Hazards forum

The Hazards Forum Newsletter

Issue No. 77
Winter 2012

Web version

Hazards Forum Newsletter

Issue No. 77 - Winter 2012

Contents

Edited by Dr. Neil Carhart

Views expressed are those of the authors, not necessarily of the Hazards Forum

Further information regarding the articles in this issue is available from *Tim Fuller on 020 7665 2230,* in the Hazards Forum Secretariat Office

E-mail: admin@hazardsforum.org.uk

Hazards Forum website: www.hazardsforum.org.uk

Hazards Forum Executive Secretary: *Brian Neale*

December 2012

Tony Bandle

It is with sadness that we report that Tony died on 1st July 2012 at the early age of 63. He was an active member of the Executive Committee for many years. He was co-opted to the committee and acted as the link with HSE, a role which he undertook with much enthusiasm, and in a way that strengthened the links between the Hazards Forum and HSE. He kept them very active in a number of ways until 2009 when he moved to a new and different role in HSE. Tony had developed the liaison role to such an extent that the Forum decided to make the position more formal by creating the position of HSE Observer. This complemented the other observer positions on the Executive Committee from the Royal Society and the Royal Academy of Engineers. The then Chief Scientific Advisor for HSE, took on the new HSE Observer role when Tony stood down. Jane Willis, Director of Cross-cutting Interventions was subsequently appointed to the role earlier this year.

Tony had a long and varied career working for the Health and Safety Executive before he retired in 2010. He undertook senior roles working across the science, inspection, and policy disciplines and contributed significantly to HSE's work on risk assessment policy and sensible risk communication. His background discipline was chemical engineering, specialising in radiological protection – an interest he maintained up to and after his retirement from HSE. He was a member of the Society for Radiological Protection. In a tribute on the Society's website the President states: *Tony contributed significantly to the work of the society as a member of the Council and more recently when he took the lead as Chairman of the Communications Committee. There he set wheels in motion that will benefit the Society for some considerable time to come.*

In private life, Tony was actively involved in scouting for over 40 years. He is survived by his wife Patricia and children Louise, Charlotte and James.

Brian Neale and Jane Willis

Thanks are given to the Association of Former H.M. Inspectors of the HSE for some of the above text which is from their September 2012 Newsletter.

New member of the Executive Committee

Ian Wright CEng MICE MIStructE FCIArb QDR Barrister at Law

The Executive Committee is pleased to announce that Ian Wright has accepted an invitation to join the Committee as a Co-opted member. He joined during the Summer and attended his first meeting in September.

Ian is a Barrister as well as a chartered civil and structural engineer. As an engineer he has worked on major building and civil engineering projects in the UK and Middle East. In his role as a Barrister he continues to specialise in construction, engineering and other technical issues. This has included covering areas such as defects in design, foundation failures, railways and light rail systems, power plant, process plant, professional conduct matters and negligence of construction professionals. He also acts as Legal Adviser to the Professional Conduct Committee of the Institution of Structural Engineers.

Infrastructure Resilience

Brian Neale

The Institution of Civil Engineer's flagship quarterly journal *Civil Engineering* publishes two additional Special Issues per year. The November 2012 Special Issue was titled *Infrastructure resilience* and can be seen as building on the Hazards Forum's series of evening events held on the subject in 2011.

Readers may thus find the topics of a number of the many refereed papers familiar. Some of the papers deal with broader approaches, particularly on risk engineering, that can be used more widely than the subject title of the journal. However, supporting examples are given that complement the journal title, as would be expected. Additionally, there are papers that focus on specific types of infrastructure, where a variety of approaches are described for examples in both the UK and elsewhere. The broader approaches to risk management that are described may be of particular interest to many readers, beyond those with specific interests in Infrastructure resilience. Numerous helpful references are included with the papers.

The Hazards Forum is also acknowledged in the publication. This includes in the *Introduction* where the Forum is thanked for helping with the promulgation the *Call for papers*. The Hf web address is also given – and will thus be seen by a wide spectrum of readers.

The journal, published by ICE Publications, is live online at:
http://www.icevirtuallibrary.com/content/issue/cien/165/6 . It is understood that hardcopies are also available from the publisher.

ICE has also promoted the publication, with mention of the Hazards Forum, at (for example):
http://www.icevirtuallibrary.com/content/related/advert?advert=291112

The main ICE publications site can be found at: http://www.ice.org.uk/publications

Risk Communication – Industrial Perspectives

Neil Carhart

On **Tuesday 25th September 2012** the Hazards Forum hosted an **evening event.** The event was co-sponsored by The Royal Academy of Engineering, the Engineering Council and the Institution of Mechanical Engineers. The event was held at the Institution of Mechanical Engineers at One Birdcage Walk, London.

