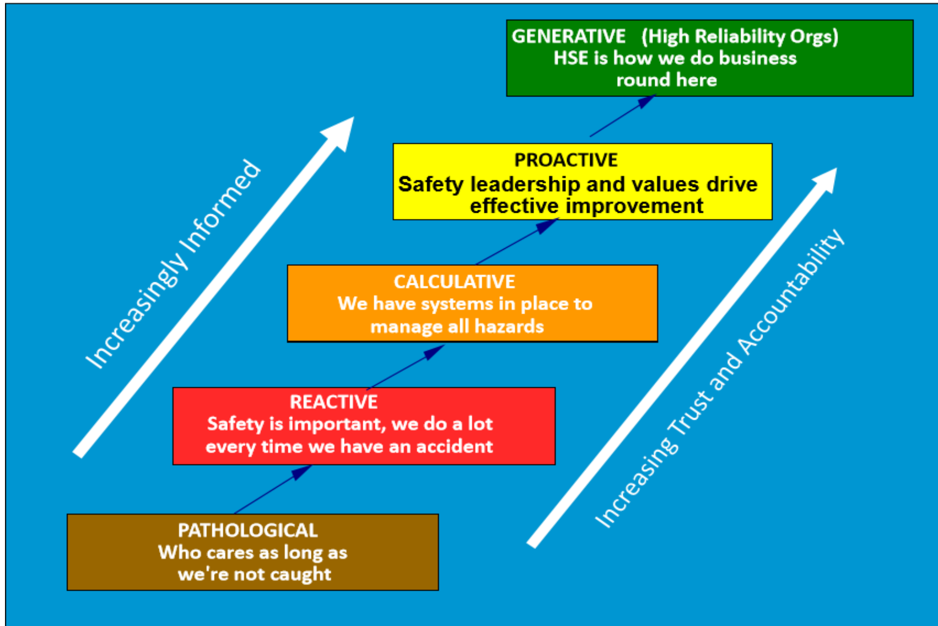
SCSC Seminar Creating and Maintaining Effective Safety Culture

The SCSC held a Seminar on Creating and Maintaining an Effective Safety Culture on 5th December 2019. The event featured seven speakers from diverse sectors explaining how to create, assess, develop and maintain a strong and effective organisational safety culture — with the recognition that different industries may require different approaches depending on the safety risks they face, the regulatory environment and the staff they employ.

This was a one day seminar held at the DoubleTree by Hilton Hotel, London West End. There were approximately 40 delegates attending from a range of industries including Aviation, Defence, Nuclear, Healthcare, Rail and Utilities.

Snakes and Ladders:
Climbing Up the Culture Ladder Without Falling Off

Patrick Hudson, Professor of Human Factors in Safety at the Delft University of Technology, gave an overview of how safety culture has evolved in organisations and identified some examples of organisational causes to high profile safety incidents across several industries, such as reliance on past success and barriers to communication.

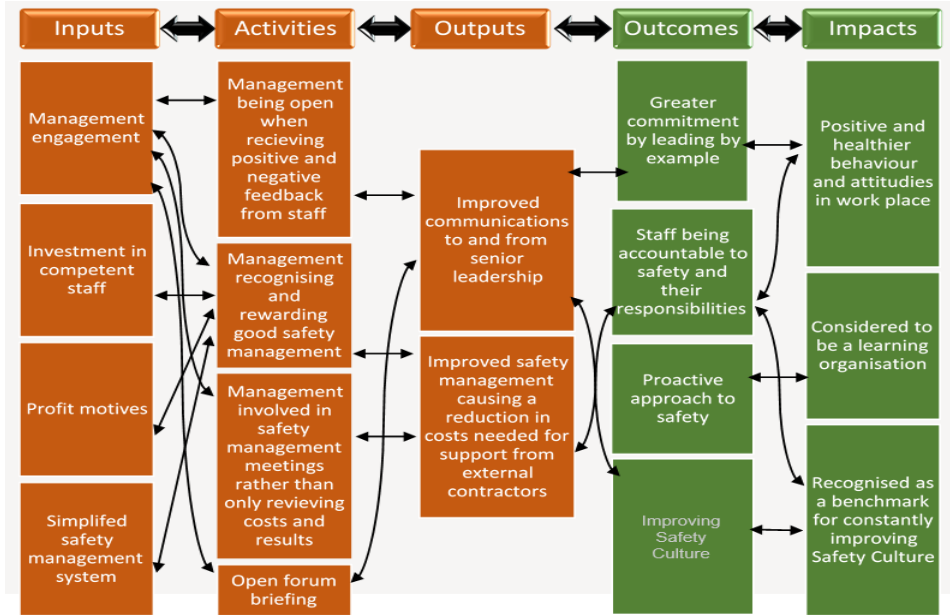


He reviewed conventional approaches involved in the measurement and development of safety culture, such as surveys, interviews and incident analyses. He also gave some examples of questions that might typically be asked in a culture survey, how the responses might be scored and then mapped to a ladder of development levels or safety culture indicators, progressing from Pathological to Generative. He explained how surveys of this nature are often phrased in terms of Generative indicators and are subject to measurement bias.

