

# The building blocks of a safety culture

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*More than two decades after it first came into use, the phrase 'safety culture' may just have become a cliché – overused yet still not entirely and universally understood.*

*In this article Paul Drouin identifies some building blocks and basic principles that will help a true safety culture to take root, grow, strengthen and bear fruit in the maritime world.*

The term 'safety culture' is ubiquitous now – but where did it come from? The best estimate puts its start at position 51°23'14"N; 30°06'41"E – that is, Chernobyl, Ukraine. In the aftermath of the Chernobyl nuclear reactor catastrophe, the International Nuclear Safety Advisory Group published its report on the accident. It is in this 1986 report that 'safety culture' appears to have been first coined. Chernobyl, the worst nuclear accident in history, gave birth to an entirely new way of viewing industrial accidents and their root causes.

By 1990 'safety culture' was already gaining wider usage; however the meaning of the term had not been fully explored and guidance was lacking on how a safety culture could be assessed.

Fast forward to today. More than two decades after the Chernobyl report, the phrase just may have become a cliché. Possibly overused and probably still not entirely understood, other than by a small group of specialists, safety culture means different things to different people. Decidedly, it is difficult to set clearly in one's mind what it truly means. One thing is clear however – in many industries this concept has taken root and has been gaining acceptance. Its principles are being put into practice on a global scale.

Over the years and in different industries, safety culture has had various definitions. For the maritime industry, the logical starting point would be the IMO.

Here it is important to quote the definition in its entirety as presented at the IMO MSC meeting in document 77/17 (2003):

## Safety culture

A safety culture can be defined as a culture in which there is considerable informed endeavour to reduce risks to the individual, ships and the marine environment to a level that is 'as low as is reasonably practicable'. Specifically, for an organisation making efforts to attain such a goal, economic and social benefits will be forthcoming, as a sound balance between safety and commerce will be maintained.

Although a valiant effort, this definition is still hard to fathom. Thankfully, the submission further elaborated and identified the following 10 key elements to achieving a proactive maritime safety culture:

■ **1: Stakeholder participation.** It is vital that all those having interest in the identification, assessment and management of safety-related risks have a voice in determining the appropriateness and effectiveness of measures employed to mitigate the risks. This could be through industry representation on international bodies at one level, and, at another level, onboard crew safety representatives.

■ **2: Commitment and visibility.** All

those responsible for managing risks need to clearly show a commitment to the development and support of a safety culture to ensure the environment for safety. Although the behaviour of individuals may be influenced by a set of rules, it is their attitude to the rules that really determines the culture. Do they comply because they want to, or because they have to? Such a conclusion could be said to be applicable to not just seafarers but the wider maritime community as a whole. Those responsible for safety related decision-making should also be clearly identifiable. The ISM Code in requiring the identification of a 'designated person' is a significant step to achieving this goal.

■ **3: Productivity/safety relationship (safety cost versus accident cost).** Industries that have embraced the principles of a proactive safety culture have recognised that improved safety has brought improved productivity, which in turn has led to greater profitability. The relationship between improved safety management and better efficiency is now so widely recognised that the economic arguments for not promoting safety management – it will cost too much – cannot be justified.

Quality shipowners know that attention to quality and safety pays unseen dividends as accidents do cost money. This again supports the need for greater accountability and transparency so that those that benefit from the risk-taking pay reasonable costs for mitigating those risks.

■ **4: Trust.** A crisis of trust cannot be overcome by a blind rush to place more trust. In other words we should not place trust blindly but with good judgement. In judging whether to place our trust in others' words or undertakings, or to refuse that trust, we need information and we need the means to judge that information (Lady Oona O'Neill's Reith Lectures, A question of trust, 2002, are well worth reading in this context. They are available online, [www.bbc.co.uk/radio4/10ith2007/](http://www.bbc.co.uk/radio4/10ith2007/)). Hence, the solution is not simply more regulation and more auditing, as this may have the effect of undermining trust with the consequence being a culture of

compliance rather than a culture of responsibility.

