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VIEWPOINT

The Blame Culture – Does it Hinder Industrial Safety?

by Dr John Bond

THE BLAME CULTURE

The blame culture has been part of human culture ever since Adam blamed Eve for eating the forbidden fruit. In more recent years it has become apparent that a culture of blame has gradually evolved into a culture of compensation, and we can instance a case in the Court of Pleas in 1785 when the plaintiff was awarded damages of £100 for the loss of a foot after a coach overturned.

It cannot be denied that in a free and just society a person is entitled to reasonable compensation for an accident-related injury without having to resort to litigation and irrespective of the cause of the accident and who was to blame. Nowadays, however, it seems the urge to blame somebody for an accident is governed largely by the following:

- To avoid responsibility for your mistake.
- To establish which insurance company should carry the risk or payout after an accident.
- To obtain a scapegoat to deflect criticism and to avoid responsibility for a failing in the organisation or management system.
- To satisfy the media's obsession with having a person to concentrate on rather than boring facts.
- To have a named individual who can be prosecuted.

But is this blame culture warranted? Recently the Prime Minister raised this question in a speech to the Institute of Public Policy Research,[1] where he ended by saying: "Sometimes we have to accept no one is to blame". He instanced a case where the Girl Guide Association was sued for hurt when a girl burnt her tongue on a sausage cooked at the camp. In some cases, particularly in the USA, the approach is to sue for penal compensation – for example, a man sued a contractor and a coal company for $10 million when a portable toilet exploded after he sat on it and lit a cigarette.

In the industrial field the reluctance of companies to accept responsibility for an accident arises from:

- The insurance company's insistence that you must not accept responsibility for an accident.
- The hope of avoiding a court case on a violation of the safety regulations.
- The wish to avoid giving the company a bad name which might affect the share price.

WHAT ARE THE CONSEQUENCES OF HAVING A BLAME CULTURE IN INDUSTRY?

The blame culture encourages people and companies to avoid their responsibility for a mishap and to pass the cause onto someone else. Invariability the person at the base of the workforce receives the blame even though it may not be solely his or her fault. This leads to poor investigation of an accident with only the basic cause being identified and not the underlying causes.

Lord Broers[2] stated in a recent BBC Reith Lecture 2005:
*"One crucial recommendation emerges (*from the debate in the Royal Academy of Engineering*). That the investigation of accidents should concentrate on finding the cause of the accidents not the person or persons to blame. The latter only leads to defensiveness and cover up. The investigation should seek the cause of the accident so that it may be eliminated in the future. The airline industry's remarkable safety record is thought by some to be because the investigators seek the cause of accidents rather than hunt down the person to blame."*

Furthermore the blame culture in industry restricts companies from sharing accident information which leads to repeat incidents.

Aidan Hayes, recently Director of Group Safety in BP, said[3] in 2004.

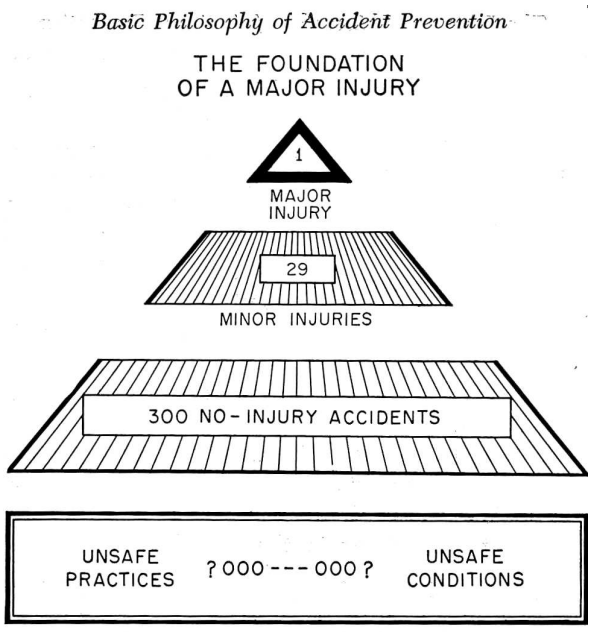
"Many of the accidents we are seeing now are repeat incidents, which is unacceptable. We have become better at learning from these events, but the challenge is to more effectively share that learning and ensure the learning from other incidents is embedded to avoid repeats."

