



*Safety & Loss Prevention
Subject Group*

IChem^E
THE INSTITUTION OF CHEMICAL ENGINEERS

Newsletter

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EDITORIAL

At 4.53 pm on the 1st of June it was the 30th anniversary of the Flixborough disaster. I remember it well as I was watching wrestling on the TV and there was a news flash. While I appreciated that it was a terrible disaster I never thought that it would lead to so much legislation and argument on safety.

The Assembly Subject Group meeting on Managing Risk is reported below. All readers are recommended to see the slides of the talks on the IChemE web site. Why not raise any thoughts in the Newsletter's Correspondence column.

The Hazard Forum meeting on Learning from

Accident was very good and well attended but unfortunately no one came from the chemical industry.

The Crossword is back in this issue but I hear very few comments. How about some puzzles from members or items for a safety quiz?

INSTITUTION OF CHEMICAL ENGINEERS 2004 ASSEMBLY "MANAGING RISK" SUBJECT GROUP SEMINAR

Chaired by Robin Turney

The seminar speakers were: Steve Vbranch, immediate past President of the Institution; Brian Harris, retired, previously vice-president of ICI Nobel Division; and Paul Buckingham QC.

Steve Vbranch spoke about the dilemma of engineers in making the judgement call during risk assessment on how far to go towards adopting best practice beyond ensuring pure regulatory compliance. Ethical issues are coming to the fore and it is essential that engineers know where to go to get support. Professional engineers must keep up with current issues and it may be appropriate for the Institution to establish a form of ethics committee with possibly a help line.

Brian Harris followed by giving a personal account of his interview with the regulator following a double fatality accident in North Wales. The questioning was personal, aiming to establish your

role, responsibilities, qualifications, training, and how as a senior manager do you get your assurance that procedures are being followed. Managers need to be prepared to answer questions at any time on their scheme for delegation, risk assessment, process for learning, and obtaining assurance. He went on to talk about how we can apply the lessons from non-process accidents, such as those on the rail network, to the process situation. The central themes are the same and it is no defence to say that accidents in other sectors are not relevant to you. On the question of "whistleblowers", companies need to have effective arrangements where employees can voice their concerns with management with confidence that they will be handled responsibly. Such systems can reduce the feeling that employees have no alternative other than to approach the press and media. In the event of an accident at your site, he questioned, "Would you have the right Headline?"

Paul Buckingham is an unusual combination of being Member of the Institution with an industrial background before becoming a QC. He focused his presentation of the legal responsibilities of the engineer in terms of both criminal and civil liabilities. On the former there is no get out clause and the engineer has to know the legislation in order that he or she is not liable to prosecution and punishment for non-compliance. On the other hand it is possible for engineers to limit their civil liabilities through adopting the right wording in contracts, however, this will not protect individuals who commit fraud, falsehood, or deliberately flout the law. Ensuring the right level of protection is one of the tools of proper risk management. The presentation also outlined the standard of performance that courts expect of a professional.

At the end of the presentations, questions initially focused on delays to release of information on major accidents due to impending litigation. Brian Harris made the point that there is little that is new

in such cases, and better value can be obtained by thoroughly reviewing past reports. Concern was voiced over how smaller companies can keep themselves informed on new regulations and codes of practice. It was noted that the Health & Safety Executive has a web site that has a section on what is new. Participants questioned whether a legal page could be added to TCE as a "one stop shop".

All presentations are available on the IChemE Website.

Learning from Accidents - Sharing Information and Experience

A meeting was held at the Royal Academy of Engineering on the 19th May 2004. The following speakers presented very interesting papers:

Mr Aidan Hayes, Director of Health and Safety, BP

Mr John Chaplin, Formerly with the CAA

Mr Gerard Forlin, Barrister

Background

After every accident someone always says that lessons must be learnt. In the aviation sector this is the general culture worldwide. However in many other industrial sectors seldom is appropriate action taken to ensure that full details of the event are recorded, and the action required to prevent it happening again clearly determined, recorded and then shared with others. Thus the new engineer or scientist in these fields invariably has to learn the hard way through personal experience. Embodiment of the information in codes and standards developed by companies was once possible but with increasing reliance on European or International standards such information is often excluded. Thus for most organisations the Corporate technical memory is becoming shorter as people who learn the lessons retire and leave. In addition many companies are not sharing information, often because of fear of legal issues. Others believe this stance to be counterproductive.

