged underframe members or floor.	Yes/No
9.6	Any sign showing loss in NMG camber	
9.7	Hitting mark on axle box crown	Yes/No
9.8	Any other observation related to this trial, if any, may be brought out.	Yes/No

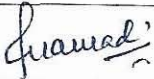
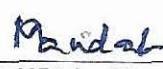
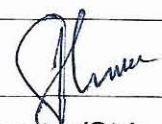
Note:

- During trial, if any of the observation mentioned at S. No. 9.1, 9.2, 9.3, 9.4, 9.5 & 9.6 above, withdraw NMG from service for intensive examination in depot sick line & the report should be submitted in format at Annexure-IA below.
- If only hitting mark on axle box crown (S. No 9.7 above) is observed then observations at S. No. (vi), (vii) & (viii) of Annexure-IA below should be recorded.

Signature			
Name & Designation.	SSE/Std./Carriage Prepared by:	SSE/Std./Carriage Checked by:	Director/Std./Carriage Approved by:

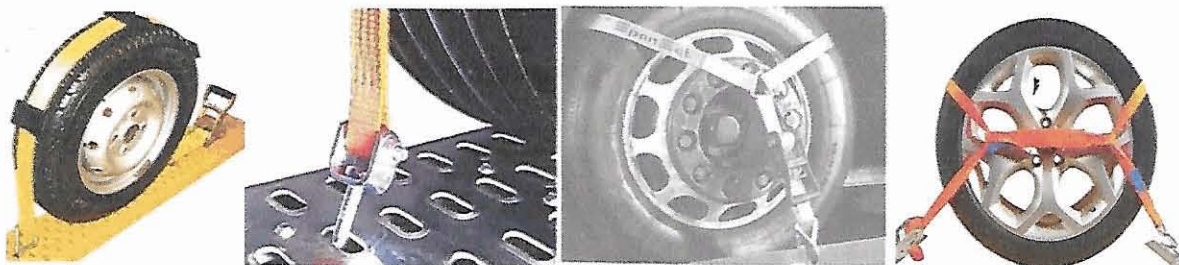
Annexure-IA

S. No.	Observations/Parameters	Observed Values															
(i)	Extent of corrosion, if any (Low / Medium / Heavy)																
(ii)	loss in thickness, if any (20% of original thickness of more)																
(iii)	Condition of trough floor (good/corroded, bend, sagged, broken etc.																
(iv)	Buffer height - 1105mm – 1090mm	PA End								NPA End							
		L				R				L				R			
(v)	Camber:		PA End				Mid of Coach				NPA End						
	Camber at center- (+) 13mm / (-) 15mm	L															
	Camber at ends - (+) 6mm / (-) 10mm	R															
(vi)	wheel dia.(915mm – 834mm)																
(vii)	Leading bogies clearances:	PA End								NPA End							
	Dimension 'A' (Bolster Lug clearance)																
	Dimension 'B' (Dashpot Lug clearance)																
	Dimension 'C' (Crown clearance)																
	Dimension 'H' (Bogie body clearance)																
	Dimension 'K' (Bogie frame bolster clearance)																
(viii)	Spring height under tare																
a.	Primary spring	PA End								NPA End							
	Height under tare	L1	L2	L3	L4	R1	R2	R3	R4	L5	L6	L7	L8	R5	R6	R7	R8
	Thickness of compensating ring																
	Thickness of packing ring																
b.	Secondary spring	PA End								NPA End							
		1	2	3	4	5	6	7	8								
	Thickness of compensating ring																

Signature			
Name & Designation.	SSE/Std./Carriage Prepared by:	SSE/Std./Carriage Checked by:	Director/Std./Carriage Approved by:

Brief Lashing Procedure For Securing Automobiles
Inside
Automobile Carrier Coach [NMG]

