

S & L P S G Newsletter

ISSUE 10

AUTUMN 1998

FROM THE EDITOR:

This issue of the newsletter begins with articles on Foresight and the London Communiqué, and describes initiatives which have great relevance for chemical engineers. Also included is the first of a series of crossword puzzles by John Bond – designed to blow away any cobwebs. Enjoy!

Lucy Johnson, September 1998

Correspondence to :

Lucy Johnson

Genesis Engineering Consultants

20-22 Stukeley Street

Covent Garden, London WC2B 5LR

Phone: 0171-430 0040

Fax: 0171-831 3934

e-mail: lj@genesis-eng.co.uk

website: <http://www.shef.ac.uk/unil>

academic/A-C/ep/impitt/slpsg.html

SAFETY & LOSS PREVENTION NEWSLETTER CONTENTS LIST

- Foresight
- The London Communiqué
- HAZOP and Standards Workshop
- Summary of 1998 Membership Survey Results
- Letters to the Editor
- Odorizing N₂ Interest Group
- Crossword Puzzle No. 1
- Book Review
- Dust Explosions Seminar
- Crossword Answers
- Management of Safety 1999
- Manosaf '99
- S&LP SG Activities
- 'In the Pipeline'

FORESIGHT

The Office of Science and Technology (OST) launched the first Foresight programme in 1994, and this was aimed at anticipating the future trends in science and technology; identifying the potential needs, threats and opportunities for UK; and taking early action to ensure that people and organisations in UK are better placed to respond effectively. The Foresight programme was divided into panels, each responsible for a specific area of technology and a report was published from each panel. These reports have been used to guide research funding and development programmes.

Although some parts of chemical engineering were represented in the first Foresight programme, these were the exceptions. In the main, the Foresight programme did not address chemical engineering issues, and this was largely a result of the composition of the panels which were decided at an early phase of the programme.

Another round of Foresight has been announced by OST to start next year, and this time the IChemE wants to ensure that chemical engineering issues are properly included in the panels. To achieve this, the Institution will carry out its own Foresight exercise before the start of the OST programme, so that IChemE will be properly prepared and can contribute fully to the Foresight exercise.

HOW DOES THIS AFFECT S&LP SG MEMBERS?

Subject Groups are seen as the main technical strength within IChemE, and the Institution wants them to lead the first stage of the Foresight exercise. Following a presentation at the last Subject Groups Forum where strong support was shown,

each of the Subject Groups will be asked to carry out a review to identify the long term developments in their business area.

IChemE's internal Foresight will be conducted by a process of scenario planning. The targeted output is an understanding of how our environment will react to a range of upsets or "trends and discontinuities", which are different from the "design conditions" that we are currently experiencing, and what actions we need to take to render them harmless. If we are able to control the impact of the trends and discontinuities by adding additional controls or changing our operating procedures we will produce a safe outcome or "positive scenario". If we cannot or do not we will produce a "negative scenario".

Scenario analysis in many ways resembles a HAZOP, though the prompts, instead of being "pressure", "temperature", etc, are drivers taken from a list of Social, Technological, Economic, Environmental and Political (STEEP) factors such as "demographics", "feedstock", etc. The trends and discontinuities derived from the above 2 factors could be "an increasingly ageing population" and "decreasing feedstock availability". These are analogous to the "What if?" phase of a HAZOP. The scenarios are the descriptions of the condition of the environment as a result of actions taken in response to these trends and discontinuities.

John Bond of the S&LPSG committee has undertaken to collate any input from members of the S&LPSG. He can be contacted at 25 Canonsfield Road, Welwyn, Herts AL6 0PY, tel/fax: 01438 717253. If anyone would like more information, or would like to make an individual contribution, please contact Malcolm Wilkinson (Director - Engineering), at IChemE in Rugby.

THE LONDON COMMUNIQUÉ

Most of us tend to be disappointed (an understatement, perhaps) about the low status of chemical engineers in Britain, and are jealous of the higher position that engineers apparently hold in countries such as Germany and France. Ways in which we can improve that position are by achieving better recognition from the public (and press) for our contributions, and showing government and other decision makers that we have an important role. These were among the key objectives of the IChemE Strategy Plan.

