

## Occupational Safety And Health Management In Malaysia: An Overview

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### Abstract

*In today's economy, globalization has shown tremendous impact on companies. Global competition increases safety and health risks and companies incurred additional cost on safety. To meet the challenges posed by these changes, revamping safety and health practices through strategies to improve performance is critical so as to motivate workforce in creating a safe and healthy environment that lead to decrease work-related accidents and ill-health in the workplace. Although work-related accidents and ill-health are preventable, there is a need for collaboration at the international, regional, national and enterprise levels to accomplish this mission with a positive commitment amongst all concerned. Due to that fact, companies need to focus on continual improvement of their performance in order to survive in the marketplace. One of the mean to encourage employers to achieve a higher standard of safety and health in the workplace is through effective occupational safety and health management.*

### INTRODUCTION

In today's economy, globalization has shown tremendous impact on companies. Global competition increases safety and health risks and companies incurred additional cost on safety (ILO, 2001a). ILO (2005, p. 3) stated that almost 4% of the world's gross domestic product is lost with the cost of injury, death and disease through absence from work, sickness treatment, disability and survivor benefit. ILO (2005) affirmed that work-related accidents and ill-health are preventable and collaboration at the international, regional, national and enterprise levels and organizations can accomplish this mission with a positive commitment amongst all concerned. Furthermore, prevention involves management, foresight, planning and commitment in order to foresee hazards, measure risks and take action before an accident happens or an illness has been developed. Thus, companies need to focus on continual improvement of their performance in order to survive in the marketplace. One of the mean to encourage employers to achieve a higher standard of safety and health in the workplace is through effective occupational safety and health management.

### BACKGROUND OF OCCUPATIONAL SAFETY AND HEALTH (OSH) SITUATION

Work is basically an economic activity and companies do various actions to produce products or services to the marketplace. Manufacturing of products or providing services has to be done in the most efficient way in order to improve companies' performance. For many decades, most companies have focused on quality to ensure their continued performance but in the recent years, the trend has moved to occupational safety and health as one driver that enables companies' to achieve competitiveness through productivity improvement and efficiency (Lee Lam Thye, 2004). Problems of productivity are reflected through work-related accidents and ill-health incidence. These costs affected society, companies, and workers as well as their families. The economic cost resulting compensation, lost-work days, interruption of production, medical expenses, retraining, etc is a burden to companies' competitiveness. Besides that, forces including technological changes, political, economic, environmental issues, socio-cultural problem like changing character of workforce play important role to occupational safety and health problems (Ashford, 1976). Even, some effect of modern working arrangement include job insecurity (downsizing or right sizing), outsourcing and contingent-work arrangement bring negative impact to the health of workers, through psychosocial hazard. This has lead to the increased of mental health prevalence in the modern working environment. This modern hazard poses serious problems for workers' compensation claim especially contingent workers.

To meet the challenges posed by these changes, revamping safety and health practices through strategies to improve performance is critical so as to motivate workforce in creating a safe and healthy environment that lead to decrease work-related accidents and ill-health in workplace (Smallman, 2001). In addition, ILO's philosophy of prevention and protection in the field of occupational safety and health affirmed that "And whereas condition of labour exist involving such injustice, hardship, and privation to large numbers of people as to produce unrest so great that the peace and harmony of the world are imperiled; and an improvement of those conditions is urgently required; as, for example, by the regulation of the hours of work, including the establishment of a maximum working day and week .... the protection of the workers against sickness, disease and injury arising out of his employment ....." (Alli, 2001, p. 3). Consequently, giving attention to occupational safety and health is a priority that enhances moral of workers as well as reduction of companies' economic costs.

## **OCCUPATIONAL SAFETY AND HEALTH SCENARIO**

This article attempts to draw three important occupational safety and health determinants to protect workers from working environment hazards: (1) occupational safety and health legislation; (2) effective management of work-related accidents and diseases; and (3) occupational safety and health management system.

