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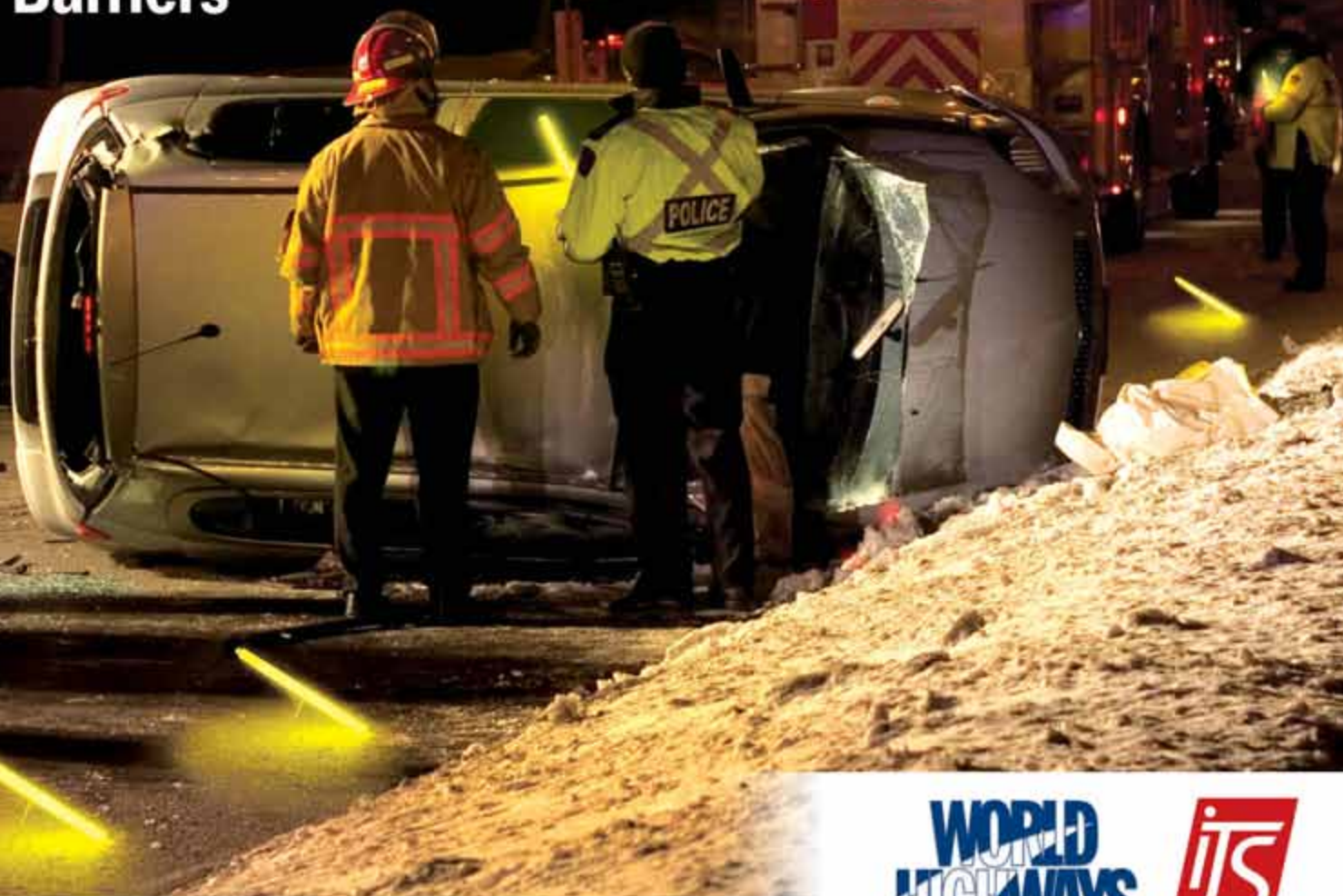
Lighting road safety

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Safer highway work zones

Holland, the US and the UK have companies offering some of the latest technology and education programmes aimed at ensuring greater temporary highway work zone safety during vital works projects. Guy Woodford reports

Dutch firm TrafIQ's innovative Mobile Automatic Roadblock System (M.A.R.S) is based around a vehicle said to be able to pick up and place crash cushions, as well as rumble strips and traffic cones. It can be operated by a single driver, helping to reduce risk to personnel from high volume, passing traffic.

