

STRENGTHS AND WEAKNESSES OF OCCUPATIONAL SAFETY AND HEALTH'S AUDIT SYSTEM IN A MANUFACTURING PLANT IN SELANGOR

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ABSTRACT

Occupational Safety and Health Management System (OSHMS) has been introduced in many workplaces. Audit is also an integral component of an occupational safety and health system. A study was conducted to gain understanding of the weaknesses and strengths of OSH audit practice as perceived by three different target groups, namely safety and health officers (SHO), employer's representative (EMR) and employee's representative (EME). The research method involved an in-depth interview in a local Japanese Manufacturing Firm. Concerning the weaknesses of audit practice, SHOs indicated that operators were overloaded with too many audit activities and audit merely based on compliance to laws which are not enough. Whereas the employee representative felt the operator should be more involved in audit activities and audit findings were slow to reach the operators. Employer representative found that audits hardly changed the worker attitudes and auditors should not be fault finding and must work together with concern section in problem solving. Among the strengths of the audit system, SHOs commented that the written audit policy helped workers in better understanding of its purposes. Job rotation provided a good training for auditor to become competent. Employee representatives felt that it helped to raise safety awareness among operator and good feedback to them. Lastly, the employer representatives found that the audit practice helped to raise worker understanding on safety matters and auditors were able to notify the hidden safety problems that operator had difficulty to detect. In conclusion, from the preliminary study of a long good track record of OSH audit system in 2 Japanese manufacturing firm, it shows the general perception towards audit approach as the best approach to identify OSH weakness still receiving some contradict ideas from the various groups especially the EMR and EME as well. It implies that there is still room for improving the audit approach.

INTRODUCTION

Audit plays an important role in improving company work processes. The main function of audit is to identify any variation happens with current practices against any gold standard or criteria (Mercer 1998) & (Breeding 1999). Since the inception of Malaysia OSH Act in 1994, the implementation of OSH audit system is still unknown to most local OSH practitioners. In the Occupational Safety and Health (Safety and Health Committee) Regulation 1996, "Safety audit" was defined as "the safety and health audits of plants and systems of work to ensure the safety and health of persons employed at a place of work" (MDC 2002:226). It further demanded the minimum duration of inspection in section 12 as such "inspect the place of work at least once in every three months to ascertain if there is anything prejudicial to the safety and health of persons employed" (MDC 2002:228).

However, local information on OSH audit system among local manufacturing industries was rather absent. As a result, a case study of a local Japanese-owned company which has a long history

of good OSH audit experience was selected as a preliminary study.

OBJECTIVES

There are two main objectives of this study. (i) To obtain the view from Safety and Health Officer (SHO), Employer Representative (EMR) and Employee Representative (EME) on matter of Safety and Health audit system as practised in the manufacturing industry. (ii) To identify the strengths and weaknesses of audit practice as perceived by the named three target groups.

METHODOLOGY

This is a case study using an in-depth interview. The sample was selected purposely from a list of manufacturing companies from the Federation of Malaysian Manufacturers directory 2002 (FMM 2002). There are minimum criteria for the company to be selected such as a minimum of 1 year audit practice and a minimum of 600 staffs. A Japanese manufacturing firm was selected that established in early 1970 with the current employees around 800 was purposely selected due to the reason that Japanese manufacturing companies are currently still the leading manufacturing industries in the world and partly also their willingness to participate in this research compare to other

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foreign-owned companies. There was one person appointed for each of the three target groups. In the interview at the factory, the safety and health manager represents the SHO category, the shift supervisor represents EMR category and Line Leader represents EME category with working experience 28 years, 26 year and 19 years respectively in this company. The selection of the interviewee of EMR and EME were however determined by SHO because he knew better who are available to participate in this study. The interview were conducted on 24 April 2003 (SHO),

8 May 2003 (EMR) and 22 May 2003 (EME) on one-to-one basic and recorded with tape recorder. All the interviewee was given the same set of questionnaire that contains eleven topics as shown in Table 1. The eleven topics are adopted from the audit measurement with 11 indicators of the Malaysian OSHMS Checklist (Rampal et al 2002). The EMR and EME target groups were only raised with the weakness and strength questions about the 11 indicators. Nevertheless, SHOs are requested to answer additional question with more detail on what, how, who, where and when questions.

