Chapter 2
Safety Management—From Basic Understanding Towards Excellence

Kari Häkkinen

Abstract  The paper is summing up the developments in the understanding of safety management in industrial companies, especially concentrating on features that seem to be most prevalent for the companies demonstrating good safety performance. The review is based on the knowledge and experiences from the practice of industrial accident insurance as well as on the findings of the selected health and safety literature. The elements of success include e.g. good overall management, safety goals and competence requirements defined for managers, visibility and commitment by top management, rewarding and incentives for safe work, effective learning from accidents and incidents and continuous improvement using risk assessments, effective safety inspections and internal audits, as well as participative leadership practices including good communication and trust. The experiences show the need for holistic management as a basis towards the long-term development for safety excellence, rather than implementing single tricks and solutions. During the recent years, safety management systems in particular have been established in highly developed economies, thus improving the formal safety management approach. In the future, there seems to be a need to better tackle the more informal processes in safety, i.e. human behaviour, attitudes and safety culture. Furthermore, the complexity of health and safety call for the improvement of the general management theory to better tackle the complex human-centred issues in management.

1 Introduction

Despite continuous and ever-increasing volumes of organized action to prevent accidents and ill-health at work, injuries and occupational diseases still constitute a global problem in industries and services. Thus, we also get continuously new
lessons from losses, often with major consequences both in human and in economic terms. The masses of information and knowledge of the losses and the risks to safety and health have dramatically increased during the recent decades, as well as the means to share the information and solutions for loss prevention. However, accidents continue to happen, although great progress has been achieved in many industries and occupations. What still needs to be done? This question is highly relevant to decision-makers, to business managers, to employees as well as to research and development institutions.

Safety efforts have been evolving from the early years of industry. The initial measures were directed to prevent major technical accidents in industrial processes by safety rules and disciplinary actions. Accordingly, new safety legislation was set in industrialized countries to force employers to organize safety and to take precautions and engineering against hazards. Accidents were considered to be caused either by unsafe acts of people or unsafe physical conditions of the nature or the technological systems (Heinrich 1959).

But further development of understanding revealed that each accident had rather multiple causes than a single cause. The evolution of systems thinking and multidisciplinary approaches such as ergonomics created new opportunities to deal with the complexity of the processes and events related to technological failures. Systems safety and risk management were developed to cope with the risks of major accidents in power and military systems as well as aerospace industry and high-risk industries more generally. The principles of safe man–machine systems are now to a large extent defined for all industries in technical standards and textbooks of machine safety, construction safety, chemical safety, etc. Risk assessment and safety technologies are standardized and applied today for everyday working tools and appliances.

Moreover, newer approaches in management science focused in human resources and change management, as well as the need for more holistic approach in management of the overall performance of enterprises, including health and safety. These developments together with the large scale technological disasters, e.g. Bhopal, Harrisburg, Chernobyl, Piper Alpha, Challenger, and more recently, the BP’s US disaster cases have underlined the safety duties of top management. The growing concern of health and safety management has also led to further standardization of management practices in health and safety, e.g. OHSAS 18001 and ANSI Z10 (ANSI 2012; BSI 2007; Haight et al. 2014).

But in spite of all this development of formal legislation, standards and procedures, and increased management concern, there seems to be some missing links, and accidents at work have not disappeared. The remaining big issue seems to be related to the human nature. People still take risks at work, they are not following safety procedures, they do not communicate the safety messages, and foremen turn repeatedly a blind eye to unsafe actions. The motivational efforts of zero-accident programmes have been successful in many companies, but even prolonged zero-accident periods are ending to the next injury event. The ‘Safety First’ principle was created almost a 100 years ago during the early years of industrial safety movement. But in practice we still encounter repeatedly the ‘Fail First’ syndrome in health and
safety development (Forck 2012). Accidents and injuries are bound into the culture of the work teams, enterprises and societies. Safety culture and understanding of the human element as a source of accidents need our consideration for the decades to come, both from practical and scientific point of view.

