

Reducing the Risk of Personnel-Vehicle Incidents

New Milton Sand & Ballast invest in ZoneSafe proximity warning system

The risk of personnel-vehicle incidents (PVI) remains a major concern for all companies operating mobile plant. Despite the successful introduction of technology and better working practices, accidents can still occur. A new product called ZoneSafe aims to provide companies with a tool for reducing the risk of PVI even further. ZoneSafe is distributed by OnGrade Ltd, the Dorset-based distributors of mobile plant instrumentation, and has been developed by Avonwood Developments, specialists in radio-frequency identification (RFID) technology.

ZoneSafe is a proximity warning system that monitors a virtual detection zone around a vehicle. The zone can be configured to give a full 360° detection coverage at a perimeter range of up to 8m.

When the detection zone is entered by personnel wearing a ZoneSafe transponder (also known as a tag), an in-cab alarm gives audible and visual warnings to the operator of the vehicle that the zone perimeter has been breached. An external alarm option can also be fitted, warning pedestrian personnel that they have breached the zone.

ZoneSafe tags can be detected by any vehicle or equipment on which a ZoneSafe system has been deployed. This makes it particularly suitable for companies who have staff movements across multiple sites. The tags can be worn in a number of ways, eg on a lanyard, in an arm band etc, or integrated into hi-vis clothing or other personal protective equipment, such as a hard hat.

One of the unique benefits of ZoneSafe compared with other safety measures, such as radar and reversing cameras, is that the



ZoneSafe can be installed on all types and sizes of mobile plant

system data-logs any events caused by a tag breach; the information recorded includes the tag number and the time and date of the breach. These data can be downloaded and used for the investigation of any incidents and for awareness training of personnel. And because ZoneSafe only monitors for wearers of the transponder, false alarms that can occur with other technologies are minimized.

ZoneSafe has already received a very positive reception from companies across many industry sectors, including those operating within the aggregates, construction

and waste-management industries, where there is a need to reduce the risk to personnel caused by moving vehicles and machine hazards.

ZoneSafe can be installed on mobile plant of all types and sizes, ranging from forklift trucks through to wheel loaders, excavators, dumptrucks and dozers.

Case Study – Elliott Road

One of the first companies to take advantage of the benefits that ZoneSafe can offer in reducing the risk of PVI is New Milton Sand & Ballast

ZoneSafe tags can be worn in a number of ways, such as on a lanyard (left) or in an arm band (right)



Communications & Security



The ZoneSafe in-cab alarm unit

(NMSB), a regional supplier of aggregates and concrete products based in New Milton, Hampshire.

NMSB have a very strict policy towards health and safety across all of their sites and have utilized a variety of technologies to ensure that their staff and visitors are protected from the hazard of moving vehicles. The company has a proactive approach to health and safety and continues to strive to improve health and safety for anybody involved with the business, whether they are employees, customers or contractors.

NMSB's managing director, Trevor Poole, commented: 'We had a particular problem on our 2-acre Elliott Road site, which is situated in the heart of Bournemouth. The site takes in large loads of aggregate, which are tipped in 42 bays. Customers then collect small quantities from these bays, bring in commercial waste for sorting or collect concrete and screed from our on-site ready-mix plant. We also sell bagged cement from the depot as well as other builders' equipment. Most collecting vehicles are 3.5-tonne tippers and we also have members of

the public collecting with cars and trailers – it is a true retail site.'

The Elliott Road site handles around 30,000 tonnes per annum of bulk aggregate and outputs up to 12,000m³ of concrete. In addition NMSB run three or four skip loaders within the operation.

'Understandably, with all this going, on it is not easy controlling incoming customer movements, and even with good safety standards the site can become a nightmare during busy times,' explained Mr Poole. 'With safety being our primary concern, we searched for a product to help solve this particular problem and found that solution in ZoneSafe.'

NMSB agreed to trial the ZoneSafe proximity warning system after Mr Poole identified several particular benefits compared with the safety measures traditionally employed by the company; in particular:

- ZoneSafe provides 'active' rather than passive alerts, ie should personnel enter the safety zone, the driver is warned automatically both audibly and visually.
- Unlike other technologies, the ZoneSafe

system offers full 360° monitoring around the machine – this was particularly relevant to the Elliott Road site where the product was installed.

- The monitored zone can be customized to meet the operational requirements of the site.
- An incident (zone perimeter breach) is recorded by the ZoneSafe system and can be reviewed and used for reporting, training or other purposes.

According to Mr Poole, NMSB felt that these benefits not only complemented their existing safety measures, but also added a new level of protection and traceability.

NMSB's Elliott Road site is a compact but extremely busy site that has three primary functions: aggregate depot; concrete depot; and waste transfer. The site is open to both trade and public and is also visited occasionally by NMSB staff not permanently based at the site, and by sub-contractors. The site has six full-time employees who operate three items of heavy plant: a Volvo L90E wheel loader; a Komatsu WA320 wheel loader; and a Terex Fuchs material handler. Both wheel loaders are already equipped with colour cameras, reversing radars with vehicle-management systems (VMS) and additional safety mirrors.

For an initial trial period, ZoneSafe was installed on the Volvo L90E wheel loader. This was a full 360° system with a zone perimeter range of 4m. Training was provided to the machine operators and all other employees at the site. The trial was conducted over a two-month period, closely monitored by both NMSB and OnGrade Ltd, and proved a great success. As a result, all the remaining vehicles at the Elliott Road site have now also been fitted with the ZoneSafe system.

Commenting on the success of the ZoneSafe trial, Trevor Poole said: 'The installation of this system has been very worthwhile. It now represents 'best practice' and we are looking to install it on our other sites.'

For further information visit: www.ongrade.com or www.proximitywarning.com

ZoneSafe front antennas (left) and rear antennas (right) on the Volvo L90E wheel loader at NMSB's Elliot Road site