Table 1: The 11 questions as quoted from the Malaysian OSHMS Checklist's audit element

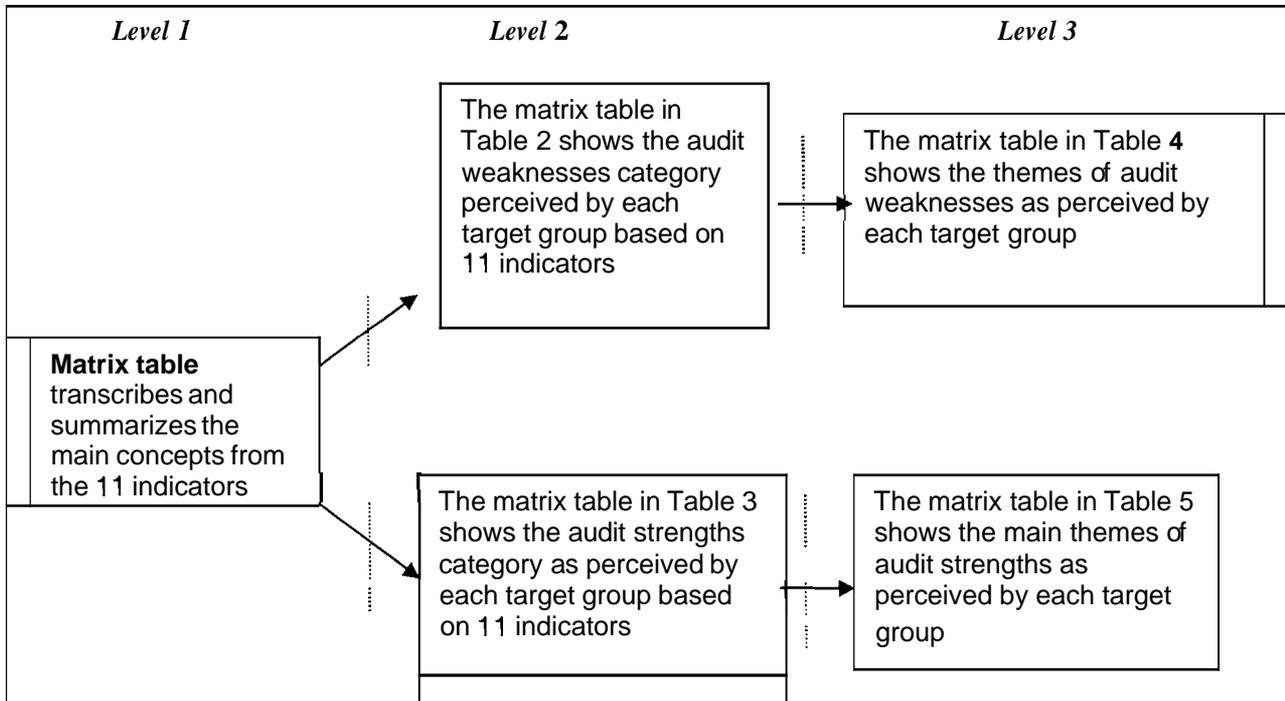
1	An audit policy and program have been developed
2	Arrangements to conduct periodic audits are established
3	The audit includes an evaluation of the organisation's OSH-MS elements or a subset of these, as appropriate
4	The audit conclusion determines whether the implemented OSH-MS elements or subset of these are effective in meeting the organisation's OSH policy and objectives
5	The audit conclusion determines whether the implemented OSH-MS elements or subset of these are effective in promoting full worker participation
6	The audit conclusion determines whether the implemented OSH-MS elements or subset of these respond to the result of OSH performance evaluation and previous audits
7	The audit conclusion determines whether the implemented OSH-MS elements or subset of these enable the organisation to achieve compliance with relevant national laws and regulations
8	The audit conclusion determines whether the implemented OSH-MS elements or subset of these fulfill the goals of continual improvement and best OSH practice
9	Audit is conducted by competent person
10	The audit result and conclusion are communicated to those responsible for corrective action
11	Consultation on selection of the auditor and all stages of the workplace audit, including analysis of results are subject to worker participation, as appropriate