■ **5: Shared perceptions.** While it is important that those managing safety-related risk have the same perception of those risks as those who are exposed to them, it is imperative that the same perceptions are shared about how those risks can be mitigated.

■ **6: Communication.** It is not enough to think and have good intentions about what is safe and unsafe practice. What is most important is to make those thoughts and aspirations explicit to all stakeholders.

■ **7: Organisational learning.** At the centre of any safety culture is the ability of all those it affects to learn from past mistakes and improve themselves and the systems that support their activity. This state can only be fully reached where there is a 'no blame culture'. Promotion of such an environment requires visible support from senior management to gain the belief of the seafarer that such an open and honest environment exists.

■ **8: Safety resources.** The success of any safety culture will be dependent upon the resources made available to support, nurture and develop it.

Safety has to be seen at the centre of all decision making and not just as an aside that needs considering once all other decisions are made.

■ **9: Industrial relations and job satisfaction.** Key to the success of a safety culture is the state of industrial relations between employee and employer, and the individual's feelings about job satisfaction and worth. If there is a good relationship, then employees are more likely to be proactive in both understanding and adopting any proposed safety measures. Where the seafarer has a negative perception of their employer they are less likely to trust the motives of the employer for wanting to change, even when the changes are there to bring benefit.

■ **10: Training.** It is important to recognise the intrinsic relationship between training, competence and procedures. Training someone to do something does not mean they are automatically competent. Very often procedures are mistakenly viewed as a way of bridging the gap between training and competence; however, procedures can never replace the understanding and awareness that are innate to competence.

## Five stage model

The expression of a safety culture through these key elements goes a long way to helping us comprehend what is meant by a

safety culture. It is important to understand, however, that safety culture is a conceptual ideal that defies exact definitions or dimensions. For example, the UK Health and Safety Executive (HSE) commissioned a study in 1999 that proposes a five-stage maturity model of safety culture (Wright et al, *Development of a Business Excellence Model of Safety Culture*, Health and Safety Executive, 1999). The general categories are:

■ **Level one: Emerging.** Safety is defined in terms of technical and procedural solutions and compliance with regulations. Safety is not seen as a key business risk and the safety department is perceived to have primary responsibility for safety. Many accidents are seen as unavoidable and as part of the job. Most frontline staff are uninterested in safety and may only use safety as the basis for other arguments, such as changes in shift systems.

■ **Level two: Managing.** The organisation's accident rate is average for its industrial sector but they tend to have more serious accidents than average. Safety is seen as a business risk and management time and effort is put into accident prevention. Safety is solely defined in terms of adherence to rules and procedures and engineering controls. Accidents are seen as preventable. Managers perceive that the majority of accidents are solely caused by the unsafe behaviour of front-line staff. Safety performance is measured in terms of lagging indicators such as lost time injury (LTI) and safety incentives are based on reduced LTI rates. Senior managers are reactive in their involvement in health and safety (which means they use punishment when accident rates increase).

■ **Level three: Involving.** Accident rates are relatively low, but they have reached a plateau. The organisation is convinced that the involvement of the frontline employee in health and safety is critical, if future improvements are going to be achieved. Managers recognise that a wide range of factors cause accidents and the root causes often originate from management decisions. A significant proportion of frontline employees are willing to work with management to improve health and safety. The majority of staff accept personal responsibility for their own health and safety. Safety performance is actively monitored and the data is used effectively.

■ **Level four: Cooperating.** The majority of staff in the organisation are convinced that health and safety is important from both a moral and economic point of view.

Managers and frontline staff recognise that a wide range of factors cause accidents and the root causes are likely to come back to management decisions. Frontline staff accept personal responsibility for their own and others health and safety. The importance of all employees feeling valued and treated fairly is recognized. The organisation puts significant effort into proactive measures to prevent accidents. Safety performance is actively monitored using all data available. Non-work accidents are also monitored and a healthy lifestyle is promoted.

