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

No.EL/2.2.1/1 Dated 27 March 1992

MODIFICATION SHEET NO. RDSO/WAM4/170
ADOPTION OF STEEL STRIPS IN PLACE OF EXISTING CARBON STRIPS FOR SMC PANTOGRAPH TYPE BR 23 LE.

1. OBJECT OF MODIFICATION

1.1 68 Nos. of BR 23 LE type-high speed pantographs were procured from M/s SMC, Australia. These pantographs have been designed and provided with carbon strips for current collection.

1.2 Unlike the conventional AM12 pantograph adopted by Indian Railways for 25 KV ac system, SMC pantographs have two pan heads each carrying carbon strips. Built in flexibility exists in these pantographs due to provision of leaf springs under two pan heads.

1.3 Centre to centre distance between two pan heads is also large 580 mm as against 230 mm in the existing AM12 pantographs.

1.4 Railways have reported excessive wear of the carbon contact strips provided on these pantographs and also heavy flashover on the FREE neutral sections. Since these carbon strips fitted pantographs have to operate side by side with steel strips fitted pantographs, excessive wear of the carbon strips is likely to occur and replacement of the carbon strips more frequent. since the pantographs designed for operation with carbon strips should be used with carbon strips only, it is necessary to have adequate spares of the carbon strips. However, due to non-availability of carbon strips ingeniously and also with the import restriction due to existing foreign exchange crisis, it is desirable that the 68 SMC pantographs are modified for adoption of steel strips for the use in high speed locomotives.

1.5 It is proposed that this modification is carried out on all the pantographs type BR23 LE available at CLW before fitment on WAP1 Locomotives and also on these pantographs available in different Sheds and the pantographs after modification are commissioned in service on high speed locomotives. i.e. WAP1 class.

2.0 WORK TO BE CARRIED OUT

2.1 Grid the carbon strips to make it levelled. The height of the horn should be 7.0mm above the grinded portion (to accommodate the height of the steel strips i.e. 7.0mm)

2.2 Taped holes to be drilled in the grinded carbon strips as per details given in the drawing enclosed.

2.3 A new steel strips with width and thickness same as that of existing strips (7.0mm thick and 25.00mm wide) and total length of 1061 mm may be procured from stone India. The material composition of the strip shall be identical to those procured for fitment on AM12 pantographs. Till such time the new strips are available from M/s Stone India, the existing strips available with the shed/CLW may be tailored to suit the requirements as shown in RDSO`s drawing No. SK. EL.-4093 Sheet 1 and 2.

3. **Application on class of locomotives:**

WAP1 type locomotives.

4. **Material Required:**

As per details given in RDSO`s SK. EL. 4093 Sheet 1 and 2. attached.

5. **Material rendered surplus**: NIL

6. **Modification Drawing**

RDSO/SK. EL. 4093 Sheet 1 and 2 attached.

7. **Agency of Implementation**

CLW and all Electric locosheds where SMC type pantographs are available.

8. **Reference:**

Discussion held between CLW, RDSO and user railways (i.e. GDB and Tata) at CLW on 18.2.1992.

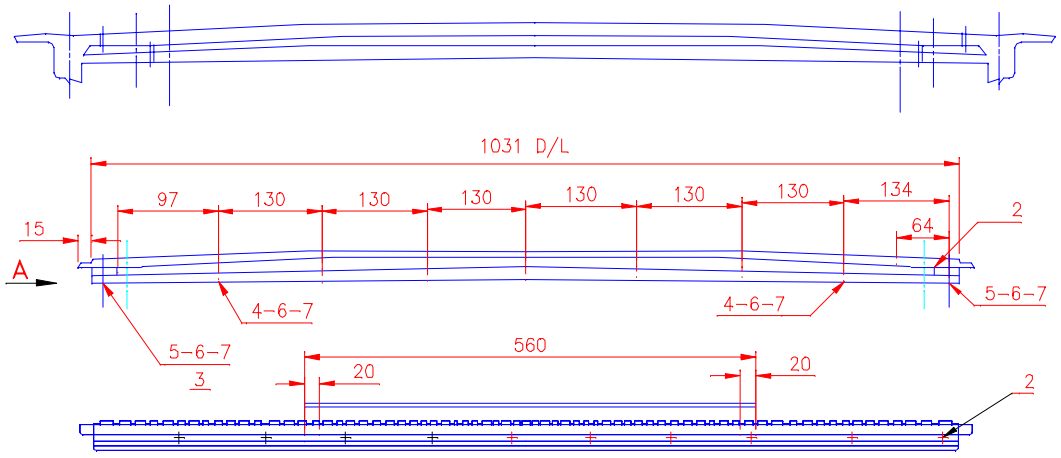
9. **DISTRIBUTION :**

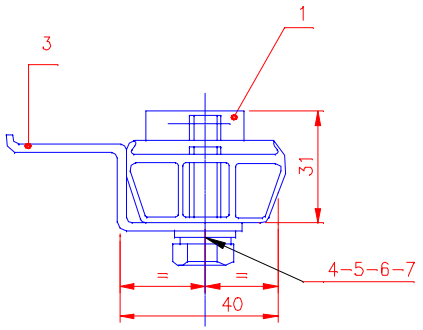
As per the enclosed list.