Despite all the good intentions of people the main reasons why lessons learnt from accidents have not been used are:

- The underlying causes have not been recorded.
- Often the cause is attributed solely to an individual.
- Insufficient information is given.
- Companies have not released the information for legal reasons.
- Companies have not wished to admit to the accident.
- The blame culture is the main reason why industry does not share lessons learnt from accidents.

COULD THERE BE A NO-BLAME CULTURE IN INDUSTRY?

Some notable companies pursue a no-blame culture within their organisation as a result of realising the Heinrich pyramid[4] represents the true situation:



If the unsafe practices or conditions were tackled then there would be fewer serious injuries. Many companies operate a no-blame culture within their own organisation so that near-miss incidents can be analysed and the lessons learnt. One problem with this reasoning is that it is primarily directed at the workforce and is not extended to managers and management systems. To be fully effective it has to be part of the company's policy and extended throughout the whole company.

The reporting of these unsafe situations or conditions in all areas has been established in some companies to the advantage of all. How much better it would be if this approach was adopted nationally and perhaps internationally.

The advantages of this could be immense. For example:

- Compensation could be paid immediately.
- Investigation could be carried out thoroughly and without hindrance.
- Detailed accident information could be shared by different companies, thereby avoiding repeat accidents.

If detailed accident information was made available to design and operations engineers they could design safer equipment and processes.

THE IMPROVED SAFETY THAT COULD RESULT FROM A NO-BLAME CULTURE

There are three basic types of lessons that can be learnt from accidents:

- The failure or lack of a management system for dealing with a situation.
- The technical detail in the cause of the accident.
- The human aspect of the accident.

Legislation generally deals with the Management of Safety aspect that is necessary. Such regulations include, among many others, Construction (Design and Management) Regulations 1994 and Management of Health and Safety at Work Regulations 1992. Additionally there are some very good HSE publications which detail the management aspects such as “Successful Health and Safety Management”.

The technical detail and the human aspect of accidents are where the real lessons can be learnt from accidents and they should be incorporated in further design or risk assessment work. The engineer, however, does not have the time to hunt through indexes, journals or reports but the information in a database can be used very effectively. As a spell-checker is to the word processor, so an accident database can be to a design or risk assessment software. The following was demonstrated[5] for the design engineer and based on the IChemE Accident Database. If, say, an ethylene oxide distillation column was being designed a window could pop up to warn of previous accidents and the lessons learnt could be incorporated in the design at an early stage.

Modern conditions resulting from legislation, professional regulations and public demand require the professional engineer to use all means available to learn lessons from past accidents. The engineer is thus expected to use best practice in design, risk assessment, accident investigation and in all associated work. This requires the engineer to have access to all the necessary information from accidents. This information must be available in a useful manner for his work and not be only available in an obscure journal or book. It must be available as a database that is linked to the software of his work.

THE CURRENT PROBLEMS IN PROCESS INDUSTRIES

The Responsible Care programme of the Chemical Industries Association requires industry to share lessons learnt from accidents. Despite adoption of these requirements very little sharing is being carried out. What sharing does exist is not recorded and does not involve the whole profession of engineers. The COMAH regulations require a management system for examining the history of past accidents in both the company concerned and other companies. There is no requirement, however, for the HSE to divulge all the information it acquires on the detailed causes of individual accidents.

The Institution of Chemical Engineers produced The Accident Database specifically to supply lessons learned from confidential company accidents reports. One company was very free with its reports but many refused to supply them despite the detailed confidential system used which protected the company’s name and place of working.

Some professions have produced accident databases which appear to be successful and used extensively in their appropriate areas. Those in my knowledge are:

- The Royal Society of Chemistry has provided for their members a digitised version of all papers published by the RSC and their predecessors from 1841 onwards and a search engine will be provided in the near future. Furthermore an extensive book[6], also available on disc, is devoted to unusual chemical reactions. A chemist is thus able to search an extensive literature as well as find out the hazards that others have experienced in chemical reactions.
- The Isabel web site (www.isabel.org.uk) describes an extensive database for clinical decision support. It was started for paediatrics after a child was diagnosed with chickenpox whereas it was a very rare problem. Its unique feature is a diagnosis reminder system which instantly gives the clinician a checklist of likely diagnoses. The database mobilises knowledge to help find relevant and specific answers to the clinical questions more easily and quickly. The database holds knowledge from respected medical textbooks, journal abstracts and ‘Lessons Learnt from Error’. It is strongly supported by the professional bodies concerned who have now shown that the computer aided system was more reliable in diagnosis than the most senior member of the clinical team in a test on 304 patients.
- The railway industry has started a database to learn from accidents after the recent report on railway accidents by Lord Cullen.

