

SAFETY AND LOSS PREVENTION SUBJECT GROUP NEWSLETTER

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EDITORIAL

With the possibility of the Olympic Games coming to London in 2012, I thought that Safety Managers could suggest a set of Industrial Games suitable for this major event. I have in mind the following new events:

Playing with Fire
Skating on thin Ice
Running a Risk
Sailing close to the Wind
Riding for a Fall
Jumping to Conclusions

Do members have any other suggestions?

I am very happy to report that our Chairman Dr. Mike Considine has been elected onto the Executive Committee of the Hazards Forum

The Prime Minister gave a speech on the Compensation Culture at the Institute of Public Research on the 26 May 2005. I like this quote from his speech:

“They (*the public*) want to know that, where something has gone wrong, lessons have been learnt and that the same mistake won't be made in the future to someone else”.

Perhaps we should be taking this suggestion up!!

INTERVIEW WITH JUDITH HACKITT, DIRECTOR GENERAL OF THE CHEMICAL INDUSTRIES ASSOCIATION



Judith Hackitt trained as a Chemical Engineer at Imperial College, London. She joined Exxon Chemicals after graduating and then worked as European Pigments Operations Director and Group Risk Manager for Elementis plc. In 1998, she joined CIA as Director of Business & Environment. Judith Hackitt became Director General on the Chemical Industries Association in April 2002, and was appointed as a Commissioner in the UK's Health & Safety regulatory body on the same date.

1. What do you regard as the most pressing safety challenges facing the UK chemical industry over the next 5 to 10 years? Would you consider that the industry is increasingly being driven to improvement by new and developing legislation rather than its own voluntary efforts to drive safety improvements as an integral part of other business imperatives?

The most pressing safety challenges facing the UK chemical industry are a mixture of

old and new. The newer challenges relate to stakeholder concerns and perception about the safety of the industry's products rather than its processes. But that by no means diminishes the challenge that we all continue to face in maintaining a track record of good performance on process safety. A single major incident in the chemical industry would do serious damage to the whole industry's reputation, not just the company where the incident occurred.

It's always difficult to determine the extent to which improvement is driven by regulation or by voluntary initiative. My own opinion, based on close to 30 years experience in this industry, is that we do best when our collective action and performance is driven by voluntary action, but that voluntary action is designed to keep us just ahead of where legislation threatens to take us anyway. This normally means that we see the need for regulation anyway, but by staying "ahead of the curve", we can help to influence the shape of the regulation and avoid making it too prescriptive or onerous.

2. The HSC has published its draft Science Strategy 2005-2008 which proposes a 'reduction in the amount of money spent in mature areas, especially Major Hazards.' One key phrase about Major Hazards is '.... these industries are mature, are well endowed with competent scientists and engineers and therefore should take greater responsibility for risk control research and standard setting'. Is the chemical industry ready for these new challenges? What are the most important things a chemical company should do to show the regulator(s), and the public, that they are managing health and safety risks properly?

The important thing to note about the statement you've quoted from HSC is where it refers to "mature areas". There is no suggestion/intention for the HSC/E to

reduce effort on new technologies/processes – such as nanomaterials. But it seems perfectly reasonable to me, for them to say that it is for the companies who own and run the mature processes to take lead responsibility for what further research and engineering needs to go into effective risk management of their facilities. HSC/E regulates all workplaces in the UK and the demography of the world of work – and its risk profile – has changed enormously since HASAWA in 1974.

The most important things the chemical industry needs to do to show that it is managing health and safety risks properly are:

- i) to actually do it in practice, - no good saying everything's fine if incident and near misses are being hidden or not properly investigated.
- ii) to be transparent about its performance with all stakeholders – regulators, shareholders, employees, local communities.
- iii) to have its health and safety management systems assessed and verified by a credible third party. CIA has long argued for 3rd party verification of Responsible Care Management Systems.

3. What role do you see the professional Institutions taking to meet these challenges?

It would be very helpful to know what value/importance professional institutions place on 3rd party assessment and verification. If they support CIA's views on this, we would welcome the opportunity to do some joint advocacy on this – to the industry itself and to the external stakeholders.

4. Do you see any areas in the education and training of chemical engineers that need to be improved?

Lots – but probably the biggest challenge of all is the art of good communication. Even the best communicators among engineers and scientists have an overwhelming tendency to speak in their own native tongue, firmly based in science, facts and figures and our own jargon.

