

THE EFFECT OF TRACK CANT ON RAIL WEAR

The relationship between the vehicle and track parameters which influence curving behaviour and hence wheel/rail wear is complex. The parameters which have a major influence on curving behaviour are:

- Curve radius
- Wheel base
- Axle load
- Stiffness of the primary yaw suspension
- Coefficient of friction
- Cant and vehicle speed i.e. cant excess or deficiency
- Height of vehicle centre of gravity.

The effects of cant and speed, combined with the centre of gravity height, are not as well understood as the other parameters. In this report a brief description of the effects of cant on wheel/rail wear is given in an attempt to clarify the situation and it is shown that previous statements on the effect of cant on wheel/rail wear are not contradictory.

On sharp curves an increase in cant can reduce high rail wear but this will be accompanied by an increase in low rail damage and an increased risk of slow speed derailment. On flatter curves a reduction in cant can reduce both high rail and low rail wear, but the sensitivity of changes in rail wear to changes in cant is low. It is recommended that track cant should not be used as a primary means of reducing rail wear.