Case Study

Left-Turn Audible Alarms: Keeping Vulnerable Road Users Safe in Australia's Largest Transport Infrastructure Project

Major Transport Infrastructure Authority (MTIA) and Cross Yarra Partnership (CYP)

Key Safety Focus:
Left Turn Audible Alarms

The Melbourne Metro Tunnel Project, one of Australia's largest transport infrastructure undertakings, is being delivered by the Major Transport Infrastructure Authority and Cross Yarra Partnership. Given the large number of trucks required to transport tunnel spoil through the busy CBD, the safety of vulnerable road users (VRUs) was a top priority. One particularly urgent concern was addressing the hazards posed to VRUs by left-turning trucks, which have been responsible for a significant number of cyclist fatalities in Australia.

To address this, left-turn audible alarms were identified as a preventative measure after discussions with Transport for London, who had successfully championed the technology in the UK. These alarms activate a spoken message and/or audible alarm when the truck uses its left-turn indicator, warning other road users of the left-turn blind spot hazard.

Implementation

To address the pressing concern of left-turning trucks, MTIA; Metro Tunnel Project team contractually mandated the installation of left-turn audible alarms for these heavy vehicles. A number of solutions exist in the market including the use of the Indicator Alarmalight Left Turn Talking Alarm 2 Pod Amber LED as one example of a suitable alarm model. This alarm emits a clear message with a noise level of 92dB(a) and features flashing LED lights to draw the attention of deaf or partially deaf road users.

"STAND CLEAR, this vehicle is turning LEFT!"

The installation cost of the alarm is approximately $250, with an additional installation cost of $250 per vehicle (taking 2-3 hours per vehicle). As such, the total estimated truck cost is $500, which amounts to $2.08 per workday over a year. The estimated weight penalty for the installation is less than 5kg per vehicle or combination.

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Key challenges

When left-turn audible alarms were initially required for the Melbourne Metro Tunnel Project, several key issues cropped up during the implementation phase. Firstly, no local manufacturers produced left-turn alarms suitable for Australian fleet vehicles. This hurdle was overcome by developing a prototype, testing and manufacturing it initially overseas and then locally, which laid the foundation for the Australian market. Soon enough, local manufacturers were engaged and now readily supply these much-needed units.

Secondly, truck owners were initially hesitant about the cost of the alarm units, installation, and the time-off-road required to fit them. To encourage compliance, a structured campaign was launched, highlighting the long-term benefits of implementing the alarms, such as protecting vulnerable road users, safeguarding the reputation and social licensing of the transport organisation, as well as complying with other contracts that require similar VRU safety solutions.

Since the initial implementation phase, these issues have largely been resolved, and compliance with the left-turn audible alarm requirements was achieved.

Achievements and Community Impacts

The left-turn audible alarm has been implemented as a preventative measure to minimise interactions between trucks and VRUs, which is expected to reduce serious injuries and fatalities. Due to the pandemic's impact on traffic, it is challenging to accurately measure community safety improvements after implementing the alarms in the project.

Implementing left-turn audible alarms has positively impacted the industry by creating a foundation to ensure that fit-for-vehicle audible alarms are available in the Australian market. Furthermore, it has raised awareness of the advantages of audible alarms and contributed to the discussion of VRU safety in the construction industry. The requirement for audible alarms on the Metro Tunnel Project will also likely have a positive flow-on effect on other projects, as many vehicles will be equipped with this safety technology.

Summary

The Melbourne Metro Tunnel Project, one of Australia's most significant transport infrastructure projects, prioritised the safety of vulnerable road users by mandating the installation of left-turn audible alarms on all heavy vehicles involved. Despite initial challenges, including a lack of local manufacturers and concerns from contractors over availability of a suitable product, cost and installation, compliance with the requirement was achieved. The alarms have been implemented as a preventative measure to reduce serious injuries and fatalities caused by left-turning trucks, and their successful implementation has positively impacted the industry by creating a foundation for the availability of fit-for-vehicle audible alarms in the Australian market. The project has also contributed to the discussion of VRU safety in the construction industry and is expected to have a flow-on effect on other projects.

More about the organisation

The Major Transport Infrastructure Authority delivers infrastructure as directed by the Victorian Government and is responsible for facilitating the development and delivery of the Metro Tunnel Project.

The CYP is a consortium comprising Lendlease Melbourne Metro, John Holland, Bouygues Construction, John Laing and Capella Capital. The CYP has been awarded the contract to complete the main tunnelling and stations works on the Metro Tunnel Project.