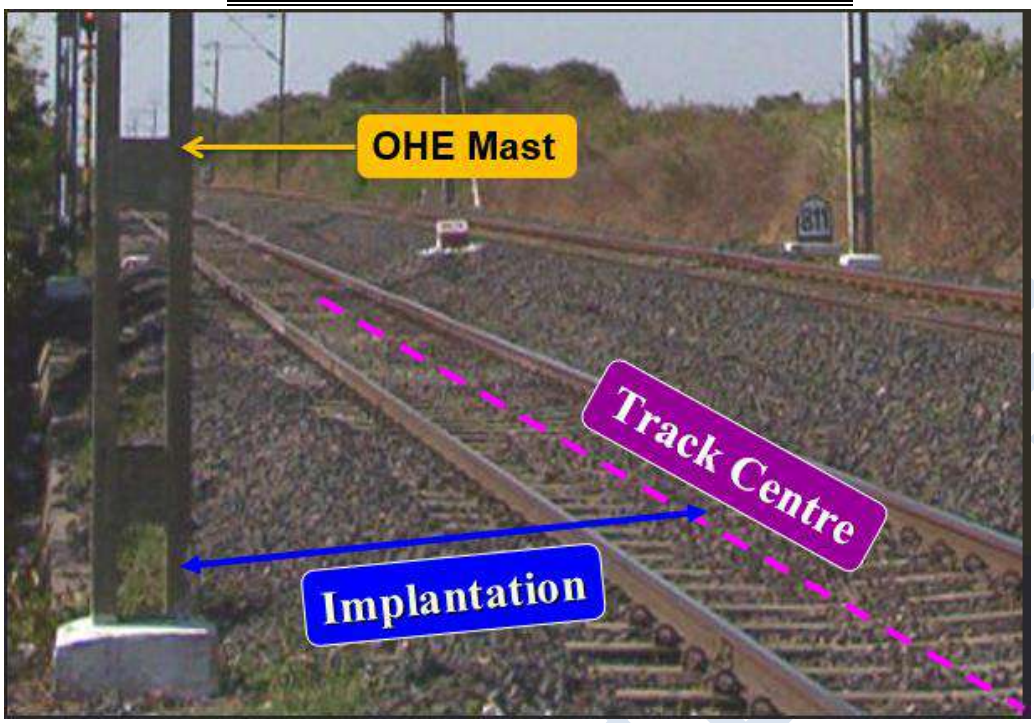
SETTING DISTANCE IMPLANTATION

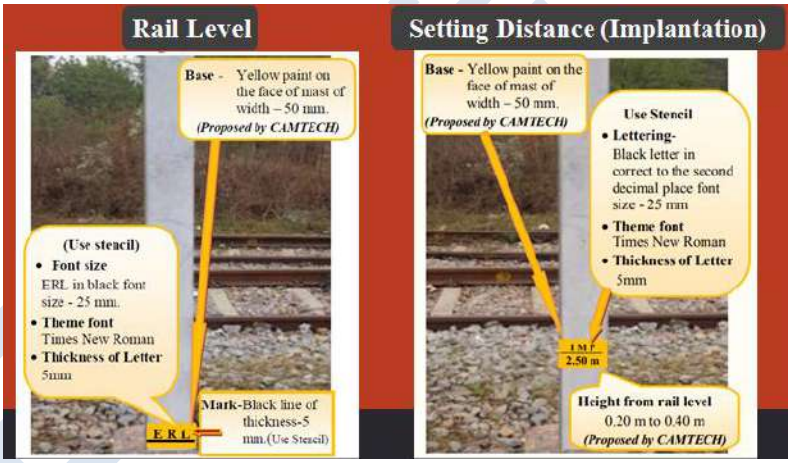


- The horizontal distance from the nearest face of traction mast to the center line of track.
- Any change in alignment due to slewing of tracks will affect the setting distance and consequently the stagger of the contact wire.
  At locations where the setting is critical i.e. close to the minimum permissible value, slewing of track may result in infringement of the moving dimensions with consequent danger of accidents.

