Testing of Loco & Rake

STC/SPJ

BRAKE CONTINUTY TEST

Brake continuity test is one of the most important tests of air brake system. This test is done to check the continuity of the Brake Pipe throughout the train. It insures that the Brake Pipe pressure gets released/created, during the brake application/release, simultaneously in Brake Pipe of all Wagons/Coaches throughout the length of the train.

WHEN REQUIRD

The continuity test must be carried out on train in the following circumstances without exception:

- Locomotive or additional locomotive attached to the front of the train.
- Locomotive or additional locomotive attached to the rear of a fully fitted train.

WHEN REQUIRD

- Vehicle attached at any position in the fitted portion of the train.
- Vehicle in the fitted portion of the train detached from other than the extreme rear.
- After any brake defect or irregularity, which has affected the continuity of the brake, has been rectified.

WHEN NOT REQUIRED

A brake continuity test need not be carried out:

- When a locomotive other than train locomotive is detached from the extreme front of the train.
- When the train locomotive is used for 'complete' brake test of the whole train and is not thereafter detached before starting.
- When locomotive or vehicle is detached from the extreme rear of the train.
- When a coach/wagon detached from the extreme rear of the train.

WHO SHALL CARRY OUT

The driver and guard must carry out this test as soon as possible after the locomotive or vehicle is coupled or recoupled to ensure continuity of the brake pipe throughout the fitted portion of the train

procedure:

- The driver must move the automatic brake valve to 'RUNNING' in the leading driving compartment and check that approximately 5.0 Kg/cm^2 is registered on the brake pipe pressure gauge.
- Move the driver's Automatic Brake Valve Handle towards the Application position to reduce the brake pipe pressure from 5 Kg/cm^2 to 4 Kg/cm^2.

procedure:

- After the brake pipe pressure has stabilized close the brake pipe isolating cock provided between additional C2 Relay valve and brake pipe of locomotive.

The Guard must then with out delay carry out the following:

- If a brake van is the rear vehicle, open the Guard's Emergency Brake Valve until all air is exhausted reducing the pressure to zero. The valve must then be closed.
- If a brake van is not the rear vehicle, open the brake pipe cut off angle cock on the rear end of the last vehicle until all air is exhausted. The cock must then be closed.

The Guard must then with out delay carry out the following:

- The Driver of the locomotive must observe that the Brake Pipe pressure has dropped to zero. If the Brake Pipe pressure does not fall, this can be due to brake pipe cut off angle cock being closed. If the brake pipe pressure does not fall to zero, check the isolating cock provided between additional C2 Relay Valve and brake pipe of locomotive is not in closed position.

The Guard must then with out delay carry out the following:

- After correction of any fault a further brake continuity test must be carried out.

- Cut out Cock between C2 Relay Valve and brake pipe is opened the brake pipe pressure should again built up to 5 kg/cm^2 in the locomotive and to a maximum pressure in the last vehicle.

LEAKAGE TEST

Whenever the problem of low brake pipe pressure is experienced, conduct LEAKAGE TEST as per procedure detailed below to check whether the leakages in the train air brake system are with in permissible limits and to take corrective actions, if required:

- Ensure that brake pipe of all wagons/coaches are coupled and brake pipe angle cocks on all the wagons/coaches are in OPEN position.
- Place the Driver's Automatic Brake Valve handle in RELEASE position. Ensure that the brake pipe pressure has stabilized in the locomotive and rear most vehicles.

- Move the Driver's Automatic Brake valve Handle towards the APPLICATION position to reduce the brake pipe pressure from 5 Kg/cm^2 to 4 kg/cm^2.
- After the brake pipe pressure has stabilized, close the brake pipe isolating cock provided between additional C2 relay valve and brake pipe on the locomotive.

- Then note the drop in pressure in the brake pipe pressure gauge in the locomotive for 5 minutes in wagons and 3 minutes in coaches.
- The drop in brake pipe pressure gauge shall not be more than 1.25 kg/cm^2 in 5 minutes (i.e. rate of drop should be less than 0.25 Kg/cm^2/min.) in wagons and 0.6 Kg/cm^2 in 3 minutes (i.e. rate of drop should be less than 0.2 Kg/cm^2/min.) in coaches.
- If the leakage rate is more than the value indicated above, check for leakages on individual wagons/coaches.

CAPABILITY OF LOCOMOTIVE

Procedure for testing the charging capacity of locomotive to ensure that locomotive is capable of supplying adequate amount of air for charging brake pipe and feed pipes of the trailing stock.

PROCEDURE:

- Place the drivers automatic brake valve handle in emergency position.
- In case of diesel locomotives start the engine and in case of electric locomotive start the compressors for building up of main reservoir pressure.

- Close angle cock of the brake pipe. Couple 7.5 mm dia. leak hole special test coupling with the brake pipe coupling of the locomotive. In case of Multiple Unit consist test coupling should be fitted on the rear most locomotive of the consist.
- Move the driver's automatic brake valve handle from emergency position to release position to charge the brake pipe to 5 kg/cm^2 .

- Open the angle cock of the brake pipe. The brake pipe pressure should fall from 5.0 kg/cm^2.
- Check the brake pipe pressure with the help of gauge fitted in the locomotive, which should not fall below 4.0 kg/cm^2 within 60 sec (For that locomotives fitted with 28 LAV-1 Brake System).

- Check the brake pipe pressure with the help of gauge fitted in the locomotive, which should not fall below 4.8 kg/cm^2 within 60 sec (For that locomotives fitted with IRAB-I Brake System).
- The test shall be carried out with all the compressors in working condition for operating the train.

THANKS