Telex : 0535 - 2424 RDSO -IN
Fax : 91-0522-450374
Telephone : 454657 & 451200
Telegram : 'RAILMANAK', Lucknow
e-mail : edse@rdso.railnet.gov.in
e-mail : edse@lw1.vsnl.net.in

सत्यमेव
जयते

भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226011
Government of India - Ministry of Railways
Research, Designs & Standards Organization, LUCKNOW - 226011

No: EL/3.1.3 **Dated: 23-10-2000**

Modification Sheet No. ELRS/MS/ 0299-2000 (Rev.'0')

- **Chief Electrical Engineer,**

- Central Railway, Mumabi-CST -400 001
- Eastern Railway, Fairlie Place, Calcutta - 700 001
- East Central Railway, Chandra Shekhapur , Bhuwaneshwar - 751001
- Northern Railway, Baroda House, New Delhi - 110 001
- North Central Railway, Hasting Road, Allahabad- 211 001
- Southern Railway, Park Town, Chennai - 600 003.
- South Central Railway, Rail Nilayam, Secunderabad - 500371
- South Eastern Railway, Garden Reach ,Calcutta - 700 043.
- South Western Railway, Bangalore- 560 046
- Western Railway, Church gate, Mumbai- 400 020.
- West Central Railway, Jabalpur.
- New Zone Railway, Bilaspur.
- Chittaranjan Loco Works, Chittaranjan - 713 331
- Chief Electrical Traction Engineer, Central Railway, Mumabi CST-400001.

1.0 **TITLE: Modified pick up value of QD relays provided in power circuit of WAG-7 class of Locomotives.**

2.0 **OBJECT:** It has been reported from Railways/Sheds that, whenever, WAG7 locomotive is started with 4700 tonnes load on raising gradient, wheel slips are often noticed and as a result electrical weight compensation circuit is not able to function. As per calculations done at RDSO, to start a load of 4700 tonnes BOX 'N' at 1 in 200 rising gradient, around 1250 amps. current is required to be injected into the traction motors. Under such a condition, if ZQWC is put 'ON', the current difference between TM2 & TM3 as well as TM4 & TM5 becomes in the range of 116 amps. which is very close to present pick up value setting 125±5 amps. for QD. As a result auto regression of GR is experienced through either of the QDs. For proper functioning of electrical weight compensation circuit, it is essential that QD does not come into the circuit at the time 'ZQWC' is put 'ON' while starting. Therefore, in order to achieve full rated performance of WAG7 locomotive on 1 in 200 rising gradient, the pick up value of QD relay needs to be revised to 150 amps. Trials conducted by Railways with above revised setting of QD relay have shown satisfactory results in respect of starting of WAG7 locomotive with 4700 tonnes load at 1 in 200 rising gradient.

In view of the above, it is advised to raise the pick up value of QD relays to 150 amps in all WAG7 locomotives.

2.0 **Work to be carried out :**

Caliberate QD relay: (i) pick up setting value - 150 Amp and (ii) drop out setting value - 80 amp.

3.0 **APPLICATION TO CLASS OF LOCOMOTIVES :**

All WAG-7 class of Electric Locos.

4.0 **MATERIAL REQUIRED** : Nil

5.0 **MATERIAL RENDERED SURPLUS** : Nil

6.0 **REFERENCE :**

I) Item No.6 of 26th MSG meeting.
II) E. Rly's letter no. EL/90/2/WAG7/AKC dt 14-7-2000.
III) S.C. Rly's letter no. EL/221/MOD/Vol. X dt 25-7,2000.
IV) S. Rly's letter no.EL/28/ET/WAG7dt 17/28-5-2000.

8. **MODIFICATION DRAWING:** Nil

9. **AGENCY OF IMPLEMENTATION :**

CLW, All Electric Loco Sheds,POH WorkShops.

10. **OPERATING INSTRUCTIONS (For Drivers)**

i) Don't operate ZQWC if no wheel slipping is noticed.
ii) The ZQWC should be operated as soon as the wheel slipping takes place.
iii) To accelerate, the notches should be taken gradually.

Encl: Nil

(A K Gupta)
for Director General/Electrical

Copy to : As per standard Mailing list No.EL/M/0028, Ver . '0'