Management practices in health and safety vary greatly between companies. Industries have their own traditions and cultural approaches as to how safety issues are valued and decisions made to improve safety. Large international companies in high-risk industries have often strong safety cultures and strict management standards, with which all plants must comply. Within low-risk industries in terms of major accidents, often less attention is paid to safety issues. Basic health and safety legislation in each country covers all industries, whereas in practice companies take very different approaches to health and safety. However, the experiences of the insurance practitioners show that the successful companies in safety performance take often surprisingly similar actions and management approaches, regardless of the industry and type of business. The first decade of the 2000s shows a declining trend in accident frequency in large enterprises in many industries. The accident rate differences are shrinking between industries and some industries with high accident rates have achieved major improvements, in particular some metal and construction industry companies (see Fig. 1). The improvement of safety is gained by the increase in management concern to safety, including the focus on safety management systems and new occupational safety legislation requiring more attention to health and safety risk management. This trend of safety improvement is not visible in the overall national work injury statistics, thus it seems that small- and medium-sized companies have been more stable in their accident outcomes.

![Accident rate development in nine major industrial companies representing different industries (construction, metal, power, chemical) in Finland during the time period 2000–2011 (Source Statistics of If P&C Insurance Ltd for injuries more than 3 days absence from work, accordingly with the national and EU/Eurostat criteria)](image_url)
The purpose of this paper is to sum up the most important management issues which repeatedly seem to have most influence on success in safety performance at a company level.

2 Health and Safety Goals and Targets Clearly Defined and Managed

“What gets measured, gets managed”. This well-known statement of management guru Peter Drucker is highly relevant in the case of health and safety. Unlike other major issues in company performance, such as production volumes and profit, health and safety is to a last extent an intangible issue. Therefore, tangible and concrete goals are important in spite of the fact that they do not exactly reflect the overall health and safety sphere of required action. An essential management task lies in defining clear goals and targets, from which key performance indicators applicable to follow-up are then derived. Without goals and targets, well-intentioned statements written in safety policies are just dead letters.

Accident frequency rates are often the first measures of interest. They can be combined with severity rates to yield a relevant risk index. Cost indicators are also interesting to companies—the costs may be expressed by the insurance premium rates or directly by the real accident and occupational disease costs for the company. The absence rates due to accidents and sickness reflect in many ways the health and safety performance, being increasingly popular in industry. Companies with good safety performance have usually safety metrics with many indicators, they may record, e.g. numbers of conducted safety talks and audits, training days, and near-accident report numbers and actions succeeding them. Thus, a good pattern of safety targets includes both leading and lagging indicators to be followed. It is also a good management practice to integrate health and safety goals into the business goals and strategies, and the safety targets are expressed in the key performance indicators of the company.

3 Inclusion of Health and Safety in Management Competencies

Expectations set on competence are usually managed by the human resource function and written into work descriptions and listing of the personal duties. If health and safety is not included in the competence specifications of managers, they may fall outside the focus areas of the mindset during the daily work. Combined with a lack of fixed goals and targets, this will likely lead to a situation in which managers pay only marginal attention, if any, to safety issues. Relying on legal pressures from health and safety legislation is insufficient in confirming management’s commitment.
In addition, health and safety issues should be essential elements in performance appraisals. In general, safety excellence seems to be related to good overall leadership, thus giving an additional measure of success in management as a whole. Many companies include health and safety results in salary bonus payments at management level. When management duties have been planned and integrated in job specifications, managers have a strong motivation to the safe action of their subordinates and fellow employees.

4 Management Commitment and Visibility in Health and Safety Actions

People are often very astute in discerning management’s real commitments. They soon may take note of whether or not management is genuinely interested in the health and safety of employees. When top management participates in company safety meetings and discusses safety goals in connection with production targets, employees receive a clear signal that safety is an important and valued issue for management. ‘Safety first’ is not just a slogan, its actual meaning is checked in all decisions, meetings and encounters with management.