The first lesson in any communication course taught to scientists and engineers should be about how to listen. Lesson two needs to be about respecting diverse views and opinions – especially those based on emotion and intuition rather than science. Neither is inferior/superior to the other nor is one right and the other wrong.

Scientists and engineers of the future must be able to engage in dialogue about risk and risk perception. Quoting probabilities in 10^{-x} jargon cuts absolutely no ice with mothers worried about the impact of our industry on theirs and their children's long-term health.

5. The IChemE, SIESO and other bodies organising conferences for the industrial sector will receive less involvement from the HSE for their conferences as a result of the strategy changes. Is the industry ready to share more with the professional persons?

As a Health and Safety Commissioner, I can assure you that there's no reason at all to assume that it is a given that less resource will be available from HSE for conferences and events held by professional bodies and others if they are regarded as valuable. The very first part of the HSC Strategy document, entitled "Developing Closer Partnerships", talks about "utilising the contribution of others", and of only changing things "where they militate against effective partnership working". HSE has recognised that it has limited resources and must prioritise what it does and whom it engages with. Partnerships and working together will be encouraged though, not discouraged,

where they clearly provide value in improving performance.

As for the industry sharing more- we should also be discussing with regulators and professional bodies how we ensure that valuable lessons can be shared most effectively.

6. Section 6.6.3 of the Responsible Care programme encourages companies to share information on lessons learned from accidents. Considering the many changes to the industry over recent years including a current trend for outsourcing materials and certain processes to smaller companies and sometimes those overseas, do you see any need to strength the mechanisms used by industry to learn from its failures?

A great deal of information sharing does go on under the Responsible Care banner – both at national and international level and it covers sharing of good practices as well as lessons learned from failures. As I have already said, we can never get complacent or feel that we are already doing "enough" to maintain our performance on process safety, so we are very open to ideas/suggestions on how we might strengthen what already takes place.

That said, we cannot ignore some of the less desirable "developments" which have taken place in the world in the last 20 years. A greatly increased "blame culture" and appetite for litigation and compensation make it much harder for companies to sign up to free and open sharing of "failures".

7. The aviation industry as a whole has maintained a database incorporating codes and standards to learn lessons from accidents, near misses and maintenance work on aircraft and now appears to be reaping the benefits in greatly improved safety. Could, in your view, the chemicals industry demonstrate the same rational and systematic approach to reducing accidents

bearing in mind that the operating companies no longer acknowledge that it is their responsibility as the principal beneficiaries to fund the updating of a comprehensive suite of industry codes and standards?

I think the most important element of what you suggest is to work on a more robust system to enable sharing of near-miss data or “incident pre-cursors” as HSE call them.

I don't believe that comparing our industry to aviation is straightforward at all. Back in my earlier comments about understanding of risk and risk perception – the public have a higher tolerance of airline accidents for 2 reasons – i) the benefit of air travel to them as individuals is much more obvious than the benefits of the chemical industry and ii) they public chooses whether to take the risk of flying on a plane but not whether they are exposed to a chemical incident.

A better system for sharing data on potential causes of possible incidents before they happen would tell a different story – of an industry seeking to do everything it could to reduce risk and prevent accidents/incidents.

8. Do you have any concerns for the proposed legislation on corporate manslaughter?

I see no reason for any responsible chemical company (or any other company for that matter) to be fearful of the current proposals to change the law on corporate manslaughter.

9. What do you think will be the effect of the Freedom of Information Act on the relationship between the chemical industry and its various regulators?

The Freedom of Information Act has helped to raise the level of transparency, which ought to be good for everyone. It is

important to remember that regulators and Government departments do not have to agree to all requests for provision of information if they see good reason not to. Good reasons not to release information will include sensitive material which is confidential to a particular company/business or which might have national security implications.

ACHIEVING A GOOD SAFETY CULTURE –“the people dimension” in health, safety and environmental performance.

