

gates, as far as practicable, to prevent an accident. If the vehicles/train has escaped into a block section, the SM has to put the concerned block instrument on a refusal to line clear position and inform the adjacent SM to set the point to an unoccupied line. After the escaped vehicles come to a stop, they shall be secured and moved to clear the block section.

Flat-tyre

Flat tyre can be identified through the continuous hammering sound generated by the affected wheel during its run. It can cause extensive damage to track by causing rail fractures and weld failures resulting into serious accidents to the following trains. Flat tyre can happen due to brake binding causing hardening/stopping of wheel movement thereby a particular area of wheel tyre wears excessively resulting in flatness on the wheel tyre.

TXR staff during 'rolling-in' examination at all major train examination points shall observe keenly to detect flat tyre in the train while in motion.

Station Operating Staff while exchanging 'all-right' signals & Engineering Gatemen shall be vigilant to hear any unusual / hammering sound in the running train and make efforts to stop and examine the train or intimate the Station Master if they failed to stop train in case they observe any such sound.

On-board staff like TTEs, Coach Attendants, AC Mechanics and other Supervisor / Officers travelling by the train/particular coach shall also take appropriate action to bring it to the notice of Train Guard/Loco Pilot/Station Master of nearby station on detecting any unusual / hammering sound in the coach / train.

Once such information is received, the Loco pilot shall bring the train to a stop at the earliest. On stopping, the train crew shall examine the suspected vehicle and share the details to the C&W control. After consultation, the train can be moved with necessary conditions to clear the block section.

If TXR staff is available at that station or they can come quickly from other station, the flat tyre shall be examined by them and they will certify whether the flatness is within the permissible limits or beyond. If the flatness is within the permissible limit, they can certify for running the train further at normal speed and if flatness is beyond the permissible limit, the wagon has to be detached at the same station. If no TXR staff is posted to work at that station, and it is likely to take more time for TXR staff to come, the Loco Pilot, Guard and Station Master shall decide in consultation with the SCOR to detach the coach/wagon at the same station. Under no circumstances, the Station Master shall allow the train to run with a suspected flat tyre, once the information is received.

Apart from examining the wagon, the track on which the flat tyre ran should also be inspected. The SSE (P. Way) / JE/P. Way / P. Way Supervisor of Engineering Department shall inspect the rear block section passed by the affected

train either by travelling in a light engine/Tower Car with a restricted speed of 30 KMPH or by proceeding on a motor/push trolley if Loco/Tower car is not readily available and certify the track duly taking protective action for any failure noticed.

Engineering Control in consultation with SSE/JE-P.Way Supervisor who has inspected the section shall impose SR of 50 KMPH for Passenger trains as well as for empty Goods trains in the affected section till USFD test is conducted in the affected section (point of detection of unusual sound to next station) is completed and protective action thereafter is taken. No loaded goods train shall be allowed to run unless USFD testing is completed. On completion of USFD testing, speed of passenger trains and that of empty goods trains shall be raised to 75 KMPH and after observing for 24 hours, normal sectional speed shall be restored for these trains. Loaded goods shall be permitted at 50 KMPH on completion of USFD and after observing for 24 hours, normal speed shall be restored for such trains.

Brake Binding

Brake binding of a wagon/coach occurs when any of the following happens:

- (1) Hand brakes are not released;
- (2) Distribute Valves (DV) are not released after engine change;
- (3) Load/empty wagon is placed in load position when the wagon is empty or gross weight of the wagon is below 42.5 tonnes;
- (4) Release of Distribution Valve is not ensured after resetting ACP or
- (5) Defect in C3W DV.

Brake binding jams the wheel movement and causes flat tyre which in turn damages the track. Hence, as and when Brake binding is noticed, the train shall be stopped and the brakes must be released.

Trains unusually delayed in section

If a train carrying passengers does not arrive within 10 minutes or if a goods train does not arrive within 20 minutes more than its normal running time from the station in rear, the Station Master at the station in advance shall immediately advise the station in rear and the Control of this fact. On double or multiple lines, the Station Masters at either end of the block section shall immediately stop all trains proceeding into the block section on adjacent line or lines in either direction and warn the Loco Pilots and Guards of such trains by issue of suitable Caution Orders and shall also ascertain the whereabouts and the condition of the delayed train.

Trains stopped in Block section

If, for any reason, a train is brought to a stand for a period longer than 15 minutes, the hand brakes of the locomotive shall be applied in addition to the application of air brake etc. If such stoppage happens to be on sections with a gradient of 1 in 150 the following additional precautions shall be taken:

On trains carrying passengers, the Guard shall apply hand brakes in the brake-van and wedges to the wheels of two vehicles towards the falling gradient. On goods trains, hand brakes of at least one third of the wagons in the train or 10 wagons behind the engine and 5 wagons inside the brake-van, whichever is more, shall be pinned down, in addition to the application of Guard's hand brake in the brake-van.

When the train is expected to start, proper air pressure must be built up to prescribed levels; hand brakes must be released; wedges and skids have to be removed. Thereafter, the air brakes may be released to start the train.

Precaution to be taken during storm and heavy wind

When the weather warning message regarding forecasting cyclone, storm or strong wind has been received from the Meteorological Department and/or there is a reasonable doubt that severe storm is going to break out endangering the safety of passengers, trains, etc., the Station Master shall, in consultation with the Guard and the Loco Pilot of the train, detain the train and also refuse to grant "Line Clear" to a train coming to his station until storm abates and he/she considers movements of trains safe.

If a train is caught on the run either in a cyclone, storm or strong wind of an intensity which, in the opinion of the Loco pilot, is likely to endanger the safety of the train, he/she shall immediately control the speed of the train and bring it to a stop at the first convenient place taking care as far as possible to avoid stoppage of the train at places like sharp curves, high embankments and bridges (including approaches thereof). In controlling the speed and bringing the train to a halt, the Loco Pilot shall stop the train carefully and without a jerk. He/she shall restart the train in consultation with Guard only after the cyclone, storm or strong wind abates and it is considered safe to proceed.

The Guard and the Loco Pilot of the train in co-operation with the Railway staff travelling in the train shall try to see that doors and windows of the coaches are kept open by the passengers to allow free passage of the wind through the coaches.

Unusual and failure occurrences are vulnerable periods for safety of train operations. It is that time when the human interface is enhanced and becomes critical as compliance to all conditions for ensuring safety is ensured manually. An alert and knowledgeable staff can prevent major mishaps by detecting unsafe conditions in time; taking immediate action to prevent accident and inform all concerned immediately through available means.

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