TrafIQ claim the M.A.R.S vehicle allows a single driver to place 6km of protective barrier sections. It can also store 200-600 traffic cones.

One M.A.R.S vehicle was used last year in the Poort Van Bunnik project involving the expansion of the A12 between Lunetten and Veenendaal, in the Netherlands. The Dutch Rijkswaterstaat (Ministry of Transport, Public Works and Water Management) commissioned works are set to last 18 months and see the renewal of 30km of highways and 26 road bridges. Night-time lane closures are being executed by the M.A.R.S vehicle.

"Normally two men are responsible for placing and picking up cones hanging outside a pick-up truck while traffic is speeding fast nearby. To improve work zone safety, the M.A.R.S vehicle can be directed by its driver to place and pick up the cones automatically," said a spokesperson for Poort Van Bunnik contractors Bam. "The driver can also direct the M.A.R.S vehicle to automatically position the crash cushion and the rumble strips."

An active camera is said by TrafIQ to assist the M.A.R.S vehicle driver in

positioning the rumble strip, which is said to be approved by the Rijkswaterstaat. The rumble strip is also said by TrafIQ to provide a "stable first alert" to motorists caught up in a roadblock.

The M.A.R.S vehicle approved crash cushion (NCHRP 25- norm, 70kmh) and light arrow combination is said to allow highway workers to carry out their work, while at the same time, protect road users in the event of an accident.

Another M.A.R.S vehicle is being used to improve work zone safety during the construction and maintenance of managed motorways on the A4-A10 south Amsterdam and on the A9 Badhoevedorp to Velsen.

TrafIQ is keen to export M.A.R.S vehicles and has already supplied one to Switzerland.

US firm Mobile Barriers recently won the International Road Federation (IRF) 2012 Innovative Product Award for its MBT-1 barrier for temporary highway work zones.

Said to offer 12-31m of highly mobile, positive barrier protection, MBT-1 is akin to a trailer that can be towed into position by a truck and then parked. It then becomes a safe barrier for work zone protection of personnel. When it is required elsewhere, the MBT-1 can be hitched to a truck tractor unit and driven to its new location.

Mobile Barriers says the barrier is innovatively able to rock on its suspension, and the steel walls are both higher and have a significantly lower

friction coefficient than concrete (turning and redirecting the impacts more cleanly).

Other features include interchangeable right/left configurations, a modular and self-contained structure, and onboard power and lighting. It is Federal Highway Administration (FHWA) classified as 'movable longitudinal barrier'. BMT-1 is also said to be eligible in the US for 90:10 & 80:20 matching funds/Federal-aid reimbursement.

Currently rated for US standards only, it can be used in North America and Latin America, as well as some parts of the Middle East and Africa. Kevin Groeneweg, chief executive of Mobile Barriers, said: "Not all countries are insisting on separate testing, but we are open to doing so."

The IRF award for MBT-1 comes after it received similar awards from the American Road & Transportation Builders Association (ARTBA), the Transportation Development Foundation (TDF), and the American Traffic Safety Services Association (ATSSA).

Over the Atlantic in the UK, latest available figures show the number of roadworkers being killed and seriously injured on Britain's major roads more than doubled between 2007 and 2009 – from no deaths and 14 serious injuries, to 1 death and 35 serious injuries.

Two prominent UK firms have noted this disturbing trend and taken recent action to tackle it, one by introducing new technology, the other by making and promoting a safety training DVD for lorry drivers. →

➔ Lafarge Tarmac's (UK) National Contracting division is rolling out innovative new technology designed to provide greater protection for lone highway workers.

