

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

No. EL/2.2.1

24.03.1998

SPECIAL MAINTENANCE INSTRUCTIONS NO. RDSO/ELRS/SMI/198
LUBRICATION SCHEDULE FOR IMPROVING RELIABILITY OF PANTOGRAPH
AM-12 TYPE AND OF SIMILAR DESIGN

1.0 Object

- 1.1** Failure investigation of some of the critical components such as plunger box, servo motor, throttle valve and articulation systems etc. of pantograph fitted on 25 KV AC Electric locomotive and EMUs reveals that due to inadequate lubrication of these moving parts, cracks and sometimes breakages take place on these components. These breakages may go undetected during the scheduled inspections. Such pantograph with unhealthy components while in services may lead. to entanglement with OHE.
- 1.2** To minimise the above failure and avoid consequent OHE entanglements, this SMI lays down the scheme for the lubrication of the moving parts of the pantographs to be followed by sheds and POH shops during the scheduled inspection.
- 1.3** The scheme covers the parts of the pantographs to be lubricated, the lubricant to be used for each part as recommended by the pantograph manufacturer, alternatives for the lubricants and frequency of lubrication.

2. INSTRUCTIONS

Ensure proper lubrication of the components of the pantographs as per detailsgiven in annexures ``lubrication chart`` enclosed.

3. APPLICATION

All electric locomotives and EMUs fitted with pantographs type AM12 and of similar design.

4. AGENCY FOR IMPLEMENTATION

Electric loco sheds, EMU Car sheds and POH work shops.

LUBRICATION CHART FOR PANTOGRAPH COMPONENTS

SL No.	Components	Lubricant recommended by the Manufacturer	Substitute Lubricant	Frequency of lubrication
1.	Ball bearings	Alvania-3 Grease (Shell)	1. mebilus-2 (Indalco)-GP5(IOC) 2. Multipurpose Grease-3 3.Regal Starfak Special (Shell) 4. Beacon-2(ESSO)	AOH, IOH, POH
2.	Servomotor Piston packing	-do-		
3.	Articulation of thrust rod	-do-		
4.	Articulation pin joints	Thuban K(caltex)	1. Mobilux (C140) 2. Mobilux (C 90) 3. Mobile DTEHH (IOC) 4. Nassa (79) 5. Limia (15) (SHELL) 6.Thuban 140 (Caltex)	IC, AOH, IOH,POH
5.	Plungers	Ursa Oil(Caltex)	1. mobil oil DTE-3 DTE-4,DTE-4D DTE Heavy, DTE extra heavy (IOC) 2.Talpa 40 (Shell)	IB, IC, AOH, IOH,
6.	Throttle valve	Vaseline	-	IC, AOH, IOH

- Note:-** (1) In case of non-availability of recommended lubricant, substitutes may be tried on a few pantographs and performance watched for atleast 6 months before adoption of the same on regular basis.
- (2) For bearings without grease nipples, remove bearings covers and renew grease.Recover the bearing.