Source: Rampal et al (2002) Malaysian OSH-MS Audit Checklist. Department of Occupational Safety and Health

METHOD OF DATA ANALYSIS

As shown in Diagram 1, the qualitative data analysis approach was using the common approach of identified main concepts from original respondents verbal textual form. Then the similar concepts will be grouped as new categories (e.g. in Table 1 and Table 2) and finally themes (e.g. in Table 3 and Table 4) were formed from the earlier categories. Frequency statistic was used to calculate the same statement as repeated by respondents through the eleven indicators. However, this frequency statistic does not imply that it is the real cause that will effect the audit practice outcome. Effort was tried to identify the similarity ideas across the three respondents. However, it is difficult to establish due to the limited number of respondent and too narrow and personal view that would lead to more confusing.

Diagram 1: The conceptual framework diagram for data analysis method



Limitation of study and method to overcome:

There are some limitations in this study that were encountered during data collection. The limitations were classified into three main sections as such:

a. Questionnaire

The questionnaire's indicators are adopted from the Malaysia OSHMS Checklist. This questionnaire is only suitable to evaluate the "same" profession such as OSH auditor, and not the end user likes worker and employer. It is because worker and employer seldom involve in the audit practice. However, input from worker and employer are greatly required in this study to avoid expertise bias.

b. Employer and employee knowledge limitation

There are some limitations of respondent from employee and employer representative due to the constraints like:

- Lack of knowledge or experience on audit practice. They have not involved in auditing as auditor or lead auditor.

- They have different definition, requirement and expectation about auditing that is not in line with the international/national standard.
- Some questions beyond their ability to answer for instance to determine the auditor competency and qualification.

Although there exists some difficulties to assess the audit practice from different representative. Accepting the different perception and definition of audit practices especially the view of EMR and EME were still being considered as an important input despite having some weaknesses: For instance, worker representatives have their own perception and definition on each question which might not be consistent with the accepted standard.

RESULT

Table 2 and Table 3 are the summary of the weaknesses and strengths of audit practice given by Safety and Health (SH) Manager (Safety and Environment Manager), Employee (Line Leader) and Employer (Shift Supervisor) according to the eleven indicators.

Table 2: Weaknesses of audit practice as perceived by three representative based on 11 indicators

Indicators	SH Manager	Employee	Employer
1 Audit policy and program	-Only <i>general guideline on audit procedures</i> -Worker cannot remember too much various audits	-less workers involvement	-can not change worker attitude -procedures need simplified for worker
2 Periodic audit	-too much paper work	-less review with workers	-slow action in audit findings findings do not reach worker level -management attitude problem towards small safety problem -attitude of worker problem appreciate the good written audit procedures
3 Organization OSH MS element audit	-difficulty to identify potential hazard	-nature of busy duty difficulty for worker to maintain good 5s practice	-new procedures do not reach the worker -worker only react better during audit -procedures need to be simplified
4 Audit Conclusion (achieve OSH objective)	-worker main challenge to digest various disciplinary audit	-audit information do not reach the worker level -top management are actual the fault causing safety problem	-problem of top down approach that less consider worker ability to practice best safety -procedures need simplified for worker, avoid time consuming inspection -poor attitude among worker
5 Audit Conclusion (worker participation)	-poor command of English and knowledge limitation among workers	-too late for review information do not reach the worker level	-top management do not aware worker the dangerous task handle mostly by worker, but their voice was less listen to -poor attitude among worker
6 Audit Conclusion (previous audit and OSH performance)	no weakness	-only involve supervisor and above during the review session -difficulty to involve worker due to nature of work shift	-photo taken approach cause unpleasant situation among section staff
7 Audit Conclusion (laws and regulation)	-some laws still not yet exist in Malaysia	-no comment	-audit can't guarantee worker comply to laws all the time -worker attitude problems
8 Audit Conclusion (continuous improvement and best OSH practice)	-lack of effective authority to monitoring the industries submitted report as required by laws	-worker behavior is rather difficult to monitor	-simplified the system process is the best approach -lack of worker confidence to give idea for improvement
9 Auditor Competency	-lack of department cooperation to release potential auditor	-auditor (safety department) is pushing too hard -suggest higher qualification among auditors	-auditor should not fault finding -should work more closely with section concern