An excellent meeting was held by the Hazards Forum on the 10th March with Dr. Dick Taylor, Head of EH&S Policy BNFL, Mr. Eric Clubley, Director of EH&S Corus, and Professor Rhona Flin. An account of the meeting is available on the web site www.hazardsforum.co.uk

BHOPAL GAS TRAGEDY AND ITS EFFECTS ON PROCESS SAFETY

International Conference on the 20th Anniversary of the Bhopal Gas Tragedy, December 1-3, 2004,

Indian Institute of Technology, Kanpur Conference Statement

Summary

150 distinguished global safety leaders and researchers from 26 countries attended a conference on the 20th anniversary of the tragic Bhopal gas accident of 1984. The causes and evolution of the accident were discussed in detail, as was the progress made since, current status, and future directions. An exhibition of photographs of the tragedy and its aftermath by the renowned photographer Raghu Rai was held. Several videos related to the accident were also screened.

Several items, such as the Conference Statement, the Bhopal Conference Group Members list, list of conference participants, press releases for the three days of the conference, papers presented at the conference, articles published in Chemical & Engineering news, Chemical Weekly, etc. are at

www.iitk.ac.in/che/jpg/bhopal2.htm.

Selected papers from the conference will be published, after peer review, in a special issue of the Journal of Loss Prevention in the Process Industries (Elsevier).

After the conference, a group of 35 participants travelled to Bhopal to see the Union Carbide plant first hand and also to visit the hospital where victims were treated and where the short and long-term health impacts of the accident continue to be studied.

The distinguished attendees renewed their commitment to improving process safety, preventing future accidents, and completing the response to the Bhopal tragedy. Attendees offer the following recommendations to industries that manufacture and handle chemicals and related materials, communities, governments, and other influencing organizations. The attendees pledge to serve as resources for companies, governments, and communities around the world to help implement these recommendations and prevent future tragedies of this magnitude.

General Conference Recommendations

- Credible information about the Bhopal tragedy should be made public. This includes information on the root causes of the disaster as well as details regarding deaths and injuries in 1984, in the weeks and months following the accident and in the intervening years.
- National and International Organizations should collaborate to provide help and guidance regarding treatment of the victims and clean up of the contaminated site. Participants in the conference expressed their desire to be involved in such efforts.
- A fresh, time-bound, and scientifically sound study by a respectable organization(s) should be done of those still suffering

directly due to the gas leak and their off-springs, including treatment needed, its cost and availability in Bhopal, and about the rehabilitation of those impacted by the gas or aftermath of the event.

- An appropriate memorial should be built at the site to help the world remember the lessons of Bhopal. The memorial should include a museum housing the details about the tragedy, the medical treatment and the rehabilitation, the laws enacted worldwide as a result, the lessons learned, the photos and artefacts of the victims, so that scholars and future generations can use them for further research into tragic accidents.
- A visit to the plant, the memorial and the museum should be encouraged for engineers, doctors, and business-persons. Engineering students, medical students, and MBAs should be taught the lessons of Bhopal to help them make the right decisions in their professional lives
- In addition, the conference attendees noted that Bhopal Plant presents a secondary and on-going hazard to the city of Bhopal based on environmental contamination from its broader manufacturing operations. Attendees of the conference encourage the responsible parties to remove and properly dispose of chemical residues and take the necessary steps to restore the Bhopal Plant site

Specific Conference Recommendations

Recommendations applicable to Governments:

Many countries have implemented sound safety and environmental regulations in the aftermath of Bhopal. Therefore:

- Countries that have weak enforcement of these regulations should strengthen enforcement;
- Countries without sufficient regulations should implement and enforce appropriate such regulations;
- International non-governmental organizations and quasi-governmental organizations should help bring consistency to regulations around the world;
- Publicize investigations into causes of accidents and suggest actions to prevent their recurrence. The constitution of the US Chemical Safety Board is a unique model to consider in this regard.

Recommendations applicable to industry:

- Demonstrate commitment to safety at all leadership levels;
- Implement appropriate safety management systems;
- Work towards a 'zero accident' goal; ensure adequate number of fully trained staff in all shifts;
- Share information on the proper responses to chemical releases with the local authorities and community, including an off-site emergency management plan;
- Consider participation in good practice programs such as Responsible Care®, and good engineering practice sharing organizations such as the Centre for Chemical Process Safety and the European Process Safety Centre;
- Continue to pursue research and development of inherently safer designs in new plants and expansion of the existing ones.

Recommendations applicable to communities:

- Be aware of potential hazards posed by local industry and become

familiar with and practiced at the proper responses to emergencies.