There are some databases of accidents such as MHIDAS, TNO but they are based on media reports which are not objective and seldom contain the lessons learnt. Any database record must be based on a full report from the company concerned or the regulatory body.

The reluctance of companies to accept corporate responsibility and share accident information results from a number of legal and insurance points:

- Insurance companies discourage the release of information fearing possible compensation claims.
- Companies’ fear of prosecution by the HSE if they admit the true causes of accidents.
- The blame culture encouraged by ambulance chasing solicitors making a claim.
- Company image might be harmed.

An example[7] where responsibility was accepted, compensation paid and information given on the cause of an accident occurred after the Texas Refinery accident on the 23 March 2005. The CEO of BP, Lord Browne, went to Texas and on television on the 24 March, accepted responsibility for the accident and agreed to pay

compensation. The interim report was on the web site for all to learn the lessons from the accident. The following is an extract from a letter in the Houston Chronicle:

> *"In my many years of representing victims, I have never dealt with a company that has stepped forward so quickly and in good faith to adequately compensate the ones who were harmed. The BP personnel and its lawyers have worked tirelessly to make as much 'right' as it can for those who were so grievously hurt - and without resorting to legal delays or trickery. BP did what the law provides, that is, to monetarily restore the financial loss. It has done all it can do under the law."*

POSSIBLE WAYS OF AVOIDING THE BLAME CULTURE

The aviation industry has a no blame culture [8,9.] They share all accident and maintenance information with all companies and without hesitation. A Mandatory Occurrence Reporting Scheme deals with the engineering aspects of investigations. The human factors side is handled by the Confidential Human Factors Incident Reporting Programme. This has resulted in a safety culture far in advance of other industries with investigations carried out more thoroughly and lessons learnt being made available to all concerned.

The required objective is that lessons learnt from accidents should be available to all engineers and scientists in an acceptable format. This should influence their design, risk assessment, operability studies and accident investigation so that there is an improvement in safety, health and environmental protection. How this can be achieved in an acceptable manner to all concerned is the main problem. Possible solutions could be:

- The HSE could recommend that any prosecution for non-compliance with a safety regulation would be less onerous if the company had fully complied with the requirements to share accident information.
- The blame culture could be removed from the legal and insurance system so that any person injured would automatically get an appropriate compensation. Any prosecution of the company would then be based on a violation of a safety regulation.
- The new regulation on accident investigation could require that accidents be reported to a confidential database system.
- The petrochemical industry has shown with The Accident Database of the IChemE that lessons learnt can be shared and usefully brought into design, risk assessment and HAZOP studies but this initiative was stalled by the lack of encouragement by the professional institutions and lack of support by most companies. Full encouragement from the professional bodies and the industry's associations would be necessary.
- The 2004 Most Admired Knowledge Enterprise (MAKE) rankings for knowledge–driven culture and collaborative knowledge-sharing structure included an oil company [10]. The culture covered all aspects of management but a specific part could be the sharing of accident information.
- It is probable that each industry will require its own database relevant to the specific problems experienced in that industry. Nevertheless some cross industry sharing of information may be appropriate in the management systems area.

If hindsight is defined as wisdom after the event, learning lessons from accidents is a process of converting hindsight into foresight and the necessary precautions then become a matter of engineering common sense. Legislation, professional institutions and the public all demand this best practice approach and it is time the solution was found.

Knowledge is power. Knowing of the cause of an accident gives you the power to prevent it happening again.

CONCLUSIONS

It is undeniable that a person is entitled to reasonable compensation if he is injured by an accident, irrespective of the cause and culpability. It would then not be necessary to apportion blame and compensation could be paid out immediately.

Each company carrying out an activity should have the necessary insurance for the operation and pay out immediately if someone is injured. If however gross negligence was found in an accident this
should not affect the compensation paid to the victim. It might however affect the approach taken by the regulatory authorities or the company itself.

It is apparent that there could be a considerable improvement in industrial safety if there was a no blame culture similar to that in the aviation industry. Accident information could be shared on a confidential basis. To achieve this no blame culture there would need to be the cooperation of the legal and insurance industry.

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Lord Donaldson of Lymington

It is with great sadness that we report the death of Lord Donaldson of Lymington on 31 August 2005, at the age of 84.

Lord Donaldson had a distinguished career in the legal profession, culminating in his appointment as Master of the Rolls between 1982 and 1992, in which position he made significant and lasting contributions.

