

## **Some Aspects of Safety Management**

**C. Ravikumar, PG Scholar**

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### **Abstract**

The international air transportation industry is strongly affected by an increasing cost pressure. Policies for the aviation production by state regulators are increasingly being replaced by internal company Quality Management Systems (QMS). Safety has to be managed to avoid a leak of safety during this situation. ICAO has created a bottom-up standard for Safety Management Systems (SMS) – ICAO DOC 9859 – applicable for various aviation organisations, including among others airlines and airports. Thereby, those organisations are now responsible by themselves for definition and adherence to an "acceptable level of safety". If an accident occurs, the responsible aviation authority judges this as a lack of the corporate SMS implementation. The objective of this paper is the introduction of basic concepts in safety management needed for the development of so called Safety Performance Indicators (SPIs) to get safety assurance in management decisions. Safety policy and targets are the first step of SMS implementation. As a next step safety risk management will identify hazards and support action planning. This approach ensures that all required safety actions will be identified. Result of this approach is a list of risks and actions, supporting safety performance monitoring. The last step of this approach is the safety promotion concept of training, education and communication for a proactive and generative safety culture.

**Key Words:** Safety Management, Safety Performance, Safety Climate

### **Introduction**

Occupational health and safety (OHS) is a cross-disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment. The goals of

occupational safety and health programs include fostering a safe and healthy work environment. OHS may also protect co-workers, family members, employers, customers,

Let us focus on Safety (Miscellaneous Amendments) Regulations 2002, the Work at Height Regulations 2005, and the Construction (Design and Management) Regulations 2007. Occupational health and safety can be important for moral, legal, and financial reasons. All organizations have a duty of care to ensure that employees and any other person who may be affected by the companies undertaking remain safe at all times. Moral obligations would involve the protection of employee's lives and health. Legal reasons for OHS practices relate to the preventative, punitive and compensatory effects of laws that protect worker's safety and health.

## **II Safety Goals and Objectives**

Strategic management was developed in the early 1990s by Drs. Robert Kaplan and David Norton (Balanced Scorecard Institute 2001). The concept “translates” the planning perspective of an institution (mission, strategic vision, and goals) into a system of performance indicators that cover all-important perspectives of performance (i.e., finances, users, internal processes, and improvement activities) (Poll 2001, 709). The balanced scorecard management system provides feedback concerning internal business processes and external outcomes. To improve performance, continuous improvement strategies are incorporated into the model. The process involves defining the mission and goals for the organization. As with other performance improvement processes, the activities necessary to meet the goals are developed and measures indicative of that performance are identified. Continual improvement is incorporated into the model, which balances financial and non- financial demands of the organization with performance. What is required to develop a “balanced scorecard” is a “basket” of measures that provide information on a range of health and safety activities (Health and Safety Executive 2001, 5). The balanced scorecard assists organizations in over- coming two key issues: effective organizational performance measurement and implementing strategy (Niven 2002, 3). An organization can use the balanced scorecard tool as a framework for translating its vision and

strategies and clarify- ing its strategy through selected objectives and measures (Gunduz and Simsek 2007, 622). The balanced scorecard utilizes four perspectives:

- Financial perspective
- Customer perspective
- Internal perspective
- Innovation and learning perspective

### **Objectives**

- Better reputation for corporate responsibility among investors, customers and communities
- Increased productivity, because employees are healthier, happier and better motivated.
- To prevent inter-office violence and raise employee awareness of the danger.
- To avoid loss of life of the employees
- To improve employees satisfaction
- To have a better cooperation with the employees union and hence to avoid conflicts between them

### **Scope**

As such, JSHER accepts theoretical and empirical papers committed to concepts, analytical models, strategy, technical tools and observational analyses that enhance the decision-making and operating action capabilities of SH&E practitioners and provide subject matter for academics. JSHER is an online journal intended to be of interest to SH&E academics and to field practitioners concerned with SH&E science, emergency and disaster preparedness, fire and homeland security, corporate sustainability and resiliency, economic evaluation of SH&E programs or policies, risk-loss control, engineering and other legal aspects of the SH&E field.

