



Safety & Loss Prevention
Subject Group

IChem^E

Newsletter

FROM THE EDITOR:

The Council has approved the proposal of the Safety and Loss Prevention Subject Group Committee for a Frank Lees Medal to be awarded for the best paper on safety/loss prevention appearing in an Institution publication. The medal itself will have a portrayal of Frank Lees with the following Chinese characters on the reverse side.

危中幾

The characters literally mean 'dangerous opportunity' but the colloquial meaning of the characters together is 'crisis'. Frank Lees had a good knowledge of Chinese.

The Accident Database of the Institution has now been made available to the Chemical Engineering Departments of the UK Universities at very advantageous terms. I hope that all students will be trained in its use and especially for the design project. Remember, the graduates going into industry will ask for the database to ensure that they do not have to experience the accidents that industry has had in the past.

The 50p clip. A correspondent tells me that he had a clip, similar to a Terry clip, beneath the knob on his parachute harness when flying in a Vampire T11 in 1956/57. The instructions stated that the clip had to be removed at 20 ft from the ground.

John Bond, April 2000

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DO WE EVER LEARN LESSONS

-THE CASE OF THE TCP CHEMICAL

My first job in 1948 was with a company making a wide variety of chemicals. One was tricresyl phosphate and not surprisingly we always referred to it as TCP, that is until an operator opened up a drum to dab on a cut he had sustained. I am not sure what the consequences were of his mistaking it for the antiseptic product trichlorophenylmethylio-disalicyl, widely advertised and sold under the brand name TCP. To prevent a recurrence we then reverted to the old style chemical nomenclature of tritoyl phosphate and hence shortened it to TTP. Transport and labelling regulations also referred to the product as tritoyl phosphate.

Quite recently I noticed that someone had updated the naming in the labelling of chemicals. Yes, it is now tricresyl phosphate. Please let me know when someone thinks that it is the antiseptic.

THE BIG BANG

Your Safety Inspector was right
 To query what happened that night;
 But the Big Bang occurred
 Because I gave the word
 And simply said "Let there be Light."

LESSONS I DID NOT EXPECT TO LEARN. NUMBER 4

This was not actually a meeting of the S&LPSG, but I was on a flight with fellow committee member John Gillett, so it nearly counts.

As we settled down ready for take-off, the staff prepared to give us the emergency instruction drill and the passengers prepared to ignore them. Firstly, because this indicates your experience and sophistication. Secondly, because we do not really want to think about crashes at this time.

"Ladies and Gentlemen," said the intercom. "As this plane is too small to have an in-flight movie, the staff will now perform a cabaret for your entertainment."

Everyone looked up, and possibly for the first time took notice of where the fire exits were.

"Now," continued the intercom, "in the event of the plane turning into a boat, there is something else you should know." So we learnt about the lifejacket.

"And there is a whistle here, should you wish to be picked up by a passing sailor."

It was a masterpiece. A little bit of humour had drawn our attention. The safety message which had become so routine as to be ignored had now been refreshed.

You cannot do it all the time (in fact it would not work if you did) but just occasionally a smile can be an effective way to pass on life-saving information.

Martin Pitt

ACCIDENT INFORMATION ON THE INTERNET

<http://www.saunalahti.fi/ility/>

This is the web site of "ility Engineering", a consulting company in Finland, which specialises in reliability, availability and maintainability. Their web site has information on recent accidents in the world and reliability information on equipment.

<http://www.ericards.net>

This is the web site for the 229 Emergency Response Intervention Cards (ERICARDS). These provide basic information and guidance on initial actions for fire crews when they arrive at the scene of a chemical transport incident.

QUOTES CORNER

"The Accident Database also enables our managers to get a feel for how often a particular type of accident has occurred. It helps them to assess the associated risks and benefits of process safety improvements without embarking on a full quantification of risks. Here at Shell we see The Accident Database making a valuable contribution to decision making in process safety."