After being called to the bar at the Middle Temple in 1946 he developed a practice focused on maritime law, an area in which he made major contributions. His recommendations as the Chairman of the inquiry set up after the *Braer* disaster were internationally acclaimed and almost universally enacted in subsequent legislation. In the mid-1990s he carried out an independent review of the evidence relating to the loss with all hands of the bulk carrier *Derbyshire*, and more recently an inquiry following the 1996 *Sea Empress* oil tanker incident in west Wales.

Lord Donaldson supported the Hazards Forum and, chaired several of its meetings. He was elected a Distinguished Member in 1998.

His wife, Lady Mary Donaldson, the first woman Lord Mayor of London, died in 2002. He is survived by two daughters and a son.

Disaster Risk Reduction: an Issue in the Recent G8 Summit in Gleneagles

The recent G8 Summit in Gleneagles specifically addressed the future of disaster risk reduction. It called for greater support for a more effective International Strategy for Disaster Reduction and implementation of the *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*, a product of the World Conference in Disaster Reduction (Hyogo, Japan, 18-22 January 2005) with strong leadership from the United Nations.

The international response to the tragedy of the Indian Ocean disaster on 26 December was immediate and overwhelming. Latest figures suggest that over £9 billion has been donated from across the globe, from both governments and individuals. The focus of affected governments and the international community in the first few months was to provide immediate humanitarian relief such as provision of food, medicine and shelter.

The G8 has now considered the longer-term issues in the aftermath of the immediate humanitarian response. Communities and livelihoods now need to the rebuilt, future risks reduced and communities left more resilient to similar events in the future. In calling for greater support for a more effective International Strategy, the leaders of the most industrialised countries have agreed to provide more resources to disaster reduction.

They support international efforts to improve global early warning capacity as called for by the UN Secretary General, with responsibility for implementation resting with governments and various stakeholders. There is a strong role for coordination by the UN at the international level. Early warning systems should cover as many hazards as possible,
building on existing systems at national and regional level. The ISDR and other world-wide bodies have an important role.

Early warning alone will not eradicate the risk of disaster, nor will it reduce the impact of disasters, which have particularly grave implications for the poor and for hard-won development gains. The G8 countries will work together with the UN, the World Bank and others to help them tackle disaster risk more effectively. The ISDR is well-placed to act as an advisory mechanism on disaster risk reduction, and to emphasise the need for dissemination of best practices in areas such as education and outreach and appropriate building codes and zoning.

The magnitude of the impact of the tsunami demonstrated the importance of having an effective and efficient international humanitarian system, that is capable of responding in a timely and appropriate manner to crises. The G8 stressed the critical importance of strengthening the humanitarian system, and to the principles of humanity, impartiality, neutrality and independence of humanitarian assistance, and will seek to strengthen the coordination and prioritisation of funding to where it is most needed. They are willing to explore initiatives to strengthen the UN coordination role and its ability to act more rapidly and efficiently in the face of emergencies, including through enhanced access to the necessary resources and capabilities such as personnel, logistics, transportation and means of adequately distributing assistance, provided at the request of the UN by individual member states.

The communiqué of the Gleneagles summit on this subject may be found on www.unisdr.org/eng/media-room/press-release/2005/PostG8_Gleneagles_Tsunami.pdf

Hurricane Katrina

On the 29th of August 2005 Hurricane Katrina hit the Gulf coast of the United States, wreaking havoc in the states of Louisiana, Mississippi and Alabama. Many areas of New Orleans became flooded and winds of more than 100mph (160km/h) battered the city.

The Disaster Monitoring Constellation (DMC) of satellites was very quickly activated by a request to acquire images of New Orleans after Hurricane Katrina struck the region.

The Disaster Monitoring Constellation (DMC) was designed as a proof of concept constellation, capable of multispectral imaging of any part of the world every day. It is unique in that each satellite is independently owned and controlled by the five participating nations, Algeria, China. Nigeria, Turkey and the UK. All satellites have been equally spaced around a sun-synchronous orbit to provide daily imaging capability.

The first DMC image of the New Orleans area was acquired by NigeriaSat-1 on Friday 2nd September 2005 and this was processed and delivered to the United States Geological Survey. The image covers an area of 400km wide by 220 km, showing the Mississippi Delta and New Orleans as well as coastal regions eastwards to Gulfport, Biloxi and beyond. The wide area coverage of the DMC combined with its high resolution capabilities mean that a large affected area can be surveyed in a single scene. Very high-resolution satellites or aerial surveys can then focus on specific areas of damage that need more detailed mapping.