### **Literature Review**

Occupational health and safety (OHS) is generally defined as the science of the anticipation, recognition, evaluation and control of hazards arising in or from the workplace that

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could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities and the general environment. This domain is necessarily vast, encompassing a large number of disciplines and numerous workplace and environmental hazards (Algera, 1990). A wide range of structures, skills, knowledge and analytical capacities are needed to coordinate and implement all of the “building blocks” that make up national OHS systems so that protection is extended to both workers and the environment (Noe, 1986).

The scope of occupational safety and health has evolved gradually and continuously in response to social, political, technological and economic changes. In recent years, globalization of the world’s economies and its repercussions have been perceived as the greatest force for change in the world of work, and consequently in the scope of occupational safety and health, in both positive and negative ways (Pfeffer, 1994). Liberalization of world trade, rapid technological progress, significant developments in transport and communication, shifting patterns of employment, changes in work organization practices, the different employment patterns of men and women, and the size, structure and life cycles of enterprises and of new technologies can all generate new types and patterns of hazards, exposures and risks (Shannon et al, 1996).

Organization since its creation in 1919, and continues to be so today. Occupational health and safety is a key element in achieving sustained decent working conditions and strong preventive safety cultures (Timpe, 1993). Close to 80 per cent of all ILO standards and instruments are either wholly or partly concerned with issues related to occupational safety and health (Yates, 1992). A large number of areas of ILO activity include an OSH or OSH-related component, among them employment, child labor, the informal economy, gender mainstreaming, labor statistics, labor inspection and maritime safety, HIV/AIDS and the world of work, and international migration. This breadth of penetration gives a clear indication of the continued importance of occupational health and safety as a core element of ILO activity and of the Decent Work Agenda in particular (Fuller, 1999).

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## Accident Causation & Risk Perception

Poor construction safety performance has prompted many researchers to model accident causation specifically for the construction industry to identify proactive hazard management measures. These models descriptively decode hazardous attributes of construction environments and associate them with incidents. Early accident causation models focused primarily on modeling behavior and personal characteristics of workers as the primary causes of injuries. For example, accident proneness theories suggest that certain individuals are more likely to be involved in accidents as a result of “their innate propensity for accidents” (Shaw & Sichel, 1971, p. 14). Kerr (1950, 1957) corroborates this theory by claiming that accidents are caused by workers who are unable to adjust to dynamic work environments. A related accident causation model, the domino theory, (Heinrich, 1950; Manuele, 2003) suggests that occupational injuries are caused when unsafe conditions are combined with unsafe actions that originate from the faults of individuals.

## Safety Risk Management

A risk management system to determine and manage the risks is a fundamental element of a safety management concept. This system shall describe all operational processes and procedures that are accepted, regarding the previously described safety requirements. The operational aviation system consists of organisational structures, processes and procedures, with people, equipment and facilities. System analysis is also the main focus of quality engineering and therefore adapted to SMS. Once the system is well-understood, hazards in the system and environment can be identified, documented and controlled. A hazard is any existing or potential condition that can lead to injury, illness, or death to people; damage to or loss of a system, equipment, or property; or damage to the environment. While identification of every possible hazard would be impractical, aviation service providers are expected to identify all significant hazards directly related to their operations and to get the missing ones from the safety oversight

## Survey

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This section presents how survey results are used to do the analysis of viewpoints of workers, managers and supervisors. This section also presents our views on the current facilities and layout and the type of injuries. Based on the outcome of questionnaire based survey, it is clear from Figure 4 that the main cause/factor related to low safety level of worker, seems to be worker back- ground/culture. This indicates that there is something wrong in the workers behavior, which has been investigated by dividing the main cause into sub causes. Similarly, the workplace environment is next subsequent cause. It is worthy to investigate this cause as well.

