

SAFETY AND LOSS PREVENTION SUBJECT GROUP NEWSLETTER

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EDITORIAL

Sadly I have to report that Ted Kantyka has died. Ted was the instigator of much in the Loss Prevention field and we owe him a lot. Not only did he start the International Loss Prevention Symposiums in Europe but he also started the Loss Prevention Bulletin.

Work carries on in the Loss Prevention field with interesting developments coming along on a Self Assessment Tool for safety personnel, an index of all Loss Prevention Bulletins and the ICI Newsletters to be put on the internet for all to see. Not forgetting the question of Learning Lessons from accidents; work is still progressing on this subject.

VOC ABATEMENT SAFETY MEETING

A joint S&LPSG and EPSG meeting titled 'Vent VOC Abatement – Environmental Protection Without Creating New Hazards' at IChemE, Portland Place on 22nd November was attended by 37 persons from the U.K. and elsewhere in Europe. The intent was to acknowledge that safe operation of abatement units requires expert advised technology selection, comprehensive duty specification,

careful operation and diligent maintenance. A series of incidents arising from shortcomings associated with one or more of these requirements are described in Loss Prevention Bulletin, Issue 184, August 2005.

Martin Cranfield began the meeting by reviewing the regulator's expectations for abatement by reference to the EU Solvent Emissions Directive. This Directive requires a long list of processes to limit their emissions to prescribed values. It is supported by a series of process specific guidance notes which advise BAT control techniques as well as target emission values.

Mike Brown outlined Amec Process Engineering's strategy for satisfying BP/Sinopec's 'Zero Emissions' requirement on their greenfields SECCO petrochemical complex in Shanghai which began operation in 2005. The result is that

- All process units relieve and vent to flares.
- Road tank barrels vent to carbon bed adsorbers during loading.
- API tanks have internal floating roofs.
- Pressure and refrigerated storage emissions are routed to a flare.

Chris Bell of ABB Engineering Services presented a series of case studies to illustrate his contention that many VOC abatement related incidents arise because abatement units are not regarded as main plant items. Moreover vent collection systems typically link a number of plant items and this provides for abatement unit incident escalation. Accurate and comprehensive data on vent sources is essential to establish a safety management strategy for vent systems incorporating abatement units.

Mark Northwood of Air Products suggested that cryogenic condensation constitutes a

safer alternative for many vent streams otherwise routed to oxidative abatement units. Subsequent discussions suggested that target emission expectations and contamination in practice limit the application of this superficially attractive technology.

Jim McMullon of Chemviron Carbon claimed that activated carbon adsorption is very often the lowest cost technique for VOC abatement but acknowledged that there are safety concerns associated with its application to vent streams containing oxygen or unsaturated hydrocarbons. He contended that these problems can be overcome by appropriate system design providing the specialist system designers are supplied with a comprehensive characterisation of the vent stream at the outset of the design process.

Derek Munro acknowledged that similar temperature excursion concerns apply to thermal and catalytic oxidisers. He observed that until BS EN 12753:2005 was published recently there was no design standard specifically relating to the safe design of vent stream oxidation equipment. This standard is of help in providing an understanding of the issues but safe design, as the previous speakers had observed, requires that the system designer is supplied with a full characterisation of the vent streams concerned including any intermittent as well as steady state flowrates and compositions.

Various contributions to the post presentation discussions suggested that many VOC abatement unit incidents are not reported. Moreover the root cause of many is the failure to acknowledge vent abatement units as an integral element of their associated upstream system and thereby afford them the operating and maintenance attention they require.

A tightly focused meeting which the attendees evidently found instructive and the contributors considered worthwhile as a means of airing their concerns. It was a pity that there were no regulator representatives.

All the presentations and backing papers are on

<http://www.icheme.org/enetwork/meetingdocuments>

Hedley Jenkins

THE ECONOMICS AND MORALITY OF SAFETY.

An evening seminar was held by the Royal Academy of Engineering on the 16 February in London. The main speakers were:

A Regulator's View. Tony Bandle, HSE

Safety Economics. Prof. M. Jones-Lee. University of Newcastle, Business School

Safety Philosophy & Morality. Prof. J. Broome, University Oxford

The Oil Industry. Ms.D.Grubbe. BP plc

The Rail Industry. Mr. C.Dennis, Rail Safety & Standards Board

The Nuclear Power Industry. Mr. P. Wakefield, British Energy

The Civil Aviation Industry. Mr.B.Alcott, Civil Aviation Authority.

