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Research, Designs & Standards Organization
LUCKNOW - 226 011

No. EL/3.1.35/2 (Brake lever)

Dated 16.09.2014

**SPECIAL MAINTENANCE INSTRUCTION No. RDSO/2014/EL/SMI/0282, Rev. '0',
Dated 16.09.2014**

1.0 Title: Special maintenance instruction to prevent falling of Brake Hanger in middle axles of WAP-7 Locomotives.

2.0 Brief History:

Earlier in 2009 RDSO modification sheet no. ELRS/MS/0381 of July 2009 was issued to modify WAP-7 locos brake rigging arrangement from 'TBU type' to conventional 'WAG-7 type'.

Thereafter RDSO released another instruction on 09.12.11 for fitting Tie-bars between two brake hangers of each axle (Left-Right Pair) owing to the phenomenon of oscillation and rattling of brake hangers that was observed at higher speed.

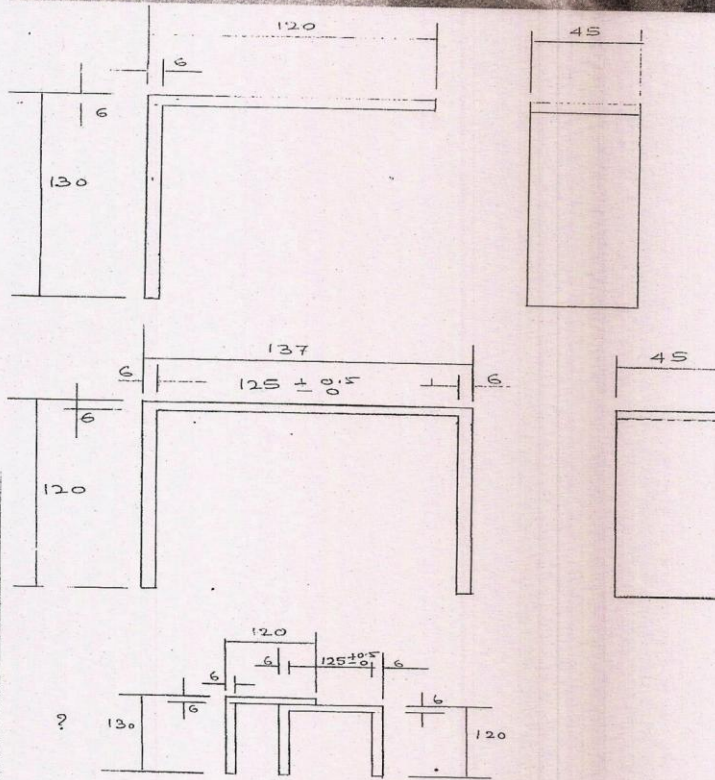
3.0 Object:

In modified brake gear arrangement existing in the WAP-7 locos, there are 24 brake hangers i.e. two for each wheel and four for each axle. The 4 brake hangers of middle axles no 2 and 5 are suspended by one pin only. The other hangers have two separate pin supports. The arrangement of the brake gears on the bogie of WAP-7 Loco is as per RDSO's Drg no. SKVL-584 alt.-2. The two brake hangers of Axle-2, provided on axle-1 side are each supported by a headless 110 mm long pin of 28 mm nominal dia. The two brake hangers of Axle-2, provided on axle-3 side are each supported by 28 mm dia. plain headed pin with slot for split cotter for locking on other end. Unlike locking by split cotter the headless pin are provided with a hex head 'keeper' pin of 10 mm dia. (with threads on tail end), which goes vertically through the main pin and is restricted on top and bottom side in two small lugs welded to the supporting bogie bracket.