Recommendations applicable to engineering and business universities:

- Ensure that students receive the basic engineering and business education necessary to support a future career safely managing industrial hazards;
- Perform research on new technologies and management practices to support the safety improvements of the future. Programs such as at Delft, Kanpur, Loughborough, Michigan Tech, Northeastern, Texas A&M, and Yokohama are amongst the good models for this activity.

Recommendations applicable to media:

- Present balanced coverage of good and substandard practices related to safety in industry;
- Help educate the public about proper actions to take in the event of an emergency.

Recommendations applicable to all:

- Share information on methods to prevent and respond to accidents;
- Learn from accidents;
- Follow regulations and good safety practices in all activities;
- Promote training, teaching and research.

CORRESPONDENCE

None received.

LOSS PREVENTION BULLETIN

The next issue of the Loss Prevention Bulletin will contain the following articles.

Information for authors and readers

Explosion in the gas-fired furnace of a melamine plant. Causes and lessons learned

Knijff, Donker and Winter describe the investigation into the initial events and circumstances leading to the explosion in a melamine plant, and discuss the subsequent in-depth study of the underlying causes.

The Environment and Loss Prevention Part 2: Environmental impact and consequences

In the second of a series of four articles, Phillip Carson and Clive Mumford summarize the potential polluting effects of chemicals on the aqueous, atmospheric and land environments.

Onsite and offsite effects of a major leak of oleum

Tony Fishwick describes the incident and outlines a number of operational and organizational shortcomings relating to plant maintenance and emergency response procedures that were highlighted by the investigation.

A survey of accidents in ports

Darbra, Ronza, Carol, Vilchez and Casal report on the findings of an analysis carried out into over 1000 accidents that have occurred in ports since the beginning of the 20th Century.

A fatality due to overriding a safety system

Tony Fishwick gives a reminder about the potential dangers of confined space working and the tragedies that can occur when basic safety rules are ignored.

Bulletin briefing

Events

The Safety Inspector

With our former inspector's fresh start
With a freelance consultant, his heart
Was set on some travel
To try to unravel
Why continents drifted apart

But he hadn't got far when he found
It was all a big plot underground
And that down in the deep
They had engineered creep
To cause tectonic mayhem all round.

**BOOK REVIEW. "DEAR AUSTEN"
BY NINA BAWDEN. Published by
Virago ISBN 1-84408-184-2 Price
£10.00 130 pages**

This book is written by a well-known novelist in the form of a letter to her husband, who was killed in the train crash at Potter's Bar on 10 May 2002, telling him what happened both then and afterwards. She recounts her experience of the crash and her stay in hospital, as well as the investigation that was carried out subsequently. The format as a letter to her husband is poignant and expresses well her feelings from the discovery of the failure of points 2182A to the reluctance of companies to accept full responsibility for the accident. Nina Bawden refers to the management personnel that she has met from organisations and companies concerned with the event but her main concern is with others who have lost husbands, daughters and friends. She recounts events to her husband as if he was beside her but then comes back to reality. For example, she writes "I woke up yesterday morning with a brilliant idea. I would ring you on your mobile number. I suppose I'd had a dream. A few moments later, my confidence that you would answer diminished but the idea lingered, a little shamefaced, at the back of my mind.

..... Our daughter came, as she does most days. We had lunch. After a glass of wine, I confessed my folly. She said, ‘I’ve already tried that, several months ago. There is no one there.’”

The book lives the reality of one who has been seriously affected by an accident and the reality of our archaic system requiring someone to blame before compensation is paid. The book should be read by engineers and managers to appreciate the consequences of failure to do a job to the high standards expected of them. Engineers and managers seldom meet the persons who are affected by their failures and these persons are usually not able to write about them. In this book Nina Bawden has written about the way the accident has affected her life and that of her family. The way she has written the account is unusual but very effective and is, of course, well written.

