



Speaking notes for National Program: Safety culture improvement initiatives in the offshore petroleum industry

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Slide 4 – Why safety culture?

Slide 5 - Lord Cullen inquiry

Safety culture first came to the attention of the offshore petroleum industry following the Piper Alpha disaster in the North Sea.

In his report following his investigation into the Piper Alpha disaster, Lord Cullen identified the need to develop a corporate culture in which safety is accepted as the number one priority.

Slide 6 - 20 years later

20 years after Cullen's recommendations were published; the industry experienced the Macondo disaster in the Gulf of Mexico. Investigation findings again identified cultural failures which contributed to the disaster.

Slide 7-8 - Have we improved?

These findings lead us to inevitably question whether we have improved as an industry. Certainly the industry has seen improvements in areas such as technology, systems, people, and injury rates. However we continue to see cultural failures contributing to major incidents within our industry and in other high hazard industries. So what can we do to change this?

Slide 9 – What does the research say?

Slide 10-13 The National Program

If we apply the principles of evidence-based practice, our first step should be to consult the research to determine which approaches are likely to succeed. Unfortunately the body of published safety culture research does not provide much useful direction. Indeed, the research appears fragmented, confused, and contradictory. There appears to be no consensus on what safety culture is, how it is created, how it works, how it can be measured, or whether measuring it is useful as a predictive tool.

The body of published research appears to provide little guidance or direction to companies wishing to understand or improve their safety culture. It was then decided that NOPSEMA would commence a national program to explore the implementation of safety culture strategies across the Australian offshore petroleum industry. The national program consisted of an online survey which was followed up with a series of semi-structured interviews to investigate the prevalence, theoretical underpinnings, and practical application of safety culture improvement initiatives across the industry.

Slide 15 – Prevalence

The question of prevalence was addressed through the online survey, where respondents were asked whether their organisation has implemented a safety culture improvement strategy. 92% of organisations indicated that they either had a strategy in place, or were planning to implement a strategy in the near future.



Slide 16 – Conceptual

The way that safety culture is conceptualised was addressed during the semi-structured interviews, a number of interview questions were asked in relation to this topic. Broadly, there is little consistency evident in the way that industry defines safety culture, or in industry's understanding of how culture works and how it can be changed. Such inconsistencies are consistent with those contained within the body of published research.

Slide 17 – Operational

The semi-structured interviews also contained questions relating to the ways in which safety culture is operationalized within participating organisations. These questions identified a variety of strategies, ranging from quite holistic approaches through to those which do not actually target culture. In some cases, traditional safety improvement strategies, such as safety management system changes or procedural improvements were labelled safety culture. In other cases, initiatives targeting only one element of culture, such as leadership development or behavioural safety, were also labelled safety culture.

Slide 18 – Why is this a problem?

So why is this inconsistency a problem? If a room full of people were all asked to picture a scaffold, they may all picture something slightly different. However there would be key elements that were consistent for everyone. It is unlikely that anyone would picture something resembling the image in this slide. This is because there are clear standards established for scaffolding, with which high-hazard industries comply. The same can be said for many risk-reduction strategies associated with the hierarchy of controls. However it seems that such standards are only implemented for those strategies which manage physical risk and hazard, and are not established for strategies which aim to manage the less tangible aspects of safety.

A good example of this is Behaviour Based Safety (BBS). Many people will have experienced BBS programs that were highly successful, and also those which failed spectacularly. People who have worked within different BBS programs may have noted significant variability in the way those programs were structured and implemented. With no clear and agreed standard for how a BBS program should be structured, we now see a plethora of programs calling themselves BBS, but with little in common except that their topic of focus is workforce behaviour. This has resulted in a very poor perception of BBS programs amongst many people, but it is likely that this perception is due to programs that were poorly designed or implemented, rather than a failure of BBS as a concept.

Slide 19 – Why is this a problem?

So how does this relate to safety culture?

Imagine for a moment that there was no standard for scaffolding. What sorts of issues might that create within organisations and across industry?

- Increased conflict between contractor and client organisations where one uses the ladder and plank approach and one uses the currently recognised safe approach.
- Ongoing confusion within a mobile workforce who have learned one approach to scaffolding in one company, only to find something entirely different but called by the same name at another company.
- Poorly designed scaffolding based on unqualified peoples' opinions about what scaffolding is and how it should be structured, resulting in failures of scaffolds to perform as they should theoretically perform.
- Failures of shoddy scaffolding might then be blamed on scaffolding as a concept rather than on the way the scaffolding was designed and built.
- This may lead to a perception across the industry that scaffolding is an ineffective approach to improving safety performance, and a subsequent decision to abandon the use of scaffolding.



This is the pattern that has emerged for BBS programs. Unfortunately it also appears that safety culture programs are in the early stages of this same pattern. However, as an industry we are in a position to do something to prevent this pattern from continuing in relation to safety culture.

