

October 2004

Presentation on "Management of Construction Transport Risk", by Martin Coyd, Health and Safety Training Manager, SKANSKA

Martin introduced his talk by itemising the Construction accidents, which had caused 11 deaths, between April and September 2003: -

- Telehandler crushed labourer
- Telehandler struck pedestrian – reversing
- Dumper rolled on ramp – killed pedestrian
- Dumper driver ejected
- Excavator rolled – crushed workman
- Lorry struck labourer crossing live work lane
- Lorry struck worker – reversing
- Plant moving mortar tub struck bricklayers mate
- Grader struck engineer – reversing
- MEWP trapped operator between MEWP and structure
- Private vehicle struck road worker at rear of lorry

Martin went on to say that the major hazards were: -

- Poor driving techniques.
- Poor control of reversing.
- Plant/ Machinery involving
 - Excavators
 - Loading Shovels
 - Fork Lift Trucks
 - Dumpers
 - Mobile elevation Work Platforms (MEWPS)
 - Cranes
 - Mini-diggers
 - Bobcats.
- Pedestrians
- Loading/Unloading operations
- Refuelling
- Access/Egress
- Members of the Public
- Children

These were aggravated, he added, by unsafe working practices, involving the unsafe use of vehicles and plant. There was growing pressure to address the issue of workers driving as a part of their job and to treat road accidents as work risks. This was an important matter, as workers could often drive a long way to, and from, work before working a complete shift, which could add up to as much as a 14 hour day. Added to the fatigue caused by this, was the stress of traffic congestion, darkness, awkward loads,

passengers, hazardous materials and vehicle checks, which may be ignored. Martin asked the rhetorical question “Should Principal Contractors check on the standards and working methods implemented by their Sub-Contractors?” He implied that they should and suggested that unannounced vehicle checks on site and toolbox talks could be an effective way of changing behaviour quite quickly.

On the matter of reversing techniques, Martin said that site control measures were generally sub-standard and quoted an example of poorly trained security guards who were expected to take charge of the movement of 38 tonne articulated trucks. He added that it was not an acceptable practice to place, so-called, banksmen at the rear of vehicles, which was the favourite position for a fatal accident. It raised the question of who should be in charge of the movement process and current practice usually meant that no one person was in charge. He contrasted this practice with the British Armed Services method where the ‘banksman’ was *definitely in command*, was placed at the front and guided the driver’s steering wheel movements because he could see the angle of the front wheels and had all-round visibility. If the driver could not see this one man’s signals by direct line of sight, then **the vehicle did not move!** In summary, he said that reversing should only be done with a banksman and that required training for him/her and the driver, to the same standard so that the right level of trust could be established between them to get the best results.

As an additional safeguard, it is very useful to have rear view aids such as specialist mirrors, rear-facing CCTV and radar sensors. One cautionary note about CCTV is, always opt for a colour system, because monochrome is not good at identifying stationary persons. It is also essential to arrange for the camera to be switched on when the ignition is turned on – NOT wired into a switch on the reverse gear, as it is too late to start looking when the vehicle might already be moving backwards!

When assessing reversing risks, it is obviously best to follow the normally hierarchy of control by eliminating the risk with a one-way traffic system. Segregation of pedestrians and traffic with barriers and well-placed signs is another essential preventative measure.

All types of plant and machinery are obvious hazards and they must be controlled by trained, competent operators, in possession of an appropriate **Construction Plant Competence Scheme (CPCS)** card. This has replaced the old **Certificate of Training Achievement (CTA)** card. Going hand-in-hand with this, of course, is appropriate training for other site operatives who must be made aware of the same risks! A crucial element of plant safety, Martin added, are daily operator checks, an effective planned maintenance system and a rapid repair system. These should include monitoring systems and an easy way for the Principal Contractor to check these is to ask to see the daily logs to ensure that they are being completed in accordance with the correct procedures. As with traffic systems, plant operating areas should be barriered off to ensure proper segregation. Proper parking areas with adequate security will also prevent that unauthorised use by employees in the day and trespassers, out of hours! Unfortunately, Martin had a plentiful collection of **‘Horror’** photos to prove that the problems he was talking about were real and all-too frequent!

Martin then addressed the hazards associated with loading and unloading of vehicles where, inevitably, all types of plant, vehicles and people were necessarily drawn together. It was crucial, he said, that this activity was carried out in a dedicated area, with adequate lighting, high visibility clothing, signing, barriers and operational controls. Load security was of paramount importance and it was essential to provide trained slingers and drivers for this activity. Falls from vehicles are also a significant risk and these must be controlled by proper access platforms, loading decks, mechanical aids such as lift trucks and lorry-mounted hoists and MEWPs. Where necessary, fall arrest equipment must be provided.

Any loading/unloading area will suffer from traffic congestion and Martin also referred to a technique of countering this by arranging to hold vehicles at a remote location until the site was clear. This is rather like the well-known system in use at airports and he quoted the construction of the London Council 'Gherkin' building, where the holding area was 20 miles away in Dartford! Such systems are enhanced with pre-arranged delivery times with suppliers, which also allows a chance to organise any specialist plant needed to off-load the vehicle.

Hazardous goods pose a special risk, in addition to the vehicle related risks, and these must receive special attention, if only because there is an unfortunate tendency for some employers, as well as workers, to disregard them because they are health-related! Advance warning of the arrival of these helps to alert the workforce that they must take adequate precautions. Another significant risk that is associated with vehicle loads is back injury, even though plenty of mechanical lifting aids may have been provided, there will still be plenty of residual risks present. Martin issued a final caution about this hazard area and that was that good housekeeping was as crucial here as in any other part of a site. It is always an excellent discipline to tidy up at the end of the day so that a safe, early start can be made the following day!

