

**JOINT PROCEDURE ORDER**

No. 2022/M(N)/60/3 (E-3387858)

New Delhi, dated: 04.05.2023

**General Managers,  
All Zonal Railways**

**Sub: Measures for operation of freight trains consisting of wagons having BMBS  
- Latest instructions regarding mixing of wagons**

**Ref:** (i) Railway Board's Letter of even no. dated 17.01.2023 (copy enclosed)  
(ii) Railway Board's Letter of even no. dated 21.03.2023 (copy enclosed)

Revised instructions regarding measures for operation of loaded freight trains consisting of more than 50% wagons having BMBS were issued by Railway Board vide letter u/r (i). In these instructions certain conditions for mixing of BOXNHL and BTFLN wagons, amongst others, were stipulated.

However, in order to expedite mixing of wagons, these conditions for BOXNHL and BTFLN wagons have been re-considered and latest instructions are given in the enclosed Annexure-A. These latest instructions will supercede the instructions given in para 3.1 (a) & (c), 3.2 (a) & (c) and 3.3 (a) to (c) of Annexure "A" of the Board's letter u/r(i).

Compliance of these latest instructions and remaining instructions mentioned in the Board's letters u/r (i) & (ii) are to be ensured by the Zonal Railways.

*This is being issued with the approval of M/T&RS and M/O&BD.*

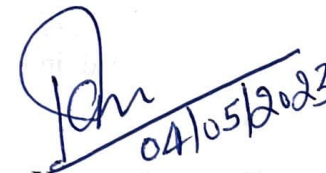
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PSO to M/T&RS- for kind information of M/T&RS  
Sr.PPS to M/O&BD- for kind information of M/O&BD  
PSO to MI- for kind information of MI  
DG/RDSO- for kind information  
AM/ME, AM/TT & AM/Traction- for kind information

**Latest Instructions regarding mixing of BOXNHL & BTFLN wagons having Bogie Mounted Brake System (BMBS)**

*Note: Changes in clause 3.1 (a) & (c), 3.2 (a) & (c) and 3.3 (a) to (c) in Annexure "A" of Board's letter of even no. dated 17<sup>th</sup> Jan'23 are shown in Italics in font size 14 & in Bold letters*

**3. Mixing of Wagons:**

- 3.1. Efforts to be made for mixing of Railway Owned wagons having Knorr design BMBS with wagons having other design of BMBS/Conventional brake system to the extent possible, depending upon the availability of suitable wagons, targeting following max. % wagons with Knorr Design BMBS in a freight train:

SN	Type of Rakes	Target max. percentage of wagons with Knorr design BMBS in a freight train	Condition
a)	<b>BOXNHL</b>	<b>50%</b>	<b>Mixing to be done within BOXNHL and with other BOXN variant wagons</b>
b)	BOXNHL25	70%	Mixing to be done within BOXNHL25 type wagons ONLY
c)	<b>BTFLN</b>	<b>50%</b>	<b>Mixing to be done within BTFLN and with BTPN wagons</b>
d)	BCFC	85%	Mixing to be done within BCFC wagons ONLY
e)	BOXNS	0%	Mixing not required as all BOXNS wagons having conventional brake system
f)	Wagon types other than mentioned in point a) to e) above	35%	Mixing to be done within compatible wagons ONLY

3.2. For avoidance of doubt, it is reiterated that

- Mixing of BOXNHL type wagons is to be done within BOXNHL and with other BOXN variant wagons**
- Mixing of BOXNHL25 wagons is to be done within BOXNHL25 type wagons ONLY
- Mixing of BTFLN wagons is to be done within BTFLN and with BTPN wagons**
- Mixing of BCFC wagons is to be done within BCFC type wagons ONLY

*[Signature]*  
04/05/2023

*[Signature]*  
24/5/23



3.3. New rakes of BOXNHL wagons which are being manufactured are to be directed, as under, for the purpose of mixing:

- a. Newly built wagons' despatch to be prioritised to the CC depots where mixing of wagons is lower and/or CC depots whose rakes are mostly running in high gradient sections. Advise in this regard shall be issued by Board, as per requirement, from time to time*
- b. After POH and Heavy repairs, BOXN variant wagons to be dispatched to the nearest CC depot for utilization in mixing*

3.4. Efforts to be made for mixing of Privately Owned wagons having Knorr design BMBS with compatible wagons, of the same owning entity, having other design of BMBS/Conventional brake system, to the extent possible, depending upon the availability of suitable wagons, targeting max. 50% wagons with Knorr design BMBS in a freight train.