The meeting was very well attended. Ms Grubbe described the BP Core Values which accepts that all accidents and injuries are preventable. Mr. B. Alcott described the Just Culture in the aviation industry which included the sharing of all accident information amongst companies and which had led to a major improvement in safety. In the discussion there was considerable wandering from the title and some doubted the economics of safety. The morality question was really not dealt with seriously in the discussion.

Obituary to T. A. Kantyka

Everyone working in the process industries will be sorry to hear of the death of Ted Kantyka. He and Trevor Kletz were the indefatigable workers who took safety out of the gloves, goggles and hard hat era and took it into the technical field of Loss Prevention

Ted started his chemistry in Poland and assisted the Professor of Chemistry to set up demonstrations. One experiment was to show

the properties of oxygen and hydrogen obtained by electrolysis. The Professor was delayed so Ted switched on the power and collected the gas coming off the anode and cathode and piped separately into a soap solution where bubbles of the gas were formed. The demonstration was to put a taper into separate bubbles. Ted however generated very many bubbles and they spilt onto the floor. The taper was plunged into them and a large explosion was generated from the mixed oxygen and hydrogen bubbles which blew out a window of the lecture room. This incident no doubt introduced Ted into the ideas of loss prevention. Ted obtained a first class degree in chemical engineering from Manchester University and joined the Institution in 1949.

I was fortunate to work for Ted when I started in chemical engineering at the Huddersfield Works of ICI. My first job was to start up an acid concentration unit but I could not get the designed throughput and my tests showed that the column was blocked. I consulted Ted and he went through my calculations carefully. He had a word with those that had built the column and decided that the unit would have to be shut down and the packing in the column inspected. When inspected we found the column packing all crushed and as he had suspected the Raschig ring packing had been shovelled into an empty column. My first practical lesson was learnt that they had to be floated into the column while full of water. Ted was always a very practical engineer.

Ted worked on research and development in chemical engineering at the Huddersfield Works of Dyestuff Division of ICI. He was transferred to the Nylon Works at Wilton in 1960 which ultimately became the Petrochemicals Division. While in the North East of England he took an active part in the Branch and organised the first symposium on Major Loss Prevention in the Process Industry at Newcastle in 1971. For his work in organising this symposium he was awarded the Council Medal in 1971. As a result of discussions he had at the symposium the idea germinated of starting an Information

Exchange Scheme by publishing the Loss Prevention Bulletin numbered 000 at the end of 1974. A Loss Prevention Panel was started and Ted became the first Chairman.

Also having its origins in the 1971 Newcastle symposium was the formation of the European Federation of Chemical Engineers Working Party on Loss Prevention with Ted as the secretary. Ted was made a Vice President of the Institution in 1973 and 1975. Ted retired in 1982 but lectured on loss prevention at University College London until 1987. He was the first winner of the Franklin Medal when it was initiated in 1988 for his work in Loss Prevention

Ted's pioneering efforts in Loss Prevention has stood the test of time. It has been adopted in all University chemical engineering courses and is still very much alive today with the continued publication of the Loss Prevention Bulletin and the 12th International Symposium in Edinburgh in Edinburgh in May 2007. Ted made a major contribution to the subject of chemical engineering which benefited enormously the profession, the community and industry.

Ted leaves a son, a daughter, 4 grandchildren and 1 great grandchild.

John Bond

SOME RECENT PROBLEMS





The Safety Consultant is Sued

The Safety Consultant was booked
To take part in a broadcast that looked
At how one could mitigate
The frenzy to litigate
On which the whole country seemed hooked.

His HSE fans quickly queued
To hear the great man interviewed;
But so great was the rush
Some were killed in the crush,

CORRESPONDENCE

None received.

LOSS PREVENTION BULLETIN

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

- Information for authors and readers
- Editorial
- The Buncefield explosion
- Will cold petrol explode in the open air?
- Report on the incident at the Texaco Company's Newark storage facility, 7th January 1983
- Explosion at the Conoco Humber Refinery — 16th April 2001
- Large fire in resin production
- Decomposition of nitrocellulose due to handling failures
- Obituary

- Bulletin briefing
- Events

PROCESS SAFETY AND ENVIRONMENTAL PROTECTION.