- **Alteration of Track**

- "Before any alteration to alignment or level of electrified track is commenced, due notice shall be given to those responsible for the OHE so that the OHE may be adjusted to confirm to the new conditions".

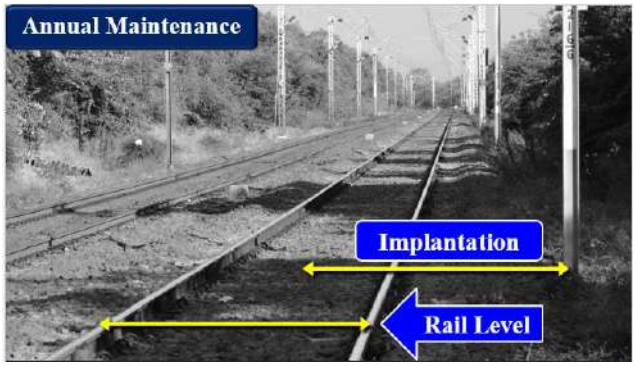
- It follows, therefore, that any alterations of the alignment of the track on electrified sections shall only be made with the prior knowledge and concurrence of the Sr.DEE (TrD), so that he may arrange to correct the SEDs to the extent required.



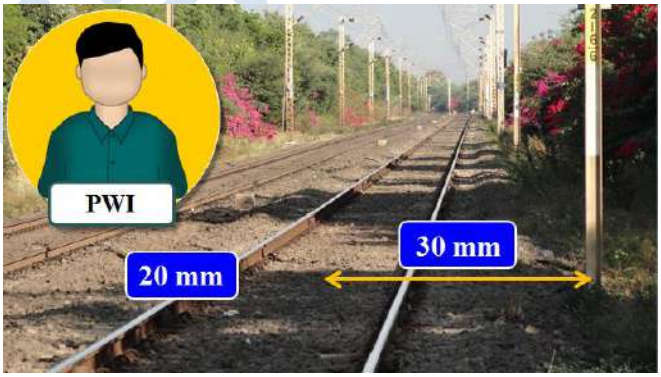
- To facilitate periodical checking, rail level and setting distance should be painted at the base of each OHE mast face soon after commissioning, preferably in black letters.

- A horizontal line would indicate the rail level.
  The setting should be marked in correct to the second decimal place.

- Repainting of the markings will ordinarily be required once in two years. Where pollution due to brake shoe dust etc. is severe, repainting may be required more often.



- During yearly maintenance of OHE, rail level and setting distance should be checked and compared with the original figures.



- Any variations above 30mm in setting distance and 20mm in rail level should be advised to the PWI for correction.

- No change in setting distance and rail level should be allowed if such change result in infringement of moving dimensions.

- It is essential to have a joint annual check of rail level and setting distance by the JE/OHE and JE/P-Way.

- In addition to the markings on the masts, a register should be maintained by SSE (OHE) to record the annual measurements of implantation over his jurisdiction.

- The standard setting i.e. the normal distance from face of the mast traction structure to the centre line of tangent track shall be 2.80 m.

- Setting distance at bridges etc. should be fixed with the approval of the Principal Chief Electrical Engineer of the Railway concerned.

- In case of portal uprights, legs carrying more than one overhead equipment and head-span structures, the setting is normally not less than 3.00 m.

- The minimum setting distance of structures including portals, head span structures etc. on curves is obtained by adding the **curve allowance and 150 mm slewing allowance** to the setting distance specified for tangent track in.

- Normally, the **standard setting distance on broad gauge** main lines on curves should not be less than the values given below:

Curve allowance for maximum speed of 200 km/h					
Degree Of Curvature	**Radius of Curvature (metre)**	**Max. Permissible Speed (km/h)**	**Super Elevation (mm)**	**Extra clearance Between adjacent Track (mm)**	
				Inside curve	Outside curve
½°	3492	200	71	191	--
		160	40	89	--
¾°	2328	200	133	400	--
		160	60	159	--
1°	1747	190	185	575	--
		160	100	295	--
1 ½°	1164	155	185	585	--
2°	875	135	185	590	10
3°	583	110	185	605	30
4°	438	95	185	620	40
5°	350	85	185	640	60
6°	292	80	185	655	80