A claimed first for the highways industry, the system has been specially developed by Lafarge Tarmac, in partnership with Reliance Protect. It works by providing real-time monitoring and tracking of workers that might be required to work alone onsite, such as plant delivery drivers and equipment fitters.

Each lone worker will be given an armband which has built-in GPS technology that relays real-time information on their status and location to a control centre, which is manned around the clock.

On arrival onsite, the operative logs into the system, advising the call centre of their exact location and the time they expect to be onsite. If their armband does not detect movement for more than 180 seconds, the device will vibrate continuously and if not acknowledged by the operative, it will send an emergency alert to a central monitoring centre to trigger emergency support.

Another armband feature is a panic alarm, which can be activated if a site operative feels threatened by a road user or intimidated by a member of the public. When this alarm is activated, the device also listens and captures everything that takes place during an incident, so that the trained monitoring staff in the control centre can respond appropriately, depending on the severity of the situation. This can include calling out the emergency services, alerting colleagues and archiving recordings as evidence for any legal action.

Lafarge Tarmac's launch of this new lone worker system follows an extensive trial across the northern England county of Yorkshire, and the West Midlands region of central England. The company had previously operated an 'accompanied worker scheme', which required fitters and plant delivery drivers to work in pairs. Where this is not possible, the new system enables operational employees to be deployed to site efficiently while ensuring their safety at all times.

Speaking about the need for the new technology, Paul Fleetham, managing director for Lafarge Tarmac National Contracting, said: "By equipping our lone workers with this new innovative device, we can access real-time information from site, helping us to further improve the safety of our employees. This technology sets a new benchmark for lone worker safety and through a central control centre ensures that we are in constant communication with our employees, and can immediately deploy support if necessary."

Atkins, a leading UK engineering consultancy, has developed a training DVD for lorry drivers as a result of an accident in which one of its employees' Impact Protection Vehicle was hit by a lorry while he was protecting a team of

road workers on the carriageway. The DVD is being distributed to a number of road haulage companies across the UK, and is also posted on YouTube.

The DVD launch is the latest development in Atkins' well established roadworker safety awareness programme, launched several years ago after a number of its people were involved in near-misses on the roads. The programme, called Safe by choice, is tackling three of the key safety issues operatives face: the role Impact Protection Vehicles (IPVs) play in protecting roadworkers; the use of CCTV on Stop/Go boards to identify drivers who ignore the signs and drive straight through works areas; and the use of CCTV in vehicles to protect operatives when members of the public drive through traffic management areas.

Atkins says some of its workers have been sworn at, while others have had drink cans thrown at them. The consultancy says cars have also been witnessed by some of its employees driving erratically through a number of closed-off work sites.

Steve Clayton, from Atkins' Somerset Highways commission, devised new CCTV Stop/Go boards as a way of gathering

evidence to assist in prosecuting offenders from similar incidents. He said the CCTV cameras in the Stop/Go board enable staff to film anyone driving through the stop sign or anyone found to be abusing Atkins employees. "We can then take the footage to the police who could file for prosecution," added Clayton. "These sorts of measures are now vital as the only alternative if this sort of dangerous behaviour continues; it may be necessary to close roads in order to carry out works."

Atkins says it is also investigating having CCTV cameras in vehicles in an effort to tackle the issue of the public driving through traffic management sites. Offending members of the public, whose actions are said to be putting operatives' lives at risk, could find themselves being questioned by the police. ■

Atkins

www.atkinsglobal.co.uk

Lafarge Tarmac

www.tarmac.co.uk

Mobile Barriers

www.mobilebarriers.com

TrafiQ

www.trafi-q.com



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1. US firm Mobile Barriers recently won the International Road Federation (IRF) 2012 Innovative Product Award for its MBT-1 barrier for temporary highway work zones 2. M.A.R.S vehicle from TrafiQ is improving highway work zone safety on a number of Dutch managed motorways 3. Lafarge Tarmac's (UK) National Contracting division has introduced innovative technology offering greater protection for lone highway workers

Mobile Barriers MBT-1™



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by 2 semi trucks.
See website for photos!



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