■ **Level five: Continuous improvement.** The prevention of all injuries or harm to employees (both at work and at home) is a core company value. The organisation has had a sustained period (years) without a recordable accident or high potential incident, but there is no feeling of complacency.

They live with the paranoia that their next accident is just around the corner. The organisation uses a range of indicators to monitor performance but it is not performance-driven, as it has confidence in its safety processes. The organisation is constantly striving to be better and find better ways of improving hazard control mechanisms. All employees share the belief that health and safety is a critical aspect of their job and accept that the prevention of non-work injuries is important. The company invests considerable effort in promoting health and safety at home.

## From top to bottom

A safety culture does not drop from the sky on to the deck plates of a ship. Nor does it spontaneously intertwine itself, like magic, into the fabric of a company. It is first and foremost the way in which a company does business – and the way in which a company does business is initiated and nurtured by senior management. If the

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senior managers, starting with the highest executives of the company;

- are not in tune with the elements of a safety culture
- if they are not true believers of the 'creed' of zero accidents
- if they do not make safety a *value* and
- if they lack the knowledge of what it takes to make a safety culture thrive

... then, a safety culture will not be produced.

Case studies have shown that companies can comply with the letter of a safety management system without actually adopting the spirit of that system. This is primarily due to the fact that senior management has not understood the underlying goals that such a system is designed to attain nor the advantages such a system can bring to the company and their employees in the long term. So too is this true of a safety culture. Without such an understanding senior management cannot lead by example nor will they promote the 10 elements that must be present for a safety culture to be strong.

It has often been said that safety and production are at different ends of the business process. One hundred per cent safety would stifle business because, as in money markets, zero risk means zero returns. At the other end of the spectrum, an activity practised without regard to safety (and therefore high risk) may give high returns, but the possibility that severe negative consequences will transpire is almost inevitable. Hence the theory and practice of risk management is equally essential in establishing, maintaining and enhancing a safety culture. Again, this must start at the highest levels of management within a company.

The next level in a shipping organisation, the middle managers, also have a critical role to play in the safety culture structure. On ships, these middle managers are primarily the master and chief engineer. Placed between crew and senior management ashore, almost all information and communication on matters of safety pass through these persons before reaching the crew. As such, they should act as a catalyst to inspire and motivate as well as serve as the 'safety coach' for the employees under their charge. If these key persons are not in sync with senior management's vision and desire for a safety culture, then they will attenuate and filter the safety message instead of amplifying and perpetuating it.

However, risk management and an understanding of the elements of a safety culture are not exclusively a top down

paradigm. Although the initiating impetus and sustaining vision must come from company leadership, responsibility for and knowledge of these factors must be present at all levels of the organization. This will in turn engender a bottom up resurgence of energy and safety mindedness that will contribute to and help improve the overall goal of a strong safety culture.

Last but not least, for a safety culture to flourish and strengthen, all levels of the organisation must;

- be aware of lessons learned from past accidents and close calls;
- hold safety as a value – not just a priority; and
- benefit from an atmosphere that encourages a questioning attitude towards work processes.

If a shipping company is visualised as a pyramid, what is important to understand is that senior shoreside leadership, although fewer in number, are in fact the base of the pyramid – imparting vision and impetus into the safety culture effort and serving to 'stabilise' the whole: see Figure 1.

Just as critical, middle managers such as the DPA or shipmasters must direct and catalyse senior management's safety culture efforts to the crew. Key words such as inspire, instruct, motivate and manage are appropriate for this level of the organisation.

A review of the literature suggests that the hierarchical structures (of necessity) found on vessels can tend to remove ownership and responsibility (perceived and/or actual) for safety from individuals at the bottom of the hierarchy (*Organisational Structures: the influence of internal and external structures on safety management performance*, C859/MCA 547/final report/2. 2006). This must be counteracted with training and communication. The crew must feel comfortable enough not only to actively participate and contribute, but to suggest improvements and be unafraid to question the status quo. Employee participation is a key element that helps with buy-in and can substantially increase the quality of the safety system. These front-line workers know the job best. They should be encouraged to contribute in identifying hazards and improving or developing procedures.

