

curve is ahead of the outer rail by an amount equal to half the pitch of boltholes, cut rails should be provided to obtain square joints. Cut rail is a rail, which is shorter than the standard length of rail by an amount equal to the pitch of the boltholes. The excess length 'd' by which the inner rail gains over the outer rail is calculated by the formula—

$$d = \frac{L \times G}{R}$$

where,

'd' is the length in mm by which the inner rail joint is ahead of the outer rail joint over the entire length of the curve, if cut rails are not provided.

L = Length of the curve in metre

R = Radius of the curve in metre

G = The gauge + width of the rail head in mm

422 Joints on Curves:- (*Back to Para 715*)

- (1) It must be ensured that fish plated rail joints are square at beginning and at the end of the curve.
- (2) On the sharp curves less than 400 metres the rail joints may be staggered, where elbows/kinks are likely to develop if rail joints are laid square.

423 Check Rails on Curves:-

Check rail reduces the risk of derailment on the sharp curves.

- (1) Check rail should be provided on the inside of the inner rail of the curve, with appropriate clearances between the checkrail and the running rail, as stipulated in the "Schedule of Dimensions".
- (2) Locations where checkrail should be provided shall be decided by the Divisional Engineer taking into consideration the negotiability of the rolling stock and the curve geometry.

424 Wear on Outer Rail of Curves:- (*Back to Para 613*)

- (1) The wear on the outer rail on the curve can be reduced effectively by-
 - (a) Lubricating the gauge face of outer rails on the curves.
 - (b) Maintaining correct curve geometry and Super-elevation.
 - (c) Provision of suitable checkrail.
 - (d) Adopting slack gauge PSC sleeper as per RDSO drawings depending on curvature of track.
- (2) Track mounted automatic Gauge Face Lubricators should be provided on curves of radius 875 m (2°) and sharper to reduce rail gauge face wear.

On routes where rail grinding is in practice, track mounted automatic Gauge Face Lubricators should be provided on curves of radius 1400 m (1.25°) and sharper.

Lubrication should be done on new rails or on old rails, which do not have Gauge Corner Cracking or head checks.

While deciding the location of lubricators, following should be considered:-

- (a) It is located on tangent track at the beginning of transition curve where wheel flanging is just beginning to occur.
- (b) On single lines, the lubricator shall be located in the direction of heaviest traffic.
- (c) Lubricators should be located away from switches, crossings and other areas where discontinuity in LWR track may exist.

425 Measurement of Rail Wear on Sharp Curves: -The wear of rails of curves having radius of 600 m or less shall be recorded during scheduled curve inspection by SSE/P.Way(Incharge) and JE/SSE/P.Way(Sectional) as stipulated in Table-1B of para 106 and 109. The lateral wear, vertical wear and total loss of section should be recorded and proper record of measurements maintained.