In very good companies, CEOs increasingly participate in safety walks and talks, or conduct such actions independently. Managers also need to follow the safety rules, using hard hats and other personal protective equipment as required by the company policy, following the speed limits specified when driving at the premises of the company site, etc. It is important to walk the talk, to be visible, to be present and engaged.

5 Rewarding Safe and Injury-Free Work

‘What Gets Measured and Rewarded Gets Done’—this is the way in which renowned safety guru Dan Petersen (1996) has modified the Drucker statement. He thereby implies that rewarding is an important element in effective goal-setting. Safety is largely a matter of intangibles, and the results are traditionally noted, if at all noted, mainly in retrospect. The notions tend to be related to failures, i.e. accidents and costs, rather than success. It is therefore important to render safety tangible and create incentives for proactive, forward-looking and positive measures.

Rewarding achievements such as an injury-free year, the most active team in near-accident reporting and the best innovation solutions to improve safety, can generate a great deal of positive energy and actions in organizations, thereby further reducing accidental losses. Both short-term and long-term achievements need consideration. In high-risk occupations, having an injury-free month can be worth awarding, while it is also important to notify the continuous improvement over the years.
6 Immediate Management Action Against Risk-Taking and Unsafe Acts

When an employee is violating safety rules or working without the required personal protection, foremen and co-workers alike should act immediately to correct such poor practices. In companies with a good safety culture, actions against violations, whether intended or unintended, are regarded as a positive challenge to learn and improve. But bringing the culture up to this level is not easy. Foremen and management need coaching. They should have the ability to communicate with and motivate employees individually, while understanding the interlocutor’s point of view. It is often necessary to overcome one’s own complacency first. Finally, it remains the duty of management to take disciplinary action to correct a situation, if necessary. On the spur of the moment, it may feel easier to turn a blind eye. In a strong safety culture, leaders are encouraged and trained to act immediately. Inaction is more dangerous in the long run, since it reinforces a risk-taking culture, making future improvements more difficult.

7 Regular and Active Communication and Discussion of Health and Safety

Constant and active dialogue between employees and management is a precondition for continuous improvement in health and safety. When the minimum legal requirements are complied with, and the company is striving for further progress to safety excellence, issues are less and less often resolved through absolute yes-or-no answers. There will be opinions for and against. Sometimes improvements here will cause more difficulties there. In good companies, we find ongoing conversations in the search for better solutions, in order to improve safety and well-being at work. Good leaders are also good at listening and communicating. In the best companies, the accident outcome may be close to zero injuries, while thousands of safety talks and conversations are conducted by management.

A number of experiences have shown that in Nordic enterprises, there are fewer accidents in Swedish plants than in Finnish plants engaged in very similar production activities. There may be several underlying reasons for this, but the Swedish culture and tradition of thorough discussion and communication may be a factor. The management style in Finland has promoted straight decision and action rather than dialogues with employees. Spangenberg et al. (2003) compared accident rates between Danish and Swedish working teams in the construction site of the Öresund Link bridge. They found that the Danish LTI accident rates were about fourfold the rates of the Swedish workers. They concluded that the difference was mainly due to individual and team level differences, i.e. education, experience and attitude. While there is some evidence that the differences are partially rooted in the basic education and cultural valuation
of the construction professionals, it is also an indication that the management culture, in particular the communication and feedback at the foreman level, are strong explanatory factors in safety performance. The results of Hyttinen (1994) also support the meaningful role of the supervisor communication for successful safety performance.

8 Safety Inspections and Risk Assessments

Internal safety inspections are important features in good safety practice. In daily production tasks, it is not always possible to detect all safety deficiencies. It is also well known that experienced employees can be too familiar with their work to note even imminent dangers. Regular walk-through surveys are therefore required. Safety checks may be conducted weekly, monthly or with some other level of frequency, depending on local risk conditions. It is usually advisable to use a checklist form appropriate to the plant, in order to conduct a systematic consideration of all of the relevant hazards. In the case of advanced safety inspection routines documented and issued using company systems, there is also a communication tool and checkout for the implementation of corrective measures by management.