10	Audit result (communication method to responsible person)	-nature of production business difficult for correction action	of that for	-slow action taken by auditor difficult to keep every worker inform and follow up	-problem of auditor body language photo taken cause unpleasant situation -poor communication skill -less diplomatic ways and should be more discussion approach -wrong root cause identification due to different work shift
11	Worker participation during audit process	no weakness		-should have more interactive session with worker	-great different of requirement between worker and management towards safety -fault finding by auditors
12	Additional comments	-lack of experience DOSH officer -audit based on laws not enough		-audit should involve more worker	-auditor should not just fault finding -should work closely with section concern -too much focus on technical rather than the management problem

Table 3: Strengths of audit practice as perceived by three representative based on 11 indicators

Indicators	SH Manager	Employee	Employer	
1	Audit policy and program	-clear reference to worker safety	-very strict audit policy	-help worker better understanding (1a)
2	Periodic audit	-improve weakness	-very independent groups of auditors comprises from various department give a very fair evaluation -increase worker awareness of safety	-independent auditor teams from various department -inspection able to notify hidden safety problem -increase worker awareness and as reminder for them
3	Organization OSH MS element audit	-just embark on ISO OSHMS	-very comprehensive audit scope and applicable at home eg. 5s	-the procedures provide good reference for complying
4	Audit Conclusion (achieve OSH objective)	-OSH regulation is very good to persuade top management to comply	-worker can be more aware about safety	-procedures provide good reference better quality of life to every body
	Audit Conclusion (worker participation)	-best worker performance through lost time injuries record	-help increase worker knowledge on safety	-top management very support on worker safety training and education -respond immediate to worker safety demand from top management
	Audit Conclusion (previous audit and OSH performance)	-all previous audit findings will be shared through out the plants in the world	-very successful audit program; no serious accident happen	-good trace back system to identify possible cause through previous audit data
7	Audit Conclusion (laws and regulation)	-able to persuade top management to comply to regulation	-great improvement compliance to laws if compare to early time	-satisfactory with company performance complying to laws
8	Audit Conclusion (continuous improvement and best OSH practice)	-international expert provide good experience on OSH improvement	-good lost time injuries record	-best suggestion scheme to promote worker involvement for OSH improvement
	Auditor Competency	-job rotation in difference departments provide a good experience for auditor	-paper qualification is not consider the main criteria to achieve higher position	-auditor able to notify area that need further improvement

10	Audit result (communication method to responsible person)	-digital camera is most effective ways to proof evidence and argument	-email technology provide best platform to communicate	-able to identify the problem and discuss it together
11	Worker participation during audit process	-good worker suggestion will be documented and selected worker will present to top management	-safety manager will review with operator level on safety matter after audit	-the auditor will help the worker any safety matter that is overlook
12	Additional comments	-regulation provide good basic for audit -job rotation provide good platform to become competence auditor	No comment	No comment

In Table 4, the result showed that the major themes about weaknesses of audit practice as perceived by Safety Health (SH) Manager is that workers were burden with various audit such as quality, environment and occupation safety and health. Besides, problems like too basic audit checklist, too much of paper work, etc. also contribute to the main difficulty encountered by the SH Manager. For the employee representative, the main concern about the weaknesses of audit are that it less

involves the workers and audit findings information did not reach worker level. Whereas for the employer representative, the comments were worker attitude is difficult to change despite having the intensive audit activities; safety procedure must be kept simple for the worker to practice; auditor only focused on fault finding without accepting constructive suggestion, and audit practice should get more worker to cooperate thru discussion with worker or section head.