The DMC spacecraft provide 32m GSD image data in 3 Landsat equivalent spectral bands, covering near infra-red, red and green bands. The unique wide swath width allows large areas to be imaged in one pass. A typical pass can image the majority of California.

The satellites are all designed and built at Surrey Satellite Technology Ltd. (SSTL, at Surrey University. Through the support of the British National Space Centre, SSTL owns and operates the UK satellite in the constellation.

Although its headline objective is to support the logistics of disaster relief, its main function is to provide independent daily imaging capability to the five partner nations. The first four satellites are now in orbit and the fifth is under construction for China at the Surrey Space Centre.

The DMC satellites provide a unique Earth Observation resource that enables daily revisit anywhere in the world. This is possible with only a few satellites because they are designed to image a large area of up to 600 x 600km. This greatly improves the value of the data as it often avoids the need for mosaics of images from different seasons. All DMC members agree to provide 5% of capacity free for daily imaging of disaster areas, and this data is channelled in the beginning to aid agencies through Reuters AlertNet.

Photographs of New Orleans and of the Gulf Coast are posted at www.dmci.com. Further information on the satellite constellation is available from the SSTL website: www.SSTL.co.uk

Report of the Natural Hazard Working Party

Following the tragic Asian tsunami last December, the Prime Minister asked the Government's Chief Scientific Adviser, Sir David King, to convene a group of experts, the Natural Hazard Working Group, to advise on the mechanisms that could and should be established for the detection and early warning of global physical natural hazards. *(A list of the members is given in the Newsletter, no 50, Summer 2005, p14).*

The Group was asked to examine physical hazards which have high global or regional impact and for which an appropriate early warning system could be put in place. It was also asked to consider the global natural hazard frameworks currently in place and under development and their effectiveness in using scientific evidence; to consider whether there is an existing appropriate international body to pull together the international science community to advise governments on the systems that need to be put in place, and to advise on research needed to fill current gaps in knowledge. The Group was asked to make recommendations on whether a new body was needed, or whether other arrangements would be more effective.

The Group issued its first report in June. This makes three recommendations. The first key recommendation called for the establishment of an International Science Panel for Natural Hazard Assessment. The Panel would enable the scientific community to advise decision-makers authoritatively on potential natural hazards likely to have high global or regional impact. It would facilitate individual scientists and research groups pooling their knowledge and challenging each other; it would address gaps in knowledge and advise on potential future threats; it would address how science and technology can be used to mitigate threats and reduce vulnerability.

The second recommendation is for the consideration of the possibility of developing the World Meteorological Organisation (WMO) framework to provide an authoritative coordinated warning system for other natural hazards. To do this it would need to establish effective working relationships and operational communications with other relevant bodies, including the Science Panel recommended above.

For any early warning system to be effective it is essential that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation. Institutional capacities must be established to ensure that early warning systems are well-integrated into government policy and decision-making processes and emergency management systems at both the national and local levels. Such early warning systems should be subject to regular system testing and performance assessments.

The third recommendation recommended that governments and international bodies prioritise national capacity building for hazard risk management, In particular greater support should be given at the national level to the improvement of scientific and technical methods and capacities for risk assessment, monitoring and early warning.

The full 42-page report is available at www.ost.gov.uk/policy/bodies/nhwg/index.htm

Managing the Restoration of Infrastructure and Services

The Speakers

Lt Col Richard Brown – Territorial Army, Coalition Forces, Basrah and Baghdad
Mr Rod Matthews – Director of Reconstruction for the Coalition Provisional Authority (Iraq South), 2003-4
Mr Tony Thompson – Former Head, Regional Resilience Team, Government Office for the South West
Mr Paul Allen – Divisional Surveyor, Cornwall County Council

Summary of the Seminar

The sets of challenges faced in Iraq and Boscastle in terms of restoring infrastructure were for both, in their own ways, huge. But one set resulted from human conflict and the other set from a natural disaster. In this seminar lessons from the Iraq experience were presented by Richard Brown and Rod Matthews and the Boscastle case by Tony Thompson and Paul Allan.

Richard Brown began by distinguishing between post-war and post-natural disaster recovery, describing how the former usually has three extra dimensions with which to contend:

- Deliberate human actions driving the outcome of war.
- Degraded governance frameworks leaving deep voids in administration.
- Divisions within communities hindering the reconstruction process.