### **Overview of Occupational Safety and Health Legislation**

Safety and health is not a new phenomenon in Malaysia. Since the end of 19<sup>th</sup> century, 120 years ago, Malaysia has its own health and safety legislation including Steam Boiler Enactment, Machinery Enactment 1913, Machinery Enactment 1932, Machinery Ordinance 1953, Factory and Machinery Act 1967, and Occupational Safety and Health Act 1994.

The first legislation to deal with safety was the Selangor Boiler Enactment in 1892. Later Perak Boiler was enacted in 1903. On 1 January 1914, Machinery Enactment 1913 replaced the steam boiler enactment. Then in 1932, the Machinery Enactment of 1913 was abolished and replaced with Machinery Enactment 1932 where registration and inspection of installation were enforced. In 1953, all the machinery enactments of the Allied Malay States, Non-Allied Malays States, and Strait States were abolished and replaced with the Machinery Ordinance 1953. In 1970, the Factory and Machinery Act 1967 was enacted and replaced the Machinery Ordinance 1953 (DOSH, 2008). In general, this act provide minimum standard of safety, health and welfare of workers at workplace.

Before 1994, the legislation of safety and health in Malaysia were more of a prescriptive style where it focused on machinery and workplace hazards and individuals at work must improve the dangerous conditions after being inspected by enforcement officers. This is so as employers perceived government to be accountable for OSH matters and workplaces need to be inspected to improve hazardous working conditions. However, this prescriptive legislation could no more assist constant changes from the rapid industrialization. The introduction of Occupational Safety and Health Act 1994 has changed this perception where the principle of self-regulation was adopted. Self-regulation approach ensures accountability and cooperation of employers and workers to achieve a safe workplace through proactive actions. This proactive action is done through duty of care provision. For this purpose, the primary aim of the occupational safety and health legislation is to promote safety and health awareness and to instill a safety culture among workers. This legislation covers all economic sectors, including manufacturing; mining and quarrying; construction; agriculture, forestry and fishing; utilities – gas, electric, water and sanitary services; transport, storage and communication; wholesale and retail traders; hotels and restaurants; finance, insurance, real estate, business service; and public services and statutory authorities; except those subjected to the Merchant Shipping Ordinance and the armed forces.

In spite of the fact that standardized of work practices with regards to the growth of precarious employment can contribute to workers' protection and thus reduce companies' costs like insurance, medical costs, lost-time injury, etc., nevertheless, the occupational safety and health legislation should be reviewed and

upgraded from time to time so that workers can choose or refuse to work in a dangerous environment without violating the legislation (Ashford, 1976).

In addition, according to Finnish Institute of Occupational Health (2000), the slow enforcement of occupational safety and health comes from lack of political will, insufficient resources, lack of management's involvement within enterprises, inadequate preventive measures, inadequate utilization of existing preventive measures at workplaces, and the relaxed enforcement of the authorities. Therefore, Finnish Institute of Occupational Health (2000) suggested that companies need to increase consideration to the following issues:

- Occupational safety and health should be brought to the attention of political decision makers and the competent authorities;
- Enforcement of existing legislation and preventive measures should be stepped up;
- Education and training in Occupational Safety and Health should be provided;
- The basic safety statistics should be harmonized;
- The parties concerned should become involved in Occupational Safety and Health activities;
- The networking of Occupational Safety and Health research institutions should be promoted; and
- Occupational Safety and Health should be promoted at the companies' level.

### **Overview of Occupational Accidents, Diseases and Compensation**

Occupational safety and health performance varies enormously between countries, economic sectors, sizes of enterprises, and groups at particular risk (Alli, 2001). There is significantly difference between small and large organizations in term of workplace fatalities. Alli (2001) concluded that economic sectors such as agriculture, forestry, mining, manufacturing and construction have the highest prevalence in occupational deaths. The same goes for small workplaces compared to large enterprises. Specific workforces at risk are women, home-based workers, part-time workers, contract workers and drivers (ILO, 2000).