Table 4: Weakness of Audit Practice based on each respondent

SH Manager	Employee	Employer
<ul style="list-style-type: none"> • worker burden with various audit (2) • basic audit checklist • too much paper work • problem identify potential hazard • worker language problem • lack of experience DOSH officer • audit based on laws is inadequate • nature of non-stop production difficult for correction action • lack of department cooperation to release potential auditor • inefficiency authority monitoring • some laws not available in Malaysia 	<ul style="list-style-type: none"> • less worker involvement (7) • information not reach worker level (4) • Only involve supervisor above during review • Heavy duty, difficult to maintain 5s • Top management causing the OSH problem • Too late for review • Slow corrective action by auditor • Auditor (safety dept) is pushing too hard • Suggest higher academic qualification auditor • Worker behavior is difficult to control 	<ul style="list-style-type: none"> • worker attitude (6) • procedures need simplified (4) • auditor more on fault finding (3) • need more cooperative with worker (3) • top management less listen to worker need • great different view among worker and mgmt towards OSH • poor communication skill; body language • wrong root cause findings by auditor • findings not reach worker • slow action in audit findings • photo taken cause unpleasant situation • audit cannot guarantee worker comply to laws • lack of idea from worker

Note: the numbered statement showed the repeating statement as mentioned by respondent across the 11 indicators.

From Table 5, the major themes about strengths of audit practice as perceived by Safety & Health Manager is that job rotation training provide good platform to become

competence auditor, regulation help to persuade top management to comply to any laws regulation during audit exercise and so on. For employee representative,

the audit strengths are that it helps to increase worker safety awareness through periodic audit. Whereas for employer representative, the audit helps the worker to better understand the important of safety practices, audit

able to identify hidden safety problem and audit will ensure the safety procedures as a good reference for compliance.

Table 5: Strengths of Audit Practice based on each respondent

SH Manager	Employee	Employer
<ul style="list-style-type: none"> • job rotation training for auditor competency(2) • using regulation to persuade top management to comply(2) • clear reference to worker • improve safety weakness • best worker commitment: good lost time injuries record • audit information shard with world wide plants • regulations as a basic for audit • good suggestion from worker will presented to top management • digital camera as good evidence and less argument • good international expert advice on safety 	<ul style="list-style-type: none"> • increase worker safety awareness (3) • very strict audit policy • comprehensive audit scope and applicable at home • very successful audit program; no serious accident happen • safety manager will review with operator after audit • email provide good platform to communicate • paper qualification is not consider in higher position • good lost time injuries record • great improvement on compliance to laws compare early time 	<ul style="list-style-type: none"> • help worker better understanding (3) • able to identify hidden safety problem (4) • procedures good reference for comply (3) • independent audit team • increase worker awareness • better quality of life to every body • top management commitment on worker training and education • respond immediate to worker demand by top mznagement • good trace back system; able to identify actual cause • suggestion scheme to promote worker involvement • good comply to laws

DISCUSSION

Two major components of the weaknesses and strengths in the OSH audit system as perceived by the three targets groups will be discussed mainly based on Table 4 and Table 5.

A. Weaknesses of Audit System

From the analysis as shown in Table 4, the problem like "worker burden with various audits"(SHO) showed the lack of integration of OSH audit along with others audit like product audit and environmental audit as commented by SH Manager. It showed that the current organization is still being managed in the isolated approach. It is against the ninth principle as mentioned by Deming (1992:23) to "break the barrier among departments". It will result in the workers being burden with various audit and inspections. As a result, each discipline is only focus achieving own discipline that resulted every body only solving the symptom and not the real root cause (O'Brien et al 1994). Therefore, "wrong root cause findings by auditor" commented by the EMR is true to some extend.

Besides that, the problems such as "only follow basic audit checklist" (SHO), "procedure need

simplified" (EMR), "heavy duty and difficult to maintain 5s" (EME) showed the other dimension of how the effort of audit might not really making any better improvement to the OSH performance. Such audit paradigm is often criticized different researchers. For instance, audit based on the known variables of checklist or just meeting OSHMS elements does not making a real improvement (Smith 1996). The auditor need to keep on searching the unknown variable as remark by Deming (1992). Mansdorf (1996) also make a remark that ISO 9000 and OSHMS do not promise a good performance. Famous quality guru, Philip Crosby also criticized the ISO 9000 standard practice is totally misguided with the faulty idea that managing quality could be improved by following strictly informative standard work procedure (Harmon 1997). Such comment is also applicable to the OSH audit paradigm. It showed that too often the public was misguided by the standard OSHMS that is over stated its real benefit and hidden limitation.