John Braithwaite of Shell

EXOTHERMIC REACTION HAZARDS

SIMON WALDRAM REPORTS

Readers who are involved with developing, scaling up or designing full scale batch or semi-batch exothermic reaction processes will be interested in the **HarsNet** thematic network. This is a cooperative programme that is funded in part by the European Commission. The 28 partners are drawn from across the European community and includes such household names as BASF, Dow, Solvay, Ciba and Sanofi. One of the objectives of **HarsNet** is for the partners to pool their collective wisdom concerning the assessment of exothermic reaction hazards and to write a user friendly guide (particularly for SMEs) that summarises their views about how this should be done. Other objectives include assembling a database of sources of relevant information and making this freely available to the process engineering community. This activity has already progressed well and the network website at <http://www.harsnet.de> (with a mirror back up website at <http://harsnet.iqs.url.es>)

already guides users to many sources of information. Nearly all of these can be accessed free of charge and the site has dynamic links to dozens of relevant sites. These can be accessed via either the "Links server" or the "**HarsNet** library." UK **HarsNet** representatives are Simon Waldram (Hazard Evaluation Laboratory), Kevin Dixon-Jackson (Ciba Specialty Chemicals), Janet Etchells (HSE) and Tim Snee (HSL). If you would like to know more about **HarsNet** then visit the website or call Simon Waldram on 0208 441 6778.

An HSE conference on "Designing and operating safe chemical reaction processes" will be held at the Birchwood conference centre, Warrington on 6th July 2000. The conference will outline the background to new HSE guidance on this topic that will be published shortly. In conjunction with this meeting the second **HarsNet** UK forum will be held. For further information call Brian Kemble on 0151 951 3513.

GO IN STAY IN TUNE IN

The long-term aim of this seven-minute video is to make members of the public more aware of the actions that they should take to safeguard themselves in the unlikely event of a major outdoor accident or emergency.

RATIONALE

It is not always possible to give prior warning of imminent potential danger. This video therefore aims to develop the instinctive reactions of going Indoors and listening to local radio. These Initial actions (that will ensure people protect themselves and can be given further advice) apply also for incidents that involve flooding, radiation releases and gunmen.

ORIGIN

The Public Education Group of the National Steering Committee on Warning and Informing the Public during Emergencies has developed this video from another that is currently shown in schools throughout Cheshire.

TARGET AUDIENCE

This video is targeted primarily at seven to eleven year-old children. However, it may also help in implementing a part of the new Control of Major Accident Hazard (COMAH) Regulations that require advice and information to be given to communities located close to high hazard industrial sites.

SPONSORSHIP

Initial funding for the video has been provided by the Health & Safety Executive, the Environment Agency, the Home Office, Magnox BNFL, SIESO and the Emergency Planning Society. Additional funding will be needed for producing many more copies of the video, its marketing and distribution.

OTHER SUPPORTERS

The Central Office of Information is providing advice on promotion, marketing and distribution. In addition, the video has support from many organisations represented on the National Steering Committee as listed below.

Central & Local Government
Emergency Services Government
Agencies
Industry Utility Companies
Professional Societies
The Media

FURTHER INFORMATION IS AVAILABLE FROM:

David Moses **01992-555960**
david.moses@hertscc.gov.uk
Evan Morris **01606-868785**
emorris@cheshirefire.co.uk
Geoff Essery **01642-816281**
geoff.essery@which.net

BEWARE THE E-MAIL ~ INFORMATION FROM DOWNUNDER

An innocent computer e-mail error resulted in a few investment bankers being given 6 minutes of advanced warning of a 0.5% official rate rise instead of the expected 0.25% rise. The

trading before the 0930 am official announcement netted some people A\$ 4.2 million. The junior public servant who made the error had her pay cut and was transferred to another position.

BOOK REVIEW

“Collapse: Why Buildings Fall Down”

by Phillip Wearne. Channel 4 Books
ISBN 0-7522-1817-4 181 pages.