This was the second in a series of events on risk perception and risk communication. These events set out to examine the barriers to the effective communication of risk and the strategies for breaking them down. The Löfstedt Report made the point that the public, stakeholders and regulators all perceive risks differently. The first event in this series examined public perceptions and how they had been formed, current good practice and ideas on risk communication, all with a strong research perspective. This second event looked at how industry perceptions can differ from those of the public. It also looked at internal and inter-industry differences as significant barriers to effective strategies. The presentations included representation from both the engineering and insurance sectors.

The event began with a few brief words from **Hazards Forum Chairman** Rear Admiral (retd) **Paul Thomas CB**, who welcomed the audience and thanked the sponsors and IMechE for hosting the event. He then introduced the **chair for the evening Professor Sue Cox OBE, Dean** of the **Management School** at **Lancaster University**. Prof. Cox recapped the first event in this series before introducing each of the evening's speakers.

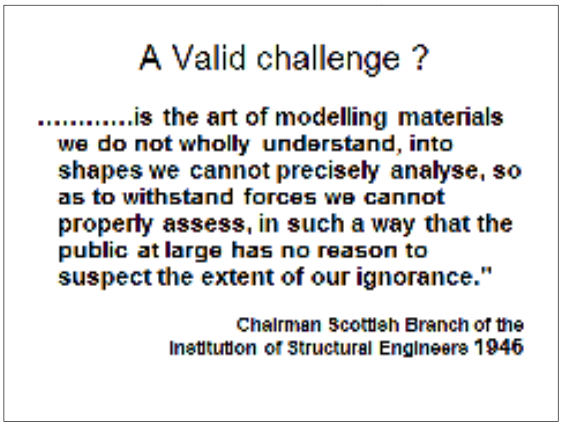
The event's first speaker was **Andrew Buchan, Senior Safety Specialist** at **Sellafield Ltd**. He has been engaged in safety and risk assessment within the **nuclear industry** for over twenty years, within both operational and decommissioning facilities. He is also a member of the council of the Safety and Reliability Society. In his talk, titled *A High Hazard Industry Perspective – where should the emphasis be focused*, he discussed whether the key issue in effective risk analysis and communication is in fact underpinning the effectiveness of risk control mechanisms, rather than the evaluation and presentation of residual risks.

The second speaker was **Zoë Layden, Senior Broker Development and Key Account Manager** at **Allianz Global Corporate and Specialty**. Her presentation, *Basic Qualities of a Well Protected Risk*, focused on known hazards, and how the insured are encouraged to protect themselves, from the perspective of the **insurance carrier**. She also discussed some related aspects from the **aviation industry**.

The final talk of the evening was given by **Graham Dalzell**, currently acting as **Senior Technical Advisor** for **Safetec UK**. He has over thirty years experience in the **offshore industry**, the majority of it as BP's head of Fire Engineering. He gave evidence at the Piper Alpha inquiry and contributed to the Prevention of Fire and Explosion Regulations. In his presentation, *Who Carries the Can – challenge to risk specialists and line managers,* he **examined the roles** of engineers and line managers with respect to the management of critical equipment, hazards and facility risks. He questioned whether these responsibilities are sufficiently well defined or recognised, and **challenged the current dependence** upon risk specialists and consultancies.

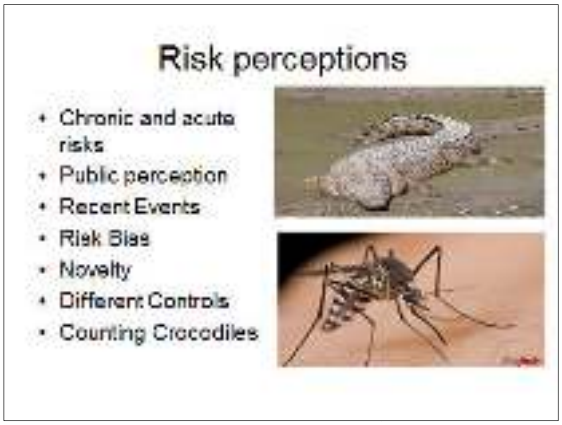
Andrew Buchan began his talk by discussing the public's casual interest in risk, and their willingness to expend time planning for unlikely outcomes (for example the National Lottery and natural

hazards). In his discussion he drew on the theory of Risk Homeostasis and the notion that we become acclimatised to risk, or adapt out environment to cope with it.



In terms of communicating risk to the public, industry is looking for concise, comprehensive, simple and emphatic messages. There are several everyday, real world examples which we can build upon for this communication of risk, such as weather forecasting.

Another parallel can be drawn from financial institutes. Before the credit crunch intelligent people were using risk models and performing risk analysis on financial instruments, but hindsight suggests they do not appear to have fully grasped the interactions and interdependencies between elements within those systems. Not asking the right questions to appreciate the bigger risk picture led to a significantly sub-optimal outcome, as was witnessed in the failure to predict the financial crash of 2008.



We need to shape and adapt the risk method we use depending on the stakeholder and the risks. Risks can come in many, dissimilar forms such as commercial risks, financial risks and business continuity risks. Risks can be voluntary or involuntary, natural or technological, familiar or novel. Some risks are High Probability Low Consequence while others are High Consequence Low Probability. These different forms of risk need to be controlled and communicated in different ways. Together with the different stakeholders, these give rise to different risk perceptions, and situations where the perceptions may not reflect the actual risk (due to novelty, bias, fear, recent events etc.).