Where the threat from natural hazards is known, measures to mitigate their effects can be designed into any response programme. By way of contrast, in Iraq, where pre-war neglect had caused major degradation of infrastructure networks, the scale of the restoration programme was difficult to quantify. He cited Kosovo as a similar example of this, unlike Bosnia-Herzegovina where much of the damage occurred during the prolonged war.

Rod Matthews was careful to point out another important distinction between restoration programmes in on-going conflict situations like Iraq as opposed to rapid onset natural disasters such as in Boscastle. Specifically he identified that actions taken by the local population may severely disrupt the restoration work. In Iraq this was epitomised by a pre-existing insurgent movement aimed at disrupting the activities of the old government regime and which carried over into the new regime almost as an extension of normal operating conditions. The approach adopted by the reconstruction authorities to tackle this was to engage local communities in the restoration process.

In his presentation on the activities of the Coalition Provisional Authority in Southern Iraq, Rod Matthews went on to highlight a number of key problem issues that find resonance within the wider disaster management community. Not least of these is the management of raised expectations in disaster-affected populations following the arrival of restoration authorities. Evidence from disaster research reveals that such difficulties frequently occur when cultural understanding between the two populations is low. To emphasise this point, Paul Allen provided evidence of how the deeper understanding of heritage, conservation and environmental issues relevant to the population around Boscastle enabled a suitable programme for restoration to be quickly developed and implemented to the satisfaction of the majority of the local population.

Richard Brown presented more detail on the local community engagement process in Iraq and here again a common problem associated with internationally sponsored restoration programmes was highlighted. The problem being that when solutions were imposed without major local input, the sustainability of the infrastructure was put in doubt. In contrast, Tony Thompson, whilst acknowledging some minor administrative difficulties, confirmed that the Boscastle restoration benefited from a well-developed and tested framework of emergency response plans and professional personnel at local, regional and national level. As a result, responsibility in Boscastle was able to be devolved to the local authorities, who were best able to affect restoration programmes.

In both the Iraq presentations, there was a tacit recognition that priority-setting was more top-down than bottom-up. Priority-setting for restoration projects was achieved by balancing political, economic, technical and community aims, which were not always congruent In relation to Boscastle, Paul Allen provided a valuable insight into the operation of the restoration programme. He highlighted the fact that whilst media attention focussed on the village of Boscastle, for the restoration services this was only one of many critical events that needed to be dealt with on the day. Again research would suggest that when the media and political focus is so narrow there is a temptation to over deploy limited resources to the area of most prominence, often to the detriment of other more needy areas. Parallels with Iraq could be made in relation to the influence political priorities played in drawing resources away from areas of priority identified by local communities.

Richard Brown, in discussing Iraq, went on to raise two other important issues that again occur frequently in post-conflict restoration programmes. First was the need to broaden the definition of 'restoration' or 'reconstruction' beyond the technical focus on physical infrastructure and to include socio-economic factors. Indeed, he felt that had an objective in 'economic reconstruction' been set initially, recovery would have been that much more effective; economic reconstruction in this context might be defined as restoring livelihoods through the development of people, infrastructure and industry. Second was a recognition that the relief and stabilisation phase of operations is very distinct from the reconstruction and development phase of the longer-term recovery programme. To some extent the first phase could be viewed as needing to run in parallel with the planning of the second phase if a seamless transition is to be achieved. In the case of Iraq, and in contrast to Boscastle, the difficulty that arose was being able to identity when the emergency phase was over and when the recovery phase should have begun.

In relation to Boscastle, Tony Thompson highlighted a common trait of major incidents in that the time taken to recognise the scale of the disaster seems excessive when viewed retrospectively. Research would suggest that this is almost always inevitable due to the cascading sequence of response arrangements needing to be considered before a major incident

can be declared. He also detailed a peculiarity of the Boscastle response, which related to the failure in emergency service communications systems. This was an issue that had been identified as a problem by the local emergency services prior to the recent flooding event; the local community, however, had blocked plans to rectify the deficiency. In a sense the emergency managers had acquiesced to the priorities of the local community in line with what was suggested as good practice from the Iraq experience. The problem inherent in this approach is that while decision-making authority could be delegated, responsibility for recovery still resides with the emergency services. This raises complex legal and ethical issues in relation to the competency of the Boscastle community to take such decisions and these issues could also be valid for the Iraq scenario.