3.5. Conditions mentioned at para 3.1 and 3.4 are desirable, not mandatory ones.

3.6. Planning for mixing of wagons, as mentioned in paras 3.1 & 3.4 above, is to be done yard wise by the Zonal Railways and closely monitored by PCMEs and PCOMs of the respective Zonal Railways.

\*\*\*\*\*

*Am*  
*24/07/23*

*pm*  
*04/05/2023*

**Recorded Notes of Meeting held on 12<sup>th</sup> Jan'23 in Railway Board regarding issues related to Bogie Mounted Brake System (BMBS) of M/s Knorr Bremse Design**

**Attended by-**

- a) Sh. Naveen Gulati, M/T&RS
- b) Sh. Braj Mohan Agrawal, DG(Safety)
- c) Sh. Sanjiv Bhutani, DG(RDSO)
- d) Ms Jaya Varma Sinha, AM (TT)
- e) Sh. R. K. Mangla, AM (PU & ME -L/A)
- f) Sh. V.K. Agarwal, EDME/Freight
- g) Sh. Manish Thaplyal, EDS(Wagon)/RDSO
- h) Sh. S.K. Sharma Director(Wagon)/RDSO

The issues of poor and erratic behaviour of BMBS of M/s Knorr Bremse design supplied to Indian Railways need to be resolved at the earliest. After detailed deliberations, following action plan was decided-

SN	Item	Action by
1.	As already advised on 31 <sup>st</sup> Dec'22, Planning for mixing of wagons to be done yard wise and closely monitored by PCMEs and PCOMs of the Zonal Railways and Railway Board. The current speed restrictions as advised to the ZRs shall continue till further advice.	PED/ TT(M) EDME (Frt)
2.	Trial of Modified design of M/s Knorr to be accorded top priority and closely monitored (with both 10" and 11" brake cylinders). Instrumented trials of 10" modified brake cylinders to be completed by Feb'23. M/s KBIPL to be followed up for completing trials with 11" brake cylinders by Mar'23. Decision to be taken for its retrofitment in existing wagons after successful completion of trials.	EDS(Wagon)/ RDSO
3.	At present M/s Knorr Bremse (KB) design BMBSs are being overhauled and continue to be used, despite braking issues being faced associated with KB design BMBS. Hence, duly considering the difficulties in retrofitment by conventional (under frame mounted) brake system – use of overhead welding, modification required for fitment of brake cylinder, etc, replacement of KB design BMBS in wagons is to be done with other approved design of BMBS, as an interim measure till modified design of M/s Knorr is proven satisfactorily. Priority for retrofitment to be given to BOXNHL, BOXNHL25, BTFLN & BCFC wagons, which are having higher percentage of KB design BMBS.	EDS(Wagon)/ RDSO EDME/Frt
3.1.	Approximately 30,000 wagons to be planned for retrofitment in 2023-24, starting from 1 <sup>st</sup> April'23. 100% wagons in POH and, initially, 50% of wagons in ROH to be retrofitted. From 1 <sup>st</sup> July'23, 100 % wagons in ROH to be taken up for retrofitment. Pace of retrofitment would depend upon the satisfactory proving out of modified design of M/s Knorr and its supply for modification of existing BMBS.	EDS(Wagon)/ RDSO EDME/Frt
3.2.	Centralised procurement of BMBS for retrofitment to be done by Board, against the proposed RSP for 88,000 wagons. However, ordering and supply to be matched with plan mentioned in para 3.1 above.	EDME/Frt EDRS(S)
3.3.	Cost of such forced retrofitment to be charged to OEMs of M/s KB design. Modalities shall be worked out and advised to the Zonal Railways by Board.	EDRS(S) EDFS EDME/Frt
4.	In new wagons being manufactured, fitment of Conventional (under frame mounted) Brake System to be stipulated (cut-off date 1 <sup>st</sup> May'23). Review of this decision to be undertaken in Oct'23. Accordingly, necessary instructions to the wagon builders to be issued by RDSO.	EDS(Wagon)/ RDSO