Table 1 shows the accidents and occupational diseases statistics. Although there are regulations to bind employers, SOCSO statistics show insignificant reduction in industrial accidents, from 114,134 accidents in 1995 to 58,321 accidents in 2006. There was even a fluctuated rate in the disease statistics. In 1997, the disease rate was 832 cases, then declined to 178 cases in 1998, and later increased to 278 in 2000. What is more, the Director-general of Department of Occupational Safety and Health (DOSH), Datuk Dr Johari Basri said that in 2007, 4,873 notices were issued to employers to improve workplace dangers with 215 being compounded and 108 charged under Section 15 of the Occupational Safety and Health Act 1994 (Sujata, 2008). This phenomenon was due to employers' non-compliance with the Occupational Safety and Health Act 1994 (New Straits Times, 2002). One of the main aspects of employer's non-compliance was the failure on the part of the management to develop safety and health systems at the workplace. The reasons given by employers, among others were: not aware of OSH Act 1994, no time for OSH matters, insufficient allocation for OSH, OSH is not an important element in business, and "accidents will not happen to me" syndrome (New Straits Times, 2002). As for employees, their non-compliance were basically due to reasons such as not aware of safety and health rules and regulations, OSH rules and regulations are difficult to follow, and feeling of discomfort when complying with OSH rules and regulations (New Straits Times, 2002).

As the reporting of occupational accidents and diseases improves, organizations are becoming increasingly aware of the associated economic costs. They include costs for lost work time and productivity, compensation and medical expenses by the social security system, and accident damage. Even, Cruz (2004) stated that accidents in the workplaces have increased organizations expenditure through its direct and indirect cost. Nonetheless, it is clear from the available statistics that the reporting of occupational accidents and diseases improves and this might be due to the awareness of the associated economic costs. In addition, the cooperation of companies with the enforcement body to ensure health, safety and welfare of their workers plays an important role to this development.

**Table 1: Accident and occupational diseases rates and compensation due to industrial accidents**

No.	Year	Accident rates	Occupational diseases	Compensation recipients
1.	1995	114,134	-	182,763
	1996	106,508	-	179,936
2.	1997	86,589	832	194,421
3.	1998	85,338	178	196,668
4.	1999	92,074	192	209,821
5.	2000	95,006	278	228,705
6.	2001	85,926	204	230,344
7.	2002	81,810	216	239,372
8.	2003	73,858	189	247,790
9.	2004	69,132	194	255,381
10.	2005	61,182	-	252,439
11.	2006	58,321	263	259,081

Source: SOCSO Annual Reports 1995 – 2006 (2008)

**Table 2: Number of Accidents by Industries: 1997 – 2000**

No.	Year	Industries	1997		1998		1999		2000	
			No. of cases reported	Death reported	No. of cases reported	No. of cases reported	Death reported	No. of cases reported	Death reported	No. of cases reported
1.		Agriculture, Forestry & Fishing	23296	265	12678	34	12753	132	11893	115
2.		Mining & Quarrying	760	18	739	8	756	14	626	11
3.		Manufacturing	36968	387	37261	228	40730	232	41331	282
4.		Electricity, Gas, Water & Sanitary Services	364	14	979	12	592	11	537	8
5.		Construction	3510	81	3573	104	4747	146	4873	159
6.		Trading	9235	126	12986	139	14685	127	15452	151
7.		Transportation	3245	88	4050	78	4462	91	4778	98
8.		Financial Institutions & Insurance	363	7	700	15	627	8	687	11
9.		Services	3723	56	5294	94	5987	65	6581	72
10.		Public Services	5125	265	7078	334	6735	83	8248	97
TOTAL			86589	1307	85338	1046	92074	909	95006	1004

