Reactions to Buncefield prosecutions

The announcement of £9.5 million in fines against the five companies involved in the Buncefield disaster has prompted safety campaigners to emphasise the importance of effective health and safety regulation.

Mike Penning, MP for Hemel Hempstead, condemned the fines handed out by St Albans Crown Court to the five companies responsible for the explosion as too lenient.

He said: “I am deeply disappointed at the leniency of the financial fines handed out to the five companies... Over a billion pounds worth of damage was done to my constituency, so how is a fine of £5.35million justice?”

He added: “None of this money will compensate my constituents who are still waiting for compensation for having their businesses, lives, homes and health destroyed by an industrial disaster which should never have happened and was obviously completely preventable. I will be using the powers I have as an MP to ask the Attorney General if he thinks that the sentence has been unduly lenient. Frankly these fines are an insult to my constituents.”

Richard Evens, Director of Training and Marketing at St John Ambulance, said: “Cases like this reinforce the need for businesses to take health and safety seriously. It shouldn’t just be a tick box exercise where you opt for the minimum cover.”

In a similar vein, Kevin Myers, Deputy Chief Executive of the Health and Safety Executive (HSE), said: “Major hazard industries must learn the lessons of events like this. From the boardroom down companies must ask themselves these questions: do we understand what could go wrong; do we know what our systems are to prevent this happening; and are we getting the right information to assure us they are working effectively?”

The prosecution of the five firms — Total UK Ltd, British Pipeline Agency Ltd, Hertfordshire Oil Storage Ltd, TAV Engineering Ltd and Motherwell Control Systems 2003 Ltd — followed the most complex investigation ever conducted by the HSE in conjunction with the Environment Agency. The cost of dealing with the disaster has been estimated at more than £1 billion, making it the most costly industrial incident in the UK.

For more on the prosecution, see www.hse.gov.uk/news/buncefield/index.htm.
A billion man hours lost to sickies

A poll for the consulting firm Aon has found that across Europe, more than 120 million sick days a year are actually taken for personal reasons, rather than for an illness. The practice of feigning illness to avoid work is costing employers close to a billion lost man hours each year.

More than 1 in 10 people (15%) say the last time they took a day off from work as sick leave, they were only feigning illness, according to the survey of over 7500 European workers from across the UK, Belgium, Denmark, France, Germany, Ireland, the Netherlands, Norway, Spain, and Switzerland — 10 of the leading economies in Europe.

Additionally, 10% of people took their last sick day in order to look after a family member.

The survey found that more than 800 million sick days are taken each year, and assuming the average work day is 8 hours long, Europe’s sickies are costing employers close to a billion lost man hours.

The number of sickies this year is expected to have increased, with many people taking time off work in order to watch the World Cup.

Interestingly, the Spanish are the most likely to admit having taken a sickie (22%), followed by UK workers, the Irish (both 21%) and the Dutch (20%).

The Danish (4%) and the Norwegians (10%) are apparently the least likely to have taken a sick day off from work under false pretences.

Safe maintenance campaign gathers pace

The 2010/2011 Safe Maintenance campaign, organised by the European Agency for Safety and Health at Work (EU-OSHA), is gaining momentum as 30 pan-European organisations joined the programme as official campaign partners.

The Agency’s latest Healthy Workplaces Campaign will focus on the importance of safe maintenance in European workplaces. Good practices in safe maintenance will be promoted through a variety of campaign activities, including conferences, seminars and training sessions for workers, employees and other stakeholders involved in maintenance work.

Companies and associations from the private and public sector, including some of Europe’s most well-known organisations, have joined forces with the Agency to promote the safe maintenance campaign.

Dr Jukka Takala, Director of EU-OSHA, said that it is estimated that in Europe, up to 20% of all workplace accidents are connected with maintenance and, in a number of sectors, over half of all accidents are maintenance related. A full 10–15% of fatal accidents at work can be attributed to maintenance operations.

Further information on the campaign partners and the activities they will be hosting can be accessed at http://osha.europa.eu/en/campaigns/hw2010/partners/eu-partners.