Risk models are also important, and there are a wide range of powerful risk models available. Used correctly these can allow for comparisons over time and between situations. They allow for risk monitoring and sensitivity analysis, and can also suggest interventions. However, used incorrectly they can be dangerous. They tend to be created in the office and not at the coalface; they can be 'reassuringly expensive' and end up being used out of context. Data used out of context can be misleading, for example: is data from the nuclear industry applicable for use on oil platforms? Those involved can become fixated on the model and its outputs and not the reality, and lose sight of the assumptions used to create the model.

Data needs to be used in context; it needs to be well understood, and cross-checked for reliability against reality and operating experience. It is also important to acknowledge that systems and barriers are not independent of each other (for more see Eric Hollnagel's book The Efficiency Thoroughness Trade-off (ETTO) Principle), something which can be overlooked.

In its most simple form the risk model is looking to communicate that risk is proportional to hazard, which is reduced by safeguards. If we introduce safeguards, the risk begins to drop. We

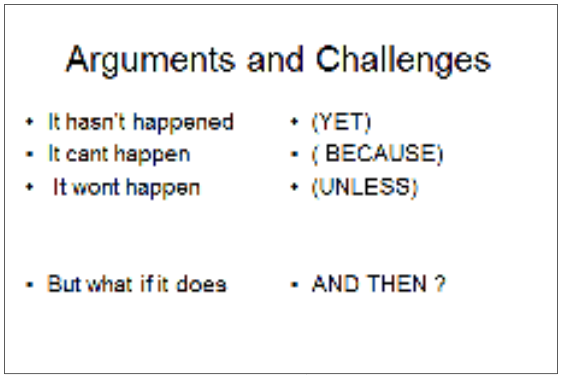
have to communicate effectively, and this is not just about getting the sums right.

Andrew then moved on to look at the **different stakeholders** with whom industry needs to communicate risk, and the different requirements they have in this process. **Senior Management**, responsible for corporate governance, setting the acceptable levels of risk and safety culture, react well to conversing about risk in the language of large hazards. One potential drawback at this level is the extrapolation from simple safety metrics, and the tendency to control only that which gets measured. Disproportionate attention on easy to measure metrics can influence a focus on conventional safety, and sometimes confusion that the control of low level health and safety risks can automatically lead to the control of high-hazard risks.

Partners, companies the organisation in question does business with, are also an important stakeholder. The Japanese tsunami had a global effect on electronic manufacturers as a result of many firms operating with a Just in Time Principle, and a very short supply chain. In this sense efficiency could almost be seen as an inverted risk. We need to share information and best practice with partners. The **Workforce** is another key stakeholder and probably the most exposed group. They control the risk themselves as well as the monitoring of the risk. How to control the risk, the clarity of the safeguards and the effects associated with the risk need to be adequately communicated with this group.

Communication of risk with the **Regulator**, with particular focus on responsibility and issues surrounding ALARP, is also important, as well as communication with **Shareholders**. Shareholders effectively own the business, so business continuity, reputation and share value are all important. Digital and social media can have a significant and disproportionate affect on reputation and value, and needs to be controlled.

It is also necessary to communicate with the wider **Public** who, unlike the previous groups, do not have direct control over risk, but may have, or desire a good understanding of local risk issues such as flooding. Drawing analogies can be a useful way of communicating risks with the public, but the analogies can breakdown and create new problems. Finally **Pressure Groups** need to be part of the communication process; they can possess specialist knowledge and employ powerful leverage techniques.



A risk conversation with all of these stakeholders is necessary. We should frame our risk arguments in a more conversational way, rather than mathematical, actively engaging with the questions and challenges stakeholders may have. Andrew concluded his talk by reiterating that while risk concepts are broadly understood, risk perceptions are important and risk communication needs to reflect the audience.

The next talk of the evening was given by **Zoë Layden** on the basic qualities of a well protected risk from the perspective of a corporate and specialist insurer. She began by talking about protection of property, specifically in terms of **ten fundamental qualities** which can provide protection to a facility from fire and natural hazards. A team of engineers inspect the property for risk of loss (to property, continuity of business etc.), for which they have a set of guidelines and rules reflecting these desirable qualities. They prepare a report back to the owner of the property so that they can take up the

recommendations and reduce their risk profile. These ten qualities are:

