

**Client and
Contractors Health
Safety and
Environmental
Updates**

August 2012



Grontmij would like to thank the following companies who have contributed to this month's Clients and Contractors Health, Safety and Environmental Update, this however in no way implies that any of these companies were involved in any of the incidents reported.

**Morgan Sindall
BarhaleWSP
Scottish Water
Speedy
URS
Severn Trent Water
Anglian Water
Highways Agency
National Grid**



Inspections or Access via Mobile Elevated Work Platforms (MEWPs) in Live Road/Rail Situations

There have been a number of recent events, some involving WSP employees, whilst using MEWPs supplied by others for the purposes of high level inspections in road and rail environments. These events included:

- movement of the ground beneath the out rigger supports of the unit causing the MEWP cage to move significantly and suddenly
- failure of the MEWP mechanism while the operator and inspector were in the cage and concurrent failure of the safe lowering mechanism. The operator jumped from the cage to the roof of an adjacent vehicle
- a vehicle illegally entering the Traffic Management (TM) closure and potentially endangering the unprotected MEWP
- a banksman required to be present at ground level throughout the inspection leaving the scene
- failure of the MEWP mechanism resulting in automatic lowering of the cage
- failure of the cage hinge resulting in the cage tipping and only being prevented from discharging the occupants by becoming wedged against an adjacent wall (see photo below)

While none of these incidents resulted in injury, the potential for significant injury is clear. The contractor involved has recognised the seriousness of the events and has identified failures of his supplier and of the type of equipment which was used and taken steps not to have any repeats of these issues.

Essential Points for WSP Employees Potentially Using Such Equipment

- The planning of all aspects of the inspection activity including the provision of a safe access to and egress from the point of inspection is normally the responsibility of the contractor NOT WSP.
- You should review and be content with the work plan and if not, raise it with your manager or the H&S team to resolve. You should check your own competency (Site Safety Clearance) for this activity.
- The work plan should include: details of any traffic management including any protective vehicles; siting arrangements for the access equipment; operator and ground level support arrangements; provision and use of harness and emergency arrangements for rescue including from the elevated level.

- If the MEWP is to be sited on a live high speed road (> 50mph), even within a TM closure, expect to see an Impact Protection Vehicle (IPV) or other robust barrier, suitably positioned to protect the MEWP.

NOTE: the provision of an IPV does not guarantee that your MEWP will not be struck by an errant vehicle; it merely affords an additional mitigation of the risk of such happening.

- You must satisfy yourself that someone has checked and declared that the item of plant is fit for purpose AND you must witness the operator carry out functional testing of the anticipated manoeuvres.
- Ensure the harness has been inspected and that you are briefed on its safe use.
- You must satisfy yourself in respect of the operator's capability through document inspection and on-going observation.
- You must be fully familiar with and monitor compliance against the agreed method statement.
- You must wear a secured harness at all times in the cage and keep your mobile phone with you.
- You must always wear head protection and include eye protection for overhead or soffit inspections.
-and finally, monitor the changes to the working environment and respond to areas of increased risk.

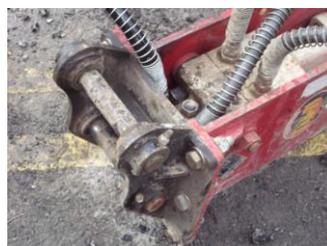
RIDDOR Reportable Injury

The RIDDOR injury was to a DT Civils operative who was working in the highway in Caerphilly.

The operative was assisting a colleague to fit a road breaker (pecker) to a 1.5 ton excavator. He fitted the securing clip to the attachment but had not engaged the clip securely. This caused the breaker to fall and it landed on his right foot. The impact was just above his toe protector and the operative was taken to the local hospital for examination.

The hospital confirmed that they had broken a bone in their big toe. As a result of their injuries the operative has been unable to work for over 7 days.

DT Civils carried out an investigation into this incident and have issued a Safety Memo to all their operatives reminding them to ensure that the clips are secured correctly.



Use of Petrol Cans for refuelling Small Plant

A recent an incident within Rail (Three Bridges Depot) occurred when two track operatives were sprayed by petrol as they opened a 25 litre 'jerry can' to re-fuel the Chembre Rail Drill. Full PPE was being worn, including glasses and gloves and no injuries were sustained. The operatives soiled PPE was bagged and placed into the spill bin.

The hot weather caused a build up of vapour within the 'jerry can', which if not opened correctly can result in fuel being "vented" out.



All direct & supply chain employees are reminded that they should not store flammable liquids in areas exposed to direct sunlight, ideally a shaded cool area (if possible). This also reinforces the need to wear PPE even though there may not be an immediately obvious hazard in the vicinity.

An expansion gap (approximately 10%) should be left at the top of any fuel container to allow for expansion and similar spilling/spraying when opening.

