

Safety Culture: A Way of Life

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Introduction:

Safety seems so easy – just make sure people don't get hurt. In practice it is difficult to achieve a safe organisation that is capable of sustained safe performance. This paper will highlight the role of systematic management systems to ensure that organisations become safe perpetually. The adoption of a management system, no matter how thorough and systematic it may be, is not, however, sufficient to guarantee sustained performance. The need of the hour is an organisational culture that supports the management system and allows it to prosper. We will discuss the notion of a safety culture and how it might be constructed through this article. The bad news is that creating a management system and keeping it alive is not an easy task. The good news is that it is worthwhile, both in terms of lives and in terms of profits. Finally the other good news is that it is not as hard as it may seem. Safety culture is an important topic, but time consuming to inspect (because of the sample required) and difficult to tackle. It is recommended that it is only be taken on where there is good reason to believe that there is a significant issue to address, such as a poor safety record over a period, and where the company is likely to be receptive to advice. An organisation's culture can have as big an influence on safety outcomes as the safety management system.

'Safety culture' is a subset of the overall company culture. Many companies talk about 'safety culture' when referring to the inclination of their employees to comply with rules or act safely or unsafely. However we find that the culture and style of management is even more significant, for example a natural, unconscious bias for production/sales over safety. Balancing both the aspects needs sincere efforts of an organisation.

Symptoms of poor cultural factors can include:

- Widespread, routine procedural violations.
- Failure to comply with the company's own SMS (although either of these can also be due to poor procedure design).

- Management decisions that appear consistently to put production or cost before safety. In inspection, it is possible to gather evidence about a company's culture, although this requires interviewing a suitably representative sample of people from all levels. (ACSNI Human Factors Study Group,1993)

We at Gandhamardan Iron Ore Mines (GIOM) have adopted a robust safety culture through implementing wide safety measures viz. Visible Felt Leadership that entrusts a person to observe an area and interact with the personnel deployed there to draw inference of any unsafe act and condition thereby assessing the severity and taking control measures to check the hazard. Reward and recognition scheme has been found to be more effective and one of the best motivating factor for the workmen for reporting of unsafe act (UA), unsafe condition(UC), Safe Act (SA), Safe Condition (SC), Near miss etc.

Safety card to all the workmen containing 10 life saving rules has been distributed to promote safety in all walks of life. Regular class room and onsite training is being imparted on General Mine safety, Lifesaving Rules, ISO:45001 to all the workmen.

To change the outlook of safety from a mere taboo to a habit, OMC declared FY:2021-22 as safety year with tagline, "Safety First, Avoid the Worst" with various monthly safety themes. All the employees celebrated the year with great enthusiasm.

To check any type of mechanical hazard, only mechanically fit vehicles are allowed inside the mine premises. Dedicated teams are deployed at various entry points to assess any fault.

Such measures with positive outlook will help in paradigm shift to adopt a safety culture in an organisation.

Safety Culture: Characteristics

What does an organisational culture that gives safety a priority look like? Reason (Reson, J.T. ,1997) has identified a number of characteristics that go to make up such a safety culture. These are:

- **an informed culture**-one in which those who manage and operate the system have current knowledge about the human, technical, organisational, and environmental factors that determine the safety of the system as a whole.
- **a reporting culture**: a culture in which people are willing to report errors and near misses.

- **a *just culture***: a culture of 'no blame' where an atmosphere of trust is present, and people are encouraged or even rewarded for providing essential safety-related information- but where there is also a clear line between acceptable and unacceptable behaviour.
- **a *flexible culture*** which can take different forms but is characterised as shifting from the conventional hierarchical mode to a flatter professional structure.
- **a *learning culture*** - the willingness and the competence to draw the right conclusions from its safety information system, and the will to implement major reforms when the need is indicated.