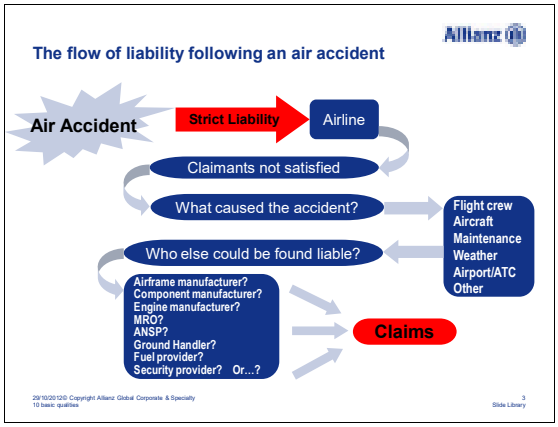
1) **Suitable Construction** – Combustion is a significant issue, and the 'suitability' owes a lot to the occupancy and extent of fire to which the construction must withstand. Light hazard occupancies, for example, will require less demanding fire resistant construction, whereas structures involved with food preparation may require more stringent demands. Sometimes insulation can cause more of a fire hazard than the construction itself. Natural hazards are also significant in determining suitability. Many airports are built on floodplains, which needs to be taken into account when assessing risk and insurance premiums.
2) **Commitment to property loss prevention** – The insurer is interested in witnessing formalised objectives and responsibilities as well as endorsement of the safety programme from the highest level.
3) **Sprinklers where needed** – Sprinklers are usually required wherever there is a combustible material or a source of fuel, but sometimes sprinklers can be thought to cause more damage than they prevent, in which case alternatives such as CO_2 based fire suppression systems may be required.
4) **Special hazards protection** – If there are special hazards (such as flammable liquids) then these will require their own special safeguards.
5) **Adequate water supply** – Some facilities have their own water supply as a result of regulatory requirements, but it is important that sprinklers and the fire service have access to an adequate volume and pressure of water.
6) **Fire prevention programmes** – Having protection is not sufficient. Processes to ensure protection is in an operational condition are also necessary, as are efforts to actively prevent fire.
7) **Good housekeeping** – Keeping the working environment clean and tidy can have a positive impact on loss prevention.
8) **Maintenance** – It is far easier to keep equipment repaired than to suffer the impact of the damage it would cause if it failed. This is about investing time and effort, and having a sensible plan in place to maintain equipment.
9) **Emergency response and public fire service** – It is important to know who is responsible for every aspect of the emergency response, for example who will direct the emergency services to the location of the fire. This will need to be tailored to the needs of the facility.
10) **Adequate protection against exposure hazards** – There is a need to take into account third party effects. Others, in nearby facilities, might not take the same precautions, but may be the source of risk or affect prevention and response efforts.

In each of these qualities it is possible for the human elements in the system to intervene and ruin the precautions or protections.

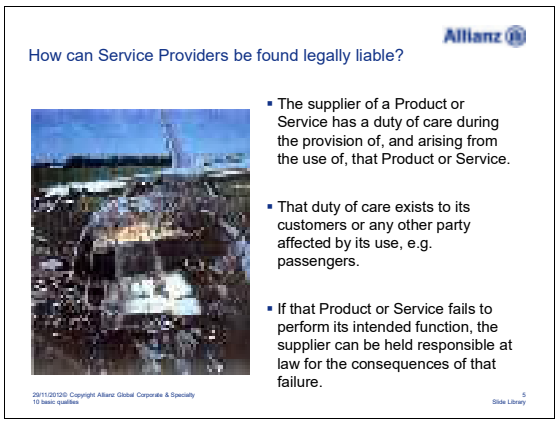
In the second part of her talk Zoë moved on to specifically address insurance within the **aviation/aerospace industry**. This includes everything from manufacturers to airports and service providers, operators and owners. As discussed in Andrew's previous talk, each of these requires a different approach, different questions need to asked and different views are required. With many different groups involved this can be particularly important in terms of understanding who is liable or responsible for an accident.

Accident investigation is a forensic process which looks at the whole chain of events. Potentially, anybody involved at any stage in the process could be found liable, from the flight crew and maintenance staff to Air Traffic Control

and airport operators. The nature of aviation insurance is such that even those involved in putting the paint on the plane could be found liable as the supplier of a product or service has a duty of care during the provision of, and arising from the use of, that product or service. The responsibility for risk control is pervasive across the whole industry.



Within the aviation industry it is common for lawyers to try and get insurance claims heard in American courts even if the case does not involve a US-owned plane, a US-based operator or American passengers. Plaintiffs have a tendency to seek wealthy defendants under negligent entrustment claims (that is to say a party is accused of negligence in its provision of a service or equipment which resulted in the plaintiff's loss). Following an accident, the owner of a plane (the majority are leased to operators) could therefore be found negligent in allowing an unsafe flight operator to use their property.



Along with the human element, technology and technological advances can have a significant impact on risk, and the control of loses. For example losses associated with 'Controlled Flight into Terrain' events were significantly reduced following the introduction of new Enhanced Ground Proximity Warning Systems.

In conclusion, significant losses can occur for many different reasons, and are not limited to high-profile, graphic and catastrophic failures. The liability for the losses can rest with anyone in a diverse chain of suppliers and operators involved in the aerospace industry. Following the loss of an Air France Concorde in 2000 resulting from debris on the runway from a Continental Airlines DC-10, a Continental Airlines mechanic was found to be personally responsible as well as the company he worked for. Risk and the sources of risk can be complex; the insurance industry plays an important role in understanding and managing that risk.