Prison gardener compensated for assault

A gardener at a young offenders’ institute who had to give up work after being sexually assaulted by inmates has received compensation for psychological trauma, according to law firm Thompsons Solicitors.

David Thomas from Northants was attacked in May 2004 at HM Prison and Young Offenders Institution Onley, near Rugby, Warwickshire, while supervising inmates who had been smoking cannabis.

The gardener was on a phased return to work after an illness and found that safe working systems appeared to have broken down. He was supposed to be working with a manager but instead found himself alone with the inmates.

The group was irritable and aggressive, and the situation deteriorated when he refused
to allow them to use a strimmer. One inmate began to hurl abuse and the group refused to follow instructions. Mr Thomas called for assistance, which would usually arrive within minutes, but his call was not answered. He was then pushed against a door and sexually assaulted. He managed to get away and phoned again for help, but it took 20 minutes to arrive. Mr Thomas was medically retired in September 2005.

**Report on global tower crane incidents**

The Health and Safety Laboratory (HSL) has published a new research report on tower crane incidents that have occurred around the world. Since 2000, there have been a number of major incidents on UK construction sites involving the collapse of tower cranes. Subsequent investigation by the HSE, assisted by the HSL, showed that these collapses were due to a range of causes.

The HSL was asked to identify tower crane incidents that had taken place around the world between 1989 to 2009 and obtain, where possible, the causes of each incident and the tower crane involved.

The report notes that a worldwide total of 86 incidents involving the collapse or major structural failure of a tower crane have been identified as taking place between during the period. The incidents were analysed and placed in one of the following seven categories of causes.

1. Erection, dismantling and extending of the crane (34%).
2. Extreme weather (18%).
3. Foundation issues (2%).
4. Mechanical or structural issues (5%).
5. Misuse (7%).
6. Electrical/control system issues (1%).
7. Unknown cause (33%).

The intention of the research was to use the information obtained to assist in advising and guiding the UK tower crane industry to help improve safety.

The report is available at www.hse.gov.uk/research/rrhtm/rr820.htm.

**Spotlight on disability and safety**

The HSE has recently highlighted the issue of disability at work, in the context of health and safety, on its website.

It points out some surprising facts, such as only 17% of people with a disability are born with that disability, and the majority acquire their disability during their working life.

In addition, 20% of the workforce — some 6.9 million people — have some form of disability or impairment, but if employers make reasonable adjustments in the workplace, this can make a significant difference to the working lives of disabled people.

The HSE is concerned that health and safety is sometimes used as a false excuse for not employing people with a disability. It is keen to emphasise that research has shown that disabled employees are as productive as their colleagues.

For example, the safety watchdog says that disabled employees have less time off sick, stay longer in their jobs and have fewer work accidents. It has reminded employers that they are required to make “reasonable adjustments” to jobs and workplaces for disabled workers, in order to ensure disabled people have equal opportunities in applying for and staying in work.

Workplace adjustments may also be made on a temporary basis. Examples of reasonable adjustments might include improving access or layout, or a change of working hours. Some of these adjustments can be made at little or no cost to the employer.

For more information, see www.hse.gov.uk/diversity/didyouknow/disability.htm.
In the first of a two-part series, Dr Craig Jackson, Professor of Occupational Health Psychology at the University of Birmingham, undertakes an in-depth examination of behavioural safety and its role in road risk. In this article he looks at the background to behavioural safety and demographic and lifestyle factors.

Background

There are many ways of measuring safe driving. However, not all experts agree on the most reliable methods for accurately reflecting what occurs on the roads. Given that there are so many ways to evaluate road safety and driving standards, not to mention the variety of measures and strategies often taken to improve road safety, there is often confusing or contradictory evidence about the causes of unsafe driving. The purpose of this article is to therefore assess some of the behavioural aspects that may relate to driver behaviour, based on reviews of the best available literature.