1. This brief procedure for loading pattern & lashing / locking arrangement of road vehicles during transportation in Automobile Carrier Coach has been prepared by taking reference from:
 - a. JUDW/NR drawing no. JUDW drawing no. JUDW/Mech.-28 for conversion of over aged ICF design Non-AC coaches into NMG.
 - b. This office letter no. MC/MV/Maruti dated 15.12.2023 regarding brief lashing procedure for NMGHS/NMGHS-FS.
 - c. BS: EN12195:2001-Load restraint assemblies on road vehicles-Safety-Part 2: Web lashing made from man-made fibres.
2. Considering the above, Zonal Railways are advised to ensure the following during loading/lashing of automobiles in NMG stock:
 - 2.1 Zonal Railways are advised to refer BS: EN12195-2:2001 (or latest) or any other National/International standards & brief lashing procedure for NMGHS/NMGHS-FS issued by RDSO vide letter MC/MV/Maruti dated 15.12.2023.
 - 2.2 Different types / method are used in lashing during transportation of road vehicles through road, rail, airways & water ways. Generally, sling belt with tensioning device / lashing equipment with different tensioning forces are used for lashing which may vary from vehicle to vehicle and type/location of anchoring point.
 - 2.3 For lashing, suitable lashing equipment / sling belts with tension retaining device of proven design as per National / International standards should be chosen as per the requirements of road vehicles. Capacity of lashing belt with ratchet may vary as per the parameters of road vehicle. Some pictorial views are as under:



- 2.4 For the purpose of lashing of road vehicles in NMG stock, lashing hooks on the floor and side walls or perforated floor plate are provided for anchoring arrangement. Some pictorial views are as under:



- 2.5 All the wheels of automobiles to be lashed individually and lashing sling belts should be tightened with the help of tension retaining device to the required tensioning force. The tensioning force may vary from vehicle to vehicle. Length of sling belt is adjustable and can

be adjusted as per the requirement at site, size & pitch of tyres, etc. Some pictorial views are as under:



- 2.6 All the wheels of automobile should be locked and parking / hand brake should be kept applied.
- 2.7 Number of road vehicles in each NMG may vary according to the size of road vehicles. However, a minimum clearance of 175mm between two road vehicles may be ensured.
- 2.8 Systematic / uniform distribution of loads on both bogies to be ensured. The maximum vertical variation between two side bearers of one end of the coach body shall be within 250Kg (i.e. total 500Kg) and variation in load between two side bearers of the same half of the coach longitudinally shall be within 750Kg.
3. Concerned Zonal Railways to ensure nomination of competent railway officials who should be capable to ensure the above conditions and complied with.
4. Zonal Railways should also issue instructions to specify the responsibilities / duties of various departments viz. Commercial, C&W etc including instruction to logistic agency / private parties during various processes involved in loading/unloading operation. Responsibilities / duties of every individual shall be clearly defined. Close monitoring should be ensured during loading and lashing of road vehicles.

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड Railway Board

No.2020/M(C)/650/2Pt

(E-File No.:3376276)
New Delhi, Date: 04.12.2024

General Manager
All Zonal Railways

Director General
RDSO, Lucknow

Sub:Maintenance and Operation of NMG coaches.

Ref: (i)RB letter no. 2024/AM(ME)/Misc dated 07.11.2024.
(ii) RDSO letter no. MC/NMG/CBC dated 25.11.2024.

Vide letter under reference (i), RDSO was advised to study the behavior of the NMG coaches with respect to the tendency of buffer entanglement.

Accordingly, RDSO carried out the trials with NMG rake and based on finding of the physical trials, vide letter under reference (ii) above, RDSO submitted its report.

The RDSO report has been reviewed at Board and accordingly following is approved:

- Limiting the speed of NMG train to 10kmph while moving over 1 in 8.5 turnouts.** Any local speed restriction shall prevail over this speed. This is approved as a temporary measure only for a period of 6 months within which RDSO to finalize instrumented trials.
- Further, as interaction between Rolling stock and Track is dynamic and variation of maintenance/permitted limits of any one parameter or a combination of two or more parameters, may create a situation of excess swing of adjoining coaches in opposite directions which may lead to buffer entanglement hence, proper maintenance of track and coaches should be ensured by Zonal Railways.

Necessary action may be taken on priority.

The above is issued with the approval of **Board(MTRS)**.

20. 24. 24
04/12/24
(ऐश्वर्य सचान)
संयुक्त निदेशक / यांत्रिक इंजी. कोचिंग
रेलवे बोर्ड

Copy to:

- PCMEs/ All Zonal Railways - for kind information and necessary action please
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