The final talk was given by **Graham Dalzell** on responsibility within the context of safety and risk. During his talk he posed a number of thought provoking questions. Again acknowledging that different approaches are required for different risk audiences, Graham first identified two broad groups: External and Internal. We are in danger of mixing-up the two, as well as the risk communication we deliver to them.

The external audience, which includes the public and regulators, are approached

very differentially to the internal audience. Communication with the external audience normally involves providing arguments and evidence that risk is understood and under control, that processes and safeguards are in place. If this same approach was used on an internal audience this could have a negative effect on knowledge and information availability amongst those who have a direct impact on the risk and its prevention.

Graham's presentation focused on how we communicate risk to those with a responsibility for managing safety, what they do with it, and how it affects their perceptions. Safety is a line responsibility, as is compliance with procedures, plant integrity, hazard management, facility risk management and corporate risk management. When it comes to compliance with procedures and plant integrity, there is a clear responsibility. It is clear in these areas what should be done and what shouldn't. When it comes to hazards and risk the responsibility may not be clearly defined. The risk level may not be communicated to those responsible in a way that they can understand or visualise it. Therefore it may not be available to them in a way that they can manage the hazards and risks. Do those responsible understand what the quantitative assessment of the risk actually means? While the acceptance criteria for competence or compliance may be well defined, the acceptance criteria for corporate risk may not, and it may not be well understood. In terms of corporate risk, what is and isn't acceptable may not be clear. Competence in managing these risks is also less clear, which led Graham to suggest an important question for assessors: where do those responsible get their training in managing hazards, facility risk and corporate risk?

Risk is a variable, so it is important that managers know what affects it, what the actual risk is and when it becomes unacceptable. But how do they do this? Even if the acceptable levels are documented in the Safety Case, would those responsible actually say "no"? The Safety Case may be based on Average Statistical Risk, but the actual risk varies and fluctuates over time as a result of many different factors, including: activity, equipment condition, exposure, weather, people (e.g. tiredness), level of supervision, time of day, operating mode, etc. At some level is a limiting risk, an upper bound to the envelope of acceptability, but how is this defined and where is it documented? How are management informed that the risk has become too high? There may be individual criteria (i.e. relating to the failure of a single piece of equipment), but this does not necessarily provide adequate information about the fluctuation of the average total risk from the summation of all hazards. How is this information communicated to the right people?

The **long term facility risk changes** over time due to many different long term variables and trends such as the seasons, maintenance campaigns, construction projects, shutdowns, process changes, plant deterioration, changes in personnel, resource and support relationships, production pressures and investment limitations. Despite these different influences on the long term fluctuations of total average risk, the evaluation is still conducted using the same criteria as for short-term individual hazards. The presented quantitative risk assessment is probably going to be the same. On a day-to-day basis the people running the plant are trying to keep all of these pieces of the jigsaw together, but it is less clear how the people in charge of the overall risk are evaluating its longer term trends.

Line managers may assess risk based on statistical/analytical models, deviation from 'normal', predefined limiting criteria or even a gut feeling and sense of discomfort. This sense of discomfort is important, and must be based on those responsible being exposed to the correct information. If the information is being prepared to demonstrate to the public and regulators that the plant is safe, then those internally responsible for managing risk may be sheltered from this sense of discomfort. Graham suggested that

perhaps it is necessary to have a Safety Case for the public and regulator, and a Danger Case for internal use, but what would happen to public perceptions of risk should these reports prepared for an internal audience become public?

There are many different statistical and analytical tools available (e.g. QRA, CBA, HAZOP, ALARP, HAZID, FMEA, FERA, etc.) mainly through consultants. Is there a danger that we have handed over risk management as well as risk analysis to these consultancies? It has been turned into such a complex process that managers may no longer adequately understand it. Ultimately, risk management comes down to whether you can control a risk and whether you can defend against it. If you cannot do either of these two things then the activity should not be undertaken. However, this assessment requires knowledge of the risk, and the current process of contracting risk analysis may not be creating the right information and knowledge for those in charge to be making this kind of decision. All of the tools tend to exist in isolation from one another, and there is no structured approach to join up the dots or communicate the correct information about hazard and risk to the correct audience. How do we use the tools proactively, to help those responsible at all levels and all responsibilities, and not just as a means to justify decisions?

Risk management is influenced by line managers' judgements, and these are in turn based upon:

- Their understanding of the hazards and risks
- Their awareness of the risk variables and underlying drivers
- Their confidence in their ability to manage the hazards
- Their ability to monitor and estimate risks
- Their perception of the risks and tolerability
- The assurances of others

A manager's judgement and resultant actions are the primary controls of risk. Their judgement is based on the quality of hazard and risk knowledge from formal analysis, their own experience, their perception of the risks and their ability to manage the risks. Graham concluded his talk by asking one final question: 'Are we expecting too much and do we take competence and judgement for granted?'