**Table 3: Number of Accidents by Industries 2001-2003 & 2006**

Year		2001		2002		2003		2006	
No.	Industries	No. of cases reported	Death reported	No. of cases reported	Death reported	No. of cases reported	Death reported	No. of cases reported	Death reported
1.	Agriculture, Forestry & Fishing	12424	75	9456	69	6947	40	3567	37
2.	Mining & Quarrying	573	7	545	12	536	8	394	8
3.	Manufacturing	35642	243	33523	214	29780	213	21609	188
4.	Electricity, Gas, Water & Sanitary Services	499	13	516	14	510	8	509	15
5.	Construction	4593	89	5015	88	4654	95	3686	64
6.	Trading	13774	192	13685	134	13395	151	11430	127
7.	Transportation	4382	91	4439	90	4104	108	3610	78
8.	Financial Institutions & Insurance	602	6	567	9	572	7	538	2
9.	Services	5950	106	5924	87	5617	84	4832	69
10.	Public Services	7487	136	8140	141	7743	108	8146	145
TOTAL		85926	958	81810	858	73858	822	58321	733

Source: SOCSO Annual Reports 1997 – 2003, 2006 (2008)

Table 2 and 3 illustrate that economic sectors such as agriculture, forestry and fishing; manufacturing; construction; trading; services and public services have the highest prevalence in occupational deaths and accidents reported. For example, the manufacturing industry demonstrated insignificant decreased in industrial accidents, from 36,968 accidents in 1997 to 41,331 accidents in 2000 and dropped to 21,609 accidents in 2006. Similarly, the number of industrial fatalities in manufacturing industry also revealed irrelevant reduction where there were 387 deaths reported in 1997, decreased to 232 cases in 1999, and then increased to 282 cases in 2000. The fluctuated rate can be attributed to the increase of industrial development where more technological innovations are being used in the workplace. In addition, new types of occupational diseases have increased through the usage of new chemical substances. The increased activities in the industrial sectors provide workers with real health hazards. On the other hand, the decrease accident rates may reveal restricted social security coverage (ILO, 2000) or even, there might be cases where under-reporting of statistics happened especially hazard contributed from modern working arrangement. Hinze (2005, p. 2) reported that “injury under-reporting is a major problem because every injury that gets swept under the table is an injury whose root cause will never be investigated.” Hence, the availability of accurate statistics on industrial accidents and occupational diseases reflects some difficulties in the development of occupational health and safety and there is a need to support significant analyses in discovering the causes of occupational accidents and diseases and promote effective prevention policies (ILO, 2002).

As a result of the accidents and diseases, workers who were injured or killed on duty, or who become infected with diseases in the course of their employment found themselves unable to earn a living. A few decades ago, there was very little support for these problems and employees were eliminated from the workforce. With this in mind, Malaysia has set up a system that compensates occupational accidents and diseases to lessen the burden of employees through the Employees Social Security Act 1969 for preventive and rehabilitative programs. Social Security Organization (SOCSO) enforced this act. There are two schemes to compensate workers who are earning less than RM3,000 for employment injury (which includes occupational diseases) and invalidity: (1) Employment Injury Insurance Scheme, and (2) Invalidity Pension Scheme. The Employment Injury Insurance Scheme provides an employee with

protection for (1) accidents that occur while commuting and working; and (2) diseases from exposure at the workplace. The Invalidity Pension Scheme is a non-occupational related scheme and covers an employee against invalidity or death due to any cause not connected with his employment. From Table 1, the figures for compensation recipients are enormous. The rate had increased from 182,763 in 1995 to 259,081 in 2006. Although there is a downward trend in occupational accidents but workers' compensation costs increased. According to SOCSO, the annual mean value for compensation claims for 1990 – 1994 was 154.3 million and the cost had increased to 577.3 million in 1998 – 2002. Even the Director-general of Department of Occupational Safety and Health (DOSH), Datuk Dr Johari Basri pointed that compensation paid by SOCSO for those involved in industrial and commuting accidents had increased from RM959mil in 2006 to RM1.06bil in 2007 (Sujata, 2008). The statistics point not only to the economic costs, but also to the social burdens associated with such costs and the suffering of individual workers and their families.

