GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RESEARCH DESIGNS & STANDARDS ORGANISATION

SNW 1364

MANAK NAGAR, LUCKNOW-11

No.EL/3.2.15

Dated: 9.5.1995

MODIFICATION SHEET NO. RDSO/WAM4/190

1.0 TITLE OF MODIFICATION :

Provision of High Capacity After-cooler on air brake locomotives.

2.0 APPLICATION TO THE CLASS OF LOCOMOTIVES:

WAG-4A, WAG5, WAG7, WAP1, WAP3 and WAP4.

3.0 OBJECT OF MODIFICATION:

The existing After-cooler provided in the compressor line is considered inadequate with the conversion of WAG4 locomotives into dual brake system. Similarly, it is observed that the compressed air contains moisture on other air brake locomotives like WAG5, WAG7, WAP1 and WAP3 also. The moisture results in rusting of the pipeline and the valves. The rust particles also enter the valves and result in mal-operation of the valves.

Electric Locoshed, Kanpur has replaced the existing after-cooler with 'EMU' after-cooler on a few locomotives which is of higher capacity. The length of the pipe for condensation is 2.5 mts in existing after-coolers and 17 metres in the ones used on EMU's.

These After-coolers have been mounted on the underframe in series with the compressors and a drain cock in each has been provided for easy drainage of the condensate at regular intervals on line.

Kanpur Loco Shed have reported a considerable reduction of failures of pneumatic valves and have also reported that very large quantity of water gets condensed.

However, EMU After-coolers can be accommodated at the original location only on locomotives which are not provided with 'DBR' equipment. It cannot be accommodated on WAG5 and WAG7 locomotives fitted with 'DBR' equipment, at the new location of After-cooler below 'GR' on the underframe.

Therefore, for locomotives on which 'EMU' after-cooler cannot be accommodated, i.e., locomotives fitted with 'DBR' equipment RDSO has designed a new high capacity after-cooler as

Railways may also take action to provide after-coolers on the locomotives available with them.

4.0 Material Required:

	Qty./Loco
i) EMU after-cooler (Sketch 7 2 043)	3 - WAG4A, WAG5
ii) High capacity after-cooler along (Drg. SKEL 4347) with moisture reservoir and drain cock.	2 - WAP1, WAP3 & WAP4 1 - WAG5, WAG7

5.0 DETAILS OF MODIFICATIONS:

(A) For EMU After-cooler:

i) Remove the existing after-cooler and its mounting bracket from its present location.

ii) Two mounting channels with required wedges are to be welded on the long beam of locomotive keeping it horizontal to the rail level.

iii) Mount the EMU after-coolers to RDSO sketch 7 2 043 with 4 bolts and nuts on the mounting channels. Mounting arrangement shown vide RDSO Drg. No.SKEL.4349.

iv) Connect the pneumatic circuit as per RDSO Drawing No.SKEL.4349.

(B) High capacity after-cooler to RDSO Drg. No. SKEL 4347:

i) Remove the existing aftercooler, its mounting bracket from its present location.

ii) Weld the modified mounting bracket on the long beam of the locomotive.

iii) Mount the high capacity aftercooler on the mounting bracket as per RDSO Drg. No. SKEL 4347.

iv) Fix the high capacity after-cooler on mounting channel by 6 numbers studs and bolts as per drg. No. SKEL 4347.

v) Remove the existing moisture reservoir with drain-cock (A9).

vi) Fit the modified moisture reservoir with drain cock at existing location.

with Connecting [illegible] as per RDSO drg. No. [illegible]
4347.

6.0 MODIFICATION DRAWING NO.:

RDSO Drg. No. SKEL 4347, SKEL 4349 & Sketch 72043.

7.0 SPECIAL INSTRUCTION:

Running staff may be advised to drain the water from the reservoir periodically.

8.0 AGENCY OF IMPLEMENTATION:

All Electric Loco Sheds and Shops.

9.0 PERIODICITY OF IMPLEMENTATION:

During POH/IOH or during any major repairs to Loco.

10.0 DISTRIBUTION:

As per Mailing List enclosed.

Encl: Mailing List

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LONGITUDE