This book is based on the television series *“Why Buildings Fall Down”*. The book covers a number of failures resulting from design, overload and pressure faults. Individual cases with the problems encountered are described in detail with the help of drawings and photographs. The accidents cover a bridge, office, hotel, water pumping station, superstore, an offshore platform and a dam. The book is well written and easy to read, making it possible to understand readily the cause of the collapse. As one who is much concerned with accidents in the petro-

chemical industry, it was interesting to find a description of failures in another industry and having similar causes. It was also interesting to note the view:

“The materials used to construct buildings follow the laws of physics and nature exactly. It is human misunderstanding of how they work or failure to use them properly that invariably causes disaster.” The book contains detailed descriptions of certain accidents and the results of the consequent investigations. It was useful to read the mistakes in another industry but I would like to have seen a conclusion drawn that there were lessons to be learnt.

John Bond

HAZARDS XV APRIL 2000

This symposium went off successfully in Manchester with 150 attending the three day event. The programme covered the following:

Safety and the Environment
Transport and Storage of Hazardous Chemicals
Accident Investigation / Failure Mechanisms
Safe Process Design
The Safety Culture
Protection of on site Personnel
(Occupied Building Studies)
COMAH / Emergency Planning

There was an interesting debate between the supporters of quantified risk assessment and those who wanted a more quality approach on the last day. The main debate over COMAH problems was ‘Why was the UK much further advanced over implementation of the Seveso 2 directive compared with our European partners. A level playing field was asked for.’

The symposium was very well organised and the new venue worked very well.

Hazard XVI will be in November 2001 so look out for a call for papers in August 2000.

PUBLIC UNDERSTANDING OF RISK

- HAZARD FORUM

The Hazard Forum has set up a Group to consider the following questions:

1. *Who should take the lead and who should provide support?*
2. *In what areas might the Forum aim to make an effective intervention?*
3. *Is the Forum sufficiently representative and coherent in its own thinking to equip it to give any leads?*
4. *What particular strengths would the Forum bring to bear or how could these be developed?*
5. *What mechanisms could the Forum employ bearing in mind the resources available to it?*
6. *How might these resources be enhanced?*
7. *Is there a successful model from another field which the Forum could attempt to emulate?*

The Group is considering these questions to recommend an agenda for action by the Forum over the next 3 to 5 years. The Group will hold a half-day meeting in London. Those wishing to express a view should write to the Hazard Forum direct at 1 Great George St., London, SW1P 3AA. Views are requested promptly.

BOILER EXPLOSION CAUSED THREE FATALITIES



During the early days of steam, an explosion of a boiler was not uncommon. The following incident at Samuda's Works in Blackwall, London and described in the Illustrated London News of the 8 March 1845 was typical.

The boiler was originally built for a ship, but was purchased by Mr Samuda for 30 guineas to run the engine in his engineering factory on the banks of the River Lea. It was a tubular boiler in which the fire, instead of passing through a common flue, passed through a number of small flues. The outer casing of the boiler was formed of 3/8 inch plate and rivetted together. Some difficulty had been experienced in getting up steam during the three months it had been in operation and it was believed that on several occasions it was operated at very high pressures.

On Wednesday morning the 5 March 1845, after the men returned from breakfast, the boiler ruptured with a loud explosion. The boiler house was a