- Safety Surveys – shall be carried out as a matter of routine, to recommend improvements where needed, to provide assurance to managers of the safety of activities within their areas and to confirm conformance with applicable parts of their safety management systems;
- Safety Monitoring - shall ensure that methods are in place to detect changes in systems or operations which may suggest any element is approaching a point at which acceptable standards of safety can no longer be met, and that corrective action is taken;
- Safety Records - shall be maintained throughout the SMS operation as a basis for providing safety assurance to all associated with, responsible for or dependent upon the services provided, and to the safety regulatory authority. Safety records include all documentation produced and maintained throughout

## **Research Methodology**

This research adopted the case study approach, randomly drawing a sample of 111 staff members from a population of 244 management and junior staff members of a construction company in Nigeria. The researcher spent a period of 12 weeks in the office premises and at various work sites of the construction company. During this period, the researcher observed, explored safety records, interacted with workers at sites on safety issues, and administered questionnaires and also interviewed some management staff, all in the bid to evaluate the key

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elements, components, practices and coverage of safety system of the construction company and to particularly determine performance level of key elements as well as the major components of safety system.

The research process consisted of two distinct phases designed to achieve several related objectives. In the first phase, the objective was to identify high potential hazard recognition programs based on literature and data provided by construction organizations in the U.S. that have achieved exceptional safety performance. In the second phase, the objective was to identify and refine the three strategies that experts believe have the greatest potential to improve hazard recognition and, consequently, safety performance. To achieve these objectives an expert panel of 14 construction safety experts was formed. These experts were CII members who volunteered to participate based on requests made by the funding agency. Each panelist had more than 10 years' safety management experience. In total, panel members had accumulated more than 352 years' practical experience in the field of construction safety. In addition to their professional experience, seven experts were certified safety professionals (CSPs) and five were certified hazardous materials managers (CHMM). The panel also included one or more members who had obtained the following designations: professional engineer (P.E.), occupational health and safety technologist (OSHT), compliance safety and health officer (CSHO) and certified industrial hygienist (CIH). Several members were active in various safety and health groups such as ASSE, National Safety Council, Accident Prevention Association and local safety councils. Five panel members held a master's degree and six had bachelor's degrees in safety-related fields of study.

## **Outlook**

The aviation system involves a complex interaction between different technical and human centred sub-systems operated by a wide range of different stakeholders (airlines, airports, air navigation service provider and maintenance repair and overhaul etc.). Each organisation must manage the hazards that fall under their managerial control, but should also co-operate with other stakeholders to help manage interactions and interfaces. In this complex hierarchy of

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different systems, a safety outcome in one system could cause hazards in another system. Therefore States have a responsibility, under the Chicago Convention, to ensure that acceptable levels of safety are established and maintained. States are further required to ensuring that SMS are implemented by all providers of the Air Transport System, which include the monitoring of overall safety levels. A holistic approach to performance monitoring is an essential input to safety management decision-making. It is important to ensure that good

## **Findings**

Among the employee's 43.75% belong to the age group of 20-30. The next highest frequency distribution is in the age group of 30-40. 41.25% of the employees are having experience of more than 10 years as compare to others. 42.50 % of the employee's fall under the income group of 20001 & above. 71.25% of employees are married whereas 28.75% of employees are single. 61.25% of the employees are satisfied with implementation of safety provisions in the organizations. From this we can infer that organization has taken special care in making the employees understand about the safety provisions. 71.25% of the respondents are satisfied with the safety measures provided to them. Hence we can infer from the above chart that the organization is implementing the right safety measures which make the employees satisfied. 60% of the respondents feel that productivity increases to great extend due to practicing of industrial safety & good work environment. 86.25% of the employees have not met with the accident while 13.75% of the employees have met with the accident during the working hours. Hence the organization has to find out the root cause for the accidents and take measures to reduce the accidents. 54.54% of the accident occurs during night shift.

## **Conclusion**

Industrial progress of the country depends on its committed labor force. Efficiency in work is possible only when the employees are safe in their working environment and also provided with some safety measures.

The study has revealed the perception of employees with regard to safety measures and work environment. The result of this study shows that majority of the employees perceive the present efforts taken on safety measures and work environment is satisfactory yet there are some factors which need to be concentrated by the company which is suggested by the researcher to ensure hundred percentage safety and congenial work environment which in turn in improve the efficiency and confidence of the employees.

Hence, in designing safety programs and good working environment the management should not compromise even with the smallest safety concept which may be costly to both management and the employees.

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C. Ravikumar, PG Scholar  
Department of Management Studies  
Anna University Regional Campus  
Madurai 625 019  
Tamilnadu  
India