The London Communiqué is important to us as practising engineers because it states the challenges that face the profession, and emphasises the role that chemical engineers should play in society. The London Communiqué was drafted during the Jubilee Research Event last year and has been signed by 18 countries.

The key challenge identified in the London Communiqué is

“To use our skills to improve the quality of life; foster employment, advance economic and social development, and protect the environment.

This challenge encompasses the essence of sustainable development.

We will work to make the world a better place for future generations.”

The signatories agreed to promote a number of specific activities to advance these ideals, and have agreed to report on their progress at the Chemical Engineering Congress in Australia in 2001. IChemE believes that the subject groups are ideally placed to promote the London Communiqué, because of their technical base and because they represent a large proportion of the active members. We agree.

Subject Groups Forum agreed that the overall strategy of the London Communiqué is too great for any single subject group to tackle and that

each Group will identify specific areas where they can promote the ideals, either by taking on new activities or expanding their existing activities.

The S&LPSG have already sent something back to London Communiqué. This includes a summary of the strategy and targets for the S&LPSG.

THE STRATEGY OF S&LPSG

- Continue to promote good safety as a cultural attitude in industry.
- Involve major companies in the sustainability debate.
- Joint work with other organisations where possible.
- Promotion of technical developments, for example resulting from workshops.
- Improve public awareness of safety issues in chemical engineering.
- Explore potential international safety ventures.

TARGETS

- Initiate “Safety 2000 in 2000” conference.
- Maintain website and issue of regular newsletter.
- Maintain regular seminar programme.
- Continue with the running of safety related workshops using electronic voting.
- Propose to formally encourage new graduates to become S&LPSG members to promote safety culture and assist them in their CPD for corporate membership.
- Propose to develop module seminars for CPD support for graduates.
- HAZOP Standard Working Party to meet in June 98.
- Report S&LPSG Progress to IChemE in time for World Chemical Engineering Congress, Melbourne 2001.

We would also welcome any suggestions from S&LPSG members about the ways that we should promote the London Communiqué. If you have ideas, let us know now.

HAZOP AND STANDARDS WORKSHOP

BURLEIGH COURT, LOUGHBOROUGH UNIVERSITY

MONDAY 8 JUNE 1998

Introduction

The purpose of the workshop was to form a view on whether a HAZOP standard would be "a good thing to have" and, if so, to suggest the IChemE's role in forming it.

Short talks:

Malcolm Preston, ICI

Some comments on his long experience of Hazard Studies. ICI now moving to 8 stage Hazard Study procedure with HAZOP (not explicitly called this) at number 4. ICI have guidelines which point to best practice which they support by expert practitioners and accreditation of their leaders. Noted that US are now making great use of HAZOP following 1993 OSHA regulations and CCPS Guideline publication - but not all of it is good quality and some aims are different (eg in recording and liability considerations).

Neville Edmondson (HSE)

IEC standard (draft) on HAZOP now nearing final version for consultation and comment. Expected in Sept/Oct 1998. Has been developed since 1995 by an international group of 10-12 from many industries - so is very general. Aims to be informative rather than prescriptive and is not expected to have mandatory or legal status. Having progressed so far it is virtually certain that standard will appear in due course.

Noted that IEC have already issued standards in related areas, FMEA, Fault Trees and Risk Analysis. Other existing standard for HAZOP is a defence standard.

Simon Turner, Foster Wheeler

Some comments on the problems of doing HAZOP as a contractor.

Allen Ormond, Eutech

Admirably concise talk on the viewpoint of a consultant. Believes a standard could help with planning, preparation and need for structure. But must keep HAZOP as an open, team centred approach with must not become mechanistic. The key is a well trained and experienced leader with the right team. However, a standard could be confusing to non-experts. Need to be clear on what HAZOP is and how it relates to other hazard studies.

First workshop session - 5 groups of 7/8 identifying topics as important/ interesting/ contentious. (Topic list on programme.)

Second workshop session - Same groups selecting one or two of these topics to discuss.

Group A discussed selection of modifications for hazard study (not necessarily a HAZOP). Method based on identifying what is being changed and whether it changes the hazards or increases the risk. Lively discussion, in part on whether you can answer these questions before a hazard study is done.