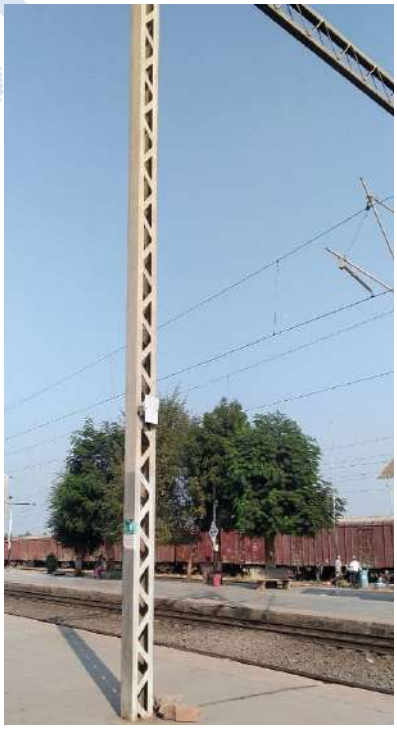
On outside curves	Standard Settings
• Radius of curvature greater than or equal to 875 m	**2.80m**
• Radius of curvature less than 875 m	**2.95m**
• On inside curves	
• Radius of curvature greater than or equal to 3500 m	**3.20m**
• Radius of curvature greater than or equal to 2350 m but less than 3500 m	**3.35m**
• Radius of curvature greater than or equal to 1150 m but less than 2350 m	**3.55m**
• Radius of curvature greater than or equal to 300 m but less than 1150 m	**3.60m**

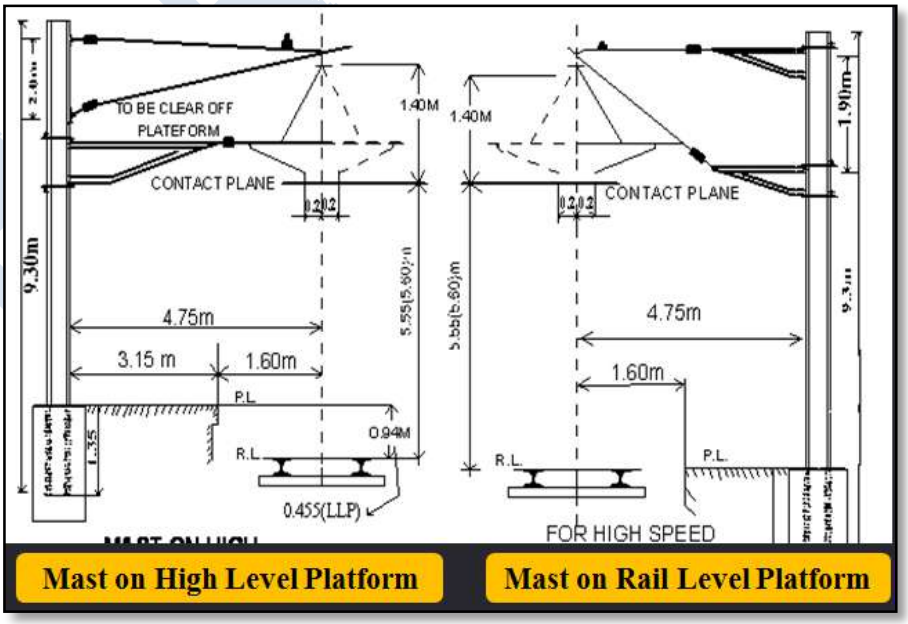
Platform Mast

- The PPT shows Normally, the standard setting distance on main lines on curves should not be less than the shown value:
- **Masts with Counter Weight**-
  In the case of structures with counterweights the term "setting" refers to the minimum distance of the counterweight from the track centre in the worst condition.

- For this purpose, the displacement of the counter weight due to wind transverse to the track is assumed as ± 50 mm.

- The point to be noted that the setting distance of structures on platforms should not be less than 4.75 m.
- As far as possible, the structures are to be located in line with other structures already existing on the platform and should be of minimum possible dimension and fit in with the architectural pattern prevailing in the vicinity. Location of structures opposite to public entrances, exits, staircases, gangways etc. shall be avoided. No live conductor shall run over the platform.





