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THE IMPLEMENTATION OF OHSAS 18001 IN CONSTRUCTION INDUSTRY IN MALAYSIA

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ABSTRACT
Occupational Health and Safety (OH&S) issues, particularly in the construction are still problematic areas that need to be addressed by all parties concerned in the construction industry. In Malaysia, the legislation to address the OH&S issues is deemed sufficient but legislative enforcement is still lacking. To redress this situation, the practical approach shall be to raise the awareness of construction companies regarding the importance of OH&S and implementation of occupational safety and health management system in the construction industry in Malaysia. One of the objectives of this study is to find out whether besides complying with existing statutory requirements, such as OSHA 1994. Data for this study was collected through questionnaires from construction companies operating in various parts of Malaysia. Accidents prevention at construction sites adopted by construction companies were investigated in this paper. The findings of this paper proven that the implementation of OHSAS 18001 can help to reduce the accident rate, especially fatal accident.
Keywords:
Implementation, OHSAS 18001, Construction Industry, Malaysia

1. INTRODUCTION

The working population is a valuable asset to our nation therefore we can not afford to have many accidents in the construction industry which will jeopardize our valued human resources. A lot of people will be affected directly or indirectly once the accident takes place. The families of the victims will suffer the loss of their loved ones and source of income. The employer will suffer the loss of an experienced worker and be forced to absorb the incidental cost due to the interrupted project activities, increased insurance premiums and medical expenditure. The OHSAS 18001:1999 is a comprehensive Occupational Health and Safety (OH&S) management system specification, designed to enable organization to control OH&S risks and improve their performance. The purpose of carrying out this study is to find out whether 18001 can help to reduce the rate of accidents, especially fatal ones. Although the construction industry plays an important role in contributing to the economic performance of the country, its contribution to the workplace accident is equally substantial. It still clings to its infamous position of being responsible for more occupational accidents, injuries and fatalities as compared to other industries. The construction industry in Malaysia recorded a higher incidence of injuries and higher fatalities rates. The case fatality rate in the construction industry in Malaysia was of more than 3 times of other work places, it was 3.3% in construction industry as compared to other work places of 1.1% (SOCSO, 2000). In 1997, the Department of Occupational Safety and Health inspected 798 sites in the state of Selangor and the Federal Territory of Kuala Lumpur and the results of the operation indicated that 4% of the sites were in a good category, 52% in a satisfactory category and 44% in unsatisfactory conditions. Although the percentage in the good category has improved, the percentage in the unsatisfactory category still remains high (SOCSO Reports). OH&S problems still remain an important issue in the construction industry. Therefore, the improvement of OH&S in construction sites is still a necessary goal for all the stake-holder in the construction industry. Although there are many research studies done on various aspects of OH&S issues, there is no study carried out on the implementation of OHSAS 18001 in the construction industry in Malaysia.

2. PROBLEM STATEMENT

Construction industry suffers high accident rate not only in Malaysia but also in most countries throughout the world. The statistics published by SOCSO (Table 1) indicated that the total number of reported accidents in the construction industry has increased from 4747 cases in 1999 to 5015 in year 2002. The reported 'loss of working capability' has also increased from 610 cases in the year 1999 to 652 cases in 2002. The reported fatal accidents show some improvement that is from 146 in year 1999; it has dropped to 88 in 2002. Nonetheless, the figures still alarm us to seek further improvement to curb the accident rate in the construction industry.

Table: 1. Industrial Accident reported From Year 1999 to 2003

Industry	1999	2000	2001	2002	2003
	RA LWCA FA	RA LWCA FA	RA LWCA FA	RA LWCA FA	RA LWCA FA
Construction	4747 610 146	4873 642 159	4593 618 89	5015 652 88	1050 133 18

(Abstracted from SOCSO Reports: RA: Reported Accident; LWCA: Lost of Working Capability Accident; FA: Fatal Accident).