Another important lesson from the Boscastle experience, which was not alluded to in the Iraq presentations but for which ample evidence exists within wider body of knowledge of disaster programmes, relates to the legal implications associated with responsibility for service restoration. Paul Allen was able to highlight this as a concern by revealing the fact that following restoration of services in Boscastle the local authorities had received several legal claims for compensation from the affected community. Based on the disputes that exist over the legality of operations in Iraq, it would be wise for authorities to ensure that in the event such claims are received, and which pertain to the restoration programme, suitable levels of documentary evidence are maintained in order to affect a defence for their actions.

Finally, Richard Brown lamented the lack of academic rigour and analysis applied to reconstruction policy formulation in post-conflict situations. This is ideally suited for reflecting on the lessons identified by academic research when designing future recovery strategies.

Andrew Fox
Senior Lecturer, Coventry Centre for Disaster Management, Coventry University

[There is also a full report available from the Hazards Forum which has been sent to all those who attended; others who wish to obtain a copy may download it from the website www.hazardsforum.co.uk or should contact the secretariat at hazards.forum@ice.org.uk]

Benfield Hazard Research Centre Newsletter

Alert 17, the latest issue of the Benfield Hazards Research Centre newsletter, is now available at the Centre's website, www benfieldhrc.org

It includes articles on prediction of the potentially dreadful Atlantic hurricane season and on a breakthrough in forecasting US hurricane activities; on volcanic hazards in New Zealand and a new volcanic loss model developed for the Auckland Volcanic Field; and a piece on the rise in sea level during the 20th century (20 cm, probably a higher rate than at any time in the past thousand years) and what might occur in the present century. There are also notices and reviews of several books produced by the staff of the Benfield Hazard Research Centre.

Science and Technology Select Committees

The House of Lords Science and Technology Select Committee was appointed on 6 June 2005. Its members are:

Lord Broers (Chairman)
Baroness Finlay of Llandaff
Lord Howie of Troon
Lord Mitchell
Lord Patel
Lord Paul
Baroness Perry of Southwark
Baroness Platt of Writtle
The Earl of Selborne
Baroness Sharp of Guildford
Lord Sutherland of Houndwood
Lord Taverne
Lord Young of Graffham

The House of Commons Select Committee in Science and Technology was appointed on 19 July 2005. Its members are:

Mr Phil Willis, (Liberal Democrat, Harrogate and Knaresborough) (Chairman)
Adam Afriyie, (Conservative, Windsor)
Mr Robert Flello, (Labour, Stoke-on-Trent South)
Dr Ian Gibson, (Labour, Norwich North)
Dr Evan Harris, (Liberal Democrat, Oxford West & Abingdon)
Dr Brian Iddon, (Labour, Bolton South East)
Margaret Moran, (Labour, Luton South)
Mr Brooks Newmark, (Conservative, Braintree)
Anne Snelgrove, (Labour/Co-op, South Swindon)
Bob Spink, (Conservative, Castle Point)
Dr Desmond Turner, (Labour, Brighton Kemptown

Hazard and Risk Science Review

Benfield and PartnerRe, two major international reinsurance groups, have jointly issued the Hazard and Risk Science Review 2005. This is the second in a series of annual reviews, commissioned from UCL's Benfield Hazard Research Centre, which provide a digest of scientific papers published during the previous 12 months and of relevance to the insurance market, focusing on the four major areas of hazard – atmospheric, geological, hydrological and climate change.

The contents of the latest review are:

Atmospheric Hazards
- New forecasting models for August hurricane activity and US landfalling hurricanes
- Geological data improve Atlantic hurricane catalogue
- New studies shed light on historical storminess in the Atlantic Basin
- European cyclone numbers continue to fall
- Scheme presented for collating and estimating UK windstorm damage to buildings

Geological Hazards
- Pacific submarine earthquakes most efficient at generating tsunami off Indonesia, the Philippines and South America
- Major tsunami threat identified off the west coast of Japan
- Future risk of Caribbean tsunami highlighted
- Second great Sumatra quake predicted and seismic risk in the region remains high
- Short-term aftershock prediction model developed for California
- Probabilistic seismic hazard analysis approach questioned
- New earthquake loss estimation model based on building displacement
- Loss estimation methodologies developed for the real-estate business
- Twentieth century earthquake catalogue for Greece announced
- Seismic risk quantified for Istanbul and the Marmara Sea region
- 2004 Nigata earthquake triggers thousands of landslides
- 260 large North Atlantic submarine landslides logged
- Volcanic risk ranking developed for Auckland, New Zealand