The values associated with a safety culture are fairly straightforward. The beliefs are more complex. Taken together the five characteristics form a culture of *trust*. Trust is needed, especially in the face of assaults upon the beliefs that people are trying their best, such as accidents and near-miss incidents which all too easily look like failures of individuals to come up to the ideals of the organisation. This helps us to identify what beliefs are associated with a safety culture.

Table.2.1 A Safety Culture defined in terms of the organisational components (**Hudson,2000**)

| <i>Safety Culture Component</i> | <i>Definition</i> |
|---------------------------------------|---|
| <i>Safety Values</i> | The organisation regards as safety as sacrosanct and provides the licence to operate. |
| <i>Safety Beliefs</i> | The organisation believes that safety makes commercial sense; that individuals are not the sole causes of incidents; that the next accident is waiting to happen. |
| <i>Common Problem-Solving Methods</i> | Risk assessment, cost-benefit analyses, accident analysis as well as investigation, proactive search for problems in advance of incidents. |
| <i>Common Working Practices</i> | Safety integral to design and operations practice, safety #1 on meeting agendas up to Board level, chronic unease about safety. |

Safety Culture : Types

Safety cultures can be distinguished along a line from *pathological*, caring less about safety than about not being caught, through *calculative*, blindly following all the logically necessary steps, to *generative*, in which safe behaviour is fully integrated into everything the organisation does. A Safety Culture can only be considered seriously in the later stages of this evolutionary line. Prior to that, up to and including the calculative stage, the term safety culture is best reserved to describe

formal and superficial structures rather than an integral part of the overall culture, pervading how the organisation goes about its work. It is obvious that, at the pathological stage, an organisation is not even interested in safety and has to make the first level of acquiring the value system that includes safety as a necessary element. A subsequent stage is one in which safety issues begin to acquire importance, often driven by both internal and external factors as a result of having many incidents. At this first stage of development we can see the values beginning to be acquired, but the beliefs, methods and working practices are still at a primeval stage. At such an early stage, top management believes accidents to be caused by stupidity, inattention and, even, wilfulness on the part of their employees. Many messages may flow from on high, but the majority still reflect the organisation's primary aims, often with '*and be safe*' tacked on at the end.

Table.3.1. Westrum's original model of safety culture classification

| Pathological | Bureaucratic | Generative |
|------------------------------|-------------------------------------|--------------------------------|
| Information is hidden | Information may be ignored | Information is actively sought |
| Messengers are "shot" | Messengers are tolerated | Messengers are trained |
| Responsibilities are shirked | Responsibility is compartmented | Responsibilities are shared |
| Bridging is discouraged | Bridging is allowed but discouraged | Bridging is rewarded |
| Failure is covered up | Organisation is just and merciful | Failure causes enquiry |
| New ideas are crushed | New ideas create problems | New ideas are welcomed |

Key Aspects of an Effective Safety Culture:

Management commitment: this commitment produces higher levels of motivation and concern for health and safety throughout the organisation. It is indicated by the proportion of resources (time, money, people) and support allocated to health and safety management and by the status given to health and safety versus production, cost etc. The active involvement of senior management in the health and safety system is very important.

Visible management: Managers need to be seen to lead by example when it comes to health and safety. Good managers appear regularly on the 'shop floor', talk about health and safety and

visibly demonstrate their commitment by their actions – such as stopping production to resolve issues. It is important that management is perceived as sincerely committed to safety. If not, employees will generally assume that they are expected to put commercial interests first, and safety initiatives or programmes will be undermined by cynicism.

Good communications between all levels of employee: in a positive culture question about health and safety should be part of everyday work conversations. Management should listen actively to what they are being told by employees and take what they hear seriously. Active **employee participation** in safety is important, to build ownership of safety at all levels and exploit the unique knowledge that employees have of their own work. This can include active involvement in workshops, risk assessments, plant design etc. In companies with a good culture, you will find the story from employees and management being consistent, and safety is seen as a joint exercise.