This paper tries to answer several pertinent questions concerning the OH&S issues in relation to the construction industry: What are the current practices to curb the accident rate in the construction industry? Are the employers and management concerned and committed to curb the OH&S problems? Are the employees having the right attitude with regards to the OH&S issues in their work place? Is the occupational Safety & Health Act (OSHA) 1994 adequate to curb the accident rate successfully achieving the 'Zero Accident Rate' target? Besides enforcing the OSHA 1994, what are the areas in the OH&S management systems that need to be improved? Will it be more effective to curb the accident rate if we implement an integral OH&S management system (OHSAS 18001)? Will the management of the construction company accept and implement the OHSAS 18001? What are the elements in the OHSAS 18001 that can effectively reduce the accident rate in the construction industry? What are the difficulties to implement the OHSAS 18001 in the construction industry? What are the benefits of implementing the OHSAS 18001 to both employer and employee? What are the advantages of the company in complying with the OHSAS 18001?

3. OBJECTIVE OF THE STUDY

(i) To prove the assumption that OHSAS 18001 may help to reduce the accident rate in the construction industry.
(ii) To review the OH&S in the construction industry in Malaysia.
(iii) To review the implementation of OHSAS 18001 in the construction industry in Malaysia.
(iv) To study the extent of the OHSAS 18001 had contributed to the achievement of these companies objectives?
(v) To study how the OHSAS 18001 can contribute to the achievement of these companies' positive objectives with regards to the OH&S issues?

4. LITERATURE REVIEW

The construction industry in Malaysia recorded high incidence of injuries and high fatalities rates. The fatality rate in the construction industry in Malaysia was of more than 3 times of other work places, it was 3.3% in construction industry as compared to other work places of 1.1% (SOCSO, 2000). In Malaysia, there are three basic legislation Acts that govern the OH&S of works in the construction industry, namely:

1. The Occupational Safety and Health Act 1994 (Act 514) (OSHA)
2. The Factories & Machineries Act 1967 (Act 139) (FAMA)
3. The Construction Industry Development Act 1994 (Act 520) (CIDB).

It is argued that employees are responsible and accountable for accident prevention. They should acquire the necessary knowledge in hazard prevention and control (Manuele, 1993). Under the section 30, Part VII of the Act, it is a duty of employer to establish a safety and health committee if there are forty or more persons employed at the place of work or directed by the Director General. The establishment of a safety committee responsible for

safety can help create a safer work environment (Kaletsky, 1996). The establishment of a safety committee and safety officer position helps to promote a positive safety culture. A safety committee should involve both management and workers in the safety planning process. Safety officers should be respected and given a high status if they are to influence events in the work place positively. The quicker their recommendations are implemented and publicized, the more they will seen to be effective (Cooper, 1997). According to Osborne and Zairi (1997), a safety and health management system is composed of standards, procedures and monitoring arrangements that aim at promoting the health and safety of people at work and to protect the public from accident.

5. RESEARCH METHODOLOGY

The data collection is based on the questionnaires sent to a wide spectrum of construction companies operating in various parts of Malaysia. Three hundred copies of a specially designed questionnaire were sent by post to the major construction companies throughout Malaysia. The selection of the companies has been restricted to those registered with CIDB under G7 category including 54 companies which are listed in the Kuala Lumpur Stock Exchange. The format facilitates a statistical basis for data analysis using the SPSS software. A total of 68 respondents submitted their answered questionnaires

6. DATA ANALYSIS AND RESULTS

The companies responding to the Questionnaire are categorized into 3 categories:
Category (a): 50 companies which have done or currently are doing engineering construction work exceeding twenty (20) million Ringgits,
Category (b): 29 companies which employ more than 100 employees and
Category (c): 48 companies which employ more than 40 employees.
68 companies answered Part One of the Questionnaire and 6 companies also answered Part 2 in addition to Part One.

