Hazards Forum

Achieving a Good Safety Culture – “the people dimension” in health, safety and environmental performance

10 March 2005

Sponsored by:

[Corus logo]  [BNFL logo]
Achieving a Good Safety Culture – “the people dimension” in health, safety and environmental performance

Thursday, 10 March, 2005 at the Institution of Civil Engineers, One Great George Street, Westminster, London, SW1P 3AS.

This event was arranged in order to raise understanding, encourage a greater personal contribution from engineers (particularly those in managerial and leadership positions) and develop thinking and sharing of good practice on how EH&S "culture" can be further improved.

Event Programme

1645 - 1700  Tea and assemble

17.00 Chairman's welcome

  Dr Paul Davies  Chief Scientist and Engineer; Health and Safety Executive.

17.10 Presentations.

  Dr. Dick Taylor  Head of EH&S Policy, BNFL
  Mr. Eric Clubley  Group Health & Safety Manager, corus.
  Professor Rhona Flin  School of Psychology, University of Aberdeen.

18.10 Discussion period

19.00 Concluding remarks by Chairman

19.10 - 20.10 Wine and light refreshments.

Background

Most organisations are now seeking further improvements in health, safety and environmental performance, including both "day to day" performance and the reduction in probability of infrequent high consequence events. There is an increasing recognition that whilst good engineered safeguards and effective procedures are vital, they must be underpinned by a strong EH&S culture. In essence, this means that the behaviour and attitude of the workforce are fully aligned with and reinforce the organisation's drive for excellent performance in EH&S as in other areas of business. Aspects of this include the vital role of executive leadership, the need for good and credible communication and leadership through middle management, and the ‘heard voice’ of a fully involved workforce in seeking improvement. These and the other issues including ethnic and domestic attitudes as conditioning factors were examined at the meeting.
The Hazards Forum and the Inter-Institutional Group on Health and Safety of the Engineering Institutions recognise that the issue of "safety culture" is a priority area which should be of importance to all engineers, irrespective of their discipline.

This meeting had three objectives:

a) to share developments and recent thinking on the subject;

b) to discuss and develop views on the key practical issues which underpin a good EH&S culture, and

c) to seek a way forward on what further steps individuals, the Engineering Institutions, and associated organisations with an interest in this subject, can take to drive forward understanding and action.
Event Report

Introduction

The Chairman, Dr Paul Davies, welcomed guests to The Institution of Civil Engineers. He opened by advising them that this event was proposed and co-sponsored by the Inter-Institutional Group on Health, Safety and Risk. This Group was established by the IEE, IMechE, ICE, IChemE and the Hazards Forum. Working together with HSE, the Engineering Council and other learned societies the Group aims to promote developments in health, safety and risk issues. This evening’s event reflects one of the Group’s top priorities, which is to raise awareness of the importance of safety culture in achieving good health, safety and environmental performance.

He thanked on behalf of the Hazards Forum BNF plc and corus who also share this aim and who have generously provided support this evening, both in the form of speakers and refreshments.

To set the scene for tonight’s discussions, he said, we might reflect on the oft-quoted figure that at least 70% of all workplace accidents are due to human error or management system failures. The origin of this figure was probably a series of reports published by HSE in the late ’70s and early ’80s which were based on root-cause analysis of a large number of serious accidents and dangerous occurrences in manufacturing and construction.

The Chairman advised that he was involved in the work to produce these reports, and although there was a degree of subjectivity in the analysis it was clear that although there were isolated examples of random human errors, most mistakes and failures could be traced to faulty systems. Either faulty technological or procedural systems – for example poor design of operational controls or maintenance procedures – which failed to take account of human capabilities and behaviour. Or management organisation and management system failures which reflected the real attitude of the company to health and safety rather than their stated - often politically correct – attitudes.

At the time HSE recognised the importance of the role played by strong leadership and a positive health and safety culture in achieving good health and safety performance. But then the methodology and metrics were not available to identify and measure those aspects of leadership and culture which comprised the essential ingredients for success.