Inspection

Inspection needs to involve interviewing a suitable cross-section of the company, particularly a reasonable number of employees, who need to be interviewed in a non-threatening manner. The number needs to be sufficient to take account of differing views and experience. Given this condition the open questions given in the question set will provide a helpful picture of the overall style of the company.

NB unless the inspector has significant personal experience of trying to tackle safety culture, it would be best to simply reflect back what has been found and give general rather than specific advice on how to improve it.

Specific documents

In addition to the general documents that should be requested prior to the visit (see chapter ‘Aim of the Guidance’) it is recommended that the following documents, which are specific to this topic, should also be requested:

- Results of climate/attitude/opinion surveys.
- Results of procedure surveys.

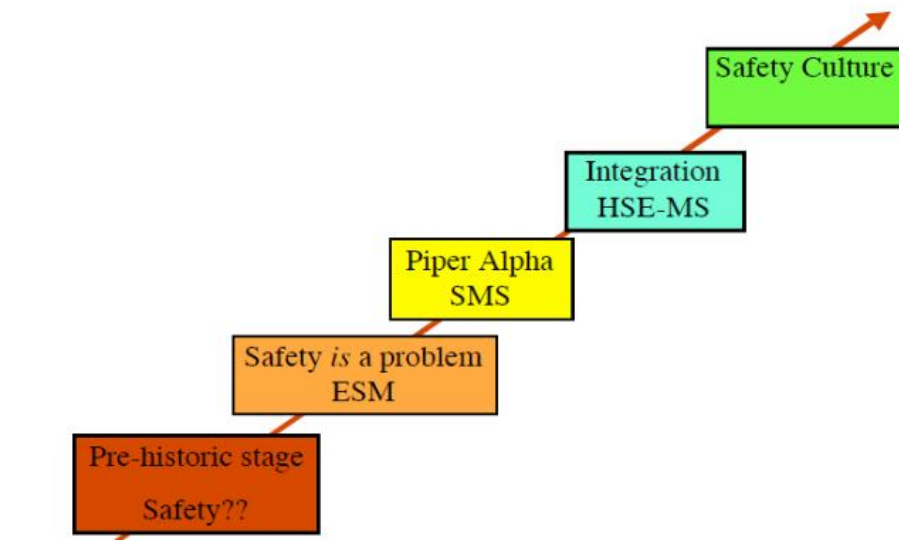


FIGURE.4.1. The evolution of safety in Shell's Exploration and Production function.

Safety started by being regarded as an individual's own problem in a dangerous business. Once safety was taken seriously in the early 80's the Enhanced Safety Management Principles (ESM) were introduced. After the Piper Alpha disaster the requirement for Safety Management Systems (SMS) eventually led to the realisation that SMS could be generalised to Health Safety and Environment-MS. The next stage is to develop an organisational culture within which all these developments flourish.

