



Health and Safety Bulletin

Applying nudge theory to health and safety

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The focus on how to reduce the number of accidents caused by human failure (estimated by the HSE to cause at least 70% of them) is growing dramatically. The HSE produced HSG48 "Reducing error and influencing behaviour" in 1999, in which they identified three human factors that could influence the risk of human failure. These are:-

- Job – such as the design of equipment and machinery (including control systems), poor work instructions, unpleasant working conditions
- Individual – workers with insufficient competence to do the work, demotivated workers
- Organisation – lack of safety systems (including failure to respond to incidents or hazards), lack of clarity of health and safety responsibilities, poor leadership

Recently, the Control of Major Accident Hazard (COMAH) Regulations were updated and they now include a requirement for a human factor assessment to be incorporated in the safety report – these are submitted by high risk facilities in order for them to obtain a "license" to operate.

Types of human failure

Human failures can be split into two categories – those which are errors (unintentional) and those which are violations (deliberate).

Most of us have committed errors, for example forgetting to put on hearing protection when entering a hearing protection area. Violations occur when workers choose to carry out an unsafe act – either because they are trying to get the job done (e.g. a worker running a machine without a guard to reduce the time delay in dealing with any blockages) or because they believe it makes life easier and they are unlikely to be caught (e.g. "nipping" through the hazardous area of a site while not wearing the required PPE to avoid the rain).

Applying nudge theory to reducing human failure

Traditionally the risk controls associated with human failure involve disciplinary procedures, but nudge theory suggests that if you can make safe behaviour have immediate, obvious and positive consequences, people can be "nudged" to choose the safe way of doing things. The real difference with "nudges," unlike standard safety management systems that use threats of enforcement, is that they encourage unconscious safe behaviour.

An example of the use of nudge theory is demonstrated in the design of this plastic recycling bin. The target on the bin encourages people automatically throw waste plastic bottles against the target so they end up in the bin rather than on the floor around the bin.

Nudge theory has been applied by many Governmental Departments in the UK and there is evidence it works effectively, so the use in health and safety is something that is being investigated. Examples that have been publicized so far include

- Repositioning and using language on safety signage so it is relevant to workers
- Locating coffee machines away from offices to encourage workers to take a break from display screen equipment
- Praising employees for working safely rather focusing on discipline for unsafe behaviour

Conclusion

Getting the right balance between technical, procedural and behavioural activities to improve health and safety is difficult. Legislation forces organisations to concentrate on technical and procedural control measures to reduce risk although there is evidence that beyond a certain point they provide diminishing returns.

When developing improvement objectives, employers need to recognise the type of health and safety culture they have and what they can do to improve it by encouraging safe behaviour – and applying nudge theory may provide a way.



Recently issued health and safety information:

- HSE's 8 Questions about Vibration Exposure Monitoring <http://www.hse.gov.uk/vibration/hav/advicetoeemployers/vibration-exposure-monitoring-ga.pdf>
- Using technology to improve feet safety <http://www.brake.org.uk/>
- BS 8580-1:2019 Water quality. Risk assessments for Legionella control. Code of practice <https://shop.bsigroup.com/ProductDetail?pid=000000000030367524>
- HSE revised RIDDOR report forms <http://www.hse.gov.uk/riddor/report.htm>
- HSE Woodworking Advice Sheets <http://www.hse.gov.uk/coshh/essentials/direct-advice/woodworking.htm>

Stainless steel welding fume now a carcinogen

The HSE have issued a safety alert (<http://www.hse.gov.uk/safetybulletins/mild-steel-welding-fume.htm>) announcing that they will now be treating the fume generated from mild steel welding as carcinogenic.

The action follows confirmation from the International Agency for Research on Cancer that exposure to mild steel welding fume can cause lung cancer and possibly kidney

cancer in humans.

In the safety alert the HSE has made it clear that they expect suitable engineering controls for all welding activities indoors e.g. Local Exhaust Ventilation (LEV) or respiratory protective equipment (RPE). They have also stated that the use of RPE will be expected for welding outdoors.

The research suggests there is no safe exposure level to the fumes.

About Clwyd Associates...

We are a management consultancy, focusing on health and safety, and SAP based in the Midlands.

We employ consultants with at least 15 years practical experience backed up by recognised professional and academic qualifications - ensuring our clients receive first class service.



Case Law update

This issue focuses on cases involving human error, where the employer was found liable for the employee's error

Polyflor was found guilty of failing to protect the health, safety and welfare of one of their employees, after he broke his arm while repairing a conveyer. The employee (an experienced technical support engineer) was working under a permit – put a spanner in a conveyer belt to find out where it was sticking. This released the belt but he was unable to let go of the spanner in time. Polyflor argued that the injury was caused by a “foolish” act and that they had not created a foreseeable risk. Polyflor were found guilty in the initial case and although they appealed, the

Court of Appeal agreed with the original decision. They suggested that Polyflor created the risk by allowing employees to run the conveyer without guarding under the control of a permit under their safety management system

Merlin Entertainments was fined **£5million** after an accident on the Smiler ride at Alton Towers resulted in three members of the public suffering life changing injuries. When Alton Towers carried out an internal investigation into the incident the published national headlines claimed it suggested that accident was caused by the human error of the ride operators. HSE prosecuted Merlin Entertainments, indicating

that they considered the human error was a result of the organisational safety culture

A worker who had only worked three shifts at **Worksop Galvanising** was splashed with molten zinc when suspension wires supporting the beam failed. The site had a practise of estimating the weight of the beams and in this case one of the more experienced operators miscalculated the weight. When the wire failed the experienced operators ran from the area but the new worker stood his ground. He received serious burns to his body and face and lost his eyesight. The company has now provided weigh scales on the forklift truck so weights no longer have to be estimated

Fees For Intervention (FFI)

The HSE has announced that from 6th April 2019 the hourly FFI rate has increased from £129 to £154 per hour – an increase of about 20%.

FFI was introduced in 2012. It is justified under the “polluter pays principle” – organisations who have been

identified as failing to comply with health and safety legislation (a “material breach”) are issued with a notice of contravention indicating where improvements need to be made and are then charged for the time the HSE spend supervising the

work required to achieve legal compliance. The HSE has been driven to increase the rate because the scheme has been running a deficit – in 2017/18 they reported it cost £1.9million more to run the scheme than was collected.



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