SN	Item	Action by
5.	RDSO to procure necessary sensors and other equipments so as to measure all relevant parameters related to working of Brake System of wagons.	ED/Testing/ RDSO
6.	Both M/s KBIPL and M/s Escorts to be followed up for certification of their BMBS designs through ISA by Feb'23.	EDS(Wagon)/ RDSO
7.	Development of Additional Sources of BMBS (M/s Wabtec and M/s Dako) to be closely monitored. Following tentative timelines were informed:	EDS(Wagon)/ RDSO
7.1.	Testing and trials with 11" single brake cylinder of M/s Wabtec to start in Feb'23	
7.2.	Twin brake cylinder per bogie of M/s Wabtec fitment trial likely to start in June'23.	
7.3.	Field trial of M/s JWL-Dako BMBS 11" brake cylinder to start in Feb'23	EDS(Wagon)/ RDSO
8.	Trial with 50% brake power in Escorts make BMBS rake and conventional brake system rake to be done at higher speeds also (than currently prescribed speed limits). PDC 31.01.2023.	
9.	RDSO has developed one design concept for underframe mounted brake system for wagons which is expected to provide better reliability than the existing design.	EDS(Wagon)/ RDSO
9.1.	One prototype of this design has been built at M/s BESCO Wagon Ltd. using two cylinders and two slack adjusters per wagon. Existing components have been used. This should take care of the hanging parts. Fine tuning of the design and layout is being undertaken. One rake to be put on trial using this inhouse design.	
10.	Consultancy for study of brake systems and root cause analysis of poor & erratic behaviour of BMBS of wagons of M/s Knorr Bremse design, as already advised to RDSO, to be expedited.	EDS(Wagon)/ RDSO
11.	Review of above actionable points will be done every month.	EDME (Frt)

No. 2022/M(N)/60/3 (E-3387858) dated 17.01.2023

*This is being issued with the approval of M(T&RS).*

VINAY KUMAR  
AGARWAL

Digitally signed by VINAY KUMAR  
AGARWAL  
Date: 2023.01.17 18:51:25 +05'30'

**(Vinay Kumar Agarwal)**  
Executive Dir. Mech. Engg. (Freight)

**Copy to:**

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Sr.PPS to M/O&BD- for kind information of M/O&BD

PSO to MI- for kind information of MI

PSO to MF- for kind information of MF

PPS to DG/Safety- for kind information of DG/Safety

DG/RDSO-- for kind information

AM/ME, AM(PU), AM/TT, AM/Traction, AM/RS- for kind information

PED/TT/M, PED/EE/RS, PED/W&D, PED/Safety, EDRS(S), EDFs & EDS(Wagon)/RDSO - for kind information

EDCC- for kind information

No: 2022/M(N)/60/3(E-3387858)

New Delhi. dt: 21.03.2023

General Managers,  
CR & SCR

**Sub: Mixing of BCFC/BCFCM Wagons with BCCW wagons owned by NRCs for bringing down %age of M/s.Knorr Bremse design BMBS Wagons in a rake**

Ref: i) This office letter of even number dated 17<sup>th</sup> Jan'23 (copy enclosed)  
ii) RDSO's letter no MW/SPD/BG dated 17<sup>th</sup> Feb'23 (copy enclosed)


Apropos above, following is hereby advised:

- Mixing of BCFC/BCFCM wagons (which are having M/s Knorr Design Bogie Mounted Brake System) with BCCW Wagons (which are having underframe mounted brake system), owned by the same Non Railway Customer (NRC) and working within a Railway under the same wagon investment scheme, may be undertaken, targeting max. 50% wagons with M/s. Knorr Bremse design BMBS in a rake.
- Operating speed of the mixed rake shall be governed by the stipulation given in RDSO's letter u/r (ii) and lower of the sanctioned speed of BCFCM/BCFC/BCCW Wagons on the ZR/Division and other speed restrictions notified by the respective ZR/Division.

Necessary action in this regard may be taken at the earliest.

*This issues with the approval of Board (M/T&RS and M/O&BD)*

DA: As above

  
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EDTT/S

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Sr.PPS to M/O&BD- for kind information of M/O&BD  
PPS to DG/Safety- for kind information of DG/Safety  
DG/RDSO- for kind information  
GMS- Zonal Railways (except CR & SCR)- for kind information  
AM/ME, AM/TT, AM/Traction- for kind information  
PED/Safety, PED/TT/M, PED/EE/RS & EDCC- for kind information





भारत सरकार GOVERNMENT OF INDIA  
रेल मंत्रालय MINISTRY OF RAILWAYS  
रेलवे बोर्ड RAILWAY BOARD



**JOINT PROCEDURE ORDER**

No. 2022/M(N)/60/3 (E-3387858)

New Delhi, dated: 17.01.2023

General Managers,  
All Zonal Railways

**Sub: Measures for operation of freight trains consisting of wagons having BMBS  
- Revised instructions**

**Ref:** (i) RDSO's Letter Nos. MW/APB/BMB dated 31.12.2022 & 05.01.2023  
(ii) Railway Board's Letter Nos. 2022/M (N)/60/3 dated 23.07.2022 & 31.12.2022

Instructions regarding measures for operation of loaded freight trains consisting of more than 50% wagons having BMBS have been issued by RDSO vide its letters u/r (i). In this regard, some issues have been highlighted by the Zonal Railways in implementation of these instructions.