In the UK the Health and Safety Executive are increasingly requiring companies to establish Management Systems that ensure lessons learned from their own accidents as well as those in other companies are recorded for future reference. Engineers responsible for design, risk assessments or writing safety cases require access to good quality data on accidents, alongside the tools of an effective accident database, so that they may embody best practice in their work.

If hindsight is defined as wisdom after the event, learning lessons from accidents is a process of converting hindsight into foresight. Thus the necessary precautions then become a matter of engineering common sense.

This meeting will address some of these issues and seek a solution so that safety in engineering can be revitalised. It will do so by reviewing existing arrangements for dealing with accidents in two important industrial sectors, aviation and petrochemicals. It will also seek to determine how the sharing of information can become a routine matter so that safety in all branches of engineering can benefit.

See the Hazard Forum website www.hazardforum.co.uk for more information on the meeting

RoSPA INITIATIVES

RoSPA are currently working on three initiatives:

1. **Managing Occupational Road Risk (MORR).**
Work is continuing to raise the profile of occupational road risk as a mainstream health and safety at work issue. The HSE and Department for Transport provide a guidance 'Driving at Work' (<http://www.hse.gov.uk/pubns/indg.382.pdf>). There is also a site for the Occupational Road Safety Alliance www.orsa.org.uk
2. **Accident Investigation.** RoSPA have been liaising with the HSE over the drafting of new guidance on accident investigation and attended the recent meeting of the Hazard Forum on Learning from Accidents and were interested in The Accident Database

3. **Director Action on Safety and Health (DASH)**
Besides feeding into the production of HSE Guidance on directors' health and safety duties (<http://www.hse.gov.uk/pubns/indg343.pdf>) and coverage of health in and safety in annual reports (<http://www.hse.gov.uk/revitalising/annual.htm>), RoSPA has produced its own web based consensus guidance "Towards Best Practice" on measuring and reporting on corporate performance and on evidence based target setting in organisations. These are downloadable as pdfs at "Occupational Safety", "What's New?" at www.rospace.com.

Loss Prevention 2004

An article for the Safety and Loss Prevention Subject Group Newsletter. Part of the competition for best article, winning attendance at LP2004.

Sean O'Sullivan, Winner of the "Young Engineer to Prague"

As a young engineer and an attendee of the recent symposium on Loss Prevention, I have been asked to comment on the experience. LP2004, Prague, consisted of two and a half days of presentations and posters from 1st - 3rd June, covering aspects of regulation, operation, analysis and case studies of all types of process hazards throughout the chemical industry.

As the first symposium of the Loss Prevention series since the implementation of the Seveso II directive, there was naturally a great deal of discussion of how the implementation occurred, practical experience of enforcement, cooperation and new developments. One speaker indicated that major hazard incidents had actually risen since implementation of Seveso II, so it was not surprising to see detailed presentation of the facts surrounding the Toulouse explosion and others.

In addition to the operational and regulatory focussed presentations, several investigations of the thermodynamic properties of various chemicals were presented. Among the less common materials, we still find studies of ammonium nitrate, coal and various organic liquids, proving

there is still much to learn about our most familiar materials.

A number of industry representatives also identified practical lessons from studies on topics such as dust explosions and risk assessment. Not surprisingly, presentations on risk assessment spanned most topics of debate, such as the use of IBCs, transportation of dangerous goods, through tunnels and otherwise, and human factors. In fact, LP2004 devoted an entire thematic section (about 15 presentations) to lectures and posters related to human factors issues, reflecting current concern over these issues. Papers from various members of the PRISM human factors thematic network were presented at LP2004, specialising in expertise development and sharing, safety culture by design, methodology for assessment of safety based on staff numbers and other workload studies.