Over the last 20 years tremendous progress has been made on these issues and tonight the speakers will give some stimulating insights on these important matters drawn from their research and their own personal experience. He then introduced the first speaker and invited him to present his paper.
SAFETY CULTURE – IDENTIFYING THE KEY ISSUES

Dr Richard Taylor, Head of Environment, Health and Safety policy, BNFL

Dr Taylor opened by suggesting that ‘safety culture’ needed to be defined before progressing further. He first offered the joint International Nuclear Safety Advisory Group/International Atomic Energy Authority definition:

“That assembly of characteristics and attitudes in organisations and individuals which establishes that as an overriding priority, plant safety issues receive the attention warranted by their significance”

followed by HSE’s Advisory Committee on the Safety of Nuclear Installations (ACSNI) now NUSAC definition:

“The safety culture of an organisation is the product of individual and group values, attitudes, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation’s health and safety programmes. Organisations with a positive safety culture are characterised by communications founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures”

but said that he tended to use a less precise but simpler definition of safety culture:

“What people at all levels in an organisation do and say when their commitment to safety is not being scrutinised”.

There are multiple benefits of having a strong safety culture. Above all others it avoids pain and suffering. Not just to the victims and their families but to all who are involved in the accident. It is, he said, a sobering experience to witness the effects of an accident. There are also substantial cost savings as illustrated by a study carried out by HSE. It also demonstrates to people that the Organisation cares about them. There is a benefit from improving the Organisation’s reputation and there is value from the customer’s and regulator’s perception of the Organisation.

So how does an organisation go about improving its Safety Culture? Dr Taylor displayed an illustrative graph of performance against time (for example lost time accidents) depicting three improvement phases. The first phase he called ‘accidents go with the job’ where, as the name implies, no major improvements are sought and the main driver is (minimum) regulatory compliance. The culture is that accidents are going to be a fact of life. From this plateau substantial improvements may be made by further increasing engineered safety, seeking to introduce effective procedures and
management systems and increasingly through involving people and addressing attitudes and behaviours. This phase he called the ‘dramatic improvement’ phase. Thereafter there was sometimes a tendency for performance to deteriorate again, possibly through complacency, change of personnel, etc before another concerted effort was taken to attempt to achieve improved performance. This he referred to as the ‘roller coaster’ phase. However some organisations had appeared to move beyond this and achieved steady, sustained, excellent performance. This seemed to go together with excellence in other areas of operation.

Returning to BNFL he illustrated their RIDDOR reportable Injuries per 100,000 hours performance over the past 15 years. This showed a decrease by a factor of nearly 20. This has been very satisfying but there was no room for complacency and he recognised that more could be done to improve further.

He had personally led a substantial benchmarking programme some time ago in order to try to identify some of the key issues which served to underpin the development of sustained excellence. These had been further developed by work he had been involved in at the International Atomic Energy Agency, leading to the International Nuclear Safety Advisory Group’s (INSAG) Publication 15. He identified the following 10 key areas:

- Commitment and leadership not solely through words but by aligning actions with those words.

- Use and ownership of relevant procedures.

- Conservative decision making ion safety matters because safety must always come first. When pressures are high they may encourage less conservative action but this is just the situation where effective leadership is essential.

- Encouragement of a reporting culture thereby using the free learning from near-hits.

- Challenging unsafe acts and conditions (involvement through e.g. behavioural observations).

- Good environment, health and safety communication by making sure that the right message gets to the right people at the right time.

- A learning organisation (in-depth benchmarking and open learning)

- Systematic checking of competence to ensure that people are equipped for and understand their roles.

- Management of organisational change which must specifically include people issues.
- Prioritisation of proactive measures to improve, avoiding the temptation to include unattainable “wish lists”.

The International Nuclear Safety Advisory Group’s publication 15 included a set of self-diagnostic questions for four different groups of people in the organisation, the Board and Lead Teams, Senior Managers, Supervisors and those in the workplace and this may be a useful check-list.