Group B also considered modifications, setting out the major problems

- what is a modification?
- when should HAZOP be used?
- what sections should be studied, i.e. how far does one go into the connected plant?

Then moved on to standards and what is wanted from a standard; should include:

- a good definition of HAZOP
- valid adaptations
- expectations from HAZOP studies
- where it fits into the overall risk management framework
- guidance and advice on when one should be done.

Group C chose existing plant and modifications.

Need a policy to select for HAZOP covering quality of information/ record of incidents and near misses/ include changes to operating procedures/ use other forms of hazard study too.

Team composition of 4-6 including process, operations and other selected as appropriate.

Training and accreditation - need guidelines on best practice covering experience/ training /knowledge.

Group D considered following aspects:

Accountability - covered if there is an approved standard applied in a competent manner.

Competent leader should have broad understanding of the technology/be expert in the HAZOP method/ been a team member in 2-10 studies/ been a scribe/ have good people-handling and meeting skills.

Independence is essential in the leader (+ one independent member?).

Guidewords vs checklists - checklists common under "other". Can use checklists within HAZOP but need care not to lose the essential features.

Group E concentrated on the original meeting topic - the need for a standard.

They concluded there is a need for a statement of best practice (although the big

companies don't need it as they already have their own). Small companies, consultants and contractors would benefit.

Recognise that the IEC standard will appear but is likely to be too general for the process industry. Nevertheless, the IChemE through the SLPSG, SHEPC, its members and any other route should try to influence the IEC document.

Concluded that the process industry would benefit from a guidance document emanating from the IChemE or from the EPSC and that much of it could be based on the existing guides used by the large companies.

Final meeting discussion and survey of opinion.

The survey showed that a great majority (75%) would welcome an up-to-date guidance document with the remainder opting for a clear standard. 40% favoured the IChemE as the source with the others fairly evenly split between the HSE, EPSC, BSI and CIA.

The ideal would be a European standard but the practical view was that it would be necessary to start with a UK standard which might then form the basis of a European one. Hence start with IChemE (or possibly EPSC) - depends on method, costs and timetable.

*Brian Tyler
S&T Consultants Ltd.*

SUMMARY OF 1998 MEMBERSHIP SURVEY RESULTS

GENERAL SURVEY

Duration in S&LPSG : Membership appears to have a half-life of around 3 years.

Expertise : Just over 50% of the membership had sufficient knowledge to do a presentation.

Members want from their membership:-

- | | | |
|-------------------------------------|--|--------------------|
| <i>Primarily:</i> | <i>Secondarily:</i> | <i>Leastly:</i> |
| 1. Providing up to date information | Providing a medium for making contacts | 1. Social meetings |
| 2. Running meetings | | 2. Visits |
| 3. Newsletters | | |

Activities which S&LPSG ought to concentrate are:-

- | | |
|-------------------------------------|---------------------|
| <i>Primarily:</i> | <i>Leastly:</i> |
| 1. Safety Initiatives | Safety Competitions |
| 2. Education | |
| 3. Legislation | |
| 4. Technology | |
| 5. Seminars | |
| 6. Workshops / Interactive Sessions | |

Top Three Main Areas of Interest within S&LP:-

- | | | |
|----------------------|--------------------|-------------------------|
| 1. Safety Management | 2. Hazard Analysis | 3. Hazard & Operability |
|----------------------|--------------------|-------------------------|

Attendance Likelihood is Most Strongly Linked to Venue, Preferred Venues:-

- | | | |
|-------------------|------------------------------|---------------------|
| <i>Primarily:</i> | <i>Secondarily:</i> | <i>Leastly:</i> |
| London/SE | 1. North West
2. Midlands | South West
Wales |

Conclusion:

In order to satisfy the current membership, attract new members and extend the membership half-life, we need to provide and concentrate more on membership preferences. This will also assist keeping meeting attendances higher. The following points of strategy need to be adopted for future activities considered by S&LPSG Committee.