The next issue will contain:

- A Grid Based Approach for Fire & Explosion Consequence Analysis
- An Improved γ -Analysis Method for Process Security Analysis
- A Simplified Method for the Estimation of Individual Risk
- A Natural Zeolite Permeable Reactive Barrier to Treat Heavy-metal Contaminated Waters in Antarctica
- Kinetic and Fixed-bed Studies
- Stabilization of Minerals by Reactions with Phosphoric Acid: Evolution of Mode Compounds
- Char-supported Nano Iron Catalyst for Water-Gas shift Reaction: Hydrogen Production from Coal/Biomass Gasification
- Sustainability Metrics for Coal Power Generation in Australia

Regular Features

Recent Safety and Environmental Legislation
Recent Contents
Obituary
Forthcoming Events

NEWS IN BRIEF

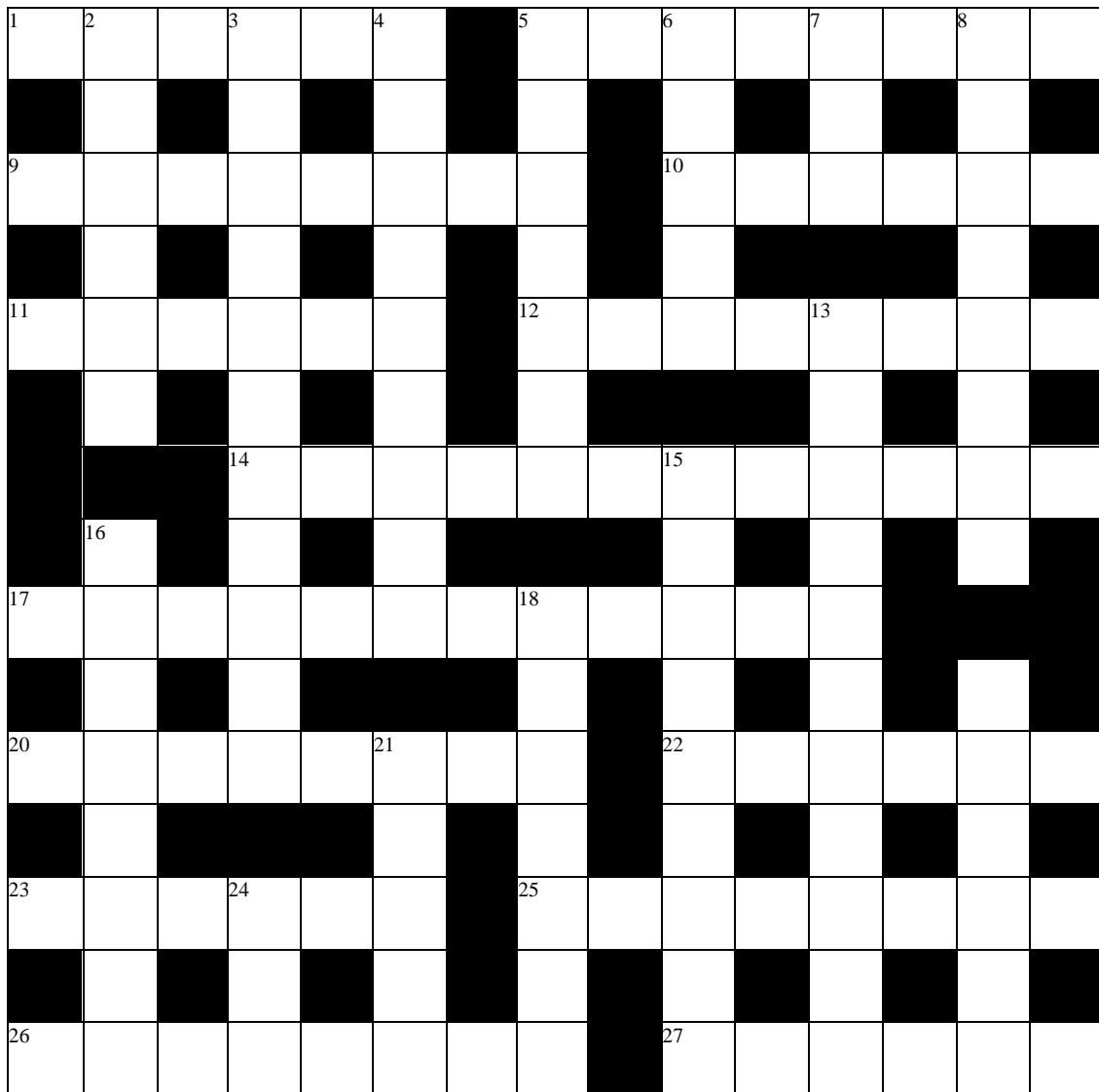
Senior Manager Convicted of Manslaughter.