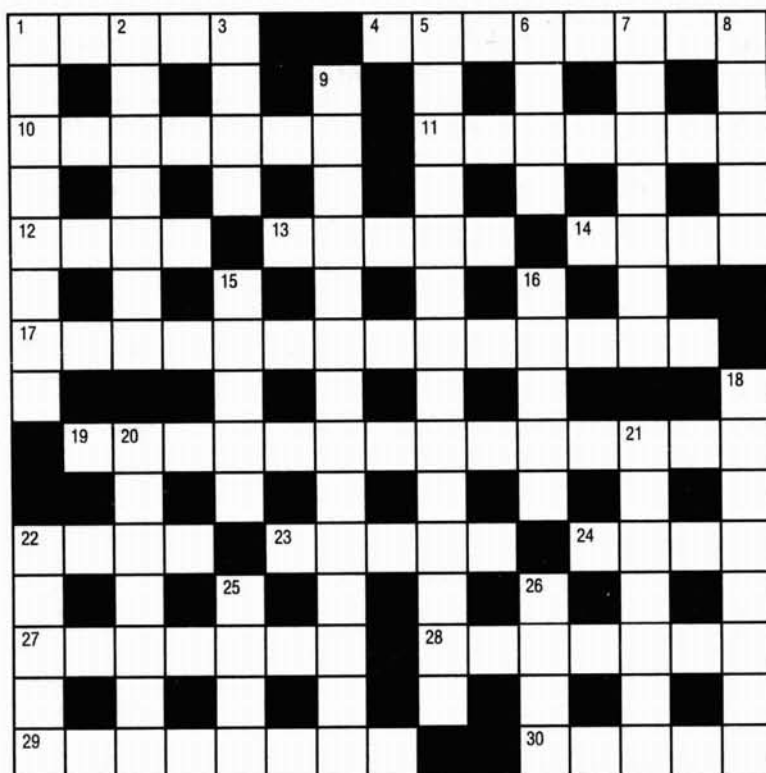
complete ruin. The premises of the nearby Thames Plate Glass Company, the Crown Tavern and numerous tenements were damaged. Five thousand windows were broken. The boiler itself was completely destroyed and parts thrown across the River Lea into the Plaistow marshes.

The three persons killed were all in the boiler house. One person was seen to be on the top of the boiler easing the safety valve.

The account of the accident records that the daughter of a local resident "... was making her toilet in a back room overlooking Samuda's factory when the explosion took place, and was thrown backwards."

Mr Samuda said that he believed the water had got very low in the boiler and that gas was generated instead of steam, and that an explosion was the consequence. This opinion was confirmed by more than one practical man who visited the site the following day.

CROSSWORD PUZZLE No. 5



DOWN

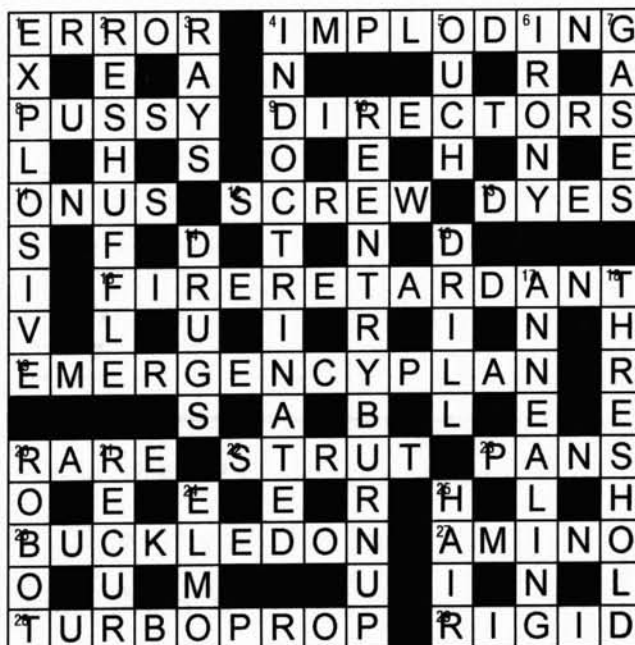
1. Clergy include a collection of powerful elements. (8)
2. Indonesian island could be the cause of serious stress. (7)
3. Radical part of plant, possibly square. (4)
5. The old king and young Edward follow the French offspring in becoming wiser. (7,7)
6. Acidic way to make your mark in the art world. (4)
7. London policeman or railway worker. (7)
8. Rouse new money. (5)
9. How the HSE wields its power. (2, 12)
15. It took just one poet to pioneer television. (5)
16. Exclamation heard in mosquito-infested zone. (5)
18. Dangerous stuff contains all that is most excellent. (8)
20. How to get your message across in a macho sounding way. (5, 2)