Prof. Cox thanked the speakers for their presentations and introduced the discussion period.

The first question asked, from the perspective of safety within the **aviation industry**, whether the insurance industry was as great a force for good as it could be. Some aircraft designs seem, from accident reports, to have a propensity to produce a particular mode of failure, and the insurance industry does not appear to be encouraging improvement in this area by increasing the premiums associated with these designs. The questioner posited that, if this were the case, it might be because the purpose is less about the risk management and more about blame management. In response to this, it was suggested that if any defects, faults or error traps became apparent, service bulletins would be issued or standing operating procedures updated. In some circumstances there may be product recall. Therefore, some issues are being controlled by the manufacturer because they do not want to increase their reputational risk. This led to the question, is **regulation** as great a force for good as it could be?

Measurements, blame and **accountability** are very easy to deal with at the lower level where **responsibilities** appear much clearer. Once you get to the higher levels of corporate risk, the issues become nebulous and difficult to measure. There is a tendency to only regulate the lower, measurable levels of the hierarchy. The question then is: how do we create an insurance and regulatory structure which ensures that the senior management are competent and capable of saying 'no' to

unacceptable risks? If there aren't people within the company to ask the right questions, if there is too much reliance on the regulator, then the company has a problem.

The biggest contribution within the **nuclear industry** to address many of the issues discussed throughout the evening might be the establishment of the Institute of Nuclear Power Operators within the United States following the event at Three Mile Island. This spread across the world following the Chernobyl event. These groups recognised that if there was an event within the nuclear industry, it didn't just affect the utility that had the accident, or indeed even just the country that had the accident, it could have a significant effect on the whole industry. Thus, there was a shared interest in driving up safety standards, and sharing knowledge and learning. Over a number of years a process was developed whereby a utility could invite in members of other utilities who have the same responsibilities for running and managing plants. These guests were invited and encouraged to identify gaps between excellence and what they saw. They were encouraged to be extremely critical, and to report this criticism to the very top of the utility. In America this led to a **system of ratings** which are highly respected and used by insurers.

This process of peer review is extremely uncomfortable for the utility and reduces complacency. It is not about compliance, and goes beyond regulatory requirements. This system has been continually strengthened and improved, and could be of **benefit within other industries.**

A further contributor described the introduction of the **International Safety Rating System** (ISRS) which focuses on process, because you are trying to measure something that is declining, i.e. how many things did you stop happening rather than how many things happened. You can't use outcome performance measures; you have to use process performance measures such as leadership. ISRS set out what a hypothetical perfect company would look like, to which the performance of others could be compared. The description of the hypothetical company came from a group of operators who came together to decide what best practice might look like. Instead of being judged against the minimum acceptable standard, operators were now judged against an unobtainable high level of performance. Processes such as peer review within the nuclear industry and ISRS should be the start of the risk conversation within the senior management of the organisation.

The final question of the evening asked about **communicating risk** within other industries such as railway and construction which have less regulation than petrochemical, aviation and nuclear. There was specific concern over the number of contractors and sub-contractors involved in these industries, but in reality it may not be that different from some of the more heavily regulated industries, such as off-shore platforms. In these circumstances the contractors are still under the oversight of a plant manager. Sometimes there may be a fear of talking about risks and consequences.

Some high-hazard industries have a large turnover of staff, but this is coupled with the fact that many of the individuals could be directly and personally affected by an accident, and self-preservation can play a role in these conditions to the approach to risk management and the desire to understand the risks. Trying to place this **level of risk communication** in the contract and throughout the relationship has a cost. It takes time and effort to maintain the risk conversation, but the organisation must be willing to invest in this with their contractors and suppliers.

Prof. Cox thanked the speakers once more for their contributions. She concluded the session by acknowledging the commonality of issues covered despite the different industries represented, and highlighting the third and final event in the series scheduled for 28th November.

TRUST

- Some thoughts after a recent[1] Hazards Forum Evening Event

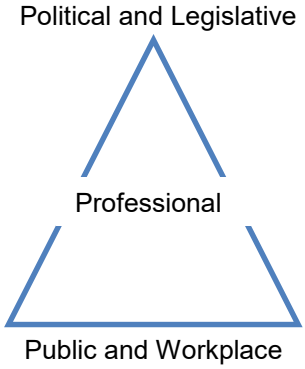
Dick Vote
Technical Director, John Brown Consultants

The "safety" community has broadened; communication and co-operation has intensified, guidelines, standards, techniques and competences are maturing to ensure safe ***and reliable*** engineering to defend against every eventuality. Unnecessary disasters (and a single serious injury is a disaster to that unfortunate person) still occur and irritating unreliability all too often wastes resource. Greed and ego however will always be attracted by short term advantage especially when detection is unlikely or the person having achieved their selfish aims has moved on and covered their tracks. Risks feed on the inability or unwillingness to consider them honestly and objectively. Not surprisingly society has become increasingly suspicious of those whose responsibility it is to manage risk, from financial trading through to dependable and sustainable energy sources.

