



Andhra Pradesh State Road Transport Corporation
Office of the Managing Director, Bus Bhavan, Hyderabad - 500 624.

No: OP4/462(02)/2010-MED

CIRCULAR No. 22/2010 - MED, Dt 21.08.2010

SUB: **MAINTENANCE** - Proper maintenance of Brake System - Provision of Low Air Pressure Warning system for all vehicles - Certain instructions issued - Reg.

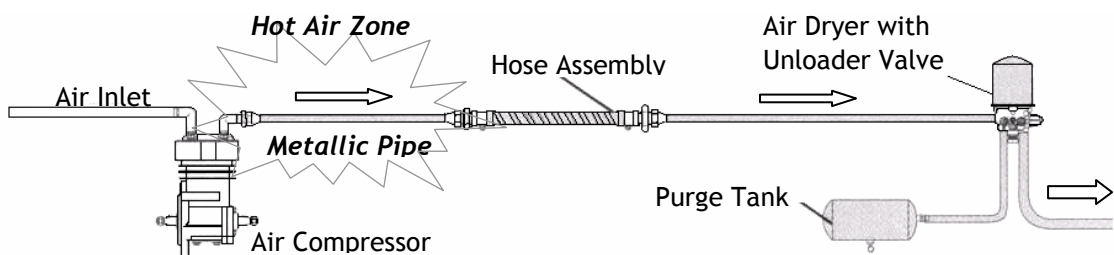
- Ref: 1. Circular No. 21/2009-MED, Dt 11.09.2009
2. Circular No. 20/2007-MED, Dt.11-10-2007
3. Circular No. 16/2005-MED,20.12.2005
4. Circular No. 23/2003-MED, Dt.07.07.2003
5. Circular No. 17/2003 - MED, Dated 5.06.2003
6. Letter No. OP2/462(3)/2009-MED, dt.25.08.09

AP28Z 194, a city ordinary bus of Ranigunj-2 depot met with ghastly accident on 11.08.2010 causing serious injuries to the pedestrians and severe damage to the private property attracting severe criticism from the public and News media. It was revealed from the preliminary investigation into the accident that both mechanical failure and Driver's fault were established as the main reasons for this ghastly accident.

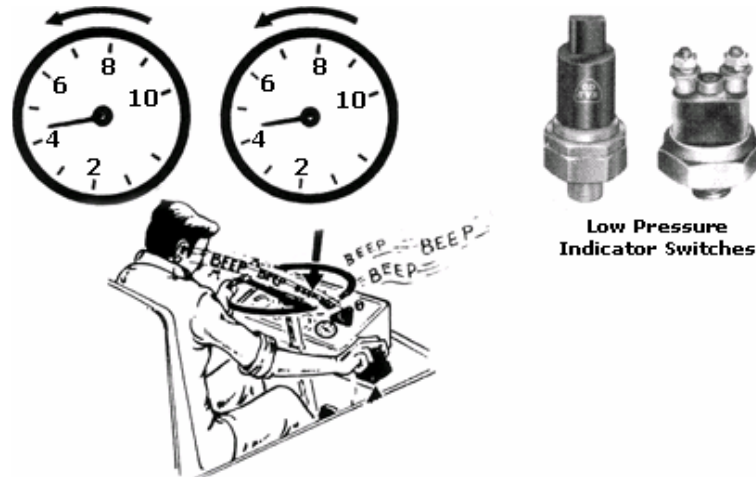
The vehicle involved in the above accident was of Ashok Leyland BS-II model. At the time of accident, the compressed air in both the service reservoirs was completely zero as the pipe connection between the Air Compressor outlet and the Air Dryer was broken. Even though, the vehicle was provided with "**Low Air Pressure**" warning system, it was not functioning when the system pressure reached to less than the safe working pressure. As the Driver could not sense the low air pressure in the Brake system, he applied brakes continuously without knowing the availability of the air in the service reservoirs. At the time of accident, as the vehicle was moving in down gradient, the Driver could not bring the vehicle to halt because of non-functioning of Service brakes owing to low air pressure. The Driver could have easily averted the accident, if he had applied the Hand brake immediately after sensing the failure of service brakes. But he failed to apply the Hand brake resulting in major accident.

The following are the main reasons that can be attributed to this incident.