Arrangement of OHE on Platform

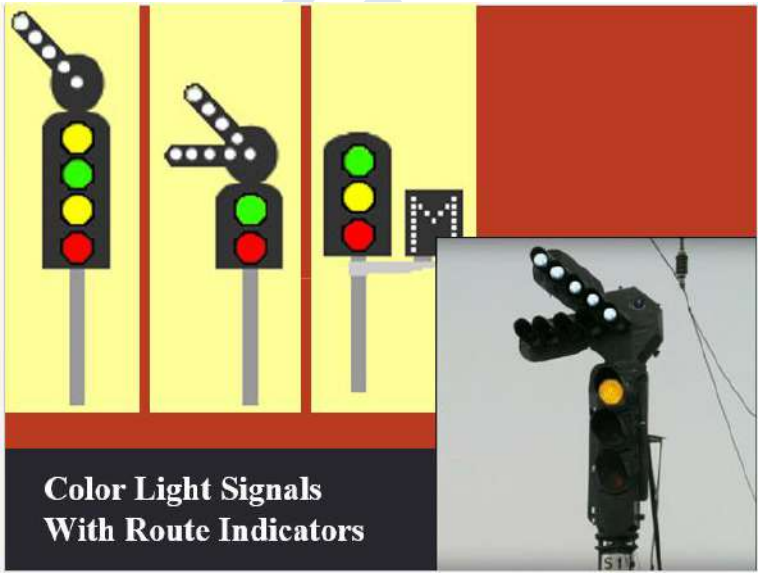
Masts near Signals-The visibility of signals should be taken into

consideration while deciding the setting of the structure in the vicinity of signals. The following principles are to be observed.

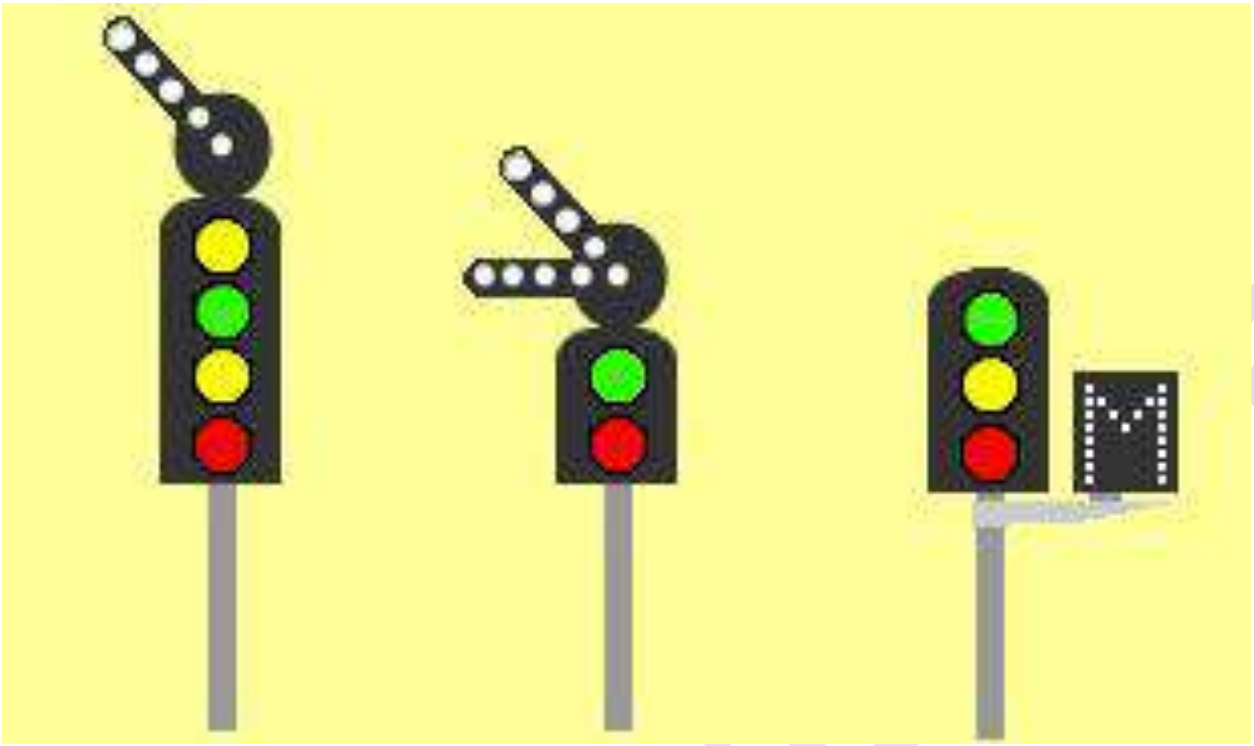
Colour Light Signals Located Outside All Tracks