	<i>Promote :</i>	<i>Avoid :</i>
◆ Topic	Safety Initiatives and provision of up-to-date information on Safety Management.	Social meetings and Site Visits.
◆ Duration	Running one day (& half-day) meetings.	Generally any evening and multiple day activities.
◆ Price	Generally slightly pricier meetings than currently offered, in the region of £50-£70, with potentially more popular meetings at £70-£100.	Very cheap meetings which cannot promote the general strategy points.
◆ Venue	Venues normally in London, North West or Midlands.	South West or Wales venues.
◆ Special 1	The Newsletter.	
◆ Special 2	Using the more knowledgeable 50% of the membership as a resource pool for speakers.	

Included with the 1998 Membership Survey was a HAZOP Software Attributes Survey, which S&LPSG members with experience of HAZOP packages were asked to complete. The response to this was excellent and the preliminary results are summarised below.

HAZOP SOFTWARE ATTRIBUTES SURVEY

KEY ATTRIBUTES

- | | |
|--------------------------------|---------------------------------|
| 1. Well tried (no bugs) | 5. Windows environment |
| 2. Logical and simple to use | 6. Tracks action implementation |
| 3. Records all guidewords used | 7. Easy to edit all data fields |
| 4. Inherently auditable record | |

REQUIRED ATTRIBUTES BUT OPINION WELL SPREAD ON THEIR IMPORTANCE

- | | |
|---|---|
| 1. Can customize printed output | 8. Detects changes to initial report |
| 2. Good support and maintenance | 9. Continuous updating of cause prompts |
| 3. Reasonable price | 10. Report coversheet data entry |
| 4. Supports another type of study | 11. Free text analysis |
| 5. Has incidents and accidents database | 12. Email transmission & reception |
| 6. Built-in failure rate database | 13. Spell checking |
| 7. Enforces systematic HAZOP | |

ATTRIBUTES GENERALLY NOT CONSIDERED TO BE IMPORTANT

1. Other language versions available
2. Supports HTML
3. Lots of features

OBSERVATIONS

Tops of the pops : It was difficult to compare package performance against all these criteria, given that nearly all respondents gave an assessment only for the one particular package they used. The most popular packages were the in-house ones.

Anomalies : There was a lot of diversity in reporting the attributes which packages actually had. The popular packages were very much more representative of this observation, as if a number of novice users were trying the packages out but had not used as yet undiscovered attributes. Some of the more advanced IT terms suggested on the survey form (e.g. supports HTML) were reported as being of low importance. This was thought to have been negatively received because some respondents may not have fully known what the terms meant, so ranked them down as being less useful to them.

CONCLUSION

A Which? style table (in PowerPoint) might be useful in generalizing what one can buy for the money. The use of symbols would be quite helpful to indicate a general performance against an attribute. It is not recommended that Committee publish how packages compare directly in such a table, because of its commercial sensitivity.

It would not be appropriate to recommend a Best Buy from such a table.

It is not appropriate to release the reports on how the packages compare in detail.

Simon Turner

LETTERS TO THE EDITOR

FIRE PREVENTION & PROTECTION

The NorthWestern Branch of the IChemE held a one day meeting on 18 March 1998 on the topic of Fire Prevention & Protection.

Technically the meeting was aimed at Chemical Engineers with relatively little knowledge of the area and was trying to get across that drench systems, which tend to be favoured by fire insurance companies, had a downside and that the whole situation needed to be looked at.

Overall the meeting was successful and the case for passive resistance was made or even the philosophy "let it burn down". Water causes more problems to the effluent systems.

The meeting was not well-attended but the interest shown put pressure on the timetable.

As an ex-generalist chemical engineer, I would ask:

- Do chemical engineers pass fire matters over to the specialists?
- Is this a good thing?

M G Kemp

PRIZE DRAW

The S&LPSG offered a prize of £100 for members completing the recent membership and HAZOPs software surveys. The lucky winner was Peter Flagg, and he writes:

Many thanks for the £100 cheque. This confirms a long held belief of mine that attention to Health and Safety issues usually brings financial benefits!

Please pass my thanks to the S&LPSG Officers.

Best regards.

*Yours sincerely
Peter Flagg*

ODORIZING N₂ INTEREST GROUP

Readers of The Chemical Engineer may recall my Odorize Your Nitrogen article (TCE 9 July 1998 p20). There has been far more interest in this topic than I could have even hoped for. Naturally I am most pleased with the overwhelming positive response and I hope that the idea might be implemented, in whole or in part, into industrial practice on a practicable time-scale. If any readers are amenable to joining a working interest group to achieve this objective, please advise me of their contact details by Fax: 0118 939 6333.