Importance of undertaking Vehicle Walk Arounds

Recently a Utility Company reported details of a significant Near Miss, when a child was spotted hiding in the wheel arch of the vehicle.

The child was spotted as the driver undertook a full 360 safety check of the vehicle before setting off. The consequences if the driver had not done this could have been fatal.

This incident highlights the importance for all drivers to do a 360 safety check of the vehicle before setting off.

Just another reason for us to do a vehicle CIRCLE OF SAFETY check before driving off in our vehicles



A crew working for a utility company found this young child in the wheel well of their truck while conducting a "CIRCLE OF SAFETY" of the company truck the crew members were driving before moving the vehicle.

I don't want to think about what would have happened if the employee had gotten in the truck and drove off without doing a walk around. Please share this eye opening, bone chilling photo and experience with your crews.

This crew has also reported children climbing into the back of company vehicles. Keep in mind children are out of school on summer break, so be sure to watch out for them!!

Injury from metal fragment

A drilling rig was being used at a borrow pit to drill holes in preparation for blasting. The drill bit needed to be replaced and the Sub-Contractor's Plant Fitter came to site to undertake the replacement.

To facilitate easy access to the drill bit, the drilling rig arm was placed in the horizontal position. The drill bit was held in place by a metal 'chuck'. The 'chuck' had to be unscrewed to release the drill bit. This proved to be difficult and the Plant Fitter used a sledge hammer to release the 'chuck' from the threaded connection.

An operative, also employed by the Sub-Contractor, was standing approximately 12m away. Whilst the 'chuck' was being struck by the sledge hammer, a small piece of metal broke free, and travelling horizontally, hit the operative in the stomach. The operative was taken to hospital and underwent an operation to have the fragment of metal removed

Employee struck by reversing vehicle

The incident occurred when a 3.5 tonne transit pick up operated by a supply chain partner was reversing to line up to park correctly. As it did so it collided with an employee who was in the depot. Although no significant injury occurred the potential for a serious or fatal injury cannot be underestimated.

The incident is currently under investigation however the initial investigation has highlighted the following

- the driver of the transit van did not use a banksman to assist in the manoeuvre
- the vehicle was not fitted with an audible reversing alarm (The vehicle was on hire to the SC company)
- the employee was not in a designated pedestrian area

the employee was speaking on the phone at the time of the incident.

Notwithstanding the outcome of the investigation the following actions must be taken.

- All reversing activities must be carried out with a banksman unless deemed inappropriate by risk assessment.
- All vehicles, 3.5 tonnes and over, must be fitted with audible alarms (This applies to hired vehicles)
- Where provided employees and visitors must use designated pedestrian areas.
- Employees must take responsibility when using mobile phones to ensure that they are in a safe place and that they are able to remain alert to any potential hazards that may arise from activities surrounding them.

Operative sustains eye injury

An agency operative sustained an eye injury whilst using a Stihl saw to cut down rebar on a reinforced concrete pile

The injured man was a member of a team who were tasked with cutting the vertically protruding bars from a line of reinforced concrete piles.

The work was being conducted from a scaffold platform, through which the piles protruded to just above platform level. The system of work required the operative to bend over and hold a Stihl saw at an angle of approximately 45 degrees to cut through the rebar.

The operative had cut through two pile clusters during the day, each comprising of eighteen bars.

Whilst using the Stihl saw to cut through a 32mm diameter bar on the third pile the operative appears to have applied considerable side pressure on the saw blade (bonded abrasive disc) causing it to break off around the circumference of the flange. The centre of the disc remained secured beneath the flange whilst the outer circumference of the disc was retained (almost intact) around the drive spindle of the machine.

When the disc broke, some debris from the disc flew in the direction of the operative and a small segment entered beneath his goggles. The operative was in pain with a burning sensation in his eye and when his workmates poured eye solution into his eye, a small piece of abrasive was found and removed from beneath his eyelid. The operative attended hospital where his eye was cleaned and his sight checked before being released that afternoon, however he did not return to work the following day.

The bonded abrasive disc was the correct type of disc for cutting steel; it was the eighth from a pack often which had been used and there is no evidence of any fault relating to the disc or the manner in which it was mounted.



A Stihl saw was an incorrect tool for this task. This type of cutting equipment is designed to cut downward on a vertical plane, whereas on this occasion it was being used at an oblique angle.

The manner in which it was being used would have generated a lateral force on the disc, causing it to fail, (witnesses had previously observed the disc snagging in the rebar prior to the accident); it also negated the effectiveness of the guard; and it would have been difficult for an operative to control the saw due to its weight, the angle that it was being used and the position of the reinforced concrete pile in relation to the operative.