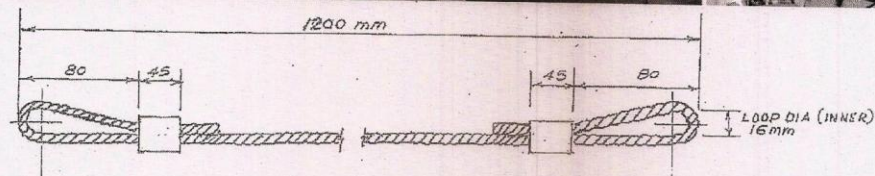
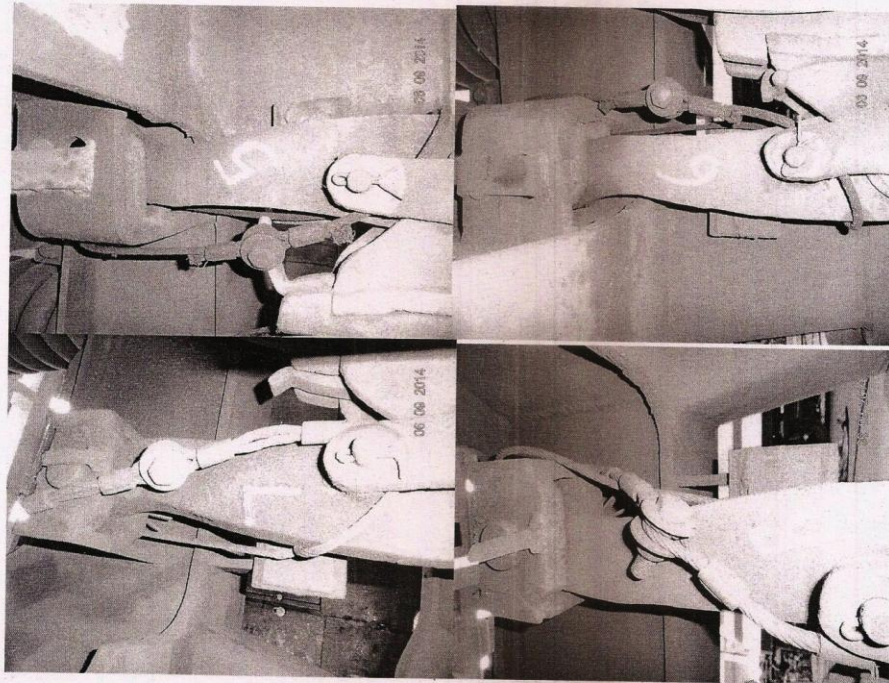
Railways have reported the common occurrence of shearing away of the vertical keeper pin. Thus the main pin is able to move laterally and in the process works itself out of Brake Hanger leaving the hanger to fall. The falling of brake hanger is observed in those brake hangers, which are supported by single headless pin.

4.0 Modified instruction:

- (i) To restrict the lateral movement of main pin even after failure of "keeper pin", an 'E' shaped clamp (as shown in photograph/sketch) to be welded in the bogie bracket of four brake hangers no. 5, 6 19 and 20, for blocking its lateral movement. Material of 'E' shaped clamp should be steel as per IS:2062.



(ii) Brake hangers no. 5, 6 19 and 20 should additionally be supported by wire rope safety sling of 8 mm dia. as per arrangement shown in the following photographs/sketch.

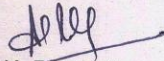


NOTE:-

1. ALL DIMENSIONS ARE IN mm.
2. NOMINAL SIZE OF WIRE ROPE SLING DIAMETER 8mm AS PER IS: 2762-1982.

Both ends of wire rope safety sling will be fastened together by a hexagonal head M-16 screw of 50 mm length (property class 8.8) as per IS:1364, M16-8 nut as per IS:1364 and two nos. of B-16 spring washers as per IS:3063.

- 5.0 **Application to:** All WAP7 locomotives fitted with modified brake rigging.
- 6.0 **Agency of Implementation:** Electric Loco Sheds, CLW and POH Shops.
- 7.0 **Periodicity of implementation:** Whenever locomotive comes to loco shed for inspection.


(A. K. Rastogi)
for Director General/Elect.

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