In the interim, I have already made overtures to appropriate organizations to provide potential sponsorship for odorizing trials, with a response for support in principle.

Simon Turner

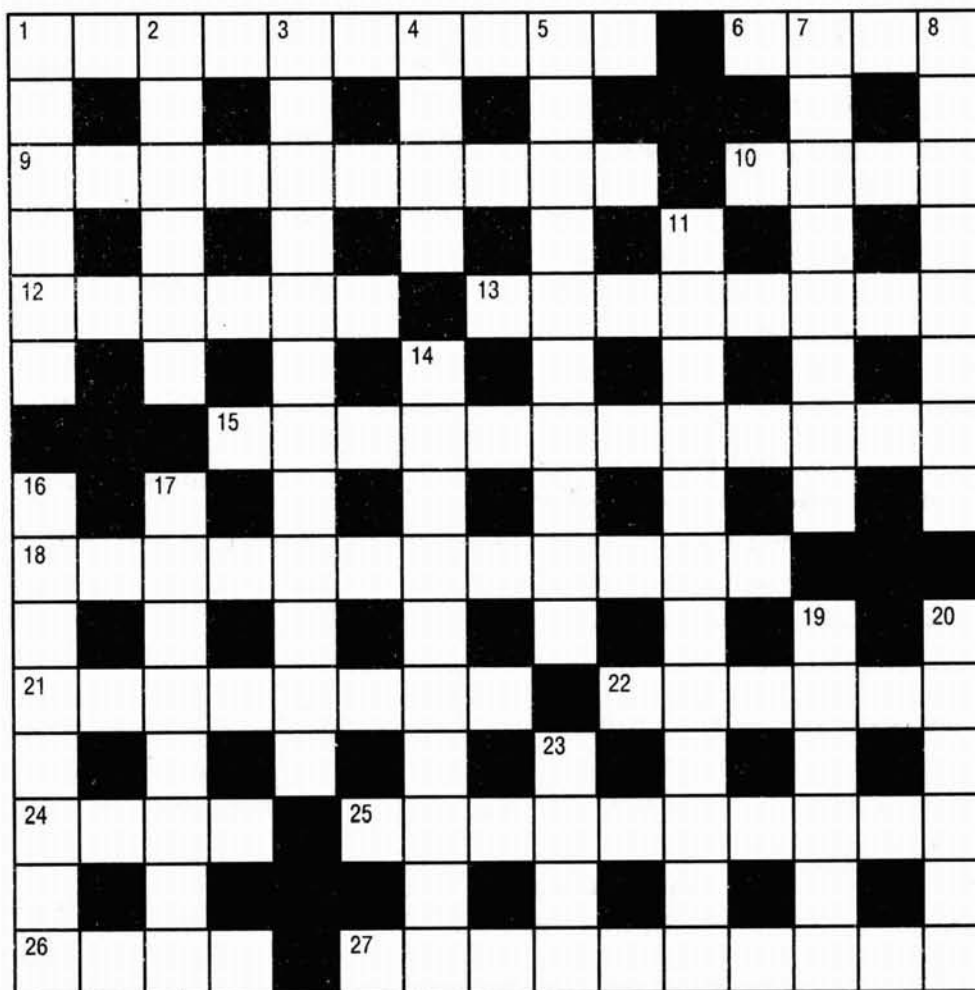
RESIGNATION OF COMMITTEE MEMBER

ROB THORNTON

Unfortunately, Robert Thornton has had to resign from the S&LPSG Committee due to changes in working commitments. As well as being a very active Committee member, Rob has served terms as Chairman and Treasurer of the Subject Group. I am sure S&LPSG members will join me and the Committee in thanking Rob for the many years of solid support given to the S&LPSG.