Although very interesting for a young engineer, I can say that it is difficult to see how many of the papers will influence my own work. The papers were presented in such a way that I understood them, yet, it is easy to feel 'in at the deep end' when surrounded by a motivated audience with a purpose for attendance. Speaking with some of the other delegates put me more at ease and I now know I am not the only one with little experience and understanding to contribute at this stage in my career.

When I finally found a topic that I did know something about, I felt very pleased to share my knowledge with the speaker and audience. To then know that my comments were genuinely appreciated by more senior peers gave me a real buzz. It was the sort of feeling that inspires a person to seek out new knowledge and strive to succeed in order to report back at Loss Prevention 2007.

I would recommend the Loss Prevention series as an excellent way to share developments, experience and problems. The delegates proved

themselves to be active, critical and a rewarding audience - I thank the IChemE for allowing me to be one of them.

ST. JOHN OF NEPOMUK



This statue of St John sits on a bridge in Bruges, Belgium. St. John is said to be the patron saint of bridge builders. St. John of Nepomuk was thrown from a bridge, bound and gagged, into the river Vitava in Prague. His feast day is the 16th May.

HOSPITAL EMERGENCY

A child was recently taken to hospital with a ball race firmly pushed onto his finger like a ring. The parents had used all of the standard methods to get the ring off by putting olive oil or butter on the finger and tried to rotate to screw the ring off the child's finger but to no avail. It was hampered by being a ball race with the outer ring being easy to rotate but not affecting the inner ring. The child was taken to hospital where a nurse wrapped string around the finger tightly starting against the ring and binding up towards the top of the finger. She then started unwinding the string starting against the ball race and at the same time pushing the ring up towards the top of the finger. Within two minutes it was off, the compression of the finger caused by the tight string was sufficient to help slide off the ball race. Easy when you know how.

Another lesson learnt!

STRANGE NOTICES

While in Tasmania recently I came across the following notice. Any suggestions as to what it could be concerned with?



ADVICE WHEN STAYING AT A HOTEL 1785 STYLE

"Some general and Necessary advice to travellers in chaises, stages or on horseback." 1785

"... let your chamber be near ground story for fear of fire; and on retiring to rest, take care that your door be locked, and look into all closets and under the bed, lest a rat or something more dangerous be concealed."

CORRESPONDENCE COLUMN

Major Accident Prevention - Code Inadequacy - no correspondence received.

NEWS BRIEF

Fire Destroys nearby Bridge

Train traffic was rerouted in Western Kansas as Union Pacific continued to rebuild a rail bridge destroyed in a fire.

Six Union Pacific coal cars were lost in the blaze on the bridge.

Union Pacific spokesman said the fire started when the crew of the east bound train stopped on a wooden bridge to inspect a hot wheel bearing. The bearing ignited the 290 ft bridge. The fire burnt out on Saturday morning. Six coal cars were lost in the

fire

The replacement bridge will be made of concrete.
The Goodland Daily News



The Safety Inspector Resigns

Said the Safety Inspector: "Oh Lord!
I really am terribly bored -
Forever inspecting,
Assessing, detecting,
Ensuring the rules aren't ignored.

"And with years of it lying ahead,
This daily grind fills me with dread,
So to hell with my pension,
It's not worth the tension,
I'll be a consultant instead."

Guidance issued for FaTaL risks campaign 2004

The current FaTaL Risks Campaign 2004 aims to have a significant impact on control of risks from what statistics show to be the three major causes of fatal and serious injuries in construction. The campaign currently involves an intensive period of construction site inspection during which HSE inspectors will focus on:

- Falls - during work at height.
 - Transport - movement of vehicles and mobile plant
 - Lifting - operations involving heavy loads.
- 300 people working in the construction industry have died during these activities in the last five

years and they account for over 70% of all fatal injuries in construction.

In tackling risks under the FaTaL campaign, inspectors will look for different things under each of the headings.

