Extract from the investigation report BMVIT-795.037-II/BAV/UUB/SCH/2006 on the collision on 18/10/2006

18. Recommendations

(1)
Re-evaluation of the cranes permitted in Austria of type KRC 1200 with regard to the functionality of the safety devices, controls and the technical modifications made.
In particular, the working order of the live ring brake should be integrated into the control logic and monitored by this in cranes of type KRC 1200 and the like. This is to rule out any automatic movement of the counterweight. The stability of the crane is thus guaranteed, and the restriction of the clear space over neighbouring tracks prevented.
From the point of view of Tracks Section of the UUB and in accordance with the existing statutory provisions, the technical securing of the live ring brake is to be preferred to an organisational measure.
The modification of track building crane SK1 X 980.009-5 of type KRC 1200 implemented by the manufacturer with respect to the display of the angle of the counterweight, together with the acoustic device when the limit angle position is exceeded, is viewed as an immediate measure. The crane driver mainly controls the crane by sight. In so doing, he has to take account of the load moved, the set-down point of the load, any employees in the set-down area and the hand signals of a marshal. Due to the sequence of operations it is difficult, while lowering the load, to pay attention always to the readout of a display which provides assistance in raising the crane.
The acoustic warning device is at best an additional aid, but in no way an additional safety device, as it may not be possible to hear the acoustic warning signal due to the noise of the construction site. The crane driver's steering in the opposite direction if the counterweight's permissible angle of rotation is exceeded can only be considered an emergency measure. Since the movement of the counterweight is determined purely by the control logic, the crane driver can only steer in the opposite direction indirectly via the jib. In the case of a roped-up load that has not been raised, it is impossible to steer in the opposite direction via the jib. The only option available to the operator is to shut off the power to all components of the crane, and therefore the live ring brake too, using the 'emergency stop', in order to stop the counterweight.

(2)
Where use of track building cranes is scheduled, it must be laid down that the provisions of ÖBB ZOV 7 are to be applied analogously to the clear space as well as to the lateral spaces. Apart from the clearance gauge, 2000 mm outwards from the centre of the track, the side spaces, 2500 mm outwards from the centre of the track (in accordance with the loading gauge 'A-B' as per with Figure 20), must also always be left clear.

(3)
Lifting operations and the transporting of loads on the jib of a track building crane should be seen as a further, non-calculable source of danger. The effects of the weather, such as gusts of wind, or a break in the reeving cable could result in the raised or transported load ending up in the clearance of the adjacent track, without it being possible for the crane team to prevent this safely. In this case, on safety grounds, it would seem advisable to halt traffic on the adjacent track during a loading operation, and, during

lifting, setting down or transport operations on the crane jib, not to allow any journeys on the adjacent track, if it is not possible safely to prevent the load being lifted from entering the clearance gauge of the adjacent track.

(4)
Drawing up of operating instructions for performing construction work with a clear division of responsibilities and powers.

5)
Harmonising the definitions (such as Local Supervisor, Safety Inspectorate, Construction Site Inspectorate, etc.) in the ÖBB DV, guides and instructions with the terms used in the statutory regulations (such as e.g. Railways Act, Railways Regulation, Railways – Regulation on Health and Safety at Work, General Regulation on Health and Safety at Work, Construction Workers – Regulation on Health and Safety at Work, etc.).

(6)
Random inspections of the completion of construction work in situ are to be carried out by the railway undertaking or by the competent supervisory authority.

- Safety recommendation of 20 October 2006 as an immediate measure (see point 9) with GZ.BMVIT-795.037/0001/II/BAV/UUB/SCH/2006:

While working in the vicinity of tracks with track building crane X 980.009-5, no journeys should be permitted within the slewing range of the crane.
Work using track building crane X 980.009-5 is to be stopped before allowing journeys within the slewing range.

The safety recommendation was issued to:
- the management of ÖBB-Infrastruktur Betrieb AG
- the management of ÖBB-Infrastruktur Bau AG
- Swietelsky Baugesellschaft mbH in Fischamend

This safety recommendation (GZ.BMVIT-795.037/0001/II/BAV/UUB/SCH/2006) with all its instructions is withdrawn as it has been integrated into the safety recommendation GZ.BMVIT-795.037/0002/II/BAV/UUB/SCH/2006.

- Safety recommendation of 10 November 2006 with GZ.BMVIT-795.037/0002/II/BAV/UUB/SCH/2006:

Following the findings of the investigation of 8 November 2006, the safety recommendation was extended to all cranes of identical construction of type KIROW KRC 1200.

While working in the vicinity of tracks with track building crane of type KIROW KRC 1200, no journeys should be permitted within the slewing range of the crane. Work using track building crane 980.009-5, 980.011-1 and 8455 9892 200-1 is to be stopped before allowing journeys within the slewing range.

Translation provided by the Agency for information purposes.
The only valid version is the original version provided by the NIB.

The safety recommendation was issued to:

- the management of ÖBB-Infrastruktur Betrieb AG
- the management of ÖBB-Infrastruktur Bau AG
- Swietelsky Baugesellschaft mbH. in Fischamend
- Bahnbau Wels (operator of a crane of identical construction)
- Montafonerbahn Aktiengesellschaft
- Wiener Lokalbahn AG
- Graz-Köflacherbahn GmbH
- Raab-Ödenburg-Ebenfurter Eisenbahn AG
- Salzburger Lokalbahn
- Steiermärkische Landesbahn
- Stern&Hafferl Verkehrs GmbH

This safety recommendation (GZ.BMVIT-795.037/0002/II/BAV/UUB/SCH/2006), issued as an immediate measure, remains in force until implementation of the safety recommendations of the investigation report.