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Health and safety issues around working at height and in confined spaces have come to the fore with the HSE's 'Shattered Lives' campaign. Brian Wall asks what should be done

Pointers

- Dangers in confined spaces: asphyxiation, entrapment, injury, engulfment, poisoning
- Rule 1: always check atmosphere prior to entry
- Rule 2: never enter without an observer
- Rule 3: always assume hazards must be present
- HSE: avoid working at height wherever possible
- Work at Height Regs apply wherever there is a risk of falling, and there is no minimum fall distance
- Modern LCV-mounted lifts offer safe working heights to 21 metres

Working at height comes with clear – indeed often all too visible – dangers, of which more later. By contrast, in confined spaces, the hazards may be less evident, but nonetheless potentially fatal – with asphyxiation, entrapment, physical injury, engulfment and poisoning just some of the main concerns.

Often containing lethal concoctions, confined spaces are generally: chambers, tanks, vats, pits, pipes, flues, tunnels, excavations, digesters and pumping wells or stations. But they can also include sewers, shafts, underground utility ducts, boilers, hoppers, silos, boreholes, steam condensers, culverts, manholes, septic tanks, cellars or bunkers.

And it's not even that simple. As Draeger Safety UK sales manager Phil Saxton rightly points out, any area can become a confined space, if the conditions are right. "For instance, an open ditch or open-topped vault becomes a confined space, if air circulation inside is poor and a gas that is heavier than air might have accumulated at the bottom. Equally, a structure or irregular shape becomes confined, if pockets of gas or vapour accumulate where air circulation is restricted."

That said, wherever they might be, confined spaces share potential hazards. Access is usually limited, they are often poorly ventilated and not only can they contain gases and other harmful substances, but escape or rescue can be difficult. The seriousness of the hazards is dependent upon several factors, such as location and nature of the work – but the dangers can be dramatically increased where a combination of hazards exists.

"Toxic gases or vapours, for instance, can poison or suffocate and any work in progress – such as cleaning, welding or painting – can produce dangerous fumes. It is also possible that toxic gases and vapours created during previous work might still be present upon re-entry, even at a much later date," warns Saxton.

So there are two fundamental rules when approaching a confined space: always check the atmosphere prior to entry and do not enter unless an observer is present. For absolute safety, everyone should always assume that hazards are present until they know otherwise. Best advice would be to ensure effective safety training specifically geared to working with confined space applications. Purpose-built training centres, for example, can create all kinds of simulated training scenarios, using manholes, crawl galleries, water, smoke and dimly-lit conditions.

Killer practices

Moving on to working at height, latest statistics from HSE show that 58 people were killed as a result of workplace falls during 2007/8. A further 3,235 people suffered major injuries. This means that working at height continues to be the biggest cause of workplace deaths and one of the most worrying contributors to major injury.

"The figures also show that reductions in both [fatalities and serious injuries], achieved during the preceding decade, have more or less levelled out in the past four years," states Jonathan Wiseman, sales manager at access equipment manufacturer CTE UK. "The long-term trend may be downwards,

but there is still much more to do to reduce the risks associated with working at height."

Unsurprisingly, HSE recommends avoiding height wherever possible – in line with the Working at Height Regulations 2005. However, it is often just not possible to eliminate the practice, so the emphasis has to be on reducing risk by developing the safest and most effective practices.

"One of the most popular options in recent years has been to use a mobile access platform mounted on an LCV [light commercial vehicle]. Platforms like these are affordable and can be driven on normal driving licences, unlike larger and specialist vehicles that require advanced or HGV licences," comments Wiseman. "They are also attractive for hire companies, because the initial purchase price allows them to be hired out at a daily rate within the pocket of many small businesses."

And it's worth noting that advances in mobile access platform design and technology mean that the latest LCV-mounted units offer working heights up to 21 metres (68ft). Typically, these can be used to access the external walls and roofs of buildings up to four storeys high. "Even at these heights, and with outreaches up to 10 metres, platforms like

Exceptional circumstances

Contrary to popular belief, there is no law against pallets, skips, stillages etc, being used as improvised devices for lifting people. "However, when there is an accident, as there will surely be with such equipment, HSE will take a very dim view and seek to investigate all aspects of your operations," warns David Ellison, Fork Lift Truck Association chief executive.

Under certain exceptional circumstances, a purpose-built working platform may be used, he continues. "This will be a specially-designed platform from a manufacturer of specialist attachments. It will always have sides, to contain the worker safely, and it must be provided with a number of other safety devices specified by HSE.

"But even the safest of purpose-built platforms cannot be used for routine tasks. So, when it comes to jobs such as painting, cleaning, maintenance, stocktaking or order picking, alternatives must be sought. To work safely and within HSE guidance, platforms may only be used for occasional, exceptional tasks, such as checking for damage at height, changing essential light fittings and clearing blocked gutters."

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these are powerful enough to support a basket with two people and their tools," observes Wiseman.

Importantly, the Work at Height Regulations 2005 apply to any work in any place where there is a risk of falling a distance liable to cause personal injury – and that includes working at or below ground level. Note that the Construction (Health Safety and Welfare) Regulations 1996, which are commonly relied upon for construction sites, require a minimum two metre fall – whereas the Work at Height Regulations impose no minimum fall. "The Work at Height Regulations will therefore capture activities that are not necessarily covered by the construction regulations," warns Navdip Dhillon, a solicitor specialising in workplace safety at law firm Weightmans. "So, while working on a scaffold is an obvious example, if an employee was working on the back of a lorry, this would also constitute work at height in they eyes of the law."

Dhillon also stresses that, even if an engineer is working at ground level, but close to an excavation area or a cellar, this would also constitute work at height for the purpose of the regulations. "Equally, consideration should be given to maintenance teams and engineers accessing machinery at various heights to inspect or repair, as well as tasks such as assessing overhead conveyor systems, for example, when dealing with blockages. Providing there is a risk of falling a distance [even a very small distance] which could cause injury, the Work at Height Regulations will apply," she states.

Ultimately, when working in a dangerous environment, it is essential first to ask the question: do I have to do this job and, if so, do I have to do the job this way? If the answers are 'yes' and 'yes', then the job must be planned and executed for safety. As Speedy Hire safety, health, environment and quality director Mark Turnbull puts it: "This means taking expert advice and using the correct safety gear or equipment where necessary. If we're serious about improving health and safety records, we have to change the mentality of workers at site level, through education and training." PE