Where possible, the need to carry out activities such as reducing pile caps or cutting in-situ rebar should be eliminated through the design process.

Where it becomes necessary to cut vertical rebar, the equipment provided should be compatible with the ergonomics of the workplace. It may be that croppers or angle grinders are safer alternatives than equipment such as Stihl saws.

The operative claims to have been wearing eye protection at the time of the accident and that some flying debris from the abrasive disc passed under the goggles and entered his eye.

Temporary Safety Barriers

Following a review of the use of temporary safety barriers (e.g. Varioguard), the need is found to depend upon the individual contract and as a result, a site specific risk assessment should be conducted to assess the need.

This will include:

- The speed of public vehicles (recommended on all high speed).
- Set up one way systems and drive through loading/unloading bays.
- The road layout/sight lines.
- The duration of the works.

The assessment should also consider the use of crash cushion style ends rather than ramped ends where there is a risk of vehicles mounting the barrier.

Man/Machine Interface

Following a review and trial of a variety of proximity sensors on the market there is no single solution. All sites should risk assess the need for proximity sensors as part of their hierarchy of control but ensure that the following basic controls are always in place:

- Ensure that pedestrians not associated with the task and vehicles are segregated. Those pedestrians associated with the task must have a clear method of communication with the machine operator and remain within his sight at all times.
- Set up one way systems and drive through loading/unloading bays.
- Ensure that any reversing vehicles (other than cars or car derived vans) are either in a pedestrian exclusion zone or if this is not possible, banked by a competent traffic marshal who is positioned in a place of safety.
- Never allow anyone to be positioned within a metre of the body of an operational vehicle and a static object (another piece of plant/a wall/ etc.)
- Ensure that everyone on site, including visitors are aware of the pedestrian and vehicle routes.

Mandatory minimum works wear standards

Water & Wastewater Operations will implement mandatory work wear from these dates for *all persons (Employees and contractors) visiting/working on operational sites and assets.*

Full Implementation Water Operations by 1st June 2012,
Full Implementation Wastewater Operations by 30th June 2012

We require:

You to comply with Water & Wastewater Operation's minimum standards for work wear on operational sites (e.g. water treatment works, pumping stations, reservoirs and assets (e.g. the water network) which is to wear:

- Hi-visibility waistcoat or jacket
- Safety boots
- Safety glasses / protective eyewear
- Gloves

This is the minimum standard of work wear required however, task specific PPE MUST be worn as per the requirements of the on site risk and COSHH assessments.



Safety Zones and Vehicle Routes within Closures

Recent incidents, audits and site inspections are highlighting that proper safety zones or routes for visiting site vehicles are not being provided for some sites.

- Lateral safety zone delineation needs to be established where works take place in specific locations within the length of the temporary traffic management.
- For works taking place over long lengths the safety zone delineation may be omitted but everybody needs to be briefed on the need to avoid conflicts upon the safety zone.
- No works are to be undertaken without adequate lateral and longitudinal safety zones being established unless an alternative safe method of working can be adopted. Where the required safety zone or route to the Works Exit cannot be provided then consideration must be given to closing the next lane.
- Where required safety zone delineation needs to be provided by means of a light weight barrier at a constant height above the ground, supported by an inner line of cones offset from those on the longitudinal run.
- Lightweight safety zone materials need to be able to snap/tear upon vehicular impact. Where stronger materials are used lengths should not exceed 50m without suitable breaking points.
- Safety zones need to be free of equipment, materials, personal, and plant.
- The only personnel permitted to enter safety zones are traffic management operatives and only then to maintain the traffic management equipment.

Vehicle Impact

The IP was driving his vehicle away from site when a third party vehicle impacted the side of the IP's vehicle forcing it against a tree.

Danger from overhead electrical cables

A fatal accident occurred where a tipper lorry was in an elevated position and the current arced from the conductor and electrocuted the driver. This occurred on a site where Halcrow have a presence monitoring the contractor's activities for the Design and Construct Works.

The driver had noticed a suspected fluid release during a previous tip at the nominated spoil within the compound. As it was late afternoon and was raining at the time he then drove the vehicle to an isolated area near the edge of the site compound. As he was carrying out an inspection he then raised the rear to an elevated position, in doing so, he failed to notice the overhead electrical cable which ran within the site compound at this point. Despite the verbal warnings from colleagues which were not heard it was at this point the arcing occurred and the driver was killed instantly.

These incidents are tragic and traumatic for all involved and as a design and supervision organisation we need to help to make a difference and where possible aim to eliminate these hazards by either design or sharing knowledge.

Insect Bites

While working on the filter beds, the employee received insect bites to his leg. His leg began to ache while driving to his next job. Later in the evening it became swollen and he developed flu like symptoms. An emergency doctor was called who sent him to A&E where he was given antibiotics.

