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Developing a Sustainable Safety Culture in Major Hazard Industries: Beyond Red Tape and Ribbons

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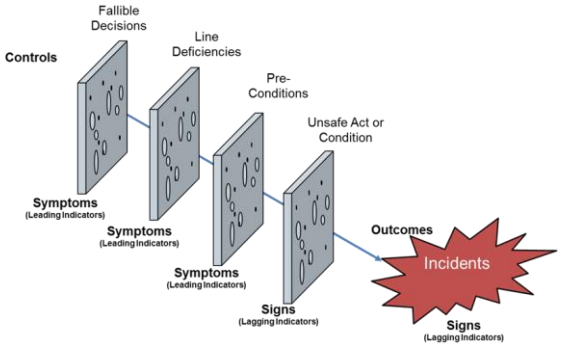
Introduction

Today Safety Culture is one of the most debated topics in the area of safety management, but after decades of research and industry rhetoric are we any closer to understanding safety culture and the role of leadership?

Reviews of major organizational disasters such as the Union Carbide incident at Bhopal, Piper Alpha, BP Texas City, revealed that it was not simply the failure of engineering controls or safety systems that led to these events, but that these events occurred because of a prevailing set of values, beliefs, attitudes and behaviours that both reinforced non compliance and ignored signs of an impending event. What this finding means is that an organisation's safety systems and engineering controls are only as good as its safety culture, the key to which stems from leadership.

Traditionally if we look at models of incident causation such as Reason's 'Swiss Cheese' (fig.1) model, it will describe that latent conditions, introduced through senior leadership decision making and escalated by management deficiencies, can exist within an organisation for many years without incident, however it is when these latent conditions interact with active failures (unsafe act and conditions) that an incident occurs. It can be argued that the presence of latent conditions and active failures are symptoms of a poor safety culture and it is these that usually become the focus of debate. However, in doing so a crucial point is missed which is that a good safety culture can act like a naturally occurring barrier (opposed to a designed system) that prevents incidents from occurring. This would be akin to an 'immune system' that can be improved through a healthy lifestyle which resists disease, whilst an unhealthy lifestyle can increase the risk of health problems. The question is how does this 'immune' system work and how can it managed within an organisation?



Reference: Reason, J (1994) Human Error

Figure.1 Swiss Cheese Model

What is a Safety Culture?

In developing a safety culture it is important to understand what a safety culture is. Quite often you will hear people speak of the importance of standards and process and also the need for a good safety culture or you will find it listed on a HSSE improvement plan as if it were a 'to do' item. The problem here is that this implicitly assumes we are dealing with separate things when in fact they are all part of the same whole. Think about it, if someone asked you tell them about your car you would not speak about your car and then its wheels as separate things. You would probably just talk about the car and the experience you have had driving it, and the same applies to safety culture.

It is better to think of Safety Culture as an umbrella concept, which emerges from the interaction between systems, attitudes/knowledge and behaviour. Why is this important? Because, describing these things separately runs the risk of missing a subtle, but important factor;. That it is the relationship between systems, attitudes and behaviour that collectively drives safety performance, not just a single part of it. For example, imagine you were auditing a Permit to Work System and during the audit you identified that all the necessary signs offs and permissions were in place. As an

auditor you would be forgiven for feeling a sense of confidence that all high risk activities were being properly managed. However now imagine that you are sat in a tea room and you overhear two people speaking about the Permit to Work system, saying how they think the PTW is a tick box exercise and how it does not really address the risk associated with the work. On hearing this, would you still feel as comfortable? Probably not! Now imagine an alternative scenario, that you are offshore and observe someone conducting work on part of a live system, which has not been locked or tagged off. After intervening you find that the person has had training and really wants to do the job safely, but on further investigation you find that the training was an attendance course conducted during an off shift period. In the first case the systems are fine, but the beliefs and attitudes would probably mean that the efficacy of the Permit to Work system is being undermined by non compliant behaviours. In the second scenario the attitudes and beliefs are not the issue, but the knowledge required for the job is not sufficient because of the systemic issues around training and competency assessment. What do these examples demonstrate? Basically if we focus on just the system or just he behaviour in isolation, we will only get part of the picture. So when we speak of safety culture and the relationship between behaviours, attitudes and systems, these are not hand in glove, but are hand and arm (different features of the same limb).

It was stated above that safety culture is the emergent property of the interaction between systems (both physical and administrative), attitudes (taken to include knowledge) and behaviour (including decision making). The question then is what is it that emerges?

Safety Culture Maturity

What emerges from the interaction between systems, attitudes and behaviour is the quality of the safety culture in terms of its maturity. That is whether the safety culture is i) pathological (no regard for safety), ii) reactive (only once something has caused loss), iii) calculative (system and process driven), iv) proactive (people and systems driven) or v) generative (values driven). Throughout this maturing we see evidence of the maturing process in terms of the organisations artifacts (physical manifestations), espoused values (what is said) and the underlying assumptions of the organisation (what is commonly known without been said).