Comments like "too much paper work" (SHO) and "audit based on laws is inadequate" (SHO) is also true as what comment by other practitioners. Heizer & Render (2000) commented that ISO 9000 was too focus on conformance to standard, documentation, work procedures, record keeping which has nothing to do with the actual product

quality. Baker (2001) and O'Brien. et al (1994) also criticized that it is too focus on documentation rather than the real evidence for real improvement. On the other hand, problem like "too late for review" and "slow corrective action by auditor" (EME), "findings not reach worker" and "slow action in audit findings" (EMR) showed some similarity with O'Brien. Et al (1994) comments that lack of good correction action plan to handle the non conformance items.

Basically, the .main issue commented by respondents like "worker burden with various audit" (SHO) and also other hints of weaknesses like "auditor more on fault finding" (EMR), "worker attitude" (EMR) and "worker behavior is difficulty to control" (EME) showed that this company basically still rely the worker as the main target of OSH improvement. Such approach is totally contradict to Deming (1992) concept that he mentioned 96% problem is due to the system fault that belongs to top management responsibility rather than the worker that account for 6% only. The implication is that the auditor, SH manager or the top management are suggesting and putting the wrong or too costly resources on the worker as primary target on safety improvement without realizing workers only account for 6% of OSH problem and neglecting the 94% that belong to the system fault.

B. The Strengths of Audit System

Regarding the strengths as perceived by different groups, this company basically has a very good audit and OSH program that try to go beyond the compliance audit paradigm. For instance, "regulations as basic for audit" such as adopting better oversea OSH requirement or standard from head quarters, "good suggestion from worker will presented to top management", "job rotation training for auditor competency", "good international expert advice on safety within their world wide plants", "audit information shared with world wide own subsidiaries' plants, etc by the SH Manager. Besides, the EMR also give positive remarks such as "respond immediate to worker demand by top management", "suggestion scheme to promote worker involvement" and "top management commitment on worker training and education". It showed the good audit system is fully supported and committed by the Japanese top management. Such good management style by the top management has pushing the more effective OSH audit approach to be more proactive rather than reactive. Japanese top management is generally know their duty and leadership as key person to push for better OSH program. The top management often carried out the morning patrolling or inspection in the production floor and give comments during management meeting.

Besides, they do support and accept every worker inputs through suggestion scheme on any issues not just on job OSH matter but also off job OSH matters. The Japanese top management does take care employee's family matter seriously such as allocation of accommodation and schooling. They do understand that if the off job or employee family issues are a serious matter to an employee, it will finally affect the worker productivity and thus also affect the company as a whole.

RECOMMENDATION

In fact, the audit practice did criticize seriously by some practitioners. Its effectiveness become suspicious. Petersen (2001) for instance criticized that not many people argue about the effectiveness of audit especially when it became a "new trend" to ensure OSH quality. Besides, less attention was given on the effectiveness of the performance measurement used in the OSH audit (Redinger 2002). There is actually a very clear answer to overcome such limitation of audit that encountered by the OSH professional. TQM has in fact embedded in the ILO OSHMS and OHSAS 18001 formulation (Kingdom Management Training 2003). Therefore, the understanding of quality theory among auditors is rather important to avoid the wrong audit findings. Jorgensen (1998) suggested the adopting of Deming 14 management principles to keep improving the OSH management system, audit criteria and there is no one standard that fit all.

Therefore, three recommendations have been proposed to improve the audit practices in the Company as follows:

- **Adopting the new paradigm of management theory, TQM principles**

Traditionally, OSH audit assessment was done only to serve own OSH discipline. It does not take into consideration the organization survival mission as a whole. As a result, the OSH approach and solution were seem as isolated and have difficulty to get along in the mainstream of core functional areas or getting the top management attention. This resulted any improvement on OHS was not taken serious by the top management. Occupational health performance should be measured integrated with other business functions (Mercer 1998; Saunders & Wheeler 1991). The OSH auditor should move into the new paradigm shift in moving the OSH measurement into the organization mainstream and helping the top management to view OSH as part of a survival approach.

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