Vehicle Accident

While the tanker was passing a coach, which was parked against the nearside kerb, with its hazard warning lights flashing, the coach pulled away from the kerb and collided with the tanker, causing damage to both vehicles. Both drivers were treated by paramedics at the scene, and the tanker driver was taken to hospital to be assessed then discharged later that afternoon.

Sludge Escape

The employee was unable to depressurise a Non Return Valve as there was no pressure release point. When a bolt was removed to release pressure, sludge escaped under high pressure.

Near Miss

Whilst a digger was being operated the contractor walked underneath the grabbing tool at the end of the digger.

Inadequate Support

A contractor was observed stretching up to place a sign on the wall without adequate support, other than clasping the railings between his legs. The potential fall from height would have been between three and eight feet, depending on which way he fell.

Chlorine Gas Leak

A valve on the chlorine gas dosing system leaked, causing a low level arm to trigger at COSC.

Hypothermia

An unknown male member of the public was found in the Millfields area of Carsington Water by police and mountain rescue, after the alarm was raised that there was a missing person last seen at Carsington Water. After being found he was suspected of suffering from hypothermia after being out all night on the site. He was administered first aid then taken to hospital by the rescue team.

Slip

While the tanker driver was walking across a cattle grid (the only means of access) to open a gate, he slipped and fell onto his right side causing pain to his groin, right knee and wrist. He continued with his immediate loading task then returned to Netheridge STW and reported the incident. After discharging the tanker, he was unable to continue with any further tasks.

Near Miss

A banksman was assigned to stop vehicles from using a road turning while a crane was moving a skip. He briefly left his post to carry out some checks, while the skip was being unloaded. The slinger instructed the crane driver to move skip and also indicated this to the banksman. The crane swung the skip over the road while the banksman was returning to his post. During this time an employee drove a vehicle into this turning and was not stopped by the banksman, who had yet to reach his post. However, the employee had noticed the potential danger and stopped his vehicle.

Fire Alarm

During a fire alarm, the process of MITIE calling the portacabins to notify them to evacuate was not followed. (The portacabin area is not linked to the main fire alarm system). By chance an employee who heard the alarm while outside the portacabins advised all staff to make their way to the fire assembly point.

Fractured Wrist

Whilst walking down a temporary scaffold staircase, the contractor slipped/ tripped and fell forward. It is suspected that he collided with the arm of the boot cleaner or the handrail and sustained a fracture to his wrist.

Vehicle Shunt

Whilst waiting in queuing traffic, the STW vehicle had been stopped for approx 10 sec when it was hit from behind by a 3rd party. This caused the STW vehicle to be shunted into a vehicle in front and then into another vehicle (multi-vehicle pileup). 2 employees received hospital treatment and have subsequently been discharged.

Wall Collapse

The cake pad dividing wall collapsed. The walls are approximately 2 metres in height and are constructed of concrete blocks. Cake was being stored in this new section. No one was in the vicinity at the time and the cake pad is currently under refurbishment by MMB.

Cycle Collision

The IP was cycling along the track down a short incline when he lost control of the bicycle. He braked and was trying to avoid some other walkers when he collided with a wooden fence and was thrown from his bicycle into the fence. He landed on his arm and the impact resulted in damage to his shoulder and elbow.

Pump Fail

Submersible pump was lifted from the returns well and lowered to the ground, the claw of the pump sat on the plinth allowing the pump to tilt, the lifting eye on the pump failed due to excessive wear.

Confined Space

After the employee exited a confined space via the winch, it was noticed that he had attached the winch wire to a velcro strap on his harness and not the rescue strap.

Discharge of Waste

There was a customer on site who was discharging domestic waste from a tanker. The STW pipe which connects the tanker to a logger had a hole in it, causing waste to go all over the customer.

Unauthorised Access

The Operative arrived on site to carry out a meter repair when he was met by a person who had gained access to the reservoir compound and refused to leave.

Damage to Electricity Cable

After tracing out the area of excavation on a private property, the gang began to excavate using a machine to dig through the tree roots. They damaged the electricity cable which was hidden underneath an outbuilding and buried about 50 mm - 100mm deep amongst the tree roots.

Cable Strike

The operative was excavating the ground above the still buried located service, when he struck the LV cable at a depth of 500mm. When the gang got to site they read their prints which indicated no electric cables in the area. A Cat & Genny was used to detect the underground utilities and found 1 electric supply and a possible 2 BT cables (none of these were exposed when the excavation took place). A grafter type shovel was used to excavate the ground which was made up of stone & clay.

Cut Finger

After the employee had returned his tools and equipment to the rear of his vehicle, he closed the rear door, trapping and crushing the last 1" of the small finger of his left hand. On realising the severity of the injury he immediately rang 999. An ambulance attended and took him to hospital.