As a solution to the problem of work-related accidents and diseases, Finnish Institute of Occupational Health (2000) proposed the following strategies:

- Improvement of occupational safety and health legislation would results better coverage of compensation and enforcement activities;
- Availability of occupational health services to all workers especially medical surveillance;
- Improved infrastructure and manpower for enforcement, health care, training, research and dissemination of information;
- Better recording and notification system of accidents, work-related diseases and cost incurred;
- Established advisory bodies and voluntary mechanisms, such as safety committees, occupational safety and health system, etc.

### **Occupational Safety and Health (OSH) Management System**

In Malaysia, OHSAS 18001 has been the only OSH management systems since 1999. OHSAS 18001 is a copyright of British Standards Institute, United Kingdom but not a British Standard (SIRIM, 2006). According to SIRIM (2006), in Malaysia, so far, there are 194 large companies that have Occupational Safety and Health Management System (OHSAS 18001) certification. These companies comprise of (1) 119 companies from the scientific sector; (2) 35 companies from the services sector; (3) 18 companies from the engineering sector; and (4) 22 companies from the electrical/electronics sector.

Most of the large companies like Petronas, Shell, Mobil, Motorola and others have their own model of Occupational Safety and Health Management Systems. There is no standard system in Malaysia yet and not all organizations have the Occupational Safety and Health Management System. Due to this problem Malaysian government has formulated the Occupational Safety and Health Management System – the Malaysian Standard in 2003 and intends to introduce the Malaysian Standard by 2004 (Hamisah Hamid, 2003). So far, there is only guideline to Occupational Safety and Health Management System but the implementation stage is yet under progress.

### **STRATEGIES TO OVERCOME OCCUPATIONAL SAFETY AND HEALTH PROBLEMS**

Work-related accidents and diseases are preventable through various ways including comply to the Occupational Safety and Health Act, developing awareness of occupational safety and health hazards among workers, assessing the nature and extent of hazards, introducing and maintaining effective control and evaluation measures, organizational accident prevention programs, etc. This article examines two strategies that can be used to overcome these problems: (1) model for managing outstanding performance, and (2) safety and health management system.