The talk considered an alternative approach where mappings to the development levels are based on rich descriptions of distinct observable characteristics, rather than quantitative scoring of survey responses. This approach may be preferable as it can be simpler to infer values, beliefs and attitudes based on observed behaviour, rather than predict behaviour based on known values, beliefs and attitudes. The talk concluded by proposing that organisations implement activities, processes and systems to move up the ladder, using lessons learnt from organisations that have fallen down the ladder.

Corn Flakes and Safety Culture

Elizabeth Jacob of SNC-Lavalin Atkins presented a process methodology used for assessing and developing safety culture, which includes the use of a logic flow analysis tool for depicting planned work (in terms of business inputs, activities and outputs) and intended results (in terms of expected organisational outcomes and impacts):



The process methodology is adapted from a change management system developed by the Kellogg Foundation and consists of four steps:

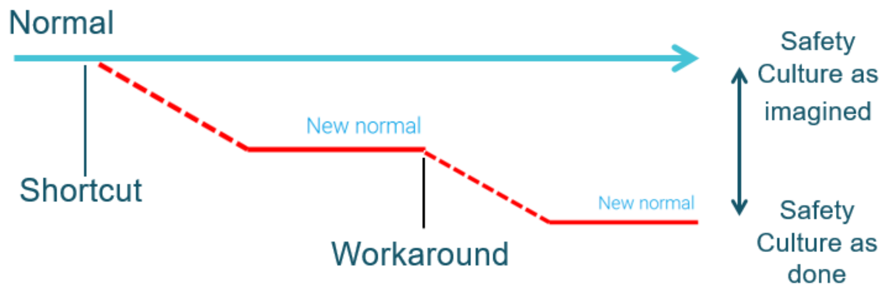
- Understand the processes which lead to the current safety culture outcomes
- Develop a set of desired safety culture outcomes which meet the organisational aim, and needs of staff and service users
- Construct and implement a sequence of events connecting actions to the outcomes desired
- Respond to learning from experience and external factors to continually improve

This approach is simple to implement and can increase clarity around the contributors to safety culture, required business resources, and potential business improvements.

The Wrong Culture Kills

Nick Flynn of National Air Traffic Services (NATS) stated that safety culture is embodied in the attitudes, actions and behaviours of staff and has to be owned and maintained by the organisation. Shortcuts and workarounds in normal working practices (e.g. caused by indifference, complacence and poor attitudes) can lead to a degraded organisational safety culture, which can increase the likelihood of accidents. Degradations in culture can build up over time and must be identified and managed.

Accidents are not typically caused by a single broken component. Employees deviate from normal working practices because they operate in complex and pressurised work environments with limited resources and conflicting business goals. To illustrate this point, the skills and competency requirements for healthcare practitioners were reviewed and correlations identified between the behaviour of surgeons and patient fatality rates. Nick emphasised the need to focus on actual staff behaviour over process in developing an effective organisational safety culture.



Fostering a Safe Culture – Approaches from GB Rail

Paul Leach of the Rail Safety and Standards Board (RSSB) gave an overview of Britain's railway system, its safety record, organisations involved in rail safety leadership and the benefits of developing a "fair culture". The RSSB's safety culture model identifies four main elements linked to organisational factors:

Main Element	Organisational Factors
Effective and appropriate safety management systems	• Barriers & Influences • Training • Communications
Demonstrable management commitment to Health and Safety (senior & line management)	• Organisational Commitment • Management Commitment • Supervisor's role
Participation, involvement and workforce attitudes to Health and Safety	• Personal role • Workmates influence • Risk taking behaviours • Employee Participation
Organisational learning and continuous improvement	• Organisational learning

The Rail Accident Investigation Branch (RAIB) considers the contribution of organisational factors to accidents. Causal factors can include issues such as staff competence, individual and group behaviours, local workforce factors, leadership, the safety management system (i.e. system mitigations), and the wider organisational culture.

