Enhancement of SMS – A Safety Culture Approach

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Presentation Outline

- Introduction
- What does an identifiable safety culture look like?
- Tools developed by OSHC for measuring safety climate and safety behaviour
- Application of these tools in enhancement of safety management system
- New competition items in Construction Safety Day
Independent Safety Audit Scheme and Pay for Safety Scheme

- OSHC introduced OSH Management System and Safety Audits in 1992

- OSHC was appointed by the Works Bureau and Housing Authority to manage Independent Safety Audit Scheme (ISAS) in 1996

- Safety Audits combined with incentive schemes (Pay For Safety Scheme)

- “A Guide to Construction Safety Management” was released in 2000
Effective Management Tools - Safe Working Cycle & 5S Good Housekeeping

- **Safe Working Cycle (SWC)** and **5S Good Housekeeping** are proven techniques from Japan.

- **SWC** nurtures safe behaviour and received strong support from ETWB making it a **contractual requirement for selected projects**.

- **5S** encourages the upkeep of neat & tidy workplace and a good habit for employees to comply with safe housekeeping rules.
Journey to Enhance Workplace Safety Standard in Hong Kong – Safety Culture Enhancement Stage

Accident Statistics for Construction Industry in Hong Kong

- **Safety Culture Enhancement Stage**
- **System Improvement Stage**
- **Technical Improvement Stage**

![Accident Statistics Graph](image)

- **No. of Accidents**
- **Acc. Rate per 1,000 Workers**

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Accidents</th>
<th>Acc. Rate per 1,000 Workers</th>
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<tbody>
<tr>
<td>1986</td>
<td>310.9</td>
<td>7.39</td>
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<td>1987</td>
<td>332.97</td>
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<td>1988</td>
<td>369.43</td>
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<td>294.76</td>
<td>7.44</td>
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<td>219.9</td>
<td>7.17</td>
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<td>1994</td>
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<td>7.01</td>
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<td>1995</td>
<td>247.9</td>
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<td>1996</td>
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<td>2.01</td>
</tr>
<tr>
<td>2006</td>
<td>60.3</td>
<td>2.01</td>
</tr>
<tr>
<td>2007</td>
<td>60.6</td>
<td>2.01</td>
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</table>
Challenges of Developing Effective Safety Management System

- Some organization’s SMS appear to be satisfactorily on paper, but are not followed in practice
- Rules may be perceived as bureaucratic, unworkable and unnecessary
- Conflicts between the needs to get the work done in time, and the time required to do the work safely
- Not all level of employees agree that the organization’s SMS is necessary and effective
- Failures to effectively communicate OSH arrangements
Occupational health and safety management systems – Guide

• Supersedes BS 8800:1996
• Safety Culture
• Promoting an effective OH&S management system in Annex C
What does an identifiable safety culture look like?

**Safety Culture (BS 8800):**
product of individual and group values, attitudes, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organization’s approach to health and safety

**Indicators**

1. Every employee has received high quality integrated job and safety training
2. A good safety climate
3. The extent to which employees are actively involved in safety on a daily basis
Promoting an effective safety management system

**Key determinants of an organization’s safety culture**

1. The effectiveness of communications
2. The level of trust between staff at all levels
3. The degree to which all staff are encouraged to be proactive in improving safety performance (Involvement)
4. The commitment of everyone to the overall goals

**Barriers to a positive safety culture**

1. Disregard for rules and procedures,
2. Risk taking and other unsafe acts

BS 8800:2004 Annex C
Measuring and improving safety culture

BS 8800:2004 Annex C. 3.1

Methods recommended:
1. Informal discussions, feedback from briefings/tool box talks;
2. Semi-structured questionnaire/interviews with groups/individuals;
3. Organizational questionnaires;
4. Attitude surveys of employees within the organization;
5. Observations of individual and group behaviours in practice.
“Capturing people’s hearts and minds involves understanding and changing people’s safety attitudes”
“The term safety climate refer to psychological characteristic of employees (i.e. how people feel), corresponding to the attitudes and perceptions of employees with regard to safety within an organization.”

(Source: A review of safety culture and safety climate literature by HSE, 2005)

e.g. How people view the importance their organization gives to health and safety relative to quality or production;

How committed they believe their superiors or peers are to health and safety
Effectiveness of Safety Climate Survey Conducted by HSE

- With reference to the Climate Survey Tool developed by HSE in 1997
- 213 users of SCI Survey Tool participated in the survey by HSE in 2001
- 83% of users had taken actions after conducting SCI survey, with 79% indicating that SCI had made a positive impact on safety and health
- 75% of users indicated that conducting SCI survey had increased employee’s participation in safety activities

Source: HSE2002 “Evaluation the effective news of the HSE’s Health and Safety Climate Survey Tool”
Safety Climate Survey in Construction and Catering Industry

- Council conducted safety climate survey for construction and catering industry in 2000 using the HSE model

- Target groups in the survey are managers, supervisors and frontline employees

- 641 participants from 14 construction sites joined the survey in Year 2000
Tools for Safety Climate Index Measurement

- OSHC and Tsinghua University jointly develop the “Construction Industry Safety Culture Index Software”

![2006 Software](image1)

![2008 Software](image2)
7 Contributing Factors of SCI Survey

1. Commitment and Concern for OSH by Organization and Management
2. Resources for safety and its effectiveness
3. Risk taking behavior and perception of work risk
4. Perception of safety rules and procedures
5. Personal involvement in safety and health
6. Safe working attitude and workmates' influence
7. Safety promotion and communication
SCI Survey

Safety Climate Index Survey is measured via surveys, that cover various factors thought to be important to safety, on an annual or bi-annual basis.