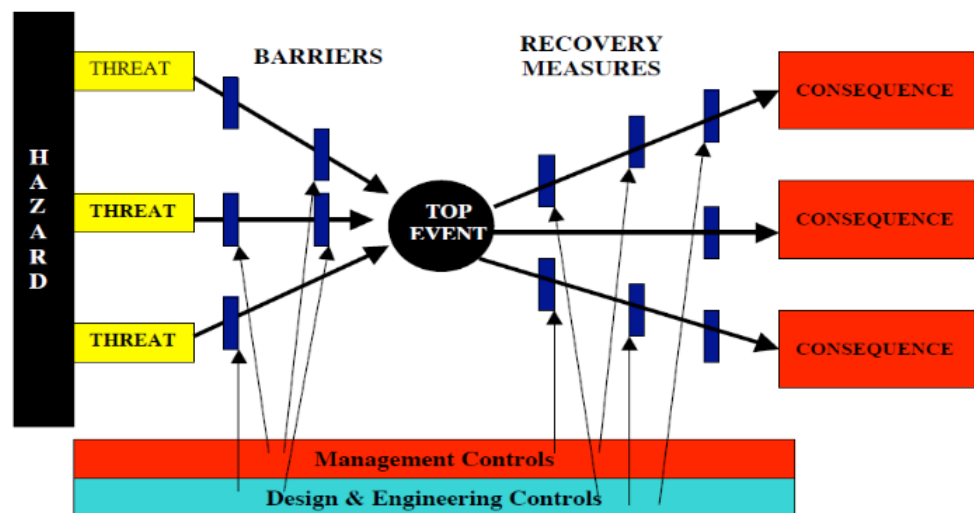


Figure 4.2. The Bow-tie Diagram.

Hazards form the major ways in which damage or injury can occur.

- **Threats** are the ways in which hazards can be released.
- A **Top Event** is the event one wishes to avoid.
- **Consequences** are the outcomes that have to be avoided (See Risk Potential Matrix).
- **Barriers** are ways in which threats are countered to ensure that a top event does not occur.
- **Recovery measures** are what can be done to ensure that a top event does not result in the unwanted outcomes.
- **Management controls** are ways in which control is exercised by procedures, training etc.
- **Design and Engineering controls** are ways in which barriers and recovery and mitigation measures are built into the system.

SMS and it's Elements:

There are so many aspects to creating and maintaining a safe working environment that sometimes it's easy to get lost in it all. To truly succeed in creating a safe place of work, the key is to develop and implement an effective safety management system. A safety management system combines all the different elements in your workplace that need attention to ensure you provide a safe working environment for everyone who enters it. Safety management systems make health and safety an integral part of your business's core operations. By designing, developing and implementing an effective safety management system, you will have methods for managing reporting, responsibilities, planning and resourcing to create a safer workplace.

Safety management systems have six elements:

- a safety plan;
- policies, procedures and processes;
- training and induction;
- monitoring;
- supervision; and
- reporting.

1. Safety plan

A safety plan is a strategic action plan that forms part of the business plan. It analyses the current and prospective risk for a company and charts how the risks will be eradicated and controlled over

a calendar period (the safety plan must have a budget). This plan will ensure that there is a governance structure within your company that ensures every worker clearly understands their safety obligations (and how to comply) and is accountable to carry out those obligations.

2. Policies, procedures and processes

Policies, procedures and processes include all safety paper infrastructures within your company. This paperwork will describe all safety behaviour, expectations, record-keeping, incident reporting, and incident notification documentation.

3. Training and induction

Depending on the nature of your workplace (whether it is low-risk or high-risk), everyone who enters your workplace should receive training on:

- the rules of your company;
- the rules of the site; and
- the rules of the location they are visiting.

The training content will depend on the level of risk the person is exposed to.

4. Monitoring

Your obligations to monitor your workplace depend on circumstances and need. Always consider the level of risk. The higher the risk, the more frequent and detailed the monitoring needs to be.

Other times when monitoring will be necessary include:

- to ensure that all risk has been covered by a new risk assessment that has been carried out due to a change in process, e.g. the installation of new workstations; and
- when an investigation takes place following an incident.

5. Supervision

The only way to ensure your workers are carrying out their safety obligations is to have adequate supervision. The level of supervision required in your workplace will increase if the level of safety control put in place to reduce a risk is low, i.e. the less effective the control measure used, the higher the level of supervision necessary.

6. Reporting

The governance structure of your company needs safety reporting at all levels, not just at board level.