After due consideration, it has been decided to revise the instructions mentioned in para nos. 3.1, 3.3 & 3.4 of letter u/r (i) dated 31<sup>st</sup> Dec'22 and para nos. 3.1, 3.2.1 & 3.2.2 of letter u/r(i) dated 5<sup>th</sup> Jan'23. The revised instructions are given in the enclosed Annexure-A. Compliance of these revised instructions and remaining instructions mentioned in the RDSO's letters u/r (i) are to be ensured by the Zonal Railways.

*This is being issued with the approval of M/T&RS and M/O&BD.*

  
(Kishore Vaibhav)

ED/EE(RS)

  
(Deepak Kumar Jha)

EDTT(S)

  
(Vinay Kumar Agarwal)

EDME (Freight)

**Copy to:**

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Sr.PPS to M/O&BD- for kind information of M/O&BD  
PSO to MI- for kind information of MI  
DG/RDSO- for kind information

**Revised Instructions regarding Measures for Operation of freight trains consisting of wagons having Bogie Mounted Brake System (BMBS)**

**1. Max. Speed Limits:**

- 1.1. Normally, Speed limits for operation of freight trains in loaded condition on IR track consisting of more than 50% wagons having Bogie Mounted Brake System (BMBS) shall be as under:

Sr. No.	Track terrain	Max. Speed limit (Kmph)
a)	Level	60
b)	Down gradient of 1:200 to <1:150	50
c)	Down gradient of 1:150 to $\leq$ 1:100	40
d)	Down gradient of >1:100	30

- 1.2. The speed restrictions mentioned in para 1.1 above are the general guidelines. An interdisciplinary committee of branch officers of Engineering, Traffic, Mechanical & Electrical, at the divisional level, may decide the specific speed restrictions to be followed, based on typical topographical conditions mentioned below and operation requirements, over and above these general guidelines:

1.2.1. Where the length of down gradient is less than 1 Km, imposition of speed restriction may be decided depending upon the topography of the section ahead.

1.2.2. In cases where the length of down gradient is more than 1 Km, which is followed by upgradient, speed restriction to be imposed to be decided according to the operational requirement, such as to avoid stalling of the freight train in the upgradient.

2. Accordingly, speed restrictions to be imposed, chainage wise, in a section for operation of the freight trains in loaded condition consisting of more than 50% wagons having BMBS are to be suitably advised to the Loco Pilots and Train Managers. These speed restrictions should also be displayed to crew through CMS.

- 2.1. The speed restrictions to be imposed should also be advised suitably to the Crew Controllers, CLIs/LIs and TIs. Regular counselling and monitoring of the LPs and TMs for compliance of the speed restrictions to be undertaken by the Zonal Railways.

**3. Mixing of Wagons:**

- 3.1. Efforts to be made for mixing of Railway Owned wagons having Knorr design BMBS with wagons having other design of BMBS/Conventional brake system to the extent possible, depending upon the availability of suitable wagons, targeting following max. % wagons with Knorr Design BMBS in a freight train:



SN	Type of Rakes	Target max. percentage of wagons with Knorr design BMBS in a freight train	Condition
a)	BOXNHL	75%	Mixing to be done within <b>BOXNHL type wagons ONLY</b>
b)	BOXNHL25	70%	Mixing to be done within <b>BOXNHL25 type wagons ONLY</b>
c)	BTFLN	75%	Mixing to be done within BTFLN wagons ONLY
d)	BCFC	85%	Mixing to be done within BCFC wagons ONLY
e)	BOXNS	0%	Mixing not required as all <b>BOXNS</b> wagons having conventional brake system
f)	Wagon types other than mentioned in point a) to e) above	35%	Mixing to be done within compatible wagons ONLY

3.2. For avoidance of doubt, it is reiterated that

- Mixing of BOXNHL type wagons is to be done within BOXNHL type wagons ONLY
- Mixing of BOXNHL25 wagons is to be done within BOXNHL25 type wagons ONLY
- Mixing of BTFLN wagons is to be done within BTFLN type wagons ONLY
- Mixing of BCFC wagons is to be done within BCFC type wagons ONLY