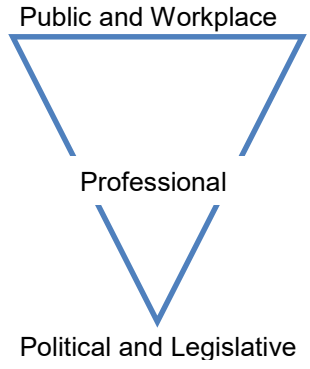
A believable image to create a believable impression in the public mind irrespective of the rational truth is easy with modern media and exploited by those seeking to push their own agendas or gain political or social power. Journalists several thousand miles from Fukushima extrapolated and interpolated the actual risk position on very scant information for their own short term aims, while there were many lessons to be learned that process is not facilitated following such short term reactions which were designed to file copy not address risk.

Safety processes, techniques etc are fine but unless a position of clearly reasoned trust is reached engineering will struggle against those who assume the emotional higher ground to invoke irrational fears. To gain trust we need to reconsider our position from the traditional hierarchical format.

From this…



To this…



This may seem pure semantics but it is a fundamental change in attitude and consequent public perception. People are

seen to be supported, not “managed” or even worse “spun”. The second paradigm shift must be to replace the disparate mechanisms with a single one that can engender change. There have been calls for a single “body” to be responsible for engineering safety, some scurrying around by some who feel that THEY should be it and stiffening of resolve to defend turf by others. To create a single body with executive authority would take many years, much effort and probably spill large quantities of blood. It may evolve but I would suggest that there is one already; it is called The Hazards Forum. There is no executive authority per se but that is an advantage because it gathers and considers all the specialist voices and accords equal weight to each. This I would contend would present a more acceptable face of the profession to the public, one where there is no single hegemony and where every branch of engineering is held to account by their peers.

To develop this further, and it seems to be progressing by its own momentum, if ALL the rational professional bodies, medicine as well as law speak with a visibly unified voice on risk with the same overt and robust peer review it will be seen that none can over-rule another. This “voice” will be confident enough to speak with authority to government, by appropriate grouping of members or as indeed as a single body. Ordinary people will feel that they are supported not ruled.

What specific developments are necessary to achieve this? May I suggest development of comparable and compatible guidelines, visibly tracked to the Engineering Council’s, to engineers in specific aspects across all the professions and a focus on comparable and compatible communication and competences within the bodies represented, drawing on the specialist societies. A single voice and well thought processes to achieve trust.

---

[1] Hazards Forum Evening Event 12th June 2012, reported in Hf Newsletter 76, Autumn 2012

Dick Vote is Technical Director of an independent verification company tasked with business and technical risk for developments in heavy oil refining. His 25 years experience in oil and gas included fast track fleet” performance reviews, design and mature asset optimisation for production and integrityband a review of performance for UK Government.

He served in the Royal Navy as a Marine Engineer Officer and was inspired to specialise in reliability assessment 30 years ago following achieving the ambition of appointment as MEO when in a ship design project he also inherited the original Systems Availability Model in the MoD, reactivated it and validated it against the first of class in service.

A founding Fellow and member of Council of the Safety and Reliability Society and from 2007-11 Chairman of the Institution of Mechanical Engineers Safety and Reliability Group. He is also active in the Institute of Marine Engineering Science and Technology and participated in the Engineering Council ad hoc working group on Risk Guidelines.

From the Secretary.....

The **2013 AGM** is scheduled to begin at 16.30 on the **19th March**. As usual, an evening event will follow. Members are urged to attend, if possible, and will be made most welcome. A formal notice will be sent to members early in 2013. More details can be seen in the Calendar of Events in this Newsletter on Page 16.

The **next** two **Evening Events** are being planned for 19th March and 19th June respectively. The latter is scheduled for the third week of June, is a departure from recent scheduling which helps prevent clashes in programmes of activities with other like-minded organisations.

Readers will have seen in recent editions, **articles by various bodies** describing who they are and what do, often with background about that organisation. What may not be clear always is why they appear in the Newsletter. It is because they are **member bodies** on the Forum and the reason for the articles is to help with mutual understanding of our fellow members.

Brian Neale

Parliamentary and Scientific Committee

The latest issues of "Science in Parliament", the journal of the Parliamentary and Scientific Committee of which the Hazards Forum is a member, has among its contents the following articles. Any member who would like any further information on any of the articles below should visit the PSC website www.ScienceInParliament.org.uk

