

**Government of India
Ministry of Railways
Research Designs and Standards Organisation
Manak Nagar, Lucknow-226011**

No. EL/3.2.19

Dated : 09-08-99

Modification Sheet No. ELRS/MS/-0263

1.0 Title :

Simplification of sander pneumatic circuit.

2.0 Objects :

Working sanders is a mandatory requirement in Electric Locomotives during bad weather and rainy season. One of the major problem diagnosed for 'Sanders Not working' cases is the defect in the sand control valve. Normally following problem have been reported by the sheds in the sand governors;

- (i) Sticking during operation
- (ii) Air leakage
- (iii) Difficult accessibility for maintenance particularly in WAG7 Locomotives.
- (iv) Non-uniformity in the base geometry of different makes making replacement difficult.

Sand governor basically supplies air pressure to the sand ejector on receipt of control pressure from sanding valve (VESA). Trials conducted at Ajni Shed of Central Railways have proved that sand governor can be easily replaced with a 'T' joint connected to receive pressure directly from sanding valve (VESA) in WAG7 locomotive and dispatching it to sand ejector. This simplified arrangement has performed much better and reliability of sanders have been enhanced. This arrangement is already existing in WAP class of locomotives and known to be working satisfactorily.

3.0 Work to be Carried Out :

- (i) All 4 sanding control valves provided in the under frame are to be removed and to be replaced by 'T' joints of required pipe line size.
- (ii) Pipe line connections of 'T' joints are to be made with sanding valves (VESA) and sand ejectors as per enclosed sketch.

4.0 Application to Class of Locomotives :

All WAG7, WAG5 and WAM4 (converted to dual/air break) class of electric Locomotives.

5.0 Material Required :

- (i) 4 nos. 'T' joints of 20 mm size.
- (ii) 20mm size pipeline of required length as per CLW's specifications.
- (iii) Suitable pipeline clamping arrangement in required nos.

6.0 Material Rendered Surplus :

All the Sand Control valves with related pipelines.

7.0 Reference :

- (i) Suggestions received from Electric Loco Shed Ajni during XXVIth MSG meeting held at Bangalore.
- (ii) Decision taken to remove sanders from middle wheel in WAG-7 locomotives by RDSO & CLW.

8.0 Modification Drg. :

As per enclosed annexure.


9.0 Agency for Implementation :

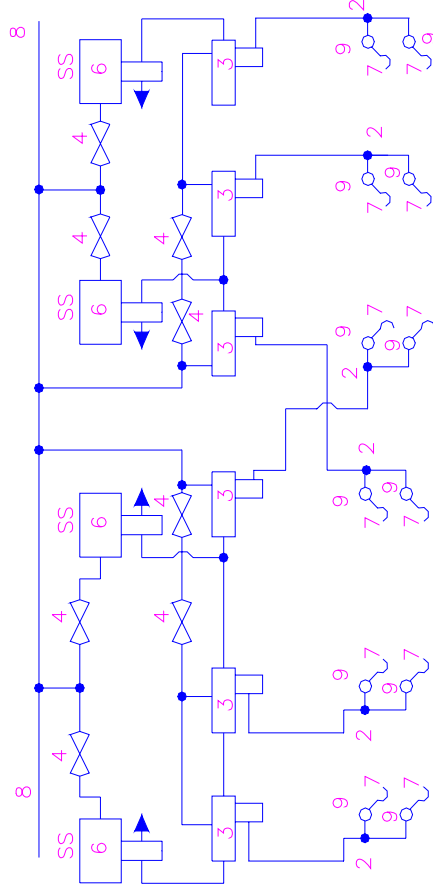
- (i) All Electric Loco Sheds and Workshops during major schedules.
- (ii) CLW for all newly manufactured locomotives.

10.0 Distribution :

As per enclosed list

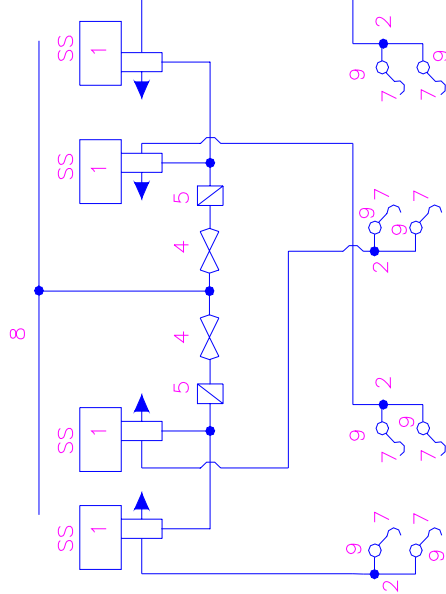
Encl: As above


(O.H. Pande)
for Director General/Elect.



EXISTING SANDER PNEUMATIC CIRCUIT IN
WAG7, WAG 5 & WAM 4 (DUAL BRAKE/AIR BRAKE
LOCOMOTIVES)

- 1,6. MAGNETIC VALVE (ENERGISED TO OPEN).
2. 'T' CONNECTION
3. SANDER CONTROL VALVE
4. 1/2" C.O.C.
5. 3/8" AIR STRINER
7. SAND HOSE CONNECTION



MODIFIED SANDER CIRCUIT FOR
WAG7, WAG 5 & WAM4 (DUAL
BRAKE/AIR BRAKE
LOCOMOTIVES)

8. 20mm. MR EQUALISING PIPE.
9. SAND EJECTOR.