A consignment of cartridges were purchased to recover the brass metal cases and the lead bullets. Young girls were employed to dismantle the cartridges putting the propellant into a container which was later dumped into the adjacent canal. The girls worked in a room heated by a stove. On 6th March 1922 there was an explosion in the Dudley Port Factory and 19 girls aged 13 to 16 were killed.

The manager was convicted of manslaughter and sentenced to 5 years penal servitude.

The Black Country Bugle

CROSSWORD PUZZLE No. 20



ACROSS

1. Not in favour of the guerrilla force. (6)
5. Bets placed after Military Intelligence blunders. (8)
9. Finish with bad temper and put things at risk. (8)
10. To remove the strongbox, say, is dangerous. (6)
11. Unpleasant creatures in some silver mines. (6)
12. Bank coup might turn out to be 10. (2, 6)
14. Interpol prey wanted for forging petrochemical. (12)
17. Male merriment, if corporate is no joke. (12)
20. Sacks and bags contain protection against flooding. (8)
22. Dry the laundry and topple over. (6)
23. Lots of people return in a party and convert energy. (6)
25. Illegal sport takes in a ghostly presence. (8)
26. I.e. formaldehyde. (8)
27. For example, topless dress provides a way out. (6)

DOWN

2. Lightweight felines from the mountains of central Asia. (6)
3. Must a tirade cause a breakdown? (11)
4. Silvery white in a South American country. (9)
5. Ancient sailor. (7)
- 6 One of those small hazards on 5th November. (5)
7. A fool can only half size up a risk. (3)
8. Given a change of leader, industrial waste could be enriched. (8)
13. Instrument to help a calorie counter. (11)
15. Sanctimonious infant's device measures velocity. (5, 4)
16. Promote a reaction – a chemical one for a change. (8)
18. Fuel – a gallon gets you round a district of London. (7)
19. Living organisms producing industrial materials perhaps. (6)
21. Decorate Royal Navy after a bit of fussy action. (5)
24. Burnt residue of a tree. (3)

Answers to Crossword Puzzle No. 19

Across

1. Spuri
4. On all fours
9. Institutes
10. Opus
11. Carmen
12. Rhodinol
14. Loot
15. Soapstone
17. Apron ring
20. Echo
21. Bedplate
23. Recoat
24. Elmo
25. Causticity
26. Epsom salts
27. Dust

Down

2. Pentaborane
3. Rotameter
4. Octanes
5. Alternative fuel
6. Lessons
7. Unpin
8. Sisal
13. Open-hearths
16. Oleic acid
18. Nuances
19. Gyrate
21. BLEVE
22. Dumps

DIARY OF SAFETY EVENTS

GROUP	TITLE OF MEETING	PLACE AND CONTACT	DATE
IChemE NW Branch	Hazards XIX	UMIST Contact Mike Adams 01539-732845 mikeadams@rawgreen.fsworld.co.uk	28-30 March 2006
S&LP Subject Group	<p>How Stable is your Chemical Process</p> <p>To ensure the safe operation of chemical processes, knowledge of the thermal stability of starting materials, reaction masses, intermediates, products and effluent streams is required. Interpretation of test data is complex owing to many factors e.g. scale effects or test sensitivity. This event is intended to introduce the concept of thermal stability screening. Various commercially available techniques will be introduced, described and appraised by specialists in their use, then discussed in open forum.</p>	Manchester University Conference Centre Graham Ackroyd 01484-537456 graham.ackroyd@syngenta.com	26 April 2006
S&LP Subject Group	Process Safety Performance Measures	London	10 May 2006
Hazards Forum	Improving Risk Management of Critical Computer Controlled Systems	Institution of Electrical Engineers, London Tel: 0207-665-2202 www.hazardsforum.co.uk	20 June 2006
S&LP Subject Group Future programme	<p>.Integrity Management -Risk Based Inspection.</p> <p>Learning from non-process industry incidents.</p> <p>Corporate Responsibility.</p> <p>Design of Relief Systems.</p>		Septemb er 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

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