So how can we tell what level of maturity we have? Well, in short, you can take any safety element and examine it in relation to how you would describe what you would see and experience in relation to a level of safety culture maturity. For example, if you take incident investigation, a pathological organisation will not tend to record or investigate incidents, as were a calculative organisation, which will tend to have a very well documented process that addresses immediate and root causes directly related to the incident. Lastly, a generative organisation, having the highest level of maturity in the safety culture ladder, would have an investigation process, that identifies immediate and root causes related directly to the incident and then would look at the organisational context of why the root cause of the incident could occur in the first place. In other words the root cause of the root cause. So really once you have identified what poor, below average, average, good and excellent looks like, you can ask the organisation how much are we like one of these descriptions opposed to the others. The one that you resemble is the level of maturity at which your safety culture rests. Knowing where you are on the safety culture ladder however, does not answer the fundamental question that leaders want to know, which is, how can I drive and build a positive safety culture?

The Mechanism for Developing a Safety Culture

The challenge to the leader is 'knowing' how a safety culture operates, that is what are the mechanisms in an organisation that drive safety performance. The answer to this can be debated in many ways, but here is a simple process. Safety Culture is the organizational scene setter that provides the enablers, which in turn influences group behaviour that makes individuals comply with and participate in safety.

There are two aspects of a safety culture which a leader needs to focus on, these are

i) Standards and Expectations for Safety – which mainly focuses on procedures, physical aspects of the workplace, training and knowledge development, and
ii) Value and Concern for Safety – which focuses more on the intangibles, the way in which groups operate and the norms that are established.

In addition two enablers of safety performance are required, to influence compliance and participation behaviour, namely;

i) Knowledge to work safely (expectation and how to do the task safely)
ii) Motivation to work safely (participation and compliance)

The way in which these interact can be thought in the same way a television remote control is used, some controls power on the television and select the channel (Standards and Expectations), whilst other controls adjust the volume and the colour (Value and Concern for Safety). What now remains is how to influence the behaviour within the organisation. In many cases organisations stress the importance of individual responsibility and accountability, and whilst this is critical, what is often missed is the fact that initiatives that focus on individuals are not sustainable. Why? Because individuals are not isolated from the immediate influence of those they work with. Put another way, the workgroup has the strongest level of direct influence on an individual's risk taking behaviour, more so than the wider values of an organisation, which can become so diffused they have little direct impact. Therefore if the values of the immediate work group are aligned with those of the organisation, different expectations and behaviours will be reinforced. Does this mean that leaders are powerless? In short 'no', but that simply leaders should focus their efforts at the group level. Why? This is because of the nature of individual needs, and the nature of group dynamics. Individuals have a need to belong and will select those groups that will help them satisfy their needs and achieve their individual goals. The nature of group dynamics is that they operate two main functions, firstly they share information with members, so they influence others by the knowledge which is shared, secondly is the process of conformity as groups establish 'behavioural norms' (expectations regarding values and behaviour) which is exercised through 'peer pressure'. As such, if the group norms and expectations are in line with the values of the organisation, then the group will share relevant information and reinforce the desired behaviour of individuals through informal means, especially when supported through formal organisational processes, such as training and communication. The advantage of this is that over time these 'norms' will socialise new people to the business whilst maintaining a check on everyday behavior. It is this which leads to the sustainability of the culture. So what is the role of the leader in this?

The leader has to operate as 'the highly influencing individual', that is the person who influences the group in establishing its expectations and norms. This is achieved by engagement and participation. This does not mean relinquishing control, but simply gaining further control and influence by engaging groups, so that they become more involved. The more involved members of a group become, the more ownership they take, the more ownership they take the greater the commitment, the greater the commitment the stronger the culture within the group becomes. So how can a leader establish these mechanisms to build a more positive safety culture?

The Pillars of a Safety Culture

The first thing to note is that there is no 'silver bullet' to building a safety culture. We cannot design prescriptive measures and fire the bullets that will change culture. However, there is a framework that allows an organisation to establish a solution based approach to building a safety culture. This frame work is based on 6 pillars;

- Leadership Influence
- Employee Participation
- Informing
- Learning
- Enabling
- Just Decisions

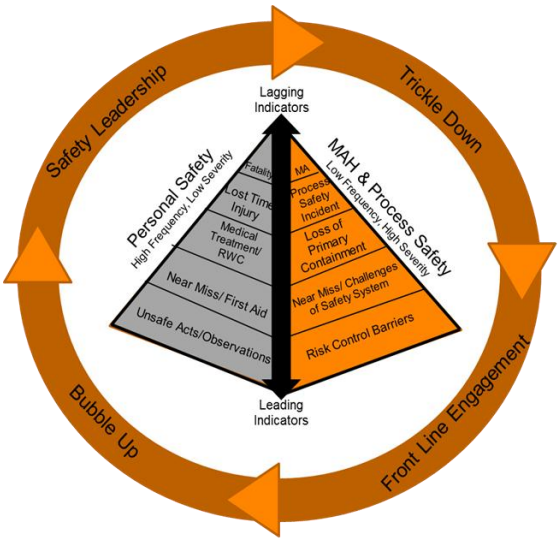
Whilst these are discussed separately for description purposes, in reality they interact and build on each other.