Pedestrians are at the forefront of our thoughts in this topic, so it was not surprising that Martin was concerned about their personal preventative measures. Having mentioned the importance of segregation earlier he added that their walkways must be signed, with clear priority markings at crossing points, and they must be wide enough to allow opposing traffic streams to pass easily. Barriers must be strong enough, surfaces clear, non-slip and even, with good lighting. Above all, there must be a strong procedure laid down and it must be firmly enforced.

One specialist loading activity on larger sites is refuelling of vehicles and plant. It is essential to have a segregated area (again!) for this, with appropriate security and adequate fire precautions and fire fighting equipment. Bulk deliveries must be done under stringent earthing precautions and all operatives must be trained according to the ADR (Accord **D**otenté **R**outier) Regulations. Refuelling of individual vehicles or items of plant is ideally done at the end of the day and should give enough for 1 day's operation. There is also an environmental risk with fuel and accidental contamination must be guarded against by bund walls which will contain 110% of the capacity of the

storage tanks. The area should also be surfaced with a concrete/blacktop surface and security must protect against unlawful damage.

Finally, there is the sensitive area of the site entrance, where traffic must be controlled to protect workers and public, alike. Two-way, in/out, traffic must be arranged and controlled entry and exit must be strict so that security, work operations and site inductions can be effectively completed. Martin displayed a simple 'A Frame' built from scaffold poles that ensured a two-way system, which could be coupled with a rule for always turning left into, or out of, the site. Good signs at the entrance are the start of a disciplined traffic system throughout the site with speed limits, well maintained roads, dust suppression, wheel wash and mud clearance from the public roads. It is also the place to start segregating vehicles and pedestrians. Controlled times for deliveries will also avoid undue congestion spilling out onto the public highway. Martin showed us a picture of an inverted Caterpillar earth-moving truck (about 20 feet high!!!) to show us how bad things could be when things go wrong!

Last, but not least, Martin spoke of the risk to the public who were generally ignorant of the hazards from construction vehicles and plant. Site security was of prime importance here, as was security of keys that must be locked away from vehicles whenever they were not in use, day or night! Sometimes it is necessary to disable plant to defeat the determined vandal or joy-rider and cabs must be protected with window shutters to prevent damage and/or easy access. Children are most at risk because of their vulnerability but also pose the greatest risk because they have so much time on their hands to cause trouble. Nights, weekends and holidays are the critical times!

Martin summed up his presentation with a final plea for

- *Safe Plant*
- *Safe Driver*
- *Safe Site*

Members' Questions

Construction Chairman, Gerry Mulholland of Carillion started Question Time with a short summary of Martin's message, which he described as 'thought-provoking' with a questioning style, which would force us to go back to our own sites and review standards. He added that the principles throughout the presentation mirrored those in HSG 144, Safe use of Vehicles on Construction Sites. He also picked up on the subject of banksmen and suggested an alternative term, "**Person in Charge of a Reversing Vehicle**", which nicely implied the function of the Armed Services system and reinforced its status. Referring to the need for a well recognised system of traffic management, Gerry suggested that a site plan on a notice board near the site entrance is an excellent medium for alerting drivers and pedestrians, alike, how to comply as soon as they enter. It is also important to update it as the site

progresses and routes change. Finally, he mentioned one construction firm that specified new plant with only first or second gears in the gearbox to limit speeds to 5 mph!

David Edwards, a visitor from Loughborough University, asked what precautions were taken about whole body vibration risk. Martin said that they had three Occupation Health Nurses who operated a company strategy on this risk, which looked at each machine and specified a maximum operation time. David briefly commented on HSE-sponsored research on this in Agriculture.

David Hughes of Hughes Business Services asked how to combat a ‘Macho’, dismissive attitude to plant safety, whereby workers tend to forget skills taught in training. Martin replied that driving courses with the Institute of Advanced Motorists (IAM) was an excellent motivator and gave drivers a reputation to maintain. Gerry Mulholland added that, in his firm, drivers covering more than 20,000 miles were automatically placed on an IAM course.

John Butler of McPhillips enquired as to why rear view cameras were not fitted as standard on critical plant? Martin commented that because the patterns of use were so varied, it was better to specify rear-view systems to match particular situations. David Edwards added that there was no CE Standard to cover this and Gerry Mulholland said that an effective system might cost £100.

John Beech of Corus asked about the use of CPCS cards and whether a Permit to Work system would be a benefit to control site transport. Martin offered the opinion that CPCS cards should be compulsory.

Mike Taylor of Corus commented that the poor condition of some vehicles seemed to go unchecked and suggested that this ought to be corrected. **BHSEA Secretary, Andy Chappell** made the observation that one of the most widespread problems was that of incorrect design of trailers that prevented proper securing of loads, like mini-excavators. Most common amongst the fraternity of ‘White Van’ subcontractors, the majority of trailers did not have adequate anchorage points, as specified in the **DfT Code of Practice, Safety of Loads on Vehicles**. As a result, very heavy loads were either not secured at all, or secured to weak hooks designed, merely, for sheeting over loads.

Peter Evans raised the issue recording that User Checks had been done. Martin replied that it was customary for the Site Supervisor to check this in the log that is kept with the vehicle or plant. Gerry Mulholland commented that the Form No. F91 was used for this purpose, but that they not always accurate and this was related to the integrity of the site management system

As there were no other questions, **Gerry Mulholland** thanked Martin for his very informative talk and presented him with a pair of BHSEA crystal goblets and a warning that they needed a daily user check and lubrication. The members conveyed their thanks in the more traditional manner!