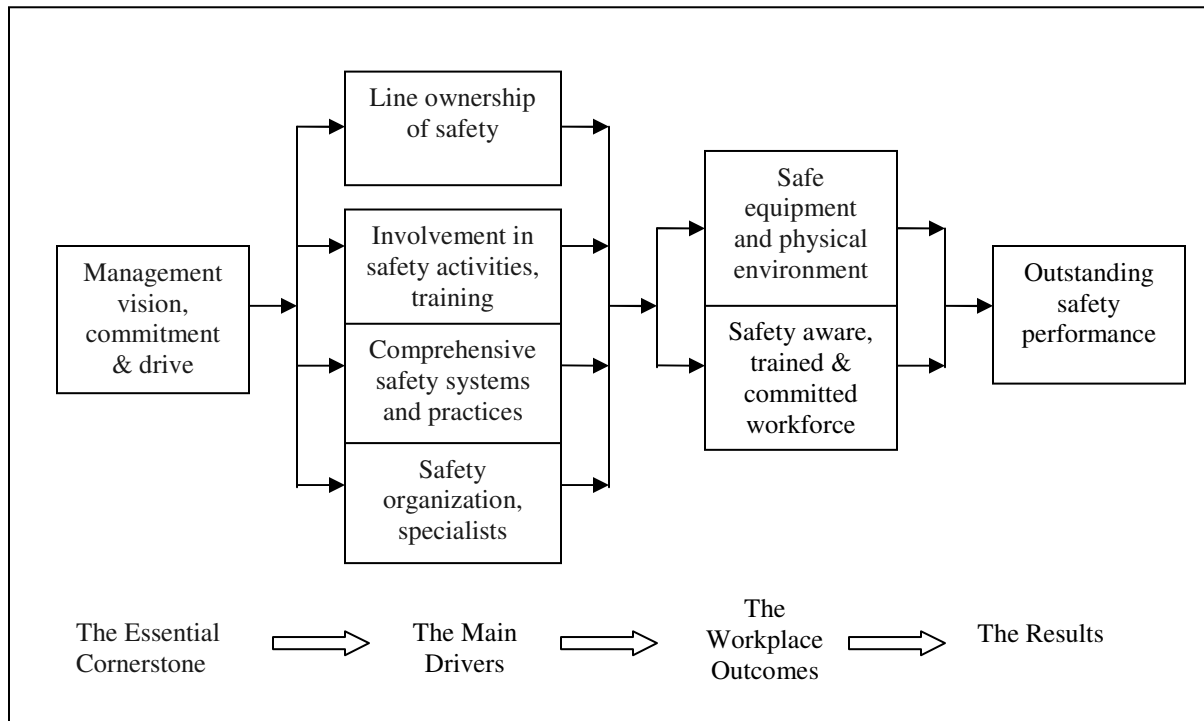
#### **The Model of Safety Management**

James Melville Stewart (2002) introduced a model of safety management (Figure 1) through observation from various companies with outstanding safety in order to understand and identify excellence factors that contributed to workplace safety and achievement of safety improvement. He found out that excellence in

safety begins with management commitment. Management is responsible and accountable for safety and health of workers. According to Stewart, the basic driver to safety is the “soft” factors including management commitment, line ownership, and workforce involvement. These factors are supported by safety systems and practices. The outcome for this model is safe physical environment and safety-aware attitude and would results in outstanding safety performance.

This model is good in a way as it focused on outstanding safety performance and its determinants that drive towards an outstanding safety performance. The key to excel in safety and health performance is the commitment of senior management (Vassie, Tomas & Oliver, 2000). Management commitment is a vital factor as managerial competence in occupational safety and health must at least be commensurate with the risks inherent in the business undertaking and must be as good as that required to operate the business successfully. The managerial responsibility for occupational safety and health includes the risks run by people in various work activities and the risks that those activities pose to other workers and members of the public. Management commitment to occupational safety and health is reflected in the ability of the upper-level management to demonstrate an enduring, positive attitude towards occupational safety and health, even in times of fiscal austerity, and to promote occupational safety and health in a consistent manner across all levels within the organization. Only when there is congruence between words, practice and attitude of the manager’s and those of the management, employees will feel they are part of the organization and safety performance will improve (Erickson, 2000).

Workers have the right to participate in any occupational safety and health activities. The responsibility is seen in employees’ willingness to participate in all activities that support the learning of the process, continual improvement activities and employee’s desire to reinforce, support and correct one another and this responsibility can only be exercised optimally in a supportive organizational climate (Topf, 2000). Moreover, employee participation has been identified as one determinant of successful occupational safety and health management (Alli, 2001). It implies that workers’ involvement is a process involving behaviour that is dynamic, action-oriented, and problem solving that continuously seeking for improvement in a safety conscious environment.



Source: Stewart (2002)

**Figure 1: The Model of Managing Outstanding Safety**

## Safety and Health Management Systems

The setting up of a safety and health management system through continuous improvement in the workplace has been seen as one mean to improve working condition in workplace and to legal compliance. Civil Aviation Safety Authority, Australia (2002) explains safety management systems as the blend of work practices, beliefs and procedure to enhance and oversee all aspects of organization's operations to ensure accidents do not occur.

The following are the elements of a management system for Occupational Safety and Health as suggested by ILO (2001b):

- Policy – contains 2 components: (1) OSH policy and (2) workers participation
- Organizing – includes 4 factors: (1) responsibility and accountability, (2) competence and training, (3) OSH documentation and (4) communication
- Planning and Implementation – comprises of 4 aspects: (1) initial review; (2) system planning, development and implementation; (3) OSH objectives and (4) hazard prevention
- Evaluation – covers 4 features: (1) performance monitoring and measurement; (2) investigation; (3) audit; (4) management review
- Action for improvement involves 2 elements:(1) preventive and corrective action; and (2) continual improvement

Drawing on HSE (2002b) research findings, it was seen that integration of behavioural safety interventions into safety and health management system revealed improvement of safety and health. Behaviour modification interventions are accomplished by encouraging employees to increase the rate of critical behaviours in order to minimize risk and decreasing the frequency of behaviours that increase risk. For example, promote employees to wear personal protective equipment in order to minimize risk at work.