On Falls - the biggest single cause of fatal and serious injury in construction - HJSE staff will expect to find:

- Assessment of the risk from all work at height and avoidance of work at height where possible.
- Working platforms used with guardrails, toe boards etc, in preference to working from ladders.
- Ladders used only for light , short duration work and secured to prevent displacement.
- Rooflights and other fragile materials protected to oprevent falls through the material.
- Fall arrest equipment used if prevention is not practicable, e.g. safety nets, harnesses with running lines.
- Instruction, training and supervision regarding the precautions required for all those at risk from falling.
- Inspections undertaken to check the integrity of working platforms and fall arrest equipment etc.

On Transport, i.e. the movement of vehicles and mobile plant, they will want to find:

- Traffic management plan as part H&S Plan prepared, implemented, updated and enforced.
- Pedestrians separated from movements e.g. at site entrance/exits and during plant slewing and loading.
- Reversing minimised and controlled e.g. by one-way systems and use of trained banksman.
- Safety and warning devices e.g. ROP's, seat belts, mirrors, CCTV, radar, reversing alarm, etc.
- Maintenance systems for checking brakes, steering, lights, etc, and all safety/warning devices.
- CTA training card or equivalent held by drivers or operators and a verification system

in place.

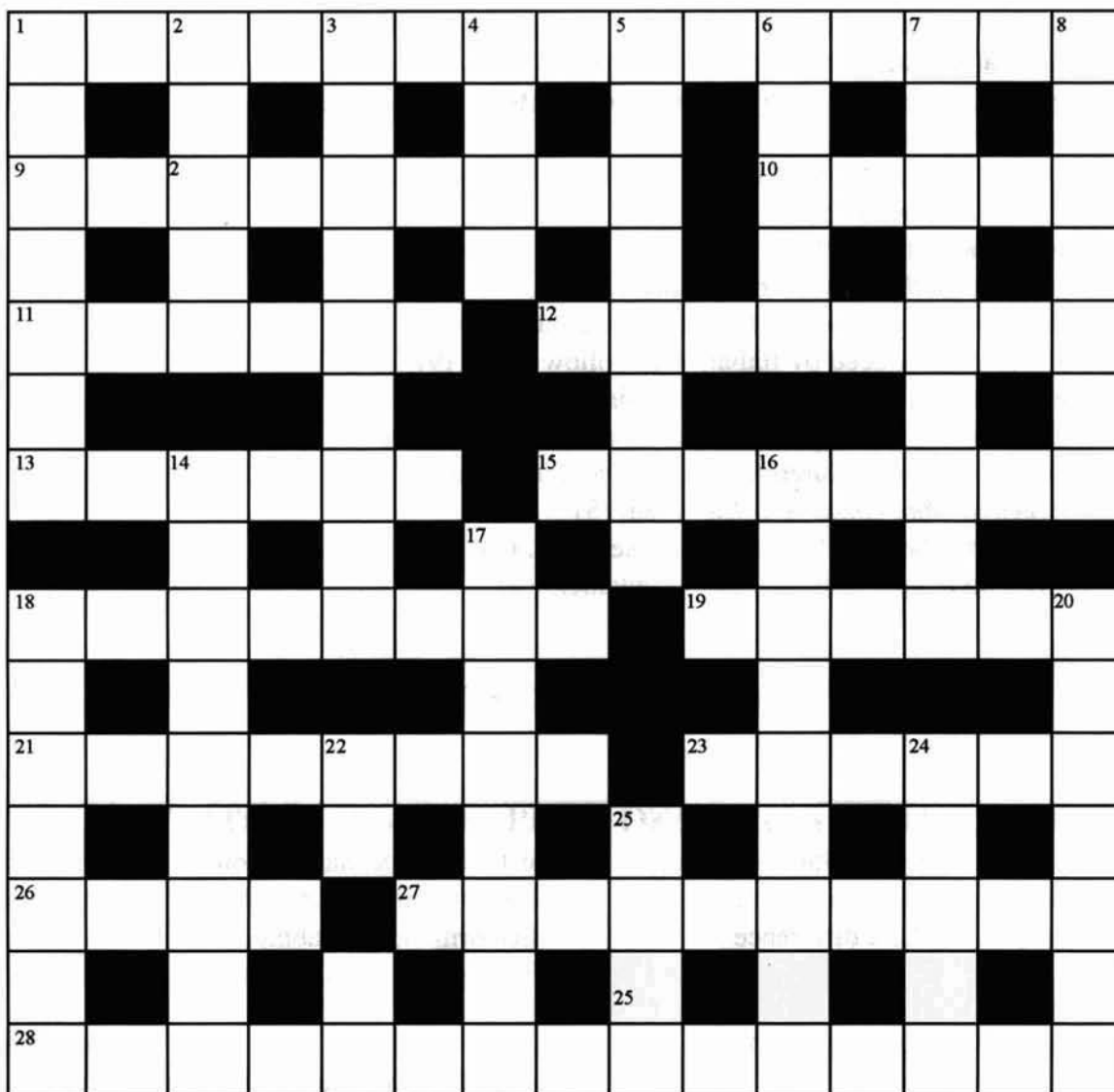
- High visibility clothing provided to, and worn by, all persons at work.

