

Government of India
Ministry of Railways
Railway Board

No.2006/CE-I/AC-1 (Pt.)

New Delhi, dated 27-10-2009.

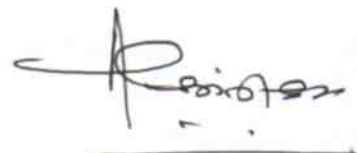
The Principal Chief Engineers & CAO(C) s,
All Indian Railways.

Sub: Safety precautions & measures of ROB /RUB Works.

Ref: Railway Board's letter no. 97/CE-I/BRO/158(Policy) Pt-II dt. 31.07.09

1.0 On dated 23.10.2009, accident of K-37 down local train took place at km 31/13-14 on Mulund-Thane section of Mumbai Division, Central Railway, due to falling of ROB girder, launched about three years back. In addition, there have been ROB accidents on Western, Northern and East Central Railways. Perusal of reports of accidents reveals that though adequate safety instructions exist, lapses as under have taken place at one site or other:

- 1.1 Lack of trained supervisors of requisite credential and expertise.
- 1.2 Critical ROB works being done in absence of designated supervisor.
- 1.3 Non-involvement of Open-line supervisor, where track safety is involved.
- 1.4 Lack of coordination meeting of concerned officials before critical activity to check systems are in place or not.
- 1.5 Cutting of Temporary cross bracing or removing side & bottom support without safeguarding against any movements at the time of shuttering arrangement of cross beam, alignment correction, lowering, etc.
- 1.6 Use of untested soft wooden wedge, instead of sound flat tested wooden blocks and steel stool/ plates.
- 1.7 Use of defective untested hydraulic jack, without pressure gauge
- 1.8 Lack of end restraining walls, which should have been cast along with pier cap and required from seismic considerations too.
- 1.9 Inadequate space between pier cap & pedestal making it difficult to provide central temporary support to Girder.
- 1.10 Girder alignment work being done without block and without taking proper care.
- 1.11 Leaving launched girder unattended and uninspected for longer period.
- 1.12 Non-reporting of ROB accidents to Board or zonal railways, lack of dissemination of knowledge.
- 1.13 Placing Girder on POT PTFE bearing under unlocked condition and without securing by cross beam arrangements & support
- 1.14 Lack of proper temporary arrangements and suitable provisions in design of ROB required for facilitating safety arrangements during launching, lowering, alignment correction, provision of cross girders.
- 1.15 Use of unapproved design of sub or superstructure under work pressure.



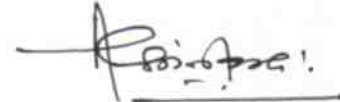
2.0 Member Engineering, during visit to the referred accident site, has issued following instructions to Central Railway officials:

- i) The girder on the launching span must be pulled back and any action on it should be taken thereafter.
- ii) Remaining two girders must be secured with 'A' frames, which should be bolted into the abutment properly & supported on cribs to see that even for a longer period, no more displacement occur in girder.
- iii) Out of total of eight segmental girders, only two girders have been launched. Considering weight and span being large, railway should examine provision of steel grillage.

In addition, preferably, railways should use of composite steel girders for ROBs, which will be lighter, interlaced and will not lead to such disasters.

3.0 In view of above, railways should ensure that above lapses do not take place, safety instructions issued under reference above are in place and necessary arrangements are done to avoid such instances.

4.0 Summary of last 10 years of ROB/RUB accidents should be compiled and sent as per enclosed proforma.



(Arun Kumar Shrivastava)
Executive Director
Civil Engineering / B&S-II

Copy to

ED/Works, IRCON and GM/NHAI for necessary action and provide inputs in this regard