The term “behavioural factors” can relate to a number of aspects about individual drivers, or the in-car environment they are in, or the external environment they are driving through. Understanding such psychological aspects is important on both an individual driver level and a group level. Drivers are influenced by the collective behaviour of other drivers they encounter, and at the same time each driver is also part of a collective of drivers. Although they may not acknowledge it, drivers are sensitive to the culture of driving that they encounter both on and off the road, and how it influences them. As such, the driving behaviour of a small group of drivers can eventually grow in influence to have a much larger effect, eventually changing the traffic environment and culture. Understanding the psychological processes at play could help in the understanding of the interactions between individuals, groups and cultures. The essential aspect of behavioural factors is that in the majority of cases they are variables that can be modified, controlled or even eradicated, either through deliberate will or as a result of social engineering, eg negative public attitudes to drink-driving, or changes in driving laws and rules.

Current evidence

There are several issues concerning the review of the literature that must be considered before any interpretation of the body of research can be made. One of the strengths of the literature on behavioural safety is the wide range of countries and driver populations that have been included. Some of the studies are UK-based and of direct relevance to UK drivers, but the studies from other countries are just as valuable.

Most studies concerning behavioural factors in driving are from industrialised countries, but there is a sizeable number of studies included from developing countries too.

However, a criticism of the body of literature is that many of the studies used very small sample sizes when collecting data from drivers and this obviously raises concerns about the statistical reliability and robustness of some of the subsequent results that those studies provided. As such, a review of the literature on this topic suggests that individual studies often produce findings that can reasonably be questioned for reliability and validity but that, as a body of evidence as a whole, the consensus findings can be interpreted more confidently.

Behavioural factors

The driver aspects in the literature are categorized into four groups of factors.

1. Demographics.
2. Driving factors.
3. Psychology.
4. Personality.

The evidence from the articles for each of the four groups will be discussed over the course of this two-part article, with some studies of interest being highlighted further.
Demographic and lifestyle factors

Several studies investigated a number of demographic and personal details for their relationship with a variety of driving activities and behaviours. The most commonly investigated factors were those of age and gender. The literature reveals a mostly consistent pattern with age and poor driving — in that poorer drivers tended to be either younger (teens and early twenties) or older, with some studies finding a decline in performance/ability beginning before the mid-60s. There is a confounder present with age, in that most of the worse drivers in their teenage years or early 20s tend to be male. By the time male drivers reach their 30s and 40s, the sex differences in driver safety seem to be less obvious. A consistent observation in the literature seems to be that females make more serious driving errors than male drivers, but that male drivers make more dangerous violations than females.

Age is also seemingly related to a number of demographic/personal details that are seen to be detrimental to driver safety. In this respect, certain ages are more synonymous with poorer driving or greater levels of driving injury. Some of the studies have shown that teenage drivers are more likely to engage in risky activities such as speeding, drink-driving, experimenting with drugs while driving, and carrying multiple passengers.

Although several variables can alter driver safety, there are many time-variables that may influence accident causation, including time of day and day of the week. Epidemiological data concerning teenage crashes suggests that school days have higher accident prevalence, clustered before school, during lunch hours and after school. Accidents on non-school days and weekends tended to be clustered later in the day. Alcohol-related accidents occurred more at weekends than on school days. The demographic aspects behind this Monday-to-Friday phenomenon are self-explanatory. The results suggested that time of day effects have an impact on driver safety and relative amounts of driving time must be accounted for when assessing the risk of drivers. Driving during the early and late morning had the highest accident risk. Consecutive hours driven also had a significant effect on accident risk — the first hour to the fourth hour having the lowest risk, with greatest increase in risk occurring to a maximum when driving beyond nine hours.

Occupations and jobs involving shift-work have also received attention. Simulator studies found that concentration lapses, poor straight line driving and lane drifting were found to be higher in drivers after night shifts than afternoon shifts. No effect of rotation systems could be shown on driving performance. Evidence suggests that shift type (eg early, days or nights) is more important than the speed or direction of shift rotation. Driving performance seemed to be reduced by night shifts, and least of all by daytime shifts. Simulator studies also found the effects of heavy workload during night shifts can be comparable with mild alcohol intoxication, and that the capacity of such workers to detect these performance decrements among themselves (eg self-awareness) is low. Such effects are extremely important in that they often immediately affect shift workers on their commute home — and when compared with non-shift-workers, such shift-workers were more tired following the drive home. Some studies have suggested that choice of occupation may be linked with drink-driving — manual occupations that were found to have such a link included carpenters, electricians, chefs, mechanics, gardeners and labourers. Professional occupations found to be linked with drink driving included business managers, company directors, civil servants and sales representatives.