Recently BNFL had also addressed the issue as to which factors were likely to mitigate the risks of complex (organisational) accidents. It therefore carried out a study of such accidents (and near hits) looking more particularly at well documented accidents such as Piper Alpha, the Longford Gas Explosion, the Challenger and Columbia shuttle disasters and recent UK railway accidents. It was concluded that although improving ‘day-to-day’ safety performance and avoiding organisational accidents had much in common, nevertheless the risk factors are not the same. Such accidents may still occur even when industrial safety performance is of a high order.

Dr Taylor then displayed a slide depicting the ‘Swiss Cheese Model’ propounded by Professor James Reason in his publication ‘Managing the Risks of Organisational Accidents’, 1997. This depicts a series of layers of ‘Swiss cheese’ representing defences against a dangerous occurrence. However each of the defences is imperfect, depicted by holes in the layers, and there is a chance that under certain circumstances those imperfections may combine to make the defences impotent, depicted by the alignment of the holes in the diagram. Alongside the model he tried to identify broadly successive layers of ‘Swiss cheese’ in order of difficulty in identification, reporting and creating practical remedial actions with the easiest at the top. These ranged from the selection of suitable personnel, their coaching and training, the use and effectiveness of the processes and equipment those personnel were expected to operate. These constituted some of the more easily identified factors often found in accident investigations, but only represented the ‘front end’ factors. Then came the deeper organisational issues such as effective management of change and issues relating to human performance and leadership. Finally the most difficult to manage items on the list included issues such as underpinning organisational values, market forces and ‘political’ influences.

The study had broadly identified about eight underlying causes of organisational accidents. These were identified as:

- Maintaining competence
- Application of acceptable standards
- Questioning attitude
- Organisational “complacency”/Loss of focus/Organisational drift
- Poor communication
- Loss of “oversight”
- Management of change (often involving contractorisation)
- Structural/External pressures
Among the conclusions reached were that four key improvement areas could perhaps be identified which would reduce the risks of organisational accidents of the type studied. These were:

- Committed Leadership
- Effective Communication
- Encouraging Involvement and Challenge
- Promoting Learning and a Questioning Attitude

Methods used to measure progress included consultation with staff through, for example, climate surveys, employment of INSAG 15 and ensuring honest self-questioning. Simpler tools are currently being developed to get an overview of progress against the key issues referred to earlier.

In conclusion Dr Taylor summed up by listing the principal issues that lead to a strong safety culture. These are:

- The people dimension (safety culture) is vital if “breakthrough” is to be achieved.
- There is wider business benefit (e.g. environment, operational excellence, quality etc.)
- About ten key issues were identified from benchmarking on industrial safety performance.
- Organisational Accidents involve some of the same issues but others of great importance deeper in the system.
- Excellence in leadership, communication, involvement and challenge and commitment to a learning organisation are likely to be priority themes.
Safety Culture - Identifying the Key Issues
Richard Taylor & Helen Rycraft

Presentation to Hazards Forum/IIG Meeting on Safety Culture
Dr Richard Taylor
Head of EH&S Policy, BNFL
10th, March 2005

INSAG/IAEA Definition of Safety Culture

"that assembly of characteristics and attitudes in organisations and individuals which establishes that as an overriding priority, plant safety issues receive the attention warranted by their significance"

ACSNI Definition of Safety Culture

"The safety culture of an organisation is the product of individual and group values, attitudes, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation’s health and safety programmes. Organisations with a positive safety culture are characterised by communications founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures"

Simple Definition or Safety Culture?