3.3. New rakes of BOXNHL wagons which are being manufactured are to be directed, as under, for the purpose of mixing:

- From Kolkata area wagon builders-Monthly upto 10 rakes to DDU/ECR, upto 5 rakes to BIA/SECR and upto 5 rakes to NKJ/WCR
- From Jabalpur area- all to NKJ/WCR
- From Bhuj area- all to BSL/CR

3.4. Efforts to be made for mixing of Privately Owned wagons having Knorr design BMBS with compatible wagons, of the same owning entity, having other design of BMBS/Conventional brake system, to the extent possible, depending upon the availability of suitable wagons, targeting max. 50% wagons with Knorr design BMBS in a freight train.

3.5. Conditions mentioned at para 3.1 and 3.4 are desirable, not mandatory ones.

3.6. Planning for mixing of wagons, as mentioned in paras 3.1 & 3.4 above, is to be done yard wise by the Zonal Railways and closely monitored by PCMEs and PCOMs of the respective Zonal Railways.







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MW/SPD/BG

Dated: 17.02.2023

CRSE (Freight)  
South Central Railway,  
Secunderabad

**Sub: Issues related to regular operation of privately owned BCCW and BCFCM rakes.**

- Ref:** (i) CRSE (Frt.)/SCR letter no. M.95/GM sanction/BCCW dated 21.12.2022.  
(ii) Final Speed Certificate No. MW/SPD/BG/BCFCM dated 21.10.22 of BCFCM wagon.  
(iii) Provisional speed certificate No. MW/SPD/Rajashree dated 23.07.2020 of BCCW wagon.  
(iv) Provisional Speed Certificate No. MW/SPD/BG/BCFC dated 14.12.2022 of BCFC wagon.

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The issue raised by SCR vide letter under reference (i) above, have been examined and parawise reply is as following:

- (a) Comparison table consisting main parameters of BCCW, BCFC and BCFCM wagons is shown below:

S. No	Description	BCCW		BCFC		BCFCM	
1	Axle load	22.9 t (Max.) 21.82t (operational)		22.32 t		22.9 t	
2	Tare weight	23.25 t		23.2 t		23.1 t	
3	Pay load	64.3 t		66.1 t		68.5 t	
4	Length over coupler	10713		10713		10713	
5	Width over all	3248		3245		3245	
6	Over all height	4115		4165		4265	
7	Volumetric capacity	70.00 c.m.		75.8 c.m.		78.98 c.m.	
8	Wheel dia	1000		1000		1000	
9	Bogie	CASNUB 22HS		CASNUB 22 HS		CASNUB 22 HS	
10	No. of wagons per rake	59		59		59	
11	Commodity	Cement/ Fly ash in loose condition		Cement/ Fly ash in loose condition		Cement/ Fly ash in loose condition	
12	Method of discharge	Air Assisted Gravity discharge		Air Assisted Gravity discharge		Air Assisted Gravity discharge	
13	Permitted speed	Empty	Loaded	Empty	Loaded	Empty	Loaded
		65	65	65	60	100	60

In view of above, BCCW & BCFC/BCFCM wagons can be operated in mixed rake however the maximum permitted speed of the mixed rake will be 65 kmph in empty and 60 kmph in loaded condition.

- (b) In the provisional speed certificate referred at (iii) above, composition of rake of BCCW is mentioned as 59 wagons so it can be operated accordingly.

2075202/2023/O/o Ch.OS/C&amp;W/PCME/SCR

File No.RDSO-MW0LKO(WD-I)/4/2020-O/o PED/SW/RDSO

- (c) For regular operation of BCCW wagon, oscillation trial of the wagon is planned over Mahoba-Khajuraho section of NC Railway and G.M sanction has been received. BCCW is designed by M/s Texmaco Ltd. and owned by different private firms.

To conduct the oscillation trial in empty and loaded condition two BCCW wagons are required at Jhansi workshop. So please identify two wagons (one in empty and other loaded condition) and arrange to dispatch to Jhansi workshop for oscillation trial. Final speed certificate shall be issued after completion of oscillation trial and Railway Board sanction shall be obtained subsequently. It is for your kind information & necessary action please.

This is being issued with the approval of competent authority.

.Encl.: Nil

Digitally Signed by Arvind  
Kumar

Date: 17-02-2023 19:45:23

Reason: Approved  
for Director General/RDSO

Copy to: EDME/Freight Railway Board- for kind information please