

Lecture Note - 8

Track Maintenance

Necessity of Track Maintenance

The railway track should be maintained properly for the following reasons:

- (a) To enable trains to run safely at the highest permissible speeds.
- (b) To provide passengers a reasonable level of comfort during the ride.
- (c) Due to the constant movement of heavy and high-speed trains, the packing under the sleepers becomes loose and track geometry gets disturbed. The gauge, alignment, and longitudinal as well as cross levels of the track thus get affected adversely and the safety of the track is harmed.
- (d) Due to the vibrations and impact of high-speed trains, the fittings of the track come undone and there is heavy wear and tear of the track and its components.
- (e) The track and its components get worn out as a result of the weathering effect of rain, sun, and sand.

Advantages of Track Maintenance

A well-maintained track offers a safe and comfortable journey to passengers. If the track is not maintained properly, it will cause discomfort to the passengers and in extreme cases may even give rise to hazardous conditions that can lead to derailments and a consequential loss of life and property. Track maintenance ensures that such situations do not arise. The other advantages of track maintenance are as follows.

- (a) If the track is suitably maintained, the life of the track as well as that of the rolling stock increases since there is lesser wear and tear of their components.
- (b) Regular track maintenance helps in reducing operating costs and fuel consumption.
- (c) Small maintenance jobs done at the appropriate time such as tightening a bolt or key, hammering the dog spike, etc., helps in avoiding loss of the concerned fitting and thus saving on the associated expenditure.
- (d) When track maintenance is neglected for a long time, it may render the track beyond repair, calling for heavy track renewals that entail huge expenses.

Essentials of Track Maintenance

As mentioned earlier, a well-maintained track provides the base for a safe and comfortable journey. Therefore, for a track to serve its purpose well, the following characteristics are required of it.

- (a) The gauge should be correct or within the specified limits
- (b) There should be no difference in cross levels except on curves, where cross levels vary in order to provide superelevation.
- (c) Longitudinal levels should be uniform.
- (d) The alignment should be straight and kink-free.
- (e) The ballast should be adequate and the sleepers should be well packed.
- (f) There should be no excessive wear and tear of the track and all its components and fittings should be complete.
- (g) Track drainage should be good and the formation should be well maintained.