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लखनऊ – 226011  
Government of India - Ministry of Railways  
**Research, Designs & Standards Organization,**  
**LUCKNOW - 226011**

**No. EL/3.1.35/2**

**Dated 04/11/2008**

**Chief Electrical Engineer**

1. East Central Railway, Hazipur-844101.
2. Northern Railway, Baroda House, New Delhi-110001.
3. Chittaranjan Locomotive works, Chittaranjan – 713 331.

**MODIFICATION SHEET No. RDSO/ 2008 /EL/MS/0369 Rev.' 0 ', Dated 04/11/08**

**1.0 Title :** Modification in Brake Assembly of WAP7 Electric Locomotives

**2.0 Object :** To arrest the failures/ breakages of Brake hangers on account of excessive vibrations at high speeds, reduction in weight of Brake unit will help in reducing the stresses developed at the hinge point and subsequent failure of Brake lever.

**3.0 Existing arrangement in WAP7 Locomotives:** Presently Parking brakes(PBU) are provided at four locations( 2,6, 7 & 11) out of 12 and at balance locations TBUs are provided in WAP7 locomotives which are similar to WAG9. Maximum failures have been reported by Railways at PBUs location 6 & 7 which is about 50% of the total failures of Brake hangers. Weight of PBU is 150 kg compared to TBU weight of 130 kg.

RDSO had carried out investigation of failure of Brake levers in WAP7 Electric locomotives and issued an investigation report no. RDSO/2007/EL/IR/0124 in October 2007 and SMI NO.RDSO/2007/EL/SMI/0251 ( Rev'0') on 01.1.2008.

**4.0 Modified arrangement for PBU unit in WAP7 locomotives :**

The parking brake in WAG9/WAP5/WAP7 has been provided in place of hand brake of the conventional WAP4/WAG7 locomotives. The existing effort that parking brake provides on its full application is 50 kN in WAG9/WAP7 locomotives, whereas this effort is 18kN in WAP5 locomotive and 20 kN in WAP4 locomotives. The parking braking efforts in WAP7 on its full application, after it has been removed from 02 locations out of 4, has been measured as 30 kN which is more than WAP4/WAP5 locomotives and is considered adequate for passenger train operation for WAP7 locomotives. Considering the large no. of brake hanger assembly failure at PBU location 6 & 7 it has been decided to remove PBU from these locations and dummy plate needs to be provided.

However in case of WAG9 locomotives all the four(4) PBUs shall continue to remain in service.

5.0 **Applicable to Class of Locomotives** : WAP7 locomotives only

6.0 **Material Required** : NIL

7.0 **Material Rendered Surplus** : The PBUs released from wheel location 6 & 7 may be kept as spares and used in WAP7 & WAG9 locos during maintenance

8.0 **Reference** : Sr.DEE/NR/GZB's letter no. 230-Elect/TRS/GAZB/P5/T-15 dt. 01/11/2008.

9.0 **Modification Drawing** : Nil

10.0 **Agency of Implementation** : Electric Loco sheds NR/GZB and ECR/GMO and CLW for new production of WAP7 class of Locomotives.

Encl: Nil

  
for Director General/Elect.