"What people at all levels in an organisation do and say when their commitment to safety is not being scrutinised"
Benefits of a Strong Safety Culture

- Avoiding pain and suffering (above all else)
- Substantial cost savings (HSE study)
- Demonstrating to people that we care about them
- Promotion of team working and involvement - wider business benefits
- Reputational value
- Regulator and customer value

“Good safety is good business”

Figure 1
Improvement Phases

BNFL /Magnox Benchmarking (1)

Ten key areas:
- Commitment/leadership (actions aligned with words)
- Use of procedures (owned and relevant)
- Conservative decision making (safety always comes first when under pressure)
- Reporting culture (using the free learning from near-hits)
- Challenge of unsafe acts and conditions (involvement through e.g. behavioural observations)
BNFL/Magnox Benchmarking (2)

Ten key areas (cont):
- Good EH&S Communication (the right message to the right people at the right time)
- A learning organisation (in-depth benchmarking and open learning)
- Systematic checking of competence (people are equipped for and understand their roles)
- Management of organisational change (including people issues)
- Prioritisation of proactive measures to improve (avoiding “wish lists”)

IAEA/INSAG

Above became the basis of INSAG 15 of the IAEA - including a set of self-diagnostic questions
- Board/Lead Teams
- Senior Managers
- Supervisors
- Workplace

BNFL Study of “Organisational Accidents” (and Near-hits)

Looked at nuclear sector but more widely at accidents such as:
- Piper Alpha
- Longford Gas Explosion
- Challenger and Columbia Shuttle Disasters
- UK Railway Accidents

Improving day-to-day safety performance and avoiding organisational accidents have much in common - but are not the same!

Mind sets and Attitudes

Causes For Example:
- Selection of personnel
- Coaching/training
- Processes
- Equipment
- Management of change
- Human Performance
- Leadership
- Values
- Market Forces
- Political Influences

Increasing difficulty in identification, reporting, and creating practical actions

“Swiss Cheese Model”

Underlying Causes of Organisational Accidents

- Maintaining competence
- Application of acceptable standards
- Questioning attitude
- Organisational “complacency”/Loss of focus/organisational drift
- Poor communication
- Loss of “oversight”
- Management of change (often involving contractorisation)
- Structural/External pressures

What are the Common Factors?

- Committed Leadership
- Effective Communication
- Encouraging Involvement and Challenge
- Promoting Learning and a Questioning Attitude

Measuring Progress

- Ask your people! (e.g. climate surveys)
- INSAG 15 - honest self-questioning
- Simpler tools being developed to get overview against key issues

Conclusions

- The people dimension (safety culture) is vital if “breakthrough” is to be achieved.
- There is wider business benefit (e.g. environment, operational excellence, quality etc.)
- About ten key issues were identified from benchmarking on industrial safety performance.
- Organisational Accidents involve some of the same issues but others of great importance deeper in the system.
- Excellence in leadership, communication, involvement and challenge and commitment to a learning organisation are the priority themes.
Mr Clubley opened by explaining that immediately after joining Corus (late 1999), there was much publicity in the press of its poor financial performance. In fact the share price slid from a high of 170p in January 2000 to a low of 4p in April 2003.

At the same time its safety performance was not good either. Throughout the year 2000 two fatalities occurred in each of the first three quarters and increased to three in the final quarter. In the first half of 2001 three more fatalities occurred to contractors on site and four more employee fatalities occurred in the second half. Over the same period the lost time Injuries fraction wandered just below and above the 15 mark: total employees were around 50,000 with about half as many again contractors. There were changes in CEO; there were plant closures and attendant job losses. Essentially Corus was in a poor state and this, he said wryly, prompted him to think that a move from HSE to Corus may not have been a good career move.

Clearly the safety culture was not what it should have been and there was an awakening at senior level that something must be done. It was decided to look at the DuPont approach, which produced for them an excellent safety record. As a result it was recognised where much of the problem lay. In order to address the problem the Board first introduced Executive Leadership Workshops to demonstrate to senior executives what was required and what part they were to play. They were made aware that they would be responsible for the safety performance in their management area and would set an example to their staff. Safety Audit training was undertaken by all senior staff, a standard was set for safety tours, and then a safety tour programme was introduced. This required every Executive Director, including the CEO, Finance Director and company secretary, to make specific safety visits to plants.

