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No. MW/APB/BMB

Date: 23.07.2022

All General Managers
Zonal Railways.
Managing Directors
DFCCIL & KRCL.

Sub: Committee's Report on Investigation of issues reported related to Brake Power in BOXNHL rakes and Recommendations made.

Ref: (i) RDSO's letter no. MW/APB/BMB dated 15th July'22
(ii) Board's letters No. No.2022/M(N)/60/3 dated 24th Mar'22 & 31st Mar'22
(iii) Presentation by Committee members in Board on 20th July'22
(iv) Board's letter No.2022/M(N)/60/3 New Delhi, dated: 23rd July'22

1. In terms of Board's instructions in ref (ii) above, a committee was formed for investigation of issues related to Brake power in BOXNHL. The committee took cognisance of various issues/incidences involving BOXNHL, BFNSM, BRN22.9 & BTPGLN wagons with BMBS alongwith braking distance trials of BOXNHL rakes carried out on SCR, ECR, ECoR, SER & SR under the supervision of CRSE(Fr.) and CELE of the concerned Railways. Report of the committee has been submitted to Railway Board vide RDSO's letter under ref-(i) above wherein it has been brought out that there is a **known deficiency in BMBS supplied by M/s KBIPL of lesser brake force and inconsistent braking distances**. It was discussed as in ref (iii) above that reducing speeds will mitigate risks as it is not feasible to stop operations of all (approximately 69000) wagons fitted with BMBS supplied by M/s KBIPL.

2. Railway Board considered the recommended measures to be taken for dealing with the braking issues of wagons fitted with Bogie Mounted Brake System (BMBS) and vide letter at reference (iv) has advised RDSO for taking action. Accordingly, as per Para 1, 4 & 6 of the letter, following instructions are advised to be followed by the Zonal Railways regarding speed restrictions, operation & maintenance and warranty issues.

3. Instruction for Speed Restriction

Zonal Railways are instructed to **restrict maximum speed of loaded trains, with more than 50% wagons with BMBS, UPTO 50 kmph on down gradients of 1 in 100, 65 kmph on level tracks of IR and 80 kmph on DFC. Zonal Railways can examine local conditions and take appropriate safe decision including that for other gradients, etc.** The **BPC shall clearly mention the percentage of wagons with BMBS in the train formation**. This instruction is applicable for all wagons with BMBS and not only for BOXNHL.

4. Operations Related:

4.1 **All wagons with BMBS are provided with twin pipe system** and Railways are to run them in twin pipe mode for higher average speed of freight trains along with more safe operations on long steep gradients. With respect to twin pipe working, extant instructions of Board on the subject including those contained in RB letter No 2017/M/(N)/60/3 dated 19.04.2022 are to be followed.

4.2 The Loco Pilots shall be counselled on the following:

(i) To control the loaded trains (more than 3000 T) with minimum brake pressure drop of 1kg/cm². Regenerative/Dynamic braking may also be used as per requirement to control the speed.

- (ii) In case it is felt that Train is not getting controlled with Full Service Brakes through A9, then shall apply Emergency Brakes through A9 as well as RS/Flap valve should also be immediately opened.
- (iii) To call Train Manager through VHF or any other means to apply emergency brakes immediately from Brake Van also. Proper functioning of VHF sets should be ensured by Zonal Railways.
- (iv) For not pressing of PVEF/pulling of Bail-off ring during Emergency Brake application.

5. Maintenance related:

5.1 During ROH/POH, Zonal Railways should ensure checking of wagons for blockages in FP and BP pipes either through removal of dirt collector and conducting blow through from both the ends or through video scope wherein a camera is inserted into the pipes and visual seen on a hand held monitor.

5.2 It should be ensured that 100% pistons are working and brake is being applied on all wagons while issuing BPC after CC examination. Efforts should be made to rectify non- working brake cylinders during course of any maintenance check. In mixed rakes i.e. with under frame mounted brakes and BMBS, the method of calculation of brake power on BPC should consider the under frame mounted brake cylinder as equivalent to two cylinders.

5.3 All freight depots should have adequate stock of DV suitable for BMBS, APM and Brake cylinder at their end for arranging replacement of defective items. Maintenance kits for APM should also be available with freight depots with test bench for ensuring attention of APM as required. Brake cylinders and DVs are to be overhauled and collected from nominated workshop by freight depots. Defective APMs are to be replaced during ROH attention and CC / premium examination of rake.

5.4 Training of Maintenance staff for BMBS including APM attention and checking during ROH attention is to be ensured. Freight depot staffs are to be counselled for proper setting of arm of APM and ensure correct gap, as recommended. Checking of BC pressure with provision of pressure gauge for both empty and loaded condition is to be ensured during SCTR testing of wagons.

5.5 Workshop should also procure maintenance kits for both brake cylinder portion as well as slack adjuster portion for complete overhauling of BMBS cylinder as well as kits for DVs and APMs to ensure complete overhauling of brake system during POH attention of BMBS wagons.

5.6 Ensuring provision of air drier for freight examination is essential. It is also essential that leakage in BP / FP system should be within the limits. Dirt collector should be cleaned during ROH attention.

5.7 Zonal Railways shall strictly adhere to the existing maintenance instructions /guidelines of locomotives especially of brake system during different schedule maintenance to ensure fail safe operation of brake system. The Technical Circular 0113 & 0116 must be followed for the purpose.

6. Warranty claims arising out of the issues being faced in BMBS to be taken up with the concerned authorities/OEMs.

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(Manish Thaplyal)
ED/Standards Wagon

Copy to: 1. Member(TRS), Railway Board for kind information.
2. Member(OBD), Railway Board for kind information.
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