- **Color Light Signals Without Route Indicators**-
  Where no approach signal is provided
- The minimum setting distance of structure before the signal should be 3.55, 3.40, 3.35, 3.20 & 3.05 m for distance upto 80m, beyond and upto 110m, beyond and upto 190m, beyond and upto 270m, and beyond and up to 400 m respectively.

  Where approach signal is provided and for signals other than distant signals
- The minimum setting of structures before the signal should be 3.55, 3.40, 3.25, 3.10, and 3.05 m for distance upto 50 m, beyond and upto 70 m, beyond and upto115m, beyond and upto 160 m and beyond and upto 240 m respectively.
- **Colour Light Signals With Route Indicators**



- The minimum setting distance of structure before the signal shall 4.02, 3.80, 3.55, 3.35, 3.20 and 3.05 m for distance upto 60 m, beyond and upto 125 m, beyond and upto 170 m, beyond and upto 215 m, beyond and upto 250 m and beyond and upto 310 m respectively.



Colour Light Signals With Horizontal Route Indicators.

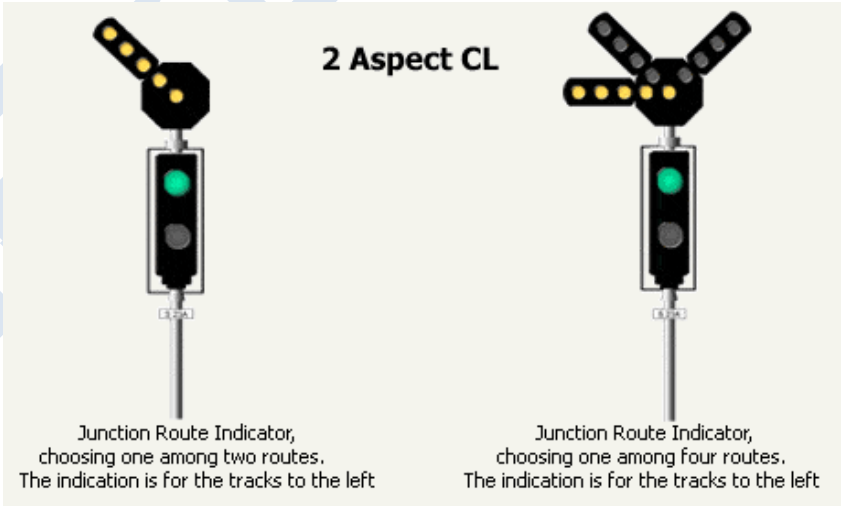
With Other than Horizontal Route Indicator

- The minimum setting distance of structures before the signals shall 3.80, 3.55, 3.35, 3.20 and 3.05 m for distances upto 70m, beyond and upto 130m, beyond and upto 170m, beyond and upto 215m and beyond and upto 280m respectively.
- Setting distance may be reduced for starter signals of loop lines and yard lines.

Color Light Signals Located between Tracks are shown on the screen.