MARS – A HAPPY LANDING	Professor John Zarnecki
LARRGE HADRON COLLIDER COMES TO PARLIAMENT	Professor John Womersley
HOW WE CAN MEET THE MEASUREMENT CHALLENGES OF THE COMING DECADE	Kamal Hossain
MEETING THE NEED FOR PHYSICS TEACHERS	Professor Peter Main
ANIMAL EXPERIMENTS: ARE EU REGULATIONS ADEQUATE?	Addresses to the P&SC by Dr Judy MacArthur Clark, Dr Maggy Jennings and Dr Stephen Mitchell
PLUGGING IN	Paul Davies
HIV/AIDS AND TUBERCULOSIS IN THE GOLD MINING INDUSTRY IN SOUTH AFRICA	Rt Hon Peter Hain MP and Martin Caton MP
THE QUEEN'S DIAMOND JUBILEE: A CELEBRATION OF SCIENCE	Ken Brown, Brian Cox, Paul Glendinning, Natasha McCarthy, Nancy Rothwell, Christopher White, Lesley Yellowlees
AN UNSCIENTIFIC CAPAIGN	Bradley Keelor
NORTHERN LIGHTS	Hazel Gibson
INNOVATIVE TECHNOLOGY IN EDUCATION	Dr Ellie Dommett
SCIENCE AND THE DEVOLVED BODIES	

HSE eNews – Some Examples

++ Judith Hackitt's Blog on Unintended Consequences
"The blizzard of signs and warnings that we all encounter every day carry a risk in themselves - that we become blind to the ones that really matter, where there is a real risk to life and limb". To read more, please visit:
http://www.hse.gov.uk/news/judith-risk-assessment/consequences211112.htm?ebul=hsegen&cr=1/26-nov-12

++ ONR grants nuclear site licence for new UK power station
The Office for Nuclear Regulation (ONR) has granted the first new site licence for a UK nuclear power station in 25 years. The licence has been granted to NNB Generation Company (NNB GenCo), which wants to build a new nuclear power station at Hinkley Point in Somerset.
http://news.hse.gov.uk/onr/2012/11/onr-grants-nuclear-site-licence-for-new-uk-power-station/

++ **Waste site dangers highlighted in Barnsley court** ++
A South Yorkshire waste management firm has admitted neglecting the safety of its workforce after two men were injured within just a week at its site in Barnsley. The two incidents were investigated by the HSE, which prosecuted the firm for serious safety failings.
http://www.hse.gov.uk/press/2012/rnn-yh-19212.htm

++ **Consultation opens on first aid changes** ++
Plans to remove the requirement for first aid training providers to be approved by the HSE have gone out to consultation. The proposal to amend the Health and Safety (First-Aid) Regulations (1981) was made in the Löfstedt report into health and safety.
http://www.hse.gov.uk/press/2012/hse-first-aid-consultation.htm

++ Radical revamp for workplace safety and health advice ++
A radical revamp of the way small businesses access official advice about health and safety online has been launched. The new Health and Safety Toolbox is the latest in a package of online guidance, bringing together in one place everything a small, low-risk business could need to manage health and safety.
http://www.hse.gov.uk/press/2012/hse-toolbox.htm

++ Research reveals secrets of Olympic safety success ++
The secret factors behind the safety successes during construction of the London 2012 Olympic Park have been revealed in a new study. Researchers identified 13 distinct characteristics in relationships between clients, contractors, designers, workers and regulators during Olympic Delivery Authority's Big Build which created the 'pre-conditions' for ground breaking safety performance
http://www.hse.gov.uk/press/2012/hse-olympics-research.htm?ebul=hsegen&cr=1/3-dec-12

Calendar of Events

Please check the Events section of the Hazards Forum website for more information at **www.hazardsforum.org.uk** and to see any updates in the calendar. These may include additional events or perhaps amendments to the Events shown below.
Please note that attendance is by invitation.

Date	Event	Venue	Contact/further information
February			
5	IMechE Event, Hf Supported: Managing Risk. Is competence in safety and reliability a mirage?	Institution of Mechanical Engineers, One Birdcage Walk, London, SW1H 9JJ	e_fox@imeche.org
March			
6	SaRS Event, Hf Supported: How Important is Reliability? An insight into reliability tools and their application to industry	Friends House,173 Euston Road, London	info@sars.org.uk
19	>> Hazards Forum Event: Annual General Meeting	Institution of Civil Engineers, One Great George Street, Westminster, London, SW1P 3AA	Tim at admin@hazardsforum.org.uk
19	>> Hazards Forum Evening Event: Education, social media and the internet -inspiring risk understanding in the Y generation (Working Title)	Institution of Civil Engineers, One Great George Street, Westminster, London, SW1P 3AA	Tim at admin@hazardsforum.org.uk

The Hazards Forum's Mission is to contribute to government, industry, science, universities, NGOs and Individuals to find practical ways of approaching and resolving hazard and risk issues, in the interests of mutual understanding, public confidence and safety.

The forum was established in 1989 by four of the principal engineering institutions because of concern about the major disasters which had occurred about that time.

The Hazards Forum holds regular events on a wide range of subjects relating to hazards and safety, produces publications on such topics, and provides opportunities for interdisciplinary contacts and discussions.

The Hazards Forum
One Great George Street
Westminster
London SW1P 3AA

E-mail: admin@hazardsforum.org.uk
Telephone: 020 7665 2230
Fax: 020 7799 1325

Website: www.hazardsforum.org.uk

Registered charity number 1047047