*Simon Turner
Chairman*

CROSSWORD PUZZLE No. 1



ACROSS

1. Got the shakes, man! (10)
6. A force that's corrosive. (4)
9. Did a crazy saint plead for them to be banned? (4,6)
10. Early half-American engineer. (4)
12. Count Volta was one. (6)
13. Away from the chemical company aluminium is legal. (8)
15. Those who control what we see sound like prime users of 18's. (4,8)
18. Yet the flames somehow afford protection. (6,6)
21. Are fire-balls thus versatile? (3-5)
22. Nothing in the measuring instrument presents a passing threat. (6)
24. Takes a long time to cut leakages by half. (4)
25. Neat way to describe accidents that happen in the Americas? (10)
26. Standard bird of prey. (4)
27. Possible causes of forest fires. (5,5)

DOWN

1. Oysters have two ways of letting off steam. (6)
2. A guiding light from on high. (6)
3. Breathless to become an 8. (12)
4. Is flammable the same as inflammable? (2,2)
5. Adrift in life boat - authorities must be alerted. (10)
7. In a space like this Priestley's discovery is the 11. (8)
8. Literally the outcome of many an industrial accident. (4,4)
11. See 7. (5,7)
14. Dangerous if this kind of work becomes mindlessly routine. (10)
16. What bank robbers do is good advice to many plant hands. (3,1,4)
17. If 'e replaces the wealthy leader, you'll end up with un'eathly muck. (8)
19. Shakespeare plucked safety from this weed. (6)
20. Emergency ones can be boring. (6)
23. No need to shore it up. (4)

BOOK REVIEW

“WHAT RISK”

**Roger Bate (ed) (1997)
Butterworth-Heinemann (Oxford)
ISBN 0 7506 3810 9 £30-00**

If you are a safety professional who can afford the time to read a little outside your field, then I can thoroughly recommend this book. It is published on behalf of the European Science and Environment Forum, an independent non-profit-making alliance of scientists whose aim is to ensure that scientific debates are properly aired, and that decisions which are taken, and the action that is proposed, are founded on sound scientific principles.

The main topic is the risk to the public from factors such as chemical pollution, radioactivity, smoking, diseases such as AIDS and BSE, food additives or contaminants. The range is impressive, the treatment scholarly. The contributors are experts who express their themes clearly and support them with proper references.

It seems that there is evidence that in many cases so-called protective measures do more harm than the risk they seek to avoid. For example following the Chernobyl disaster 400 000 people were forcibly resettled. The majority of these were under no practical risk from radiation but suffered great stress and a decrease in standard of living giving rise to actual disease and suffering.

In other cases the cost is simply one of wasted resources, which do no actual good but could have been spent on genuine public health benefits. Sometimes the fear of remote harm (promoted by the media) prevents people getting the benefit of products. This obviously applies to pharmaceuticals including

contraceptives. Perhaps less obviously it applies to fresh fruit and vegetables. Fear of pesticides and additives can make these foods more expensive and thus less accessible to the poor, while increasing the likelihood of illness from moulds etc.

Public policy on risk is commonly based on poor non-scientific reasoning and worse data. The political decisions may depend more upon the lobbying expertise of special interests groups such as farmers, environmentalists or big business than on genuine risk.

These are not merely assertions, they are carefully demonstrated. But before you feel too smug about the issue, many so-called experts are wrong. Many of the things which are widely accepted are based upon poor data or even bad science. This is perhaps the most compelling reason to read this book. Take passive smoking, for example. Careful studies have shown that many people reported as “non-smokers” in medical literature may actually be smokers who do not admit it, or those who have only recently given up. Conversely, the ready identification of passive smoking as a cause has all but eliminated efforts to search for other possible causes of lung cancer. Moreover even well-refereed journals have an in-built bias towards the interesting. Studies showing no association between some factor and disease are less likely to get published than those showing some slight significance.

This is not a polemic text. It is a careful criticism of many things we take for granted. Engineers will find the comparison with industrial control a helpful means of understanding toxic risk. Some experimental methods are badly flawed, and many conclusions have been drawn through inadequate reasoning. Looking at these examples should help us to spot the weaknesses in our own areas of risk management.

Martin Pitt

DUST EXPLOSIONS SEMINAR : SUMMARY

Organised with military precision by Keith Cassidy (HSE), this seminar was blessed with a fine sunny day at Buxton (despite the altitude and the miserable effects of El Niño on the British Summer of 1998). Possibly Keith has contacts in higher places than we thought!