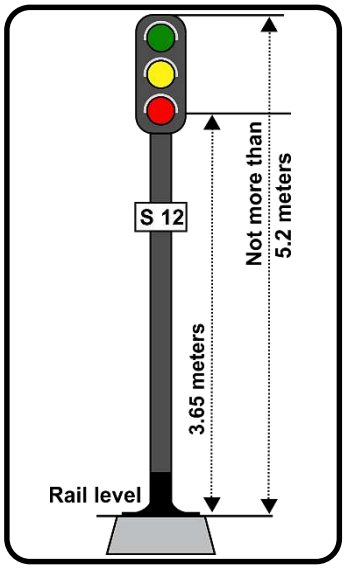
Signals without route indicators –

- No overhead equipment structure should as far as possible be located in the same lane as signals for a distance of at least 600m before a signal.
- Drop arms of portals should also not normally be located in the lane where signals are located at least for a distance of 600 m before the signal. Where this is not possible for any reason, the signal should be mounted on an offset bracket. In addition, a special study should be made in each such case in respect of three drop arms before the signal to see whether the drop arms can be offset from the centre line of the lane in a direction opposite to the arms. Reduction in the signal height must also be examined.

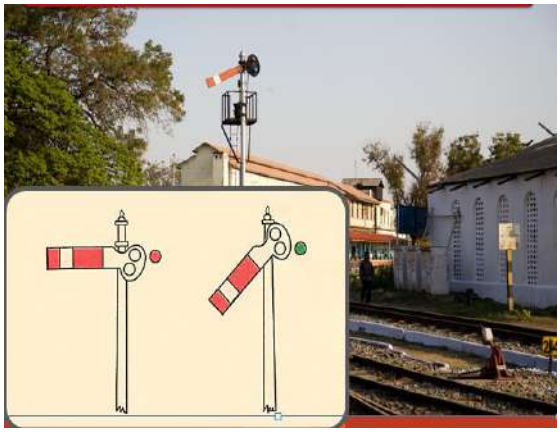


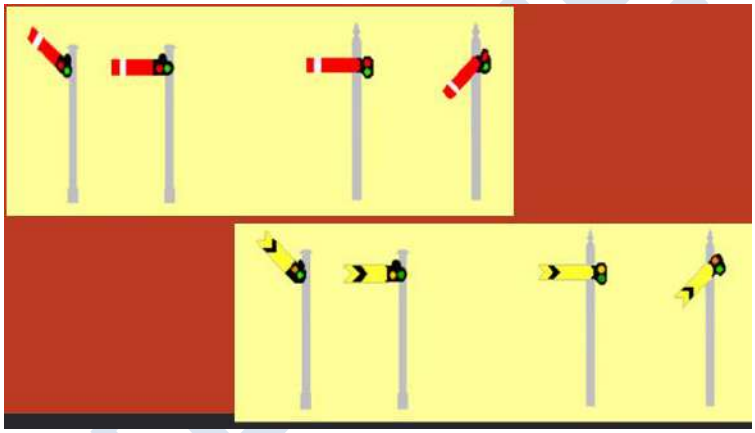
Signals with route indicators –

- The principles mentioned in the preceding paras should be observed in this case also.
- No part of a color light signal without a route indicator should as far as possible be higher than 5.2 m above rail level. Great care must be exercised in deciding the location of the color light signals with route indicators so that the necessary minimum clearances are available between the signals and live out of run wires, or pantograph sway zone



Semaphore Signals Located Outside the Track





- On signal line sections, signals (color light as well as semaphore) must, as far as possible, be located on the side of the track opposite the overhead equipment structure.

Masts on Bridge Piers –

- The setting distance of masts on piers of bridges will be as large as possible and indicated by the Railway.

Turn-out & Diamond Crossings –

- The setting of masts located near theoretical centers of turn-outs and diamond crossings shall be 3.0 m form the nearest track.

Portals

- Wherever portals are proposed to be used, they shall be selected with standard clear spans (distance between face of the uprights).
- The setting of masts located near theoretical centers of turn-outs and diamond crossings shall be 3.0 m form the nearest track.
- For this purpose the clear span for any location obtained by adding the proposed setting of the two columns to the centre-to-centre distances of the tracks spanned by the portal shall be rounded off to the next higher standard span.
- The setting of the uprights of the portal shall then be adjusted to suit the standard span selected with a minimum setting distance.