CASE STUDY
Skanska – A428 | Digital 'Thumbs Up' – 19/12/2022

Introduction

Each year an average of about 7 people die as a result of accidents involving vehicles or mobile plant on construction sites – a further 93 people are seriously injured. People plant interface (PPI) is one of our highest risks at the A428 Black Cat to Caxton Gibbet Improvement Scheme. The PPI Fatal Risk Group at the project have been exploring technologies which support the expecations of Raising the Bar 3 Plant Person Interface. Wherever practical the A428 team uses 3D machine control to completely segregate plant and people eliminating the hazard completely, however there are activities where this is not a practical solution. Working with L Lynch Plant hire and Safety Shield Global the project are now using digital 'Thumbs Up' technology to enable clear, consise communication and instruction between Plant Operators and individuals wishing to approach or pass a machine.

Overview

Feedback from RedZone training sessions identified issues with individuals being able to confidently recognise whether an Operator had seen them and isolated their machine controls using a deadman lever. The Digital Thumbs Up ensures that a machine is safe to pass or approach by providing the approaching person with clear visual and audible instructions, and acceptance from the Operator. The simple model involves the Operator pressing a button in the cab that triggers the LED display to change from a red 'No Entry' to green "Thumbs Up". This is accompanied by an audible message from an inbuilt speaker saying, "Thumbs Up accepted, approach with caution". Simultaneously, the machine controls are disabled making it safe for the approaching person.

Challenges

Working with plant and machines and implementing the Digital Thumbs Up presented few challenges, namely:

- Without clear exclusion zones in place it is difficult for individuals to judge when they are in or approaching the Red Zone

- As with any change or use of technology it must be used consistently to result in any real change in improved behaviours; and the focus for safety must always be plant and people segregation rather than relying on technology as the first line of defence

'The button is well positioned in the cab so I can't accidently switch it on/off, it's good for people to know I have seen them and along with RedZone training I think this system will get people into the habit of approaching plant safely, it's something I will definitely use' –

Mark Start, Plant Operator

Lynch

Action Taken

- The A428 project have updated RedZone delivery to reflect the inclusion of the new digital thumbs up.
- Briefings and communications around the digital thumbs up have been undertaken across the scheme and the Highways Sector through demonstrations at our Infrastructure Zero Accident Forum and through communications on the Skanska intranet.
- Lynch have undertaken on site demonstrations and briefings with plant operators and workers on the A428 scheme.
- We are currently using this technology on excavators being used for archaeology works and compound set up, and also on a telehandler used for loading and unloading of vehicles.

Results

- Clear audible and visual communication between Plant Operators and other site workers; the visual warnings are easily recognisable during day and night works, and can be easily understood by multi-lingual individuals.
- Plant Operators praise the technology and expressed the simplicity and low effort involved with the system. Plant Operators have confidence that those wishing to pass or approach can clearly see if the Plant Operator approves or denies their request reducing the risk of people plant interface and general fustrations when communication is misunderstood or unclear.
- Longterm the A428 hope that the Digital Thumbs Up will continue to provide a simple message and drive desired behaviours when utilised consistently across the project.

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home safe and well