

**Government of India**  
**Ministry of Railways**  
**Research, Designs & Standards Organisation**  
Manak Nagar, Lucknow - 226 011

Ref.No.EL/2.2.1/J-6

Dated 7.05.1986

**MODIFICATION SHEET NO. RDSO/WAM4/150**

**Sub:- Provision of new slotted bar with increased threaded length in place of the existing in order to arrest extension of pantograph beyond 2 meters height.**

**1. OBJECT OF MODIFICATION**

- 1.1** Railways have reported that raised pantograph on ac electric locomotives /EMUs on inadvertently entering into unwired turn outs were abruptly extending to the maximum specified height and some times even beyond. This results in a) breakage of the pantograph articulation system and (b)entanglement with neighbourig OHE.
- 1.2** In order to overcome the above problem, it has been decided that the threaded length of the slotted bar used for raising/lowering and also limiting the extension of the pantograph shall be increased from 45/60 mm to 100mm. Since the air motor of the pantograph is supplied and fitted saperately on the loco roof, the adjustment to the insulator rod is required to be done after installation of the pantograph on the loco. For limiting the maximum extension of the pantograph. it is necessary to obtain a play between the pin and the slot of the slotted bar between 3 to 5 mm with the pantograph in the raised condition. This is presently not possible since the threaded length of the slotted bar is inadequate to cater for the discrepencies in the panto/servomotr mounting to achieve the desired play of 3 to 5mm.

**2. WORK TO BE CARRIED OUT**

- 2.1** Replace the existing slotted bar of the AM12 pantograph (stone India Part No.19-5) with new slotted bar having a threaded length of 100mm.
- 2.2** With the pantograph extending to a height of 1.75 meters, adjust the length of the slotted bar to obtain a play of 3-5 mm. -between the pin and the slot.
- 2.3** check that the pantograph extends to a height of 2 meters and further extension is arrested with the play between the pin and the slot becoming zero.

2.4 In case the pantograph extensions beyond 2 meters height adjust the play between the pin and the slot to zero at an extension of 2 meters.

2.5 Lock the slotted bar using the safety nut.

3. **APPLICATION**

All AM-12 pantograph fitted on AC electric locomotives/EMUs.

4. **MATERIAL REQUIRED**

Slotted bar with increased threaded length of 100mm to be procured from M/s. Stone India Limited,16,Taratalla Road, Calcutta-700 088.

5. **MATERIAL SURPLUS**

Slotted bar (Stone India Pt. No. 19-5).

6. **AGENCY FOR IMPLEMENTATION**

All ac Electric loco/EMU sheds and POH Shops.

7. **DISTRIBUTION**

As per list.



Encl : Nil

(ARUN SIRVASTAV)  
for Director General /Electrical.