Leadership was clearly necessary from the top managers and the new Safety Policy was introduced, with guidance on its implementation, in 2003. Quarterly reports on safety tours were also introduced and the programme of safety tours was doubled in 2004. The Chief Executive Officer made plain that if success was to be restored at Corus then Safety would have to be the number one priority. To demonstrate his own commitment to safety he commissioned a video in which he outlined his personal beliefs for safety and his expectations of all his staff with emphasis on the most senior. Those who attended this Hazards Forum event had the opportunity to see the video and witness the obvious sincerity of the Chief Executive’s commitment to improving Corus’ safety record.

The CEO charged the H&S function with producing a Maturity Tool and with developing a Group Senior Management (GSM) safety and health excellence programme, this latter initiative being the most recent innovation towards achieving a strong safety culture throughout the Company. If the senior managers reflect the commitment of the Chief Executive and practice what they preach in safety and health then the response throughout the workforce is much more likely to be positive. The GSM Excellence Programme is a training and educational course where the senior managers are the delegates and where an Executive Director acts as sponsor/delegate. All senior managers world wide, attend this 3-day event in the UK. The key to its success is the Commitment that each GSM makes in the final session and which they have to agree with...
their boss within 6 weeks of leaving the course. The Executive Directors must agree their Commitment with the CEO.

The Maturity Tool is used for measuring improvement in health and safety performance. It consists of a series of statements that describe a near-perfect state of health and safety. It is organised under the eight Principles of the Corus Health and Safety Policy:

- Leadership
- Hazards, risks and control measures
- Health and well-being
- Competence and behaviour
- Incident analysis and prevention
- Sharing and learning
- Contractors and joint ventures, and finally
- Monitoring, audit and review.

Each of the statements, and there are between 6 and 11 for each category, have alongside them five ‘evidence’ boxes from ‘No evidence found’ to ‘Fully demonstrated’. Whoever uses the tool, and it can be anyone from an operator to manager and even a contractor, rates the statements against what they actually find arriving at an overall Principle rating for a particular category. No special training is necessary to use the tool but it does include advice on the first page of the document on how it should be completed and how to undertake scoring for those statements requiring a numeric answer.

Clearly it is early days to see whether the above initiatives are working or seeking to demonstrate a reliable trend but the early signs are there. On the fatalities record 2003 was not a good year – 3 to employees and 4 to contractors. This was only marginally better than 2000/01. However, although there were a further 2 contractor fatalities in the first quarter of 2004 no further fatalities occurred that year: March 2004 to March 2005 saw the first 12 month period that was fatal accident free. On the lost time injuries record there has been a marked improvement from a Lost Time Injury fraction of 15 in 2000 to 4 in 2004. Back in 2001 there were 1350 accidents but this has steadily decreased and in 2004 there were 316 accidents – down from 110 per month to 26 per month. These figures whilst encouraging nevertheless remain unacceptably high and Corus’ aim is to continue to improve. The challenge ahead is to continue the downward trend for fatalities and injuries by rolling out the GSM programme, exploiting the Maturity Tool, developing the programme of GSM’s reports and finally repositioning and developing the health and safety functional support within the organisation.
Towards achieving good safety culture

Executive leadership

- Corus in the news 2000-01
- Financial performance 2000-01
- Health & safety performance 2000-01
- Recognition at Board level of the need for change
- Executive leadership 2001 – present
- Current performance
- Challenge

“Steel giant Corus has axed jobs as part of a cutbacks package in the face of expected heavy losses.

……...which the city believes will show losses of up to £150m for the first six months of Corus’s existence up to March of this year.”

BBC News - 2000

“Troubled steel producer Corus has announced pre-tax losses for the last half-year of £230m.”