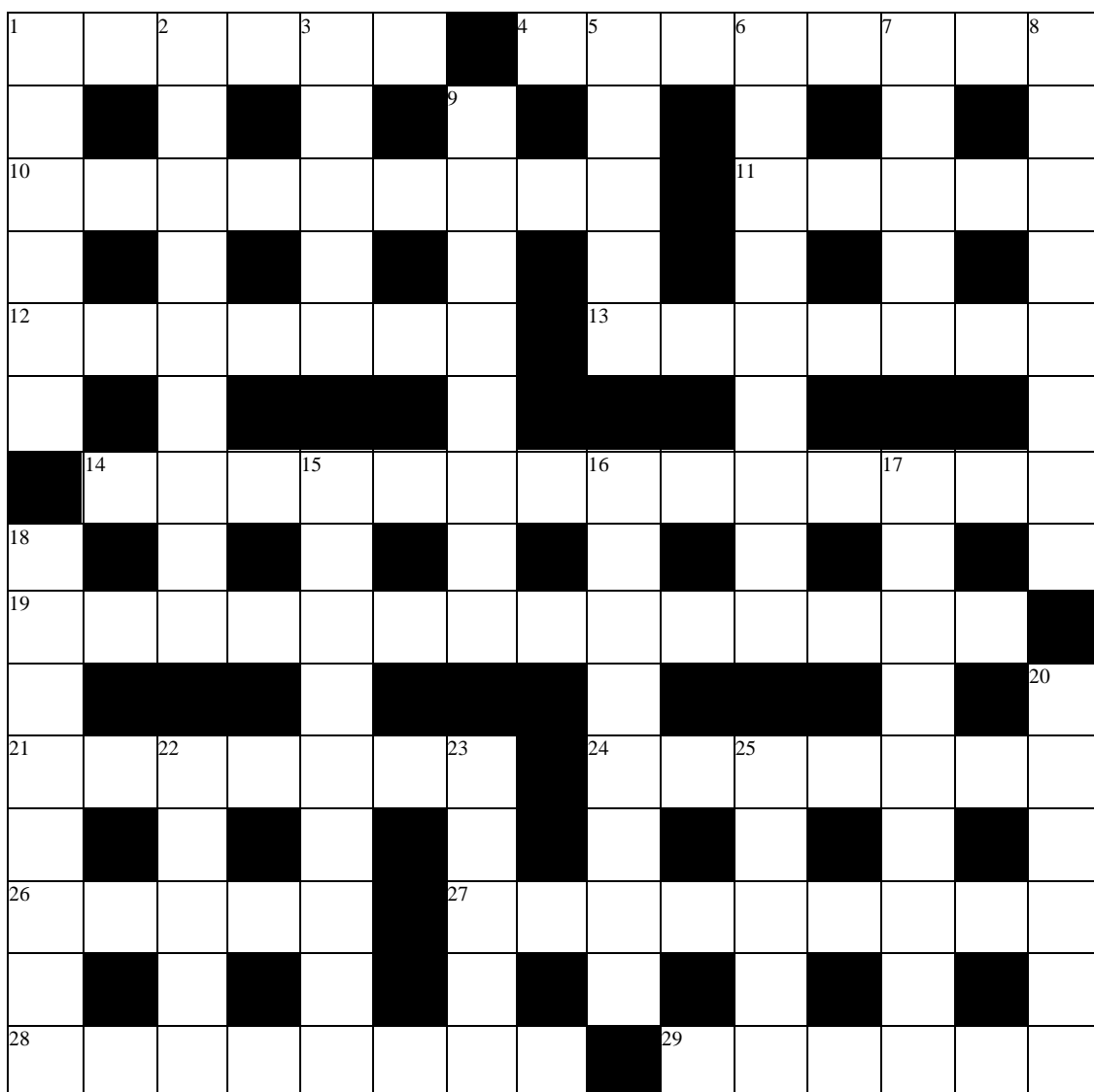
I would recommend all engineers and managers to read it.

NEWS IN BRIEF

Rue Gay-Lussac in the northern French town of Villeneuve d’Ascq was renamed Rue Isaac Newton after a pharmaceutical company objected to the word Gay being seen in their address. They considered that it would not be acceptable to their American customers. Objections to the change were however made in France and the name was replaced.

Accidents killed 5,286 Chinese miners in the first 11 months of last year, but safety is improving the Government said. China produced 35% of the world’s coal but reported 80% of deaths in colliery accidents globally.