Part 2 of this article will address the other aspects of driver safety.
Machinery safety

Following on from the report in Health and Safety Briefing issue 416 on recent cases involving guarding and machinery, this article by Grainne Kelly highlights some of the changes that the Supply of Machinery (Safety) Regulations 2008 made and what impact they may have on anyone designing or buying machinery.

The Machinery Directive (2006/42/EC) is implemented directly into UK law by the Supply of Machinery (Safety) Regulations 2008 (SMSR), which came into force in December 2009 and replaced the previous 1992 Regulations.

There are currently two principal pieces of health and safety legislation relating to machinery in the UK: the SMSR, which lays down how machinery should be designed and developed before it is marketed or assembled for use; and the Provision and Use of Work Equipment Regulations 1998 (PUWER), which place duties on the users of machinery. Under PUWER, machinery users must assess that machinery is safe for its intended use and must implement suitable control measures to ensure standards of safety are met. For example, the regulations include requirements for machinery to:

- be fit for purpose
- conform with community requirements (ie CE marked)
- be maintained and inspected regularly
- only be used by people who have adequate training and information
- have suitable methods of isolation from sources of energy
- prevent access to dangerous parts, ie parts which would expose the operator to mechanical hazards
- have controls and control systems which do not increase the risk of harm to anyone using it.

In the past, most prosecutions involving machinery have focused on the machinery user (often manufacturing companies) rather than the designer or manufacturer. One recent example involved a power press that had been manufactured and used in Staffordshire by two different companies. An operator lost four fingers of his left hand when the press was operated by another employee; the employer had failed to maintain the machine guard and therefore the operators were not protected from the moving parts of the machine. The employer was successfully prosecuted and fined £5000 with costs of £2737 under PUWER. The investigation also showed that the company that manufactured and sold the machine had failed to ensure that it met essential health and safety requirements relating to machine guarding. It was fined £1000 with costs of £1745 under SMSR.

Essential safety requirements of the SMSR

Under the SMSR, those designing and developing machinery have always had to ensure that the design of the equipment meets “essential health and safety requirements (EHSRs)”. This is often achieved by demonstrating that the equipment meets harmonised (ie BS EN) standards. The regulations require the equipment manufacturer to carry out a risk assessment to demonstrate how it has met the EHSRs, and this should be incorporated in the technical file (which summarises the issues considered during design). Anyone who places the machinery on the market must produce a CE certificate, providing the buyer with evidence that the equipment meets relevant EHSRs.

Definitions and responsibilities

Under the Machinery Directive, the basic definition of a machine is “an assembly, fitted or intended to be fitted with a drive system other than directly applied human or animal effort”, although some exceptions to this definition are also included, such as lifting accessories or partly completed machinery.
“Assemblies of machinery” are also listed as machinery; these are created when machines or partly completed machinery are arranged and controlled so they function as an integral whole, such as on a manufacturing line or process mixing operation.

In the case of a simple machine, the person responsible for ensuring that it complies with the Machinery Directive is the equipment designer or manufacturer. Where an assembly of machinery is designed and installed, it is often the final user’s own project team that confirms the layout of the assembly and is therefore responsible for ensuring compliance. Most manufacturers are unaware that they are accountable for this.

Risk-assessing the design
BS EN ISO 14121–1:2007 Safety of Machinery. Risk Assessment. Principles describes how a machinery risk assessment should be completed. Basically, the hazards associated with the machinery (without considering control measures, eg guards or safety devices) should be identified, taking into account all the activities associated with the machine, such as operating, cleaning and maintenance. In addition, hazards arising from reasonably foreseeable misuse should also be considered.