Risk assessment procedures in health and safety are legal requirements in most countries and also essential elements of the safety management systems, being they certified or not. In formal risk assessments, the risks are listed based on their priority in terms of severity and likelihood of the possible accident. In spite of the fact that there is a subjective element involved in such estimation, the process will yield a rational basis for decisions to act on hazards encountered. Further, the follow-up assessments are giving estimates of residual risks for those risks counteracted, to complete the prevention with additional measures where needed.

Safety is at first hand a responsibility of business and production management, rather than the duty for safety managers or specific safety organization. In good companies, we increasingly see that risk assessment and safety walk-through inspections belong to line management duties. Safety function has an important advisory role for management, and to secure that the risk management process is functioning the way it was meant to.

9 Investigation and Reporting of Accidents and Near-Accidents

An accident at work is always an opportunity for learning, for management as well as employees. A good accident investigation routine records what happened, why, and lessons on how to prevent the accident’s recurrence. For an employer, accident investigation is also a legal duty, as well as being necessary in order to begin an
insurance claims process in workers’ compensation systems. It is usually not enough to check immediate causes such as carelessness or poor housekeeping. Understanding the root causes of an accident often reveals new paths for prevention, e.g. in process improvement, management actions and safety culture improvement.

A range of tools are available for root cause investigations, ranging from simple questioning techniques such as ‘5 x Why’, to sophisticated software packages. In well-run companies, information on accidents is distributed openly throughout the organization by ‘hazard-alert’ and similar illustrated information reminders, in order to remind employees of risks and precautionary measures in the workplace.

Activity levels in near-accident reporting and accident outcomes seem interconnected. We have found that, in companies that have achieved major increases in their reported near-accidents and hazard observations, a clear decline in workplace injuries has resulted at a same time. Knowledge and experience are dramatically bolstered by advances in the reporting of minor incidents. Active reporting of near-accidents is also an indicator of a good safety culture, where people dare to talk and report their own failures without fear, and a near-accident note is seen as a positive reminder for safeguarding colleagues at sites and as a sign of management caring of the employees.

10 Good Overall Management

Good overall management, including good communication both top–down and down–top, seems to be a precondition for success in safety and health. It also corresponds to the management approach required for good business results. Enterprises that respond positively based on all of the above-mentioned criteria are likely to be among the best health and safety performers in their industry. Moreover, the lessons from major accidents also highlight the needs for a good overall management. Trevor Kletz (1994) concluded his discussion on the 1988 Piper Alpha disaster, that no single act or omission was responsible for the accident. And he summarizes: ‘Perhaps the most important lesson of all that can be drawn is that the sum and quality of our individual contributions to the management of safety determines whether the colleagues we work with live or die’.

Health and safety management systems have improved the overall understanding and implementation of good management practices. However, a functioning formal management system is not enough. There is a need for a more personal approach to health and safety. Each and every individual must look in the mirror and ponder their personal attitudes and values. Safety is much related to the emotions, attitudes and values of people. Besides following the rules and regulations, it is about caring and feeling. More thoughtful and lively dialogues are needed on how to improve our mindsets and safety practices, in order to get all fellow employees, teams and managers engaged in coordinated actions to move the safety culture towards the achievement of an injury-free workplace (see e.g. Choudry et al. 2007; Hudson 2007).
This is also a challenge from scientific point of view. More understanding is needed regarding safety culture, human behaviour and safety leadership in the contexts of businesses and industries, to better manage the risks in health and safety in future. Moreover, it may be that the general management theory needs some further development in order to better cope with the complexity of the issues involving human nature and behaviour in organizations and related to safety (see Carrillo 2011). This complex nature of human relations is a challenge for management not only in safety, but also more generally in business management.

References

Integrated Occupational Safety and Health Management
Solutions and Industrial Cases
Väyrynen, S.; Häkkinen, K.; Niskanen, T. (Eds.)
2015, XI, 306 p. 56 illus., Hardcover
ISBN: 978-3-319-13179-5