Finally under the Lifting section of FaTaL HSE inspectors will expect to find:

- Lifting operations planned by trained competent and appointed person(s).
- Lifting plan/methodm statement prepared as part of the project H&S Plan.
- Responsibilities established; clarity as to whether contract or crane hire terms apply.
- Crane outrigger support assessed, i.e. identify loadings and load-bearing capacity on the ground.
- Slings arrangements planned and slinging undertaken by trained and competent persons.
- Lifting operations supervised by trained persons and carried out in accordance with lifting plan.
- Maintenance of machines and equipment supported by up-to-date examination reports.

The results of the campaign will be collated and published on the HSE website but presently anyone with questions is requested to phone 01582-444248 or hit infonet@hse.gsi.gov.uk . Callers ,it should be noted, will not be asked their name, company or project details.

CROSSWORD PUZZLE No.15



ACROSS

- 1. Sombre but safe implement to work with. (3-8, 4)
- 9. A city lass responsible for chemical reaction? (9)
- 10. Hardly a cation. (5)
- 11. It's enough to make you sick! (6)
- 12. Music and altered element sounds Nordic. (8)
- 13. Oil for a wheel. (6)
- 15. Story is about right but it could rub you the wrong way. (8)
- 18. Make it to get at the honey quickly. (1, 3, 4)
- 19. Variations on a cypher. (6)
- 21. Return of Russian space station inspires floating roof problem. (3, 5)
- 23. Head wear in Central America ... (6)
- 26. ... and in France. (5)
- 27. To achieve equilibrium you need a good person with talent. (9)
- 28. Unstable police etc. prayed for unstable compound. (6, 9)

DOWN

1. DNA or RNA for instance. (7)
2. Chemical commemorated on 5th November. (5)
3. Imply a lot needs adjusting to get at the oil. (9)
4. Corrosive coating caused by 7. (4)
5. It's not safe to underwrite around London district. (8)
6. 7,000 to the pound. (5)
7. Combining with O. (9)
8. American footballer repairs telephone cables. (7)
14. Device made by some works team taking part back. (5, 4)
16. Depression produced by Italian with hollow tooth. (9)
17. Some blunders early on lead to that sinking feeling. (8)
18. Dull person in spy organisation taken aback by exercises. (7)
20. Sounds as if Mme. Karenina is telling porkies - break them down. (7)
22. Sources of fibre could self-heat in air. (5)
24. A party member and I prove to be elsewhere. (5)
25. There's no danger with the metal container. (4)

DIARY OF SAFETY EVENTS

GROUP	TITLE OF MEETING	PLACE AND CONTACT	DATE
Safety and Loss Prevention Subject Group	Safety Culture - Sharing experiences of how it can make a difference	For further information contact Allen Ormand 01925-741269 Allen.ormand@gb.abb.com Winnington Hall, Cheshire Cost £61.10 / £66.10	1030 -1630 hrs 22 September 2004
NW Branch	HAZARDS XVIII	UMIST Contact Mike Adams 01539-732845 mikeadams@rawgreen.fsworld.co.uk	23-25 November 2004
IChemE	7th World Congress of Chemical Engineering	Glasgow	10-14 July 2005
EFCE	International Loss prevention Conference	Edinburgh	22-24 May 2007