V/Line accepts reports on heat speed management

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V/Line has accepted all the recommendations in two reports commissioned into the management of heat speed restrictions on the state's freight lines.

V/Line engaged Monash University's Institute of Railway Technology and Central Queensland University (CQU) to carry out two independent reviews into the restrictions.

Both provided recommendations on how V/Line could improve its freight network.

V/Line chief executive James Pinder said the corporation had accepted all the recommendations.

It had also undertaken a detailed assessment to identify which ones could be addressed through routine and corrective maintenance and those that would be addressed through the Murray Basin Rail Project.

"We know how important the freight network is for Victorian farmers and industry so we're working hard to make the system as efficient as possible," Mr Pinder said.

"We've already started work on the recommendations from these reports and will have more improvements to come so farmers and operators can move more produce more often by rail.

"We will keep working with our Rail Freight Advisory Council to deliver a more customer-focused, safe and efficient rail network."

In response to industry concerns, remedial work undertaken on the freight network had allowed the easing of speed restrictions for the 2017–18 summer and trains would still be able to run even when the temperature reached 36°C.

CQU, Rockhampton, carried out inspections and assessments of sections of the Korong-Vale–Manangatang (KVERBV) and the Korong-Vale–Sea Lake (KVEKUL) rail corridors.

It used the Transport for NSW Welded Track Stability Assessment (WTSA) process in its assessment.

It found V/Line engineers were justified in suspending rail operations during periods of high temperature (36°C or above) until remedial actions could be conducted to improve the track condition.

CQU also evaluated appropriate WOLO speeds and temperature trigger points that would reasonably and objectively have applied for the 2016–17 summer period.

WOLOs – the NSW railways telegraphic code for the introduction of heat related speed restrictions – were first introduced by V/Line in 1998.

The trigger for WOLO restrictions was set at 36°C for welded tracks constructed with a design stress-free rail temperature of 35°C–37°C.

The Centre for Railway Engineering (CRE) found V/Line's track and civil maintenance manager was responsible for imposing restrictive WOLOs.

The director determined if the temperature trigger point would be reduced or whether or not to stop train operations to mitigate the assessed risk of lateral track instability.

Interviews with the local V/Line track maintenance staff showed they followed rail industry standard practices and conducted maintenance on the highest-priority track defects first.

"This was conducted in compliance with the V/Line risk management framework, which includes reducing the risk of train derailments to 'So Far As Is Reasonably Practicable' (SFAIRP)," the report found.

The use of restrictive WOLOs incurred public criticism from rail freight providers and their customers.

During the 2016–17 summer period, restrictive WOLOs coincided with an unprecedented season, leading to agricultural production levels that were significantly higher than those of previous years.

CRE conducted a site investigation of the KVERBV and KVEKUL rail corridors to evaluate the state of the track during the 2016–17 summer period.

"However, these rail corridors have undergone extensive remedial works, including refurbishment of level crossings, rail restressing activities, joint lubrication and other corrective maintenance actions, in response to the WOLO restrictions of last summer," the report said.

"The CRE investigation of the KVERBV rail corridor identified some sections of track that were still in the same basic condition as they were during the 2016–17 summer period.

"Furthermore, V/Line has reviewed and expanded [its] track standards and maintenance procedures to improve the management of lateral track stability.

"Many investigated sites on both the KVERBV and KVEKUL rail corridors had undergone corrective maintenance before the CRE investigation and the degree of track instability over the 2016–17 summer period could not be accurately determined from these site inspections.

"Interviews with the local V/Line track maintenance staff showed they followed rail industry standard practices and conducted maintenance on the highest-priority track defects first.

"Therefore, many of the high-instability areas on the KVERBV and KVEKUL rail corridors appear to have been rectified in the first half of 2017.

"The investigation found that, based on the New South Wales track stability assessment process, the condition of the track at the time and using best practice to reduce the risk to SFAIRP, trains should have been restricted in speed to 60kmh at 29.9°C and train operations then halted at 35.9°C until track repairs had been conducted.

"Furthermore, the track condition during the 2016–17 summer period was in a deteriorated state that did not permit reliable train operations."

Additional track maintenance was required to improve track availability, albeit with reduced speeds during hot weather.

"The CRE investigation has identified locations on the KVERBV rail corridor and documented evidence was provided by V/Line for locations on the KVEKUL corridor of areas that would have experienced high rail stress when temperatures exceeded 36°C in the 2016–17 summer period," the report stated.

"When combined with a standard of track that was operating near its maximum acceptable limit of degradation, this created an increased risk of track buckling.