ACROSS

1. It goes round in reverse as well. (5)
4. Shapeless pickling agent is still a volatile fluid. (8)
10. Tiny particle in any branch of medical science. (7)
11. Prophet keeps his dog inside to be on the safe side. (7)
12. Send out backwards into the fourth dimension. (4)
13. Cause of accidents that's all too human. (5)
14. Currently used for measuring in Hampshire. (4)
17. Stark messiness may result from not making one. (4, 10)
19. Mecca's heliport is hardly the place to locate this industry. (14)
22. What management has to do can be poisonous. (4)
23. Bird found in the west Orkneys. (5)
24. A plane, for example, may have many faults. (4)
27. Book is able to add nothing to our understanding of a natural disaster. (7)
28. Worn out pipe. (7)
29. Popular android has support for storing information. (8)
30. He succeeded long before the alchemist failed. (5)

21. Running it is, in the main, a hazardous business. (7)
22. £4 and an old penny can make you very angry. (5)
25. Boast about ones clothing. (4)
26. Half a national emblem is phoney. (4)

ANSWERS TO No. 4 CROSSWORD PUZZLE



Answers will appear in the next issue.

FORTHCOMING MEETINGS OF SUBJECT GROUPS AND OTHER MEETINGS OF INTEREST TO THE SAFETY AND LOSS PREVENTION SUBJECT GROUP

Group	Title of Meeting	Place & Contact	Date
Sheffield University 4-day IChemE sponsored course	Computer control safe practice in the process industry	Sheffield Sophie Wilson - 01788-578214	15-May-00
EPSC	Management of Environmental Protection 2000 (MANENPRO)	London Karley Duerden - 01279-459534	17-May-00
Eutech (co-sponsored by S&LP)	Achieving COMAH compliance – the lessons learnt so far	Edinburgh Fiona Robinson - 01606 704259	17-May-00
EPSC	Waste Minimisation 2000	Daventry John Picken - 01788 578214	18-May-00
EPSC	IPPC 2000	Daventry John Picken - 01788 578214	19-May-00
Haztech Consultants	Fire precautions at special premises	Manchester Steve Kershaw - 01606-77121	25-May-00
IChemE 2-day course	Hazop Study and its Management	Leeds Tracy Lepkowska - 01788-578214	12/13-Jun-00
PTC / IChemE Conferences (co-sponsored by BESG)	Pharma 2000: Engineering and Technology for the 21st Century	Nottingham Melanie Royce, Conferences 01788 578214	20/21-Jun-00
CAPE	CAPE Net Project, University College, London	David Bogle - 0171 419 3803	22/23-Jun-00
Strathclyde University (Process Management Control SG = co-sponsor)	Process Control and Instrumentation 2000, Strathclyde University	Ann Frood a.frood@eee.strath.ac.uk	26-28-Jul-00
IChemE 3 one-day Courses	Screening and characterisation of exothermic chemical reactions Process scale-up and relief sizing Explosion hazards of dusts and vapours	Borehamwood Tracy Lepkowska - 01788 578214	12/14-Sep-00
IChemE 3-day Course	Applied Hazard and Operability Study	Leeds Tracy Lepkowska - 01788 578214	25-27-Sep-00
IChemE 4-day Course	Introduction to Hazard Analysis and Risk Assessment	Sheffield Tracy Lepkowska - 01788 578214	25-28-Sep-00
Suregrove Ltd	Applied Risk Management in the Process Industries	London Reg Canaway - 01737 813605	9/10-Oct-00
IChemE Course	Assessment and control of electrostatic hazards in industry	Leeds Tracy Lepkowska - 01788 578214	10-Oct-00
IChemE 4-day Course	Hazop study for team leaders/team members	Manchester Tracy Lepkowska - 01788 578214	31-Oct-3 Nov
S&LP	De-manning and outsourcing - the implications for safety in an organisation, DNV, Palace House, 3 Cathedral Street, London	Mike Considine / John Bond 01438-717253 or 01788 578214	29-Nov-00

For information about any of S&LPSC meetings, please contact the IChemE's Subject Group Officer:

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