## Safety objectives (targets)

Every industry has specific challenges in respect of safety – and this naturally extends to building and sustaining a safety culture. The maritime trade is faced with

some powerful impediments to implementing a true safety culture. The multifaceted array of shipowners, ship managers, crewing agencies, charterers and the like has compartmentalised the industry to such an extent so as to render it almost unaccountable. This situation was one of the driving forces for the implementation of ISM which requires an accountable organisation linked inextricably to the vessel via the document of compliance (company) and the safety management certificate (vessel).

Another challenge for shipping companies is the disjointed and distant nature of the workplaces – that is, the ships. Unlike a factory floor, where work practices and safety can be easily audited for quality, the work on vessels is entirely at arm's length from senior management ashore.

All levels of a shipping company's structure, crew and middle management on board and senior management ashore, are vital elements of the whole that must function in harmony for a safety culture to exist. Neither dependent nor independent of the other levels, they must operate in an interdependent fashion. Interdependence is an indication of a mature development, as true in life and relationships as it is for a safety culture. Stephen Covey's book *The Seven Habits of Highly Effective People*, 1989, has useful things to say about this.

It is certain, however, that without the initial vision and impetus from senior management a safety culture cannot take root. But, neither vision nor the best of intentions on the part of senior management are sufficient if middle management on board the ship does not share these values or effectively communicate the message. If middle management is insensitive or indifferent to the safety culture vision then the results will be less than hoped for by senior management.

As a conduit and catalyst for senior management's vision of a safety culture, middle management is a key player in the system. But without safety performance measurement criteria (established safety objectives) middle management is cast adrift and without clear direction.

Perhaps the most famous aphorism of performance measurement may be:

**What gets measured  
gets done  
or  
If you don't measure  
it you can't manage it**

These formulations help us to understand the fundamentals of performance measurement. At the end of the day, we want a safety culture to 'get done'. We also want to continually improve – which means management through measurement. But as in many instances in life, the devil is in the details – in this case the challenge is to develop measurable safety objectives for the advancement of a safety culture.

Safety responsibilities should be a primary performance expectation of masters and chief engineers. These shipboard leaders should be recognised for effectively completing assigned safety responsibilities, while substandard performance should be dealt with accordingly. This can only be accomplished if safety objectives are set and measured.

One best practice is to use activity measurements that are positive indicators of safety action – that is measuring a presence, rather than an absence, of safety – for example:

- One-on-one meetings conducted
- Safety meetings held
- Safety inspections undertaken
- Employees recognised
- Hazards evaluated or reported
- Incident investigations/lessons learned instruction
- Safety observations
- Safety training conducted.