Despite the fact that there are many benefits of safety and health management system, HSE (2002a) reported that a good safety and health management system can only exist on paper and does not reflect the practice. It needs the influence of certain association to ascertain "the deployment and effectiveness of the safety and health management resources, policies, practices and procedures" as two crucial components of any successful safety, health and environmental management system are management leadership and action, and employee involvement and agreement (CTJ Safety Associates, 2006). Therefore, assessment of a safety and health management system is a proactive measure of an organization's safety performance (Kelly & Boucher, 2003). Consequently, Eckhardt (2002) notified that measurement for safety performance consists of two approaches: traditional indicators and leading indicators. Examples of traditional indicators are injury/accident rate, lost time injury frequency rate, first aid cases and even financial indicators. Some of the leading indicators practice by most companies according to Eckhardt (2002) are (1) use of pretask instruction cards, (2) use of job safety analyses, (3) inspections, (4) employee safety improvement contacts, (5) safety meeting attendance, (6) organizational planning and support: Expectations and involvement, goal setting and action planning, (7) industrial hygiene and safety practices: Design and construction, operation and maintenance, (9) safe practices, (10) site training systems, (11) behavior management: On-going feedback system and behavior observation system, and (12) performance tracking. Yule, Flin and Murdy (2007) even stated that some example of leading performance measures are safety audits, hazard analysis and safety climate.

Although "OSH Management has evolved internationally as the major strategy to reduce the serious social and economic problem of ill-health at work" (NOHSC, 2001, p.11), yet there has been lack of empirical research to assess OSH management systems efficiency. However, there are some studies that focus on OSH management but concentrate on the successful of health and safety outcomes and not directly investigate the effectiveness of the systems.



For instance, Vassie and Lucas (2001) survey of safety and health management in the manufacturing sectors indicated that empowered workers who played active safety and health role enhanced their safety and health performance although the empowerment was limited. Although employees' participation and involvement are crucial, the accountability and responsibility in the safety and health must come from the senior management as obliged by the Occupational Safety and Health Act (Vassie & Lucas, 2001). In addition, a company's objective and communication of the objective to all workers is the crucial aspect of effective safety and health management as lack of communication may hinder employee involvement (Vassie & Lucas, 2001).

Previous research suggested that management's commitment to safety is a significant determinant to employee involvement to safety (O' Toole, 2002). In addition, employees' perception of management's action to safety can result in accident reduction. Furthermore, according to HSE (2002a), many aspects of employees' safety behavior can be influenced by management priority in safety and that includes:

- The success of safety initiatives;
- The reporting of near-miss occurrences, incidents and accidents;
- Employees working safely;
- Employees taking work related risks;
- Influencing production pressures;
- Implementing safety behavior and health interventions;
- The effectiveness and credibility of safety officers;
- The effectiveness and credibility of safety committees.

Even, Marsh et al. (1995) findings stated that management commitment has a high impact on all aspects of intervention. Besides management commitment, safety training and safety policy are also important determinants to enhance safety performance. Lin and Mills (2001) make it very clear that understandable policy statements and safety training played significant role in reducing accident rate.

Cheyne, Oliver, Tomas and Cox (2002) conducted a study on employee attitudes towards safety in the manufacturing sector in UK. The study identified safety standards and goals, and safety management, which include personal involvement, communication, workplace hazards and physical work environment as factors that enhance safety activities in organization. The study also found a good physical working environment and employee involvement as key factors that contribute to safety activities in organizations.