An organization is willing to actively consult and act upon its membership’s views provides a very good indicator of a positive culture.
Process of Survey

• A 3-phase survey method:
  – Preparation Phase
  – Implementation Phase
  – Result Announcement and Follow-up Phase
3 Types of Survey Questionnaires

1. Safety Climate Index Questions
   Use to calculate the SCI

2. Demographic Questions
   • Use to compare SCI of different groups of employees

3. Site Information Questions
   • Collect basic information of participating sites
   • Use to compare SCI of different sites
Characteristics of SCI Questions

1. **38 questions** and include some open-ended questions

2. Ensure a good mix of positive & negative responses e.g. “I ignore safe working practices” “I adhere safe working practices”

3. The statements are:
   a) short
   b) simple - focused on only one complete thought
   c) familiar - using everyday language

4. **Scoring Format**

<table>
<thead>
<tr>
<th>Please tick the appropriate box to show your level of agreement with each of the following statements</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Some health and safety procedures/instructions/rules are difficult to follow</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Overall Safety Climate Index of the Sites Participated in the Survey
Results of Safety Climate Index for Different Staff Levels

- Manager (16 Cases): SCI = 65.4
- Supervisor (88 Cases): SCI = 65.3
- Workforce (612 Cases): SCI = 60.5

*: Level of significance is less than or equal to 0.050.
It is well documented that WSB can improve safety performances as well as productivity.

**Business benefits**

A manufacturing company with 1,400 staff introduced a behavioural safety programme and gained:
- improved productivity – the number of work days lost through injury per year dropped from 550 to 301 in four years
- improved public image – the company’s managers have given presentations at major behavioural safety conferences
- staff development – many observers have improved communications and IT skills and greater confidence.

(Source: HSC)

**Business benefits**

A behavioural safety programme at a petrochemicals plant brought economic benefits, including:
- a saving of £250,000 per year through early identification and repair of leaks
- a 32 per cent reduction in insurance premiums
- major reductions in operating costs as workers became more confident about identifying and dealing with problems themselves.

(Source: HSC)
Characteristics of Work Safe Behaviour (WSB) Programme

1. Each company could tailor-made its WSB programme.

2. A programme to encourage all stakeholders’ participation from sub-contractors to senior management and frontline employees.

3. ‘No naming, No blame and No fault’ approach to correct at-risk behaviour and reinforce safety behaviour.

4. Develop a caring culture for colleagues and co-workers.
1. Identifying Critical Behaviours
- Operation Process Analysis
- Risk Assessment
- Accident Investigation

2. Communication and Support
- Briefings
- Fully explain to all concerned
- Encourage participation

3. Target Setting and Training
- Forming Working task group
- Recruiting and training observers
- Developing baselines

4. WSB Observation
- Developing WSB Checklist
- Implementing Observation Process
- WSB Analysis

5. Intervention
- Reinforcement training
- Award Scheme
- Changing of operation design and process

6. Review and feedback
- Evaluating the extent of change
- Correcting deviations
- Monitoring

Work Safe Behaviour Flow Chart
Briefings

Four Important Issues:
1. Target Setting
2. Sufficient Information
3. Gain Workers’ Co-operation
4. Encouragement
Work Safe Behaviour (WSB) Training

- OSHC provide WSB training courses (12 hours)

- Tutors with OSH knowledge receive WSB program and SCI training (12 hours)

- Trained tutors will follow the DIY Kit instructions to train their WSB Observers
Recruiting Observers

Observers must undergo appropriate training

Accident Prevention Programmes

Motivate
Support

Observer

Serve as Observers

Management  Supervisor  Worker

Potential Observers

• Good reputation among colleagues
• Visible Safety Commitment
• First hand knowledge and experience
• Good Communication skill

Work Safety Behaviour

Reputation  Trust
Training the Observers

Duration: 12 hours

- Practices and Report
- Case Studies
- Data Analysis and Improvement Actions
- Training Contents
- Feedback Techniques
- Methods of Identifying Critical Behaviour
- Observation Techniques
- Score Calculation
Observation Procedures

- Target Setting
- Developing WBS Checklist
- Choosing the Right Time and Right Place
- Identifying the Root Causes of Behaviour
- Following the Score Calculation System
- Recording Safety Behaviour and