**IOSH / IIRSM / IIAI notes 7 May 2014**

**Confined space** – large enough to enter, limited entry exit points, not for regular work.

Lack of oxygen or poisonous gas, could be liquids or solids that could fill space [such as water or grain]. Panic attacks common which aggravates a situation [darkness, noise, narrowness], occurs as perception of lack of control over work environment. Reflex is a key in a threatening situation – i.e. grasping a handrail if falling on a stair. Only about 15% of our actions are based on conscious behaviour. Actions become routine and can become a habit, then dangers are missed [so are their consequences]. Less concentrated autopilot. Most danger signals remain in our unconscious until they enter higher spheres of our cerebral cortex, based on previous experiences. Most accidents at work occur [at some point] because of a human error [or even a violation]. Fire fighters have intense training in real life scenarios – so actions become routine when event become even more hazardous. [Have BT ever challenged a rescue plan without prior notice a “get someone down/out” as a real time event?].

According to the QBE Insurance Issues Forum – 59% of major injuries occur following a fall from a height that is less than two metres, for info see the HSE WAIT toolkit at <http://www.hse.gov.uk/work-at-height/wait/> which is useful for one off jobs.

Just like alcohol or drug use, a lack of sleep increases risky behaviour. Research (2012 Chan) found that a workplace incident is four times more likely to be caused by fatigue than by alcohol or drug impairment. (University of British Columbia 2010) study showed workers on night or rotating shifts were twice as likely to be injured on the job as opposed to those on similar job working regular day shifts.

The University of Reading hosted a lecture on public attitudes to health and safety under governments “burden” agenda – <http://bit.ly/1dkpkWh> .

IOSH are working with ISO Occupational Health and Safety Management system to progress standard ISO 45001 – they note three pillars, strong leadership, worker involvement and competency. The time frame is three years for publication by September 2016.

The 1936 dark comedy <http://www.youtube.com/watch?v=tfw0KapQ3qw> Modern Times by Charlie Chaplin shows rise and rise of capitalism at expense of worker.

The civil service have introduced resilience training to help staff cope with increased workloads, cut backs and fewer workers, Whitehall has lost one in four due to government austerity measures.

Professor Löfstedt says his safety reforms are being rushed [www.lexisurl.com/hsw17134](http://www.lexisurl.com/hsw17134) but HSE say they will meet their self-proposed deadlines (the last tranche was end of 2013). As mentioned at CWU conference he has written to a parliamentary scrutiny committee raising the issue – it is noted that he would barely recognise some of the things that are being done in his name.

There has been a recent HSE prosecution where a worker (48 year old Brian Wilkins) died from carbon dioxide poisoning in a cable chamber; a breach of Section 2(1) of H & S at W etc. Act 1974, fined £120,000 plus £125,000 costs. Fire protection system discharged C02 into a cable chamber whilst he was working there cutting cables and activated a smoke sensor. Colleagues could not assist even though they heard alarm. There was no rescue equipment in cellar or access, no valid RA, no safe system of work, no secure way of isolating CO2 system. Exposure to CO2 of 10% to 15% for one minute causes unconsciousness and exposure from 17% upwards is fatal in less than a minute.

*Section 2(1) of the Health and Safety at Work etc Act 1974 states: “It shall be the duty of every employer to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees.”*

The TUC have issued a booklet on “The health and safety of older workers”; download <http://www.tuc.org.uk/sites/default/files/Older%20workers%20april%202014%20pdf.pdf> . Whilst there is no specific (old) age related health and safety legislation employers have a general duty to protect workers. It notes that age is about change not a decline and this is excellent reference assistance for risk assessments etc.

TUC have raised issue of USRs not having anyone at HSE whom they can contact for support/intervention. No as there are very few proactive inspections we need an easy reporting system, we can be eyes for HSE. We also have to stop this “building resilience” nonsense; you do not give a worker a hard hat to prevent the brick hitting him on the head – you stop the brick from falling.

Metal fatigue – despite suitable and sufficient design, failures still occur due to environmental factors like corrosion, increased loading, misuse etc. an excessive load may increase elasticity beyond intended level and cause permanent deformation. This can cause catastrophic failure at a later date. Materials can also fail at stress levels below their ultimate tensile stress, or yield stress, if they are subjected to repeated loads which apply alternative tensile/compressive stressors to those from which it was designed for. Defects such as fatigue cracks in the region of welds are an indicator; as is surface damage due to collisions. This can be massively altered if there have been additions such as a notice riveted onto a machine for example. This corrosion can be affected by things like chlorides in salt water which accelerates damage. Cracks in the structure propagate as corrosive ions diffuse to the crack tip when it is under stress until it fails. It needn’t take long; in Switzerland 12 people died at a swimming pool from corrosion in stainless steel rods – they had been in place only 13 years. Structures, such a cable trailer, do not need wholesale corrosion. In the pool, one rod corroded, snapped but the design was such that the next one could not take the extra weight so it also snapped and the rest followed like dominoes.

There is a survey ref aging workforce at [www.survey.lboro.ac.uk/agediversityworkforce](http://www.survey.lboro.ac.uk/agediversityworkforce) , the research is looking at barriers and solutions.

Unlike workplace health and safety fire safety is generally respected. There are an increase in enforcement numbers, 2,800 enforcement notices, 485 prohibition notices and 58 prosecutions in the last year of stats – Risk Assessment topping the list. The competency of a person looking at risks should cover (not just the FRA) but the behaviour of fire, behaviour of people and general fire precautions (plus others) see FIA Council criteria).

Derek Maylor - 7 May 2014

Sourced from various publications by IOSH / IIRSM / IIAI

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