Hydrological Hazards
- Separating out uncertainties shown to improve flood frequency analysis
- A generic evaluation of flood damage to buildings
- Study reveals precipitation responsible for 2002 Czech floods could have been heavier

Climate Change
- The 2003 European heat wave is attributed to human activities
- Human-induced global warming is penetrating the oceans
- Climate change is likely to bring more damaging hurricanes
- More intense depressions and more damaging winds are predicted for Europe

The Review can be read as a .pdf file at www.benfieldhrc.org

The Big Flood: North Sea Storm Surge

The June 2005 issue of Philosophical Transactions of the Royal Society A, contains papers of a discussion meeting entitled '**The Big Flood: North Sea Storm Surge' ,** organised and edited by A McRobbie, T Spenser and H Gerritsen.

Storm surges in the southern North Sea pose a complex and persistent threat to its surrounding coastline. In the time since the catastrophic floods of 1953, there have been technological advances in the engineering of flood protection, increased understanding of physical processes on shallow seas and estuaries, developments in the statistics of extreme events, and the realisation that climate is not a stationary process.

This volume provides a benchmark statement of these new understandings, ranging across a range of fields.
Further information is available at http://www.pubs.royalsoc.ac.uk/phil_trans_phys_northsea.shtml
The publication is available for a limited period at the special price of £45, from the Royal Society, quoting reference TA 1831, by telephone (02074512647), email (sales @royalsoc.ac.uk) or post (The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG.

‘Science in Parliament’

As a member of the Parliamentary and Scientific Committee the Hazards Forum receives a copy of the Committee’s journal *‘Science in Parliament’*, which is published quarterly. As it is not feasible to circulate the journal widely, it is proposed to show the main part of the contents in the Hazards Forum Newsletter. Any member who wishes to see any of the articles should contact the Editor at ilawrenson@iee.org

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Calendar of Events

Date	Event	Venue	Contact/further information
2005			
OCTOBER			
3-15	Eight Workshop on 'Non-Linear Dynamics and Earthquake Prevention', organised by the Abdus Salam International Centre for Theoretical Physics and the Department of Earth Sciences, University of Trieste.	Trieste, Italy	e: smr1676@ictp.trieste.it
25	'Sumatra Earthquake and Tsunami Symposium' organised by the Technical Council on Lifeline Earthquake Engineering, the Coastal, Oceans, Ports and Rivers Institute, and the ICE	Los Angeles (preceeds the ASCE National Conference)	www.coprinstitute.org/events/tsunamiquake.cfm
25-28	'HAZOP Study for Team leaders and Team Members'; short course from the Institution of Chemical Engineers (IChemE)	Manchester Conference Centre, University of Manchester	Rachel Robinson T: 01788 578214 e: courses@icheme.org.uk www.icheme.org/HazopTeam
NOVEMBER			
1-2	13th SIESO COMAH Workshop	Easingwold	www.sieso.org.uk
DECEMBER			
6	'Fuel Cells – Industrial Application and Modelling', organised by the Structural Technology Group, IMechE	IMechE London	Georgina Shaw T:020 7973 1291 e: g_shaw@imeche.org.uk
2006			
JANUARY			
13	Briefing on 'Civil Contingencies, Competence & Training' by Safety Solutions (UK) Ltd	Union Jack Club, London	T: 01322 303112 e: info@safety-solutions.co.uk
MARCH			
28-30	'Hazards XIX; Process Safety and Environmental Protection'; organised by IChemE, North West Branch	University of Manchester	Mike Adams T/F: 01539 732845 e:mikeadams@rawgreen.fsworld.co.uk www.icheme.org/hazardsxix

Membership of the Hazards Forum 2005

Distinguished Members

Professor P A Bennett, FREng
Professor Sir Bernard Crossland, CBE FRS FREng
Dr S N Mustow, CBE FREng
Dr A C Patterson, CBE FREng
Professor P O Wolf, FREng
Professor Sir Frederick Warner, FRS FREng

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British Computer Society
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Coventry University
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Institution of Electrical Engineers
Institution of Mining and Metallurgy
Institution of Occupational Safety and Health
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Dr John Bond
Mr Iain Carter
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Mr Frank Crawley
Mr Graham Dalzell
Mr David Eves CB
Mr Robert Foster
Mr Robert Gilchrist
Mr Peter Graham
Mr Peter Livock
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Mr Brian G J Thompson
Mr Simon Turner