Leadership Influence - Leadership behaviour is key to setting the expectation and standards for others to follow. However there are many examples of when leaders who have done the right things have not seen any improvements in safety performance. Why? This is because it is not just what the leader does which is important, but why people believe their leader is doing it. For example, if people believe a leader is conducting a Safety Management Tour, because they have to do it then they will tend to see this as a 'must do' rather than 'want to do' and consequently this does not add much to peoples' perception of management's commitment to safety. Unfortunately, if a leader does not do the 'must do's' this will be perceived as a lack of

management commitment. There are two areas that leaders can focus on to manage this. First, at the highest and broadest level is setting the expectation and inspiring others with vision based on clear values. This is often referred to as transformational leadership and is based on genuine communication to the business. However this on its own is insufficient, as such values can often be diffused on their own to inspire change. This has to equally match with quality interactions with people in the business, which focuses on group and individual concerns and needs. Often termed leader-member exchange, this has been shown to have significant impact on safety performance. In short, the leader has to address the wider organisation through transformational leadership and then reinforce at a more direct level through everyday interactions.

Employee Engagement - Employee Participation is has been found to be an effective method for improving safety performance. It is interesting as this is strongly linked to leadership style. Why is participation so important? Participation is an engagement process which means individuals who are engaged, via group processes will, which reinforce their feelings of control and efficacy, this resulting in attitudinal changes at the individual level.

Informing - Leadership and Employee Engagement are essential because they lead not only to information been shared top-down, but also bottom up. The major pitfall here is that when it comes to safety we often rely and communicate on the basis of lagging indicators or leading indicators that reinforce the wrong behaviours. There is an axiom that states what gets measured, gets managed and what gets managed gets done. This is actually a false hood, as really what gets measured gets results. The question is what do these results mean and how were they achieved? The point here is to be careful about what you measure. Are we really measuring the right things? Also information does not have to be about metric all the time. Quite often soft signals through conversation can be equally and sometimes more informative. Engaging with people to extract 'real' information not only serves to provide a more comprehensive picture to understand the organisation, but only serves to increase engagement and reinforce the leadership message. When using hard indicators, it also important not to be fooled by the incident triangle. Many incident triangles suggest that the number of near misses will predict the number of fatalities. This is not exactly true. What such incident triangles suggest is that there may be system holes in the Swiss Cheese that could in different circumstances lead to more serious incidents. In addition, such triangles are not predictors of Major Organisational Incidents, so it is important to examine the incident pyramid (Fig.2) that looks at leading indicators of Major Incident Hazards, doing this increasing organisations situational awareness of the risk they face and will help inform decisions on whether they are still safe to operate or not.



Reference: Safety Incident Pyramid applied to Process Safety (www.api.org)

Figure.2 The Incident Pyramid Showing Leading and Lagging Indicators for Personal Safety and Major Accident Hazards/Process Safety

Learning - Information provides the basis from learning, but learning requires an honest appraisal or a 'warts and all' approach. The blocker to learning aside from not receiving information, is receiving mis-information. When leaders do not signal their willingness to accept 'Bad News" they will only receive good news and this can lead to a very distorted picture which can have a major impact when making risk based decisions in the face of uncertainty. Learning has to be based on factual information so that the challenge can be properly premised and the right solution targeted for action.

Enabling - Enabling is not just about putting the right resources in place to close out an agreed action, but also about providing people with right level of authority to act in a way which reinforces the values of the organisation. In

resource constrained times, organisations will often look towards people focused solutions, which without the right equipment or training will lead to ineffectual changes. Like wise when it comes to authority if people do not feel that they have the right to challenge or stop a job or task which they feel is unsafe, then this will simply lead to disengagement from people and in the worst case a sense of learned helplessness where people do not act because they do not believe anything will happen.

Just Decisions - Organisational justice is concerned with accountability and responsibility of individuals and ensuring fair treatment. That is to ensure when an individual decision has been made or an act that has been commissioned or omitted that has led to an incident, does the organisation look at this objectively and fairly and respond proportionally, or does it simply look for the 'scapegoat'. A just culture is essential to building a safety culture, because organisations cannot operate safely with a situation which offers blanket blame, not can it operate in a way that it offers blanket immunity. It is worthwhile remembering that punishment only drives down the undesired practice, it does not drive the desired practice. In terms of the latter, blanket praise can undermine efficacy of performance management so it is worthwhile bearing in mind that an organisation should reinforce safe behaviour by continually encouraging the expected, recognizing best practice and rewarding the exceptional.

Summary

All in all, leadership has a major role across all six pillars in developing a sustainable safety culture. At the beginning of this paper, the question was asked after years of research and discussion are we any closer to understanding the role of leadership and safety culture? The answer to this question would seem to be 'yes', but perhaps the real question is how many organisations have the conviction to apply what has been learned.