Management Responsibilities:

A safety management system is a series of policies and procedures organizations use to reduce accidents and illnesses among employees. According to OSHA, “Effective Safety and Health Management Systems (SHMS) have proven to be a decisive factor in reducing the extent and severity of work-related injuries and illnesses. SHMS will result in reduced injury-related costs. These savings, when properly administered, will exceed the cost of a workplace SHMS.” Research shows that the successful adoption of a safety management system relies a great deal on the level of commitment from both management and employees, as well as an adequate commitment of resources to design and enforce the system. While each safety management system is unique, key components usually include hazard assessment, inspections, incident reporting systems, worker training and performance measuring tools. According to OSHA, “The best Safety and Health Programs involve every level of the organization, instilling a safety culture that reduces accidents for workers and improves the bottom line for managers. When Safety and Health are part of the organization and a way of life, everyone wins.” Workers commitment to an organization’s occupational health and safety and the adoption of a safety management system can be important issues for any company, no matter its size or what it produces. Presently, these safety processes are predominantly used in what are considered high-risk industries, such as the maritime and train transportation industries and most notably in aviation. It is clear that transportation companies, which move massive numbers of people daily, work under an added imperative to reduce accidents and ensure safety.

The Safety Management Process:

Process safety management is discussed below that contains fourteen steps:

1. Develop and maintain written safety information identifying workplace chemical and process hazards, equipment used in the processes, and technology used in the processes.
2. Perform a workplace hazard assessment, including, as appropriate, identification of potential sources of accidental releases, identification of any previous release within the facility that had a potential for catastrophic consequences in the workplace, estimation of workplace effects of a range of releases, and estimation of the health and safety effects of such a range on employees.
3. Consult with employees and their representatives on the development and conduct of hazard assessments and the development of chemical accident prevention plans and provide access to these and other records required under the standard.
4. Establish a system to respond to the workplace hazard assessment findings, which shall address prevention, mitigation, and emergency responses.
5. Review periodically the workplace hazard assessment and response system.
6. Develop and implement written operating procedures for the chemical processes, including procedures for each operating phase, operating limitations, and safety and health considerations.
7. Provide written safety and operating information for employees and employee training in operating procedures, by emphasizing hazards and safe practices that must be developed and made available.
8. Ensure contractors and contract employees are provided with appropriate information and training.
9. Train and educate employees and contractors in emergency response procedures in a manner as comprehensive and effective as that required by the regulation promulgated pursuant to section 126(d) of the Superfund Amendments and Reauthorization Act.
10. Establish a quality assurance program to ensure that initial process-related equipment, maintenance materials, and spare parts are fabricated and installed consistent with design specifications.
11. Establish maintenance systems for critical process-related equipment, including written procedures, employee training, appropriate inspections, and testing of such equipment to ensure ongoing mechanical integrity.
12. Conduct pre-startup safety reviews of all newly installed or modified equipment.

13. Establish and implement written procedures managing change to process chemicals, technology, equipment and facilities, and
14. Investigate every incident that results in or could have resulted in a major accident in the workplace, with any findings to be reviewed by operating personnel and modifications made, if appropriate.

Conclusions:

Safety management systems and associated safety cases can make a big difference. The systematic approach means that the hazards of the business are known, understood and demonstrably controlled. There is considerable evidence that those companies that are most safety-minded are also amongst the most profitable and the amounts of money that an effective safety management system can produce is considerable. But the problem with purely systematic management is that such activities can be carried out mechanically. The argument was that the next step is the development of a safety culture that makes a system come alive. The discovery that a safety culture pays, not just by reducing accidents, is crucial. One way a safety culture pays off, as the levels of trust improve, is in the quality of communication between management, and the rest of the company. As communication failures are always pointed to as a source of problems for organisations, having a definitive focus for improving communication can only result in improved performance at all levels. Another way a safety culture pays is in the reduction in time and paperwork devoted to checking whether elementary safety related actions are carried out. The other main reason why safety makes money lies in the fact that, if one has the guarantee of safety that an effective management system provides, then one can devote resources more effectively and take (profitable) risks that others dare not run. What costs money is not safety, but bad safety management. Once the management of an organisation realises that safety is financially rewarding and that the costs incurred have to be seen as investments with a positive return, the road to a full safety culture should be open.

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