1. The original **metallic pipe** between the Air Compressor Outlet and Compressor rubber hose was replaced with a **hose pipe** (available in FC kit) which was **not supposed to be fitted in place of metallic pipe**. Since, the air temperature in the Air Compressor outlet is too high for a hose pipe to withstand; the hose pipe has failed enroute, thereby disconnecting the Air compressor to the rest of the system.



2. The “**Low Pressure Warning system**” was not functioning. There were no connections between the **Low Pressure Switches** of DB Valve and the **LOW AIR PRESSURE WARNING BEEPER** near the dashboard. As such, the beeper failed to warn the driver about the low air pressure when the system pressure fell down to 4.9 kg/cm^2



3. The Driver **failed to apply Hand Brake** immediately on sensing that the Service Brakes were not working.

All the Dy.CMEs were advised vide letter No.OP2/462(3)/2009-MED, dt.25.08.2009 to organize thorough inspection of brake system on all vehicles covering the following important aspects and report compliance by 01.11.2009.

- i). Condition of Hand Brake Valve
- ii). Condition of Rear Spring Brake Actuator Wind-off bolt both LH & RH
- iii). Proper connection between Air Dryer and Purge tank
- iv). Oil throw from Air Dryer
- v). Condition of SP Valve
- vi). Correct tapping of Air for Air Horn, Wiper etc
- vii). Proper connection between SP Valve and Hand brake Valve
- viii). Proper connection between H.B Valve and Rear Spring Brake Actuator

But the compliance reports have not been received from some Regions.

In the light of the above, the following instructions are reiterated for strict implementation to prevent recurrence of such incidents in future.

- **Air leakage in the Brake system shall never be allowed.** The instructions issued vide Circular No 16/2005-MED on prevention of air leakages shall be strictly followed
- **Proper tapping of air connection to Horn, Air suspension, wiper and other auxiliaries** shall be done from Port No:24 of System Protection Valve as instructed vide Circular No 17/2003-MED
- The **Hand brake shall always be kept under proper working condition.** The Wind-off bolts of Rear Spring Brake Actuators shall always be in tightened position. The Drivers shall constantly be **educated on use of Hand brake** while parking the vehicle and **to stop the vehicle whenever any problem is encountered with Service brakes.** The instructions issued vide Circular No.23/2003-MED shall be implemented scrupulously.

- Proper **clamping shall be provided to all Brake pipes** to avoid breakage due to vibrations and rubbing with other objects.
- Proper care shall be taken **to avoid damage to the Polyamide pipes** while doing welding works.
- The guidelines issued vide **Circular No 20/2007-MED** on maintenance of brake system shall be implemented scrupulously
- **Under no circumstance, the rubber hose pipes shall be fitted in place of Metallic pipes provided by the Vehicle Manufacturers**
- The **Low Pressure warning system shall always be kept under working condition**. The defective Low Air Pressure Switches, indicators & Beepers shall be replaced immediately. The DB Valves supplied by Workshops shall invariably be fitted with Low Pressure switches which are in proper working condition.

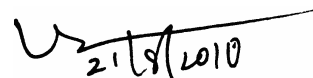
The **Dy.Chief Mechanical Engineers** are advised to **conduct census on availability & working condition of the Low Pressure Warning systems** on all the vehicles and submit the depot-wise requirement to the Zonal Stores for procurement and supply of all necessary spare parts to keep the Low Pressure Warning system in working condition on all vehicles.

The **Works Manager** shall **ensure that the overhauled DB Valves be fitted with Low Pressure Switches & Stop Light Switches** without fail.

The Depot Managers and Maintenance incharges are advised to ensure proper working condition of brake system and see that no incident of brake failure is occurred on any vehicle in future.

The Regional Managers and Executive Directors (zones) are advised to submit compliance by 10-09-2010.

The receipt of the Circular may please be acknowledged.


21/9/2010

VICE CHAIRMAN & MANAGING DIRECTOR

To
All Depot Managers.

Copy to: Dir (V&S), ED (E&IT), ED (O&MIS), ED (A&P), FA, CAO, ED (T&C) for infn.

Copy to: EDs (Zones) for information.

Copy to: All RMs for necessary action.

Copy to: CME (O), CCOS, CA, CFM, CME(C&B), CE(IT), CPM, CM (HRD) for information

Copy to: All DyCMEs, Dy.CTMs, DVMs, WMs, COSs & DyCAOs for necessary action.

Copy to: All Principals of ZSTCs, BTC, HPT & TA/HPT for information.

Copy to: All Maintenance In-charges for necessary action.

Copy to: In-charge, Manual Section for record