6.1. COMPLIANCE TO STATUTORY REQUIREMENTS

Out of the 68 companies, 46 (67.6%) employ a safety and health officer for various reasons. Thirty nine companies (57.4%) do so in compliance with OHSA 1994 and other regulations, 29 companies (42.6%) do on their own initiative and 26 companies (38.2%) do so to comply with their clients' requirements. A simple majority' of the respondents employ a safety' and health officer because of their awareness that they have to comply with OHSA 1994, probably due to the fact that they are employing more than a hundred employees, whereas the other companies do so not because they have to comply to OHSA 1994 but because of their own initiative or to comply with their clients' requirements. Although there are 50 companies which have done or are currently doing engineering construction works exceeding twenty million Ringgits, construction works exceeding twenty million Ringgits, we do not know how many employees these companies employ. Out of 68 companies, 29 companies (42.6%) employ more than one hundred employees and 48 companies (70.6%) employ more than forty employees but less than one hundred employees. This fact confirms that the out of 68 respondents, the majority of them employ more than 40 but less than one hundred employees. This explains why 48 companies (70.6%) do not have to employ a safety and health officer in compliance to OHSA 1994 or other regulations but do so out of their own initiative or to comply with their clients' requirements. Although companies under category b.) do not have to employ a safety and health officer in compliance with OHSA 1994 and other regulations, they do establish a safety' and health committee or at least they have a safety and health policy either on their own initiative or at their clients" request. Out of 68 companies, 51 companies (75%) do establish a safety and health committee and 57 companies (83.8%) formulate and establish a safety and health policy respectively. The above statistics indicate that the majority' of respondents are aware that there is a need for a safety and health management and its importance to their companies. Whether or not they need to employ a safety and health officer depends on whether OHSA 1994 or other regulations require them to do so Even if they do not have to comply with OHSA 1994 or other

regulations, a significant number of companies a safety and health officer either on their own initiative or to comply with their clients' requests, probably, to assist them in establishing a safety and health committee. The service of a safety and health officer will also be needed to formulate and establish a safety and health policy for the company concerned.

6.2. AWARENESS OF THE DUTY OF EMPLOYER TO ENSURE THE SAFETY, HEALTH AND WELFARE OF ALL THEIR EMPLOYEES

Almost all the respondents (97.1%) said that they are aware that it is the duty of the employers to ensure the safety, health and welfare of all their employees. Most of the companies do provide training to their employees either by sending them to attend an Induction Course by CIDB or NIOSH (91.2%) or in-house safety and health program organized by a qualified safety and health officer (88.2%). The above statistics further indicate the awareness of the majority of the respondents concerning the importance of training for their employees in respect of safety and health issues. It also imply that the management of these companies (under categories b. and c.) realize that with a safety and health program their employees will be more productive and less prone to safety and health hazards during work. Employees succumbing and not able to report for work due to safety and health reasons will be deemed as liabilities to the company concerned. That is the reason why respondents (95.6%) said that their companies' employees do take good care of themselves pertaining to safety and health while at work. For example, 56 companies indicated that their employees take reasonable care for the occupational safety and health of themselves and of other persons who may be affected by their acts or negligence at work. 60 companies (88.20%) indicated that their employees wear or use at all time any safety measure, protective equipment or clothing provided for the purpose of preventing risks to their occupational safety and health. 52 companies (76.5%) indicated that their employees comply with any instruction or measure on occupational safety and health instituted by their management.

6.3. THE EFFECTS OF IMPLEMENTING A SAFETY AND HEALTH MANAGEMENT SYSTEM

This part concerned with whether or not the companies think their successes are dependent on the implementation of effective occupational safety and health management systems. If so, to what extent has effective safety and health management contributed in respect of the following areas:

1.) Reduce the accidental cost
2.) Enhance the image of company.
3.) Increase business opportunity.
4.) Increase overall profit of project

A majority of 58 respondents (85.3%) said that the implementation of effective occupational safety and health management systems has contributed to their companies' successes in respect of the areas as apportioned below:

1.) Reduce the accidental cost - 55 companies (80.9%)
2.) Enhance the image of company - 46 companies (67.6%)
3.) Increase business opportunity - 34 companies (50.0%)
4.) Increase overall profit of project - 19 companies (27.9%)

A minority of 19 respondents (27.9%) which said that the implementation of effective occupational safety and health management has contributed to their companies' increases of overall profits of projects were probably correct in saying so because additional costs will be incurred as a result of the implementation of effective occupational safety and health management systems. If the safety and health management systems are complex and sophisticated, then the administrative, operating and maintenance costs will be quite substantial thereby reducing the overall profits of projects. However, respondents (92.6%) stated that their companies emphasize safety and health at works at every stage of works for all their employees.