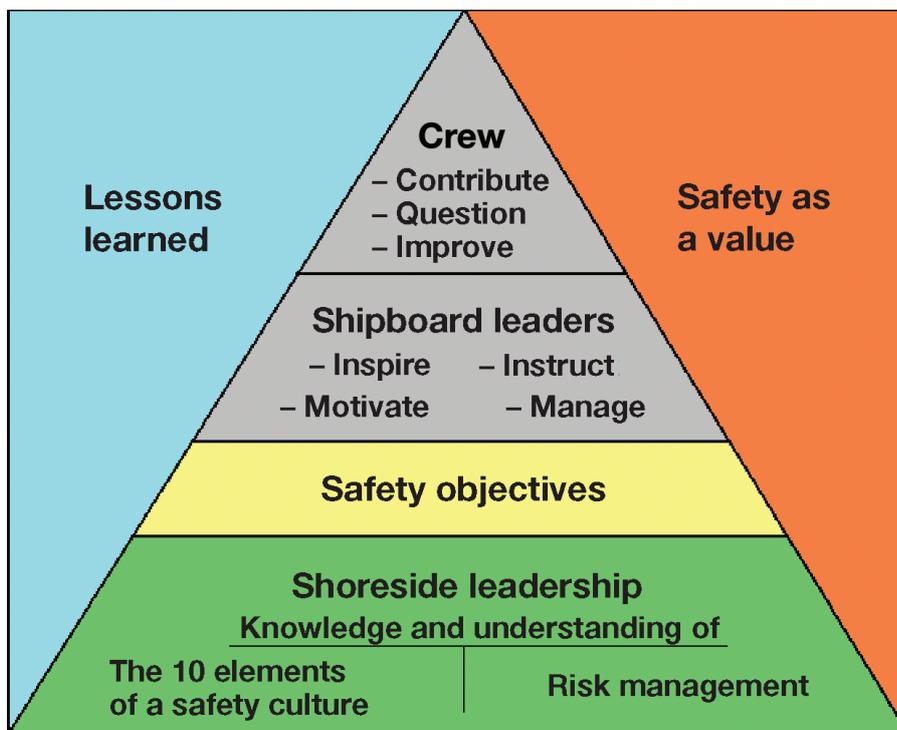
## Safety objectives

When setting safety objectives, a narrow band of specific objectives need not be imposed. A 'collection' of safety objectives could be developed and masters and chief engineers could choose to their strengths. Table 1 shows a few examples of safety objectives for masters or chief engineers that could be in the company's 'collection':

A collection of safety objectives would ideally have some with more frequent time

Safety objective	Frequency
Recognise a crew member for distinguished safety attitude.	Every three months
Review an existing procedure and validate its effectiveness. Produce a written report of your findings.	Every two months
Validate the hazards and defences of a specific shipboard task with the help of the crew designated for the task under review. Produce a summary of the results.	Every two months
Practice an emergency procedure (other than fire and abandon ship).	Every month
Review, with the navigational officers, the essential elements of good BRM.	Within two weeks of boarding the vessel
Conduct a 'lessons learned' session with departmental crew.	Every month
Deliver a safety information session to officers and crew.	Every three weeks

▲ Table 1: Safety objectives



▲ Figure 1: Safety culture pyramid

intervals and others with less frequent time constraints (such as one month or less/two months or more). At the beginning of their assignment on the vessel, shipboard leaders could then be asked to pick one or more objectives from each 'frequency family', to be accomplished during the interval of their assignment. This will help keep safety efforts varied and prevent falling into the trap of routine and repetition.

Safety objectives also serve as a formal 'safety contract' between senior management ashore and the shipboard leadership. Not only will this help ensure safety action is advanced on the vessel by giving clear direction and specific safety targets for shipboard leaders, it will cement a bond of confidence between these leaders and senior management – reassuring shipboard leaders of the

importance of safety within the organisation. These steps also help weave 'safety as a value' into the warp and weft of the organisational fibre.

## Conclusion

In summary, if we were to make a visual representation of a safety culture from what has been discussed, it could be shown as a pyramid representing the shipping company's three operational levels: see Figure 1. The crew at the apex who should contribute, question and help improve. Supporting and guiding the crew are the shipboard leaders who should inspire, instruct, motivate and manage. Between the shipboard leaders and shoreside leadership are the safety objectives which give stability and foundation to the safety culture effort. Finally, shoreside leaders must have a firm grip of the 10 elements of a safety culture as well as the principals of risk management.

On either side of the pyramid, the elements of 'lessons learned' and 'safety as a value' are positioned to interface with all levels, from top to bottom. This illustrates the importance of these elements permeating through the entire organisation for a safety culture to thrive.

Of course, no company is perfect. In the course of business, some of these elements may be more or less emphasised than others. And of course the above representation and discussion cannot profess to be the gold standard in safety culture models. However, if these basic principles are understood and undertaken in good faith, a safety culture will surely take root, grow, strengthen and bear fruit.