Moreover, Clarke (2003) examined organizational structures and values on the safety attitude and behavior of contingent, core and contract workers in U. K. The findings of the study indicated that organizational restructuring might damage mutual trust between core workers and managers. The inclusion of contingent workers and contract employees into the workforce of an organization could threaten the integrity of safety culture and gradually destroy the trust of core employees towards safety activities in an organization.

In conclusion, the positive impact of occupational safety and health management systems is now being acknowledged by governments, employers and workers world wide where various countries have developed occupational safety and health management systems standard. Good occupational safety and health practices can increase workplace efficiency, reduce risks of lost productivity and accidents and reduce risks of legal action for workers' compensation.

## **CASE STUDIES**

Below are two case studies on outstanding safety performance.

### *Case study 1*

Huntsman Petrochemicals is located at Olefins plant, Teesside, USA. Its business activity is hydrocarbon processing. Huntsman Petrochemicals employed 300 employees. Although Huntsman Petrochemicals has an excellent safety records but due to some "near misses" that could contribute to injury, the company

implemented a “BSAFE” (behavioural-based safety system) program to cultivate safety behaviours of all employees to ensure major accidents would not happen. The success of the “BSAFE” program showed benefits from two perspectives: business and health and safety. Some of the business benefits were (1) energy consumption was decreased by £250,000 / year, (2) insurance premiums were cut down by 32%, and (3) reduction of operating costs due to workers analyzing and improving plant problems themselves. The health and safety benefits included (1) no Occupational Safety & Health Administration (OSHA) recordable injuries over the last 18 months, (2) OSHA recordable injury rate falling from around 3 per 200,000 hours worked in 1997/8 to zero in 2002/3, (3) improved awareness of the influence of behaviour on individual’s safety, and (4) all employees make a more proactive contribution to safety management.

#### *Case study 2*

The Associated Octel Company Ltd is located at Ellesmere Port, Cheshire. Associated Octel business activities include petroleum additives and specialty chemicals. Associated Octel employed 2,200 employees in 1996 but in 2003 it has only 450 employees. This was due to a series of major incidents included a major fire and fatality at Ellesmere Port and some of its major business has reduced rapidly. Since these incidents, Associated Octel has focused upon a more open & accountable safety culture. Some of the business benefits are (1) 40% reduction in production costs, (2) improvements in equipment reliability during a period of staff reductions (60% of workforce), (3) Reduction in insurance claims, from over 50 in 1997 to zero in 2002, (4) Improved trust and reputation in local community, and (5) Improved staff morale – absenteeism down from 10% to 2.5% of staff. The health and safety benefits included (1) Reduction in lost time incidents from 35 in 1996 to zero in 2002 and 2003, (2) 50% reduction in injuries compared to hours worked, and (3) Improved housekeeping procedures. Since then, Associated Octel has fewer accidents and injuries and decline in production costs, civil claims and their reputation has enhanced.

### **CONCLUSIONS**

Safety at workplace is mandatory for every employer and they must ascertain that their employees’ safety, health and welfare are looked after. This drastic focus on safety and health is critical to the enhancement of employees’ productivity as it emphasis organisation’s performance. For this reason, employers need to be alert of their duties towards their employees to determine a world-class safety performance is achieved.

In spite of these positive developments, many organizations face common problems. Workers are generally unaware of hazards they are exposed to. Preventive measures are taken by large enterprises but seldom by the small ones where the legal requirements on safety and health are often not complied and especially the small and medium companies have few trained safety personnel, such as safety officers.

The experience of industrialized countries shows that the incidence of work-related accidents and diseases could be decreased significantly even in situations of rapid growth. Some of the steps to be taken include: (1) review of the legislation on occupational safety and health with tripartite collaboration; (2) improving enforcement; (3) improving statistics compilation; (4) developing special programs for hazardous jobs; (5) setting up training mechanisms; (6) creating nation-wide awareness; and (7) arranging for the mobilization of available resources and expertise. These are effective way to ascertain the management of safety and health among workers is taken care off according to the self-regulation philosophy of occupational safety and health legislation.

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