6.4. THE EFFECTS OF IMPLEMENTING OHSAS 18001

Forty seven respondents (69.1%) were aware of OHSAS 18001. The benefits of implementing OHSAS 18001 in respect of their respective companies as stated by the respondents as apportioned below:

1.) Improve company image - 36 companies (52.9%)
2.) Improve productivity and working environment - 34 companies (50.0%)
3.) Risk reduction on occupational safety and health accidents - 45 companies (66.2%)
4.) Can be treated as a self- regulators system in compliance $ with OSHA - 31 companies (45.6%).

As for the current practices of the companies pertaining to the prevention of accident at work, 52 respondents (76.5%) stated that they comply with OSHA 1994, Factories and Machinery Act, 1997 and other statutory requirements. They also practice according to their companies' respective occupational safety and health measures including in-house training programs, etc. The above statistics indicated although the majority of companies were aware of the benefits of a safety and health management system, they based their current practices on compliance with OSHA 1994 and other regulations and / or their own safety and health committees' recommendations and policies.

Fifty seven respondents (83.8%) stated that their current practices pertaining to the prevention of accident at work do not include implementing OHSAS 18001. It is obvious that OHSAS 18001 is still new to the majority of companies. This explains why 57 respondents (83.8%) stated that they did not implement OHSAS 18001. Although most companies are aware of the benefits of a safety and health management system in compliance with the statutory requirements of OHSA 1994 and other regulations, it is interesting to note that the majority of the respondents that is, 41 respondents (60.3%) do not think that complying to statutory requirements (OSHA 1994, FMA 1967} alone can effectively prevent accident at work. Fifty five respondents (80.9%) think that implementing OHSAS 18001 will help to reduce accidental rate at work although not all of them implement OHSAS 18001. However, we examined only those companies which have actually implemented OHSAS 18001. To find out whether how beneficial OHSAS 18001 is to those companies-which have implemented it, we have to analyze and evaluate the field data in Part 2 for those companies which have obtained OHSAS 18001 certification. There are only six companies which have obtained OHSAS 18001 certification, of which 3 companies obtained their certification within the years 2000 to 2001. The other three companies did not indicate which year they obtained their OHSAS 18001 certification. The amount these companies spend for the purpose of obtaining OHSAS 18001 varies from less than RM 10,000.00 to more than RM 100,000.00.

Three companies spent between RM 10,000.00 to RM 50,000.00 and 1 company spent between RM 50,000.00 to RM 100,000.00. The remaining 2 companies did not state how much they spent. The above statistics implied that all 6 companies are willing to spend thousands of ringgits to be OHSAS 18001 certified. It is logical to deduce from the above statistics that all 6 companies thought that being OHSAS 18001 certified would be an asset and advantageous to their companies. The six OHSAS 18001 certified companies implement OHSAS 18001 for differing reasons. 5 companies (83.3%) stated that they do so because firstly, they care about the occupational safety and health of their employees, secondly, to gain public respect and thirdly to reduce accidental cost. Out of 6 companies, 2 companies (33.3%) think that the most difficult part in implementing OHSAS 18001 is attributed to too much paper works 5 companies (83.3%) think it is attributed to the attitude of the employees to co-operate and 3 companies (50%) think it is attributed to the high cost of implementing the system. All 6 companies have differing views on the disadvantages and advantages to their companies after implementing OHSAS 18001. From Tables 2 and 3 it can be seen that only 1 company stated that the disadvantage is that the operating cost is higher compared to the competitor, whereas 5 companies (83.3%) do not think that higher cost compared to the competitor is a disadvantage. Three companies (50.0%) think of the disadvantages in terms of too much paper work and procedure will lengthen the construction time and only limited sub-contractors can follow the system. Hitherto, we have dealt with what the management thought in terms of advantages and disadvantages to their companies after implementing OHSAS 18001. What about the responses of employees toward the implementation of OHSAS 18001? Three respondents (50.0%) stated that their employees felt that although there are too much paper works and procedures they felt safe and secure. It is also comforting to note that at least 2 respondents (33.3%) stated that their employees felt excellent after the implementing of OHSAS 18001 by their management and that they will only work with OHSAS