Apart from the obvious attraction of witnessing a full-scale dust explosion, the technical presentations generated so much interest, that this seminar was well oversubscribed.

Alan Jones (HSL) gave an historical briefing of the HSL organisation, which was strongly followed up by an explanation of the ignition and dust explosion work at HSL by Geoff Lunn (HSL). Alan Tilsley (HSE) described some recent dust explosion incidents, recent developments in dust explosion law, technology and management.

Norbert Gibson's presentation highlighted the, traditionally, most important points when managing dust explosion risks and provided his audience with the benefit of his many years of experience in this field.

The 60 attending delegates also toured the site and viewed the facilities at HSL.

Disappointed applicants who could not attend need not be too dismayed. Their interest is noted and plans are already underway to run another fine explosion demonstration seminar in mid 1999.

Readers may also be interested to know that details of the presentation are compiled within an information pack on this seminar, now held by the IChemE's Library and Information Service at Rugby. Copies of the recorded information, which is on disparate media (paper, photographs and video (very short)) are available at a nominal cost. Copies of the 20 page HSL Capability Statement and 30 page HSL Facilities booklets are available directly from HSL (Health and Safety Laboratory, Explosion Control Group, Harpur Hill, Buxton, Derbyshire, SK19 9JN)

[Delegates who attended with cameras may wish to spare a thought for those who could not attend and consider donating a copy of their best prints to the information pack record for colour photocopying.]

Simon Turner

**RIGHT: ANSWERS TO
CROSSWORD PUZZLE No. 1**

V	I	B	R	A	T	I	O	N	S		A	C	I	D									
A	E	S	T	O							O	E											
L	E	A	D	P	A	I	N	T	S		I	N	C	A									
V	C	H	S	I		V	F																
E	P	O	N	Y	M		O	F	F	I	C	I	A	L									
S		N		X		M		I		T		N		O									
						S	I	T	E	M	A	N	A	G	E	R	S						
U		E		A		C		B		L		D		S									
S		A		F	E	T		H	E	L		M	E	T									
E		F		I		A		E		L		N		D									
A		L		L		R		O		N		D		M	E	T	E	O	R				
M		U		N		I		F		M		T		I									
A		G		E		S				O		C		C	I		D	E	N	T	A	L	
S				N						A		R		N		L						L	
K		I		T	E					F		L		A		M	E	T		R	E	E	S

LONDON & SOUTH EASTERN BRANCH

A REGISTERED CHARITY

MANAGEMENT OF SAFETY 1999

MANOSAF '99

A ONE DAY MEETING

**TO BE HELD ON WEDNESDAY, 24TH FEBRUARY 1999 AT
DNV TECHNICA, CATHEDRAL STREET, LONDON BRIDGE**

The London and SE Branch of the Institution of Chemical Engineers has organised its biannual one day conference on the Management of Safety.

This year we will be focusing on four major subjects – risk ranking/assessment, current predictive methods for explosion hazard measurement, independent auditing and accident databases as a management tool.

The organising committee has assembled a group of speakers from senior figures in industry, regulatory agencies, consultancies and NGOs who will provide authoritative and informed presentations on these subjects.

Each subject will be considered from both the regulator's and industry's point of view.

The cost of the meeting will be £150 plus VAT for Members of the Institution (£170 for non-members + VAT) which includes conference documentation and a buffet lunch.

To register, please contact:

Dr. John Bond
25 Canonsfield Road
WELWYN, Herts, AL6 OPY
TEL: 01483-717253

S&LP SG ACTIVITIES - 'IN THE PIPELINE'

Nov/Dec 1998	Title TBA Venue: Fire Research Station Organiser: Hedley Jenkins & P A Richardson
December 1998	Safety Culture Workshop Venue: DNV (London) Organiser: Steve Billington/Martin Pitt
24 February 1999	Independent Auditing - MANOSAF 99 Venue: DNV (London) Organiser: John Bond & Malcolm Preston
April 1999	Following-up Safety Recommendations Venue: North West Organiser: Noel Stack/David Graham
May/June 1999	Safe Process Scale-up Venue: TBA Organiser: Simon Waldram
Sept/Oct 1999	Millennium Activity TBA