Slide 21- Recommendations

Based on the results of the national program, NOPSEMA recommends that industry adopts a common definition and model of safety culture, which should be used to frame the design and implementation of safety culture initiatives. This would help to ensure that safety culture strategies target culture change rather than other things, and will improve their likelihood of success. However, the adoption of a common definition and model should not be used to dictate the content, process or structure of individual safety culture strategies. These should be unique and fit-for purpose, and appropriate to the organisation in question.

Slide 22 – Proposed definition

NOPSEMA proposes the following definition for safety culture:

*Safety culture refers to the **shared basic assumptions** held by most members of an organisation, which create and reinforce **group norms** of thinking, language and behaviour in relation to **major accident event prevention**.*

Slide 23 – Proposed model

NOPSEMA has also developed a model which demonstrates the way that safety culture is created and reinforced. Strategies aiming to improve safety culture should take a holistic approach, and address each element of the model.

Slide 24 – Culture starts at the top

Culture is driven from the top level of the organisation. Basic assumptions are created through the decisions and actions of the holders-of-power within organisations. The creation of a safety culture therefore starts with the level of commitment to safety held by the executive level of an organisation. Their commitment is expressed through the decisions they make and the behaviours they demonstrate. However, this is moderated by their safety knowledge, and their understanding of organisational behaviour.

For example, an executive who has a limited understanding of incident causation may see statistics stating that 75-100% of incidents are caused by human error, and believes that all that is required is better motivation to behave safely on behalf of the workforce. So that executive then implements a bonus system whereby people who are injured become ineligible. As a result of this, injuries continue but now people do not report them, or find ways to modify the severity of the rating. While the commitment to safety is there, the necessary understanding of incident causation and organisational behaviour is not, and the objective of improving safety is not achieved.

Slide 25 – The culture onion

Executive decisions and behaviour are typically translated into espoused values and organisational artefacts such as organisational systems, leadership practices throughout the various levels of the organisation, and the physical working environment. As these values and artefacts are applied and repeated throughout the organisation, the explicit assumptions underlying the executive decisions are reinforced and over time become basic assumptions.

So in the case of our example from the previous slide, the decision to implement an injury-focused bonus is built into a formal bonus system and is reflected in leadership practices across the organisation, such as creative reporting (it was a suture not a stitch so it's not a medical treatment case), or sending injured people on "training" to avoid any lost time. The hazards existing within the working environment are



unlikely to be addressed because the assumption underpinning the bonus system is that injuries are due to human error and motivation. The executive will see a reduction in reported injuries, and so the bonus system will be deemed successful, thus reinforcing the original assumption about incident causation.

Slide 26 – Group norms

Executive decisions and behaviour drive organisational behaviour both directly and via the corresponding espoused values and artefacts. As behaviours are repeated and reinforced, over time they become group norms – that is, “the way we do things around here”.

In our example, we would be likely to see reluctance to report injuries and incidents, and active participation in statistics-management behaviour. This would be reinforced through the leadership practices mentioned previously, along with being awarded the bonus. Over time, “the way we do things around here” is that we hide injuries through creative reporting to keep our statistics looking good. This behavioural norm has arisen out of a basic assumption that injuries happen when people aren’t sufficiently motivated to work safely.

Slide 27 – Safety outcomes

Finally, the behaviour of individuals and groups at all levels of the organisation delivers safety outcomes.

In our example, it is unlikely that any real reduction in injuries has occurred. Although the injury statistics may look much healthier, in reality the safety outcomes have not changed, or may be worse than before the bonus system was implemented.

Slide 28 – Proposed model

So to go back to our overall model of safety culture, it all starts at the top with executive commitment, which informs their decisions and behaviour, though moderated by their safety knowledge and understanding of organisational behaviour. Executive decisions and behaviour are interpreted by the organisation, and result in changes or reinforcement of leadership practices, systems, and the working environment. Organisational behaviour is influenced by executive decisions and behaviour, as well as these organisational elements. Finally, safety outcomes are achieved as a direct result of behaviour from all levels of the organisation.

Slide 29 – How to use it

This model has been proposed as a means of driving a consistent industry-wide approach to safety culture improvement. It has been developed to guide the design of safety culture initiatives, which should target each element of the model. It is not intended to dictate the approaches to measurement or change that different organisations take; rather individual strategies should be fit-for purpose. Finally, the use of this model should not be interpreted as a regulatory requirement – it is proposed as a way to facilitate continuous improvement across the industry.

Slide 30 – Further information

More information about the development of the model, including a detailed account of the research findings, is available in the final report which can be found on the Human Factors subpage of the NOPSEMA webpage.

Slide 31 – Questions

Further questions regarding this presentation or the safety culture national program can be sent to information@nopsema.gov.au and will be answered as soon as possible.