CROSSWORD PUZZLE No.18



ACROSS

1. Rob him of some figures. (6)
4. What oil and water aren't. (8)
10. The enemy left shortly to become highly reactive. (9)
11. Table wine from South African port. (5)
12. Filter right for a Swedish radiologist. (7)
13. One hopes its contents are made from phosphor-bronze. (4, 3)
14. Scoring more goals, for instance, could achieve safety objective. (4, 10)
19. When ordered, military pose no risk of generating dangerous heat. (14)
21. It needs an inhibitor to prevent 19. (7)
24. No matter! (7)
26. Hedging shrub first pruned away to reveal small bolt. (5)
27. Oversupply a colleague with a flavour enhancer. (9)
28. It's negligent to enfold the French in an embrace. (8)
29. Sea captains, say, deprived of Parish Priest, can take to the slopes. (6)

DOWN

1. Forgetful about young lady. (6)
2. In danger of BLEVE. (2, 3, 4)
3. Founder member of the Royal Society who laid down the law. (5)
5. Sluggish sort of gas. (5)
- 6 e.g. Diamonds, graphite, etc with neon and tritium – all under cover? (3, 6)
7. Obstruct part of pulley. (5)
8. Stretchy stuff from some of the last aneroids. (8)
9. Lock lasciviously about rudely terse university teacher. (8)
15. Overdue silent performers returned for arsenic, for instance. (9)
16. Pliny's destructive volcano. (8)
17. A gaseous hydrocarbon is nothing but an eastern construct. (9)
18. New mice ripe for chemical formation. (8)
20. Organic compounds for topless clowns. (6)
22. Some dine very well, others not ever. (5)
23. Bravura gestures include displays of bad temper. (5)
25. Drug to produce lighter molecules. (5)

Answers to Crossword Puzzle No. 17

Across

1. Hamper
5. Spalling
9. Hydrofiner
10. Mine
11. Isomorph
12. Linger
13. Horn
15. Titanium
18. Empathic
19. Mons
21. Jet set
23. Elements
25. Peer
26. Aminoethyl
27. Asbestos
28. Danger

Down

2. Abyss
3. Pyromania
4. Reform
5. Synthetic resins
6. Acrylate
7. Lumen
8. Non-return
14. Ohmmeters
16. Number Ten
17. White ant
20. Record
22. Surge
24. Thyme

DIARY OF SAFETY EVENTS

GROUP	TITLE OF MEETING	PLACE AND CONTACT	DATE
S&LPSG IChemE	Active and Passive Fire Protection of Process Plant	The Institution's Conference Centre 1 Portland Place, London 1000 to 1600 hours Contact Gemma Jones 01788-578214	16 June 2005
S&LPSG IChemE SIESO	Security Risk Assessments	UMIST Evening News Theatre Manchester Details in May TCE	22 September 2005
S&LPSG And EPSG I.Chem.E	Vent VOC Abatement – Environmental Protection without Creating New Hazards	<p>The incorporation of a VOC abatement device into a vent system can represent a convenient method of arresting both continuous and intermittent releases to atmosphere. However, in some circumstances, stream composition and flowrate excursions, fouling and corrosion can create situations which constitute serious fire and/or overpressure safety hazards. These threats can be managed by correct technology selection, duty specification and system operation.</p> <p>A regulatory representative will review abatement expectations. Abatement technology and system design experts will advise the measures necessary to address the various concerns relating to the incorporation of abatement devices. The meeting will conclude with an open discussion of the experiences of those attending.</p>	Tuesday 22 November 2005 Half day meeting Lunch at 1 pm Institution's Conference Centre 1 Portland Place, London
S&LP Subject Group Future Programme 2006	Human Factors in Control Rooms. Thermal Stability. Risk Based Inspection. Process Safety Performance Measures Learning from non-process industry incidents. Corporate Responsibility. Design of Relief Systems.		

IChemE	7 th World Congress of Chemical Engineering	Glasgow Congress Secretariat 48, 50 Spiers Wharf, Port Dundas Glasgow G4 9TB Tel: +44(0)141-331-0123 Email: info@chemengcongress2005.com	10-14 July 2005
IChemE NW Branch	Hazards XIX Call for papers Feb – April 2005	UMIST Contact Mike Adams 01539-732845 mikeadams@rawgreen.fsworld.co.uk	28-30 March 2006
IChemE and EFCE	12 th International Symposium Loss Prevention and Safety Promotion in the Process Industries	Edinburgh International Conference Centre Contact R. Cragg IChemE Tel 01788-534476 Email rcragg@icheme.org.uk	22 – 24 May 2007