BBC News - 2001
Financial performance

Corus share price

Health and safety performance

Corus fatalities in 2000 and 2001 by quarter

Health and safety performance

Corus LTIF in 2000 and 2001 by month

Recognition

- Board - Executive Leadership Workshop
- Board - safety audit training
- Executive - standard on safety tours
- Executive - safety tour programme
Executive leadership - 1

- New Policy and guidance on implementation - 2003
- Quarterly reports on safety tours at Exco - 2003
- ExCo doubles programme of safety tours - 2004
- CEO Restoring Success “Safety is no 1 priority” – 2004
- Maturity tool - 2004
- Benchmarking best in class, Bluescope Steel - 2004
- Group Senior Management (GSM) safety and health excellence programme - 2005

Executive leadership - 2

- CEO video
- Maturity Tool
- GSM safety and health excellence programme – executive directors are delegates
- GSM commitment – executive directors complete the commitment

Current performance - fatalities

Current performance - lost time injury frequency
ACHIEVING A GOOD SAFETY CULTURE – RESILIENCE MANAGEMENT

Professor Rhona Flin, University of Aberdeen, Industrial Psychology Research Centre

Having had two presentations from industrial perspectives Professor Rhona Flin then provided a view from an industrial psychologist. In a typical high reliability organisation, accident causation is due either to a combination of technical and human factors. In general, human factors are responsible for about 70-80% of causation in well regulated, modern industries. This human component of causation could be further broken down into safety culture being responsible for about 80% with the remainder being caused by operator error. Concentrating on the safety culture aspect for the purposes of this event she explained that the term safety climate is more properly used when questionnaire measures are employed.

Until recently there were few explanations of how safety climate actually influenced worker behaviours but in 2003 first Zohar, from Israel and then in 2004 Neal & Griffin, from Australia produced models. Both of these had a common motivational component and can therefore be combined to produce the diagram at illustration 6. To the left of the diagram the safety climate consists principally of company senior management commitment to safety and the department supervisors also being committed to safety. However there are other components, work pressure, communication and the safety system itself. The motivation for workers’ behaviour is often based on ‘What's in it for me?’ so reward systems can play a big part. For instance, the supervisor’s leadership style can be motivational if seen by the workforce to be supportive and committed to the safety climate. Finally peer pressure can contribute to workers’ unsafe behaviours, for example if everyone in the team is breaking safety rules. Not taking precautions is a familiar problem; workers break the rules and take risks either by action or not using supplied protective clothing. Another unsafe behaviour is not reporting incidents or near misses or nor speaking up if they observe others carrying out unsafe practices. Unsafe behaviours/ and human error lead to task failure or work injury.
So what determines safety culture?

In 1999 the Health and Safety Executive produced a guidance document HSG 48 ‘Reducing error and influencing behaviour’ ISBN 0 7176 2452 8 available from HSE Books. This is a simple introduction to the essential HSE generic industry guidance on human factors. In it there is a list of organisational factors associated with a safety culture:

- Senior management commitment
- Management style
- Visible management
- Good communication between all levels of employee [management action]
- A balance of health and safety and production goals [management prioritisation]

- spot the recurring theme!

The question is which managers should you focus your attention on to achieve maximum safety impact? Senior managers, site managers, or supervisors/team leaders? At this stage Professor Flin asked for a show of hands for each of the groups. Although some hands supported each of the groups, the majority opted for senior managers. Professor Flin then explained that some 200 power generation managers at an Electricity Association gathering in May 2000 had been asked the same question. 42% thought senior managers, 11% site managers and 47% supervisors/team leaders.

One recent development in the psychology of safety research is the concept of Organisational Resilience (Hollnagel et al, in press Ashgate Books). One definition (Hale & Heijer) is:

“Organizational resilience is the characteristic of managing the organisation’s activities to anticipate and circumvent threats to its existence and primary goals. This is shown in particular in an ability to manage severe pressures and conflicts between safety and the primary production or performance goals of the organization”.

Professor Flin’s preference was to focus this at a managerial level:

“Managerial resilience is the ability of managers and supervisors to manage severe pressures and conflicts between safety and the primary production or performance goals of the organization”

This consists of diagnosing the present risk level of an operation and taking a decision to act in order to prioritise safety over production or costs 9e.g to halt production, delay a project). She then gave three examples where management resilience was not in evidence. First she recounted the story of the Swedish Warship Vasa which was built in 1628 and which can be seen exhibited in a museum in Stockholm. This was to be the pride and joy of the Swedish navy. The original design was amended and added to through the insistence and interference of the then King of Sweden. There was a lack of external learning capability, confusion over the design goals, an obsession with speed during its build, and from the King top management meddling. Sailors apparently discovered the ship to be unstable whilst rushing back and forth across the decks during stability trials but the Admiral in charge dared not say anything to the
King. The result was that on its first sailing it capsized because the additional weight of the fittings demanded by the King had raised the centre of buoyancy.

This could not possibly happen today? Or could it? 300 years later we saw the NASA Challenger disaster. Failure of an O ring led to this tragedy. It is reported that during a meeting on O rings and the effect on them of a low pressure launch, one of the engineers who wanted to delay the launch was asked to: “take off his engineering hat and put on his management hat…” Similarly in the report on the NASA Columbia Space Shuttle disaster in 2003 it was stated that the schedule pressure was creating: “strong incentives to move forward and look askance at potential disruption to the schedule.”

How then do we measure management resilience? The maturity tool described by Mr Clubley earlier is a good example. Essentially safety climate (culture) surveys have to be taken regularly, there has to be upward appraisal on safety commitment and much can be gained from situational judgement interviews.

UNIVERSITY OF ABERDEEN

Achieving a Good Safety Culture
Resilience Management

Rhona Flin
Industrial Psychology Research Centre

The Hazards Forum, London, 10 March 2005
Models of safety climate

- Until recently few explanatory models
- Neal & Griffin (2004)
- Common motivational component as intervening mechanism
What determines the safety culture?

Organisational factors associated with a safety culture (HSE, 1999)

- Senior management commitment
- Management style
- Visible management
- Good communication between all levels of employee [management action]
- A balance of health and safety and production goals [management prioritisation]
Which Managers?

- Senior Managers?
- Site Managers?
- Supervisors / Team Leaders?

Which one of these Management Levels would you focus on?

- Senior Managers?
- Site Managers?
- Supervisors/ Team leaders?
(200 power generation managers
- May 2000, Electricity Association)

Which one of these Management Levels would you focus your attention on to achieve maximum safety impact? (200 managers)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Manager Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Senior Managers</td>
<td>42</td>
</tr>
<tr>
<td>2</td>
<td>Site Managers</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>Supervisors / Team Leaders</td>
<td>47</td>
</tr>
</tbody>
</table>

Organisational Resilience

"Organizational resilience is the characteristic of managing the organisation’s activities to anticipate and circumvent threats to its existence and primary goals. This is shown in particular in an ability to manage severe pressures and conflicts between safety and the primary production or performance goals of the organization". (Hale & Heijer, in press)
Managerial Resilience

“Managerial resilience is the ability of managers and supervisors to manage severe pressures and conflicts between safety and the primary production or performance goals of the organization” (Flin, in press).

VASA: Resilience failure: 1628

- Lack of external learning capability
- Goal confusion
- Obsession with speed
- Feedback system failure
- Communication barriers
- Poor organizational memory
- Top management meddling

(Kessler et al, 2001)

NASA Challenger

During the critical meeting on O rings and a low temperature launch, one of the engineers was asked to...

“take off his engineering hat and put on his management hat”

(Vaughn, 1996, p358)
NASA Columbia 2003

Schedule pressure was creating .. “strong incentives to move forward and look askance at potential disruption to schedule.”

(Woods, 2003)

Measuring Managerial Resilience

- Safety climate surveys
- Upward appraisal on safety commitment
- Situational judgement interviews

References


Further information

- r.flin@abdn.ac.uk
- www.abdn.ac.uk/iprc
- lists of projects and papers and reports
OPEN DEBATE

The Chairman thanked the speakers for their excellent, informative and interesting presentations. He felt that they would spark an energetic discussion session and invited questions or comments.

The first contributor said that he had been head of safety at BP where it was realised that it was not enough just to get senior managers to commit to health and safety but also middle managers and everyone else. Once this was implemented a regular audit was carried out to test its effectiveness. It was also suggested that the success in DuPont owed much to the fact that plant safety managers lived in a Company house adjacent to the plant!

A related question pointed out that most of the presentations that referred to The Board were meaning the Executive Board rather than PLC. What did the speakers think about the role/benefits of non executive groups like safety audit committees? This is becoming more crucial in terms of Board Liabilities such as Corporate Manslaughter, re Turnbull, Higgs etc. etc. In reply the speakers were of the unanimous opinion that the non executive/audit committee were really the king pins of the likely success of achieving a good safety culture. The reasoning behind this was that senior executives need to be informed before they can act. The audit committee spokesperson is best placed to do this in that they have the safety skills and respect of the senior managers. More importantly, if the workforce witness that the non exec/audit committee has influenced senior management in their safety policy then they too will respect the advice from the audit committee. In other words they are central to the success of the Company's safety policy in that they are in a position to influence both up the management chain and down it to the shop floor.

One guest stated that a past colleague had coined the phrase ‘organisational accident’ to describe incidents caused by management failure. He also was interested how individuals could be expected to interpret ambiguous information in a high risk context. Another suggested that when trying to engender trust there could be conflict between external and internal regulation. In response the speakers gave several responses. One of the speakers compared information received to a snowstorm. The trick was to be able to pick those issues where snowflakes were worth making into snowballs. Another put his faith in communication and trust. You could claim that there is a ‘no blame culture’ but this just is not and cannot be true. Honesty and trust lay together. Champions of the safety cause definitely exist; they will get better results in the organisation if they can communicate and be seen to communicate their concerns to senior management with positive outcomes. On the other hand one speaker from the floor pointed out that the ‘Macho Senior Executive’ who comes into the Company changes everything and then leaves is usually very difficult to communicate with.

Much has been heard about big companies does the same apply to small to medium enterprises (SMEs)? The Chairman answered that the HSE had spent considerable effort in trying to convince SMEs that there really is a benefit in H&S in monetary terms and that it was not just a moral issue.

We have heard about training of managers what about training engineers? Dr Dick Taylor explained that this was exactly what the Inter-Institutional Group on Health and Safety were focussing on at the present time. They had already obtained support from the Principal
Engineering Institutions, Engineering Professors, Engineering Council (UK), and HSE. Indeed the latter were assisting the Group to develop a tool for use by Universities. Perhaps not so tongue in cheek another delegate suggested the next step was to teach accountants and lawyers!

Anecdotally it was then heard that one excellent champion of Health and Safety to colleagues in an organisation then did a job himself and broke all the rules in the book. How did one explain this? Without a doubt production pressures can override good health and safety theory and this may have been the case here.

Two further questions from the floor asked whether what we had heard relevant to big incidents also applied to the small incidents such as trips and falls. Also when staff are encouraged to challenge how do you overcome the ‘cry wolf’ syndrome and are staff competent to cope with this situation? Another delegate suggested that although large accidents had encouraged a culture of ‘no’ it may be better for SMEs if the culture was changed to ‘yes’. However whichever culture is adopted its success will depend on adopting the correct tone and tenor of any debate. Advice was given that any comparison of organisational accidents versus individual accidents was not well documented but it is accepted that the causal patterns are similar. The final question asked whether a single safety culture existed or were there different safety cultures in different environments. In answer it was stated that safety culture was cross-sector.

The Chairman then brought discussion to a close thanking all those who had so enthusiastically contributed to the debate particularly thanking the speakers for so competently responding to the very searching questions.