The result of the risk assessment will indicate whether current controls are adequate or further risk reduction measures are required. It will also help to identify any risks that cannot be eliminated through design. This information will need to be passed on to the final users through an instruction manual or standard operating procedure.

Assessing compliance with EHSRs
As well as assessing the fundamental health and safety risks associated with activities involving the equipment, the machinery needs to be assessed for its compliance with the EHSRs. These are listed in Annex I of the SMSR. Some EHSRs apply to all types of machinery, but some are based on the specific industries in which the equipment is used (eg food, wood), some on the type of equipment involved (eg mobile, lifting) and some on the location in which the equipment is used (eg underground equipment).

Examples of EHSRs that apply to all equipment include: materials used to construct the machinery; transportation of the machinery; stability; protection against mechanical hazards; requirements for guards and protection devices; integral lighting; machinery maintenance; ergonomics; control systems; and instructions.

Meeting standards
Most buyers are unfamiliar with the harmonised standards (it is estimated that there are about 650) and therefore rely solely on the machinery manufacturer or supplier demonstrating compliance with EHSRs through the CE certificate. It is important for buyers to understand that, in the majority of cases, CE marking is only as good as the competence of the machinery designer; there is no independent review of the process.

When buying single machines, manufacturers are expected to ensure their use of the equipment complies with PUWER, although there is no requirement in these regulations to carry out an assessment of equipment against PUWER. In fact, much of the associated guidance suggests that a suitable and sufficient task risk assessment (completed under the Management of Health and Safety at Work Regulations 1999) should highlight any non-compliance.

There is a link between PUWER requirements and the EHSRs, so if buyers assess the equipment against PUWER it will give them a good indication of compliance with the EHSRs.

However, if manufacturers are buying a series of machines that they intend to link to produce a manufacturing line, they are then responsible for ensuring that the end product (regarded as a “machine” itself) complies with the Machinery Directive.
A regular series in which Robert Spicer highlights the consequences of non-compliance with health and safety laws.

The importance of compliance with health and safety measures during work at height, and the tragic consequences of non-compliance, are clearly illustrated by the death of a worker during demolition work at Bristol Airport.

In December 2006 Steven Watson, an employee of Rubb Buildings, was working to dismantle a hangar at Bristol airport. High winds at the time meant that employees decided to work from the top of the hangar. There were concerns about metal parts of the structure being dislodged by the wind.

The site supervisor, an employee of Fitzpatrick, a groundwork construction company, told Watson that he must wear a harness. Watson failed to wear a harness. He fell through a hole in the roof and died instantly from multiple injuries.

The following points were made in mitigation.

- The company had no previous convictions.
- It had entered an early guilty plea.
- It now has a new system for managing protective equipment and has renewed its method statement.

Rubb Buildings was fined £100,000, plus £48,000 costs, for a breach of section 2(1) of the Health and Safety at Work, etc Act 1974, for failing to ensure the health and safety of employees.

The Health and Safety Executive (HSE) investigation into the fatality discovered failings in the company’s work plan, method statement and supervision. The company was unable to produce inspection and maintenance records for the harnesses.

An HSE spokesperson is reported to have made the following points.

- The work could have been done from underneath, using a mobile platform.
- Rubb had not avoided work at height and did not follow the hierarchy of risk control.
- The deceased should never have been on the roof. When he was, he should have had the correct equipment and training. None of these was provided.
- The fine reflected new sentencing guidelines, which state that fines for health and safety failings resulting in death should seldom be less than £100,000.
- The tragic thing about the case was that there was no reason for the work to be done from the top of the roof.
- Watson should have been properly protected by Rubb Buildings. Instead, he lost his life. The company had failed in its duty to ensure that there was a properly planned and supervised means of working.
- Falls from height can be extremely serious and adequate safety measures must be in place to protect all workers.

Deaths and serious injuries resulting from workplace falls from height are regularly reported. This case can be seen as illustrating the current policy of the courts in relation to sentencing employers who fail to comply with basic health and safety principles.