"This risk would have become significant when forces were applied to the rail by operational rail traffic. Therefore, if lateral track stability analysis was conducted using the NSW standard practices, then V/Line engineers would be justified in suspending rail operations during periods of high temperature (36°C or above) until remedial actions could be conducted to improve the track condition."

Among the CRE recommendations were:

- rail joints be maintained and lubricated in accordance with the V/Line standard and gaps be monitored near known rail creep bunching locations during hot weather track inspections;
- ineffective rail anchors be reset;
- rail-to-sleeper fastenings be installed and maintained in accordance with the V/Line standard; and
- skewed and ineffective sleepers be corrected or replaced.

CRE also made recommendations about headwalls of culverts, cleaning of cess drains and widening of formation where adequate sleeper ballast shoulders could not be maintained.

CRE also suggested installing creep markers at 500m intervals in line with the NSW standard TMC-203

"Once a track section is identified as a high risk to lateral stability, then remedial works or risk mitigation strategy is to be carried out within a timely manner," the report said.

It also recommended V/Line install continuous welded rail and concrete sleepers to improve lateral track stability.

IRT report made similar findings to those of CRE.

An inspection of the Mildura and Tocumwal lines in mid June 2017 found the dominant fault was track-gauge related.

"Tight gauge conditions were responsible for most recorded gauge exceedances – approximately nine per cent and 18pc of gauge faults were reported at an A-level fault.

"Extreme tight-gauge conditions are a concern and can cause significant issues, such as increased risk of internal defect development, increased wear, increased vibration and noise and increased risk of flange climb," the report summary said.

It suggested a combination of the current V/Line approach to restrictions and site specific controls be employed.

"Current WOLO requirements should remain as an overarching approach to controlling track buckle risk during hot weather," IRT found.

It called for the application of localised speed restrictions in areas deemed to present a high risk of track buckle. These included fixed points, such as level crossings, turnouts and high creep areas.

"Prior to the hot-weather months, potential high-risk areas should be assessed individually to determine the estimated stability loss and the corresponding temperature threshold."

Among its recommendations, IRT suggested current blanket WOLO thresholds for all track sections with calculated track stability loss of greater than 55pc.

"Using this approach, all sections between Birchip and Mildura and Congupna and Tocumwal may remain under the current WOLO threshold," the report said.

The Shepparton-to-Congupna section of the Tocumwal line would require WOLO intervention at a lower temperature threshold (29°C).

It also affirmed the CRE recommendations to identify and undertake stability analysis of potentially high-buckling-risk areas before the hot weather months.

Prior to the hot-weather months, potential high-risk areas should be assessed individually to determine the estimated stability loss and the corresponding temperature threshold.

"High risk areas requiring earlier (lower temperature) intervention should be monitored and local speed restrictions applied, once the critical temperature threshold is expected."

Localised speed restrictions should apply through the affected area, extending out in 500m sections, until stability loss was below 55pc. "Once temperatures reach the blanket WOLO threshold, high-risk sites may either join the blanket restriction envelope or be subject to further speed restriction."

It also recommended correction of ballast shoulder deficiencies and disturbance to the ballast profile during maintenance works. "Numerous examples of poor ballast profile at joints due to disturbance during joint maintenance were observed," IRT found. **T+S**

Kilbride 'near-hit' report released

THE AUSTRALIAN TRANSPORT Safety Bureau has released the final investigation report into a near-hit with detrained passengers on the track at Kilbride, New South Wales, on 22 May 2014.

The report, released on 17 January 2018, said a northbound XPT passenger service (train No NT33) had departed Paterson towards Kilbride on the lower North Coast when at 11.37am the driver observed a bus at the Mirari road level crossing. He also noted there were people walking on the track ahead.

A disabled coal train had delayed an earlier (local) passenger service No V938, and the passengers had detrained to reach alternative road transport.

According to the report, the crew of train V938 did not comply with the Australian Rail Track Corporation network rules when detraining the passengers and had "unknowingly" placed the passengers in the path of NT33.

The driver of NT33 immediately made an emergency brake application and brought the train to a stand approximately 80m short of the people.

"There were no reported injuries as a result of the incident, but this near-hit shows the importance of strict adherence to recognised detraining and track protection procedures when transferring passengers from a stranded train to a safe place," the report's author said.

The investigation also found that key operational staff in NSW Trains and Sydney Trains continued to operate under RailCorp legacy systems, even though documented transitional arrangements had re-established lines of responsibility and authority. This misunderstanding of roles, responsibilities and limits of authority by operational employees likely contributed to inadequate communication between critical safe working positions, the report suggested.

– LEON OBERG