18001 certified companies in future. As for the advantages after implementing OHSAS 18001, it can be seen from Table (2), that only one company (16.7%) said that they have improved profitability. This is probably attributed to increase costs in implementing OHSAS 18001. However, the profitability of a company does not only relate to implementing and maintenance costs of operating a safety and health management system. This feet probably explains why 5 companies (83.3%) do not put emphasis on improved profitability as an advantage to their companies after implementing OHSAS 18001. Perhaps, they put more emphasis on other advantages. Nevertheless, 3 companies (50.0%) stated that after implementing OHSAS 18001, they have a team of dedicated and sense of belonging staff. Four companies (66.7%) said that they have improved company's image and better prepared for competition locally and internationally and furthermore, the accidental rate has improved tremendously. Five companies (83.3%) stated that their companies were given credit for investing in OHSAS 18001.

Table 2: Improved profitability

	Frequency	Percent
Not select	5	83.3
Yes	1	16.7
Total	6	100

Table 3: The accidental rate has improved tremendously

	Frequency	Percent
Not select	3	50
Yes	3	50
Total	6	100

7. CONCLUSION

From the above analysis and evaluation, it can be deduced that most companies responding to the field data collection survey are those which employ more than 40 employees but less than 100 hundred employees. Most of them have done or currently are doing engineering construction projects amounting to twenty millions Ringgits. They do comply with OHSA 1994 and other regulations if it is required for them to do so. Even if they are not required to do so, they are aware of the importance of safety and health management systems. They do employ a safety and health officer on their own initiative or to comply with their clients' requirements. Even for those companies that do not have to employ a safety and health officer in compliance with OHSA 1994 or other regulations, they do establish a safety and health committee. At the very least, they do formulate and establish a safety and health policy. Generally, the current practices of the majority of companies responding to the field data collection survey do not include the implementation of OHSAS 18001 although the majority of them are aware of the existence of OHSAS 18001. Moreover, only a small number of companies have obtained OHSAS 18001. Hence, for this study, it is difficult to make a conclusive analysis and evaluation of the advantages and disadvantages of implementing OHSAS 18001 based on thus small base of OHSAS certified companies. We feel that OHSAS 18001 should be well publicizing to construction companies throughout Malaysia. More technical seminars on OHSAS 18001 should be conducted for the construction and other related industries by Sirim Malaysia Berhad and other relevant Government Ministries and Departments concerned with safety and health issues. This paper has analyzed and evaluated the data pertaining to the frequencies and percentage tables in relation to the responses made by respondents to the main and sub questions of the Questionnaire. When analyzing and evaluating the frequencies and percent data, it has referred to the cross tabbed and correlated relationships of various main and sub questions of the Questionnaire with the answers given by the respondents.

REFERENCES

BSI. OHSAS: 18001: Occupational Health and Safety Management Systems – Specification. London, British Standardization Institution, 1999.
Cooper D. Improving Safety Culture. London, Wiley; 1997.
Kaletshy R. OHSA Inspections. New York, McGraw-Hill,1996.
Manuele FA. On the Practice of Safety, New York, Van Nostrand Reinhold, 1993.
Osborne J. and Zairi, M. Total Quality Management and the Management of Health and Safety. Health and Safety Executive, London,1997.
Social Security Organisation (SOCSO). "Annual Report for 2000" Kuala Lumpur, 2000.