Mahendra Singh
for Director General/Elect.

NOTE :

These Pantographs, originally fitted with carbon strip, were suitable speed of 250 KMPH for existing Indian Railway OHE, However, with change of steel strips potential expected to come down. This will be assessed by carrying trials.





VIEW FROM 'A'

NOTE:-

1. CARBON ON SMC PANTO CONTACT STRIP BASE SUPPORT SHOULD BE GROUND TO MAKE IT LEVEL.
2. SMALL PIECE (REF-2) TO BE CUT & BOLTED TO REF-1 AND GROUND.
3. THE TAPPED HOLES TO BE DRILLED ON SMC PANTO CONTACT STRIP BASE SUPPORT AFTER MARKING WITH THE HELP OF CONTACT STRIP (REF 1 & 2).
4. REF-3 SHOULD BE PROVIDED AFTER DRILLING HOLES IN POSITION.

ITEM NO.	DESCRIPTION	MATERIAL	SPECN.	QTY.
7	SPRING WASHER M8	SP. STEEL	IS: 3063	20
6	PLAIN WASHER M8	STEEL	IS: 2016	20
5	HEX. HD. SCREW M8x40	STEEL	IS: 1364	4
4	HEX. HD. SCREW M8x35	STEEL	IS: 1364	16
3	TRAY			2
2	STEEL STRIP			2
1	STEEL STRIP			2

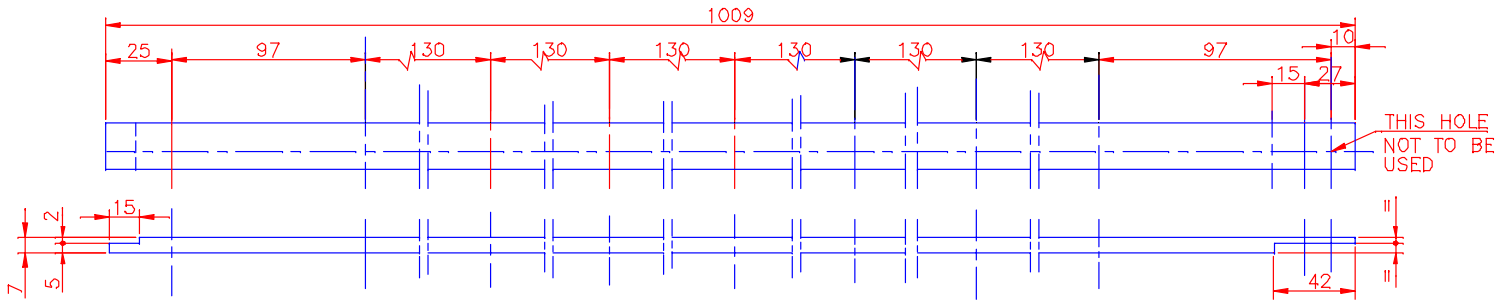
REF:- CLW DRG.No. CLW.3W.800999 | SCALE:-NTS | APPROVED BY:-

PROVISION OF STEEL STRIPS ON SMC PANTO-GRAPH TYPE BR 23 LE FOR WAP-I. LOCO

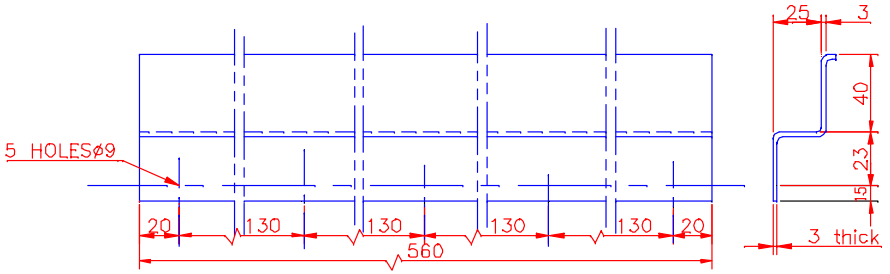
RDSO.ELEC.DTE. | SKEL 4093

Dt.	
D	
T	
C	

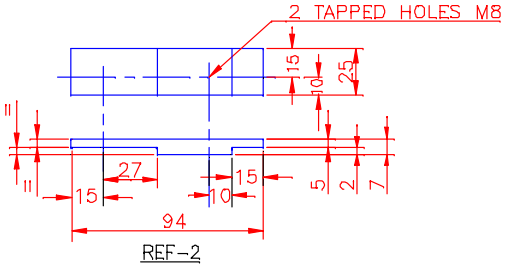
SKEL-4093



REF-1



REF-3



REF-2

Dt.	23.2.79
D	
T	
C	

REF:- CLW DRG. No. CLW-3W- 8009,99	SCALE:- NTS	APPROVED :- FOR D.G.

PROVISION OF STEEL STRIPS ON SMC PANTOGRAPH
TYPE BR-23 LE FOR WAPI LOCO.

RDSO.ELEC.DTE.	SKEL-4093 SHEET 2/2