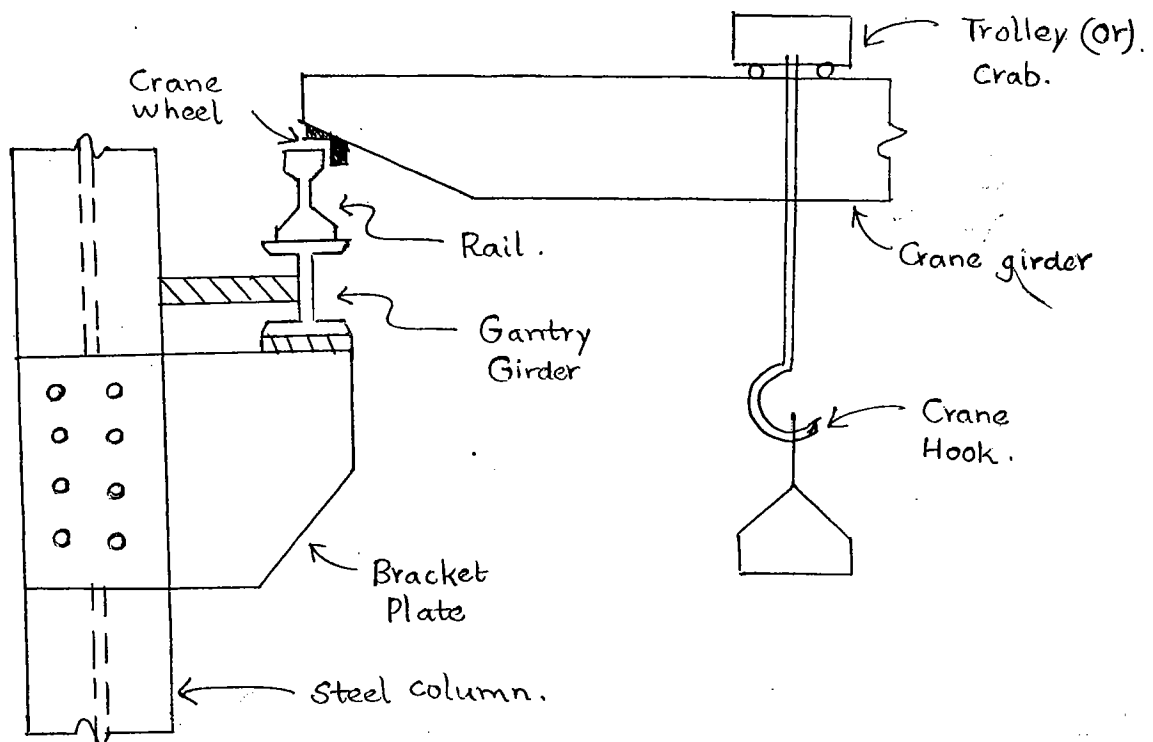


3rd Oct,
FRIDAY

10. GANTRY GIRDERS



EOT Cranes :- Electrically Operated Overhead Travelling Cranes.

MOT or HOT Cranes :- Manually (or) Hand Operated Overhead Travelling Cranes.

→ Design loads on Gantry Girder:

- Vertical loads (Gravity Loads)
- Lateral loads (Surge Loads)
- Longitudinal loads (Drag Loads)
- Impact loads (Sudden Actions)

→ Additional loads on Girder due to Impact effect

(i) Vertical Loads

- EOT cranes
- MOT cranes.

Additional loads

- 25% max. static wheel load.
- 10% max. static wheel loads.

(ii) Lateral Loads

- EOT cranes
- MOT cranes

(iii) Longitudinal Loads

Additional Loads

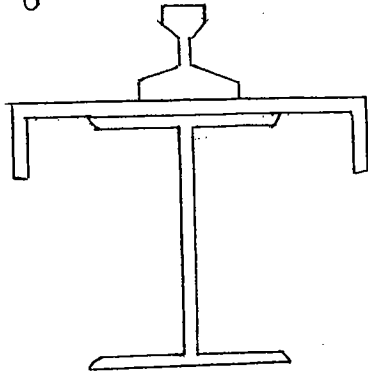
- 10% (wt. of crab + wt. lifted crane)
- 5% (wt. of crab + wt. lifted crane)
- 5% max. static wheel load.

→ Types of Sections

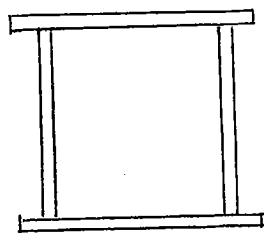
- ISWB : to resist more lateral loads.

$$(I_{yy})_{ISWB} > (I_{yy})_{ISLB/ISJB/ISMB/ISHB}$$

- Reinforced with channel section.



- Box Girder : for more torsional resistance.



→ Limiting Deflections (IS 800: 2007)

- For MOT (or) HOT cranes
- For EOT cranes with crane capacity upto 50 t or 500 kN
- EOT cranes with crane capacity more than 50 t (or) 500 kN
- For other moving equipments like charging cars etc

Δ_{limit}

$L/500$

$L/750$

$L/1000$

$L/600$

$L \rightarrow$ span of gantry girder