The RSSB aims to promote a culture which accepts that staff will make mistakes commensurate with their experience and training, that incidents may be caused by a combination of human performance issues and system failures, and where staff feel able to report unsafe behaviours without fear of punishment. The talk also outlined non-technical skill requirements for railway staff and a method for assessing their behaviour.

Creating and Maintaining an Effective Safety Culture

Wood Nuclear designs, builds and maintains nuclear assets for its energy clients. Chris Gazard and Paul Gaynon gave an overview of Wood's safety culture expectations, health and safety management systems, and examples of their implementation. Wood has introduced a Safety Shield system to encourage preparation, engagement and intervention from staff. It has also identified Safety Essentials to raise awareness of the behaviours required of staff to prevent incidents. A Stop Work Authority may be authorised to ensure intervention and stop any activities considered unsafe.

Key to Wood's corporate safety management system is the oneCLICK Dashboard which provides staff with access to tools, reports and training via a single screen.

Wood's Independent Assurance group provides specialist advice and assessments independent from designers, operators and Safety Case authors. This group comprises Suitably Qualified and Experienced Personnel specialising in nuclear safety and other regulated industries.

Safety Culture Assessments and Improvement Strategy: Lessons from Defence and Elsewhere

Greenstreet Berman provides safety culture and Human Factors consultancy services to its clients. Its Director, Michael Wright, described a toolkit of tried and tested methods for assessing safety culture in Defence and other organisations.

The toolkit comprises a range of techniques including: surveys and workshops, observation and audits, and behavioural indicators. These are directed at assessing Elements of Safety Culture and the outputs may be triangulated and weighted so, for example, the results are not solely determined by subjective survey alone.

The talk identified benefits associated with corporate assessments including: benchmarking to a qualitative standard, comparable results and sharing examples of good practice.

It was recommended that assessment be owned at an appropriate organisational level and integrated with other business improvement plans.

It is also important to recognise that different safety cultures may exist across: Acquisition Safety, Product Safety, Occupational Health and Safety, and Operational Safety. The talk concluded by outlining steps towards an evolving model of safety culture based on "psychological safety". That is one whose elements include: a sense of trust, being part of a team, inclusive leadership, purposeful engagement, shared goals, improving the system of work for a common purpose, and no blame.

Safety Culture: Some Lessons from Healthcare

Patrick Waterson, a Reader in Human Factors and Complex Systems at Loughborough University, gave a talk on the importance of safety culture in healthcare, how it is measured and some lessons from high profile incidents involving NHS Trusts. Since 2004 there have been over 300 studies of Patient Safety Culture. It was suggested that many of these studies are unreliable and supported by weak evidence – e.g. low sample sizes, exclusive use of surveys rather than workshops and interviews, responses limited to a specific staff group.

Hospital Survey on Patient Safety Culture (Original Version)

Overall perceptions of safety "Patient safety is never sacrificed to get the work done"	**Frequency of error reporting** "When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?"	**Supervisor/manager expectations** "My supervisor/manager overlooks patient safety problems that happen over and over"
Organisational learning "We are actively doing things to improve patient safety"	**Teamwork within units** "People support one another in this unit"	**Communication openness** "Staff will freely speak up if they see something that may negatively affect patient safety"
Feedback/Communication "We are give feedback about changes put into place based on event reports"	**Nonpunitive responses to error** "Staff feel like their mistakes are held against them"	**Staffing** "We have enough staff to handle the workload"
Management support "The actions of hospital management show that patient safety is a top priority"	**Teamwork across units** "There is good cooperation among hospital units that need to work together"	**Handoffs and transitions** "Things "fall between the cracks" when transferring patients from one unit to another"

It was suggested that the assessment of safety culture in healthcare in general has a great deal to learn from other industries – e.g. use of team based reflection and education, self-assessments and safety maturity models. Some possible tools were outlined: Hearts and Minds toolkit used in Oil and Gas, Eurocontrol's Safety Discussion Cards used in Air Traffic Management, and the Oxford NOTECHS tool used for evaluating the non-technical skills of operating theatre staff.

Panel Session

A wrap-up session led by Mark Nicholson of York University gave delegates an opportunity to put further questions to the speakers.

Some key messages from the event were summarised:

- To beware of the accuracy of quantitative measurements of safety culture
- To avoid big leaps and instead, use small steps to achieve the desired level of safety culture
- To recognise that safety culture models are evolving and the five development levels referenced by many of the speakers are also likely to evolve
- To recognise that since an organisation's business areas, staff groups, partners, and operations could all have different safety cultures, the full "culture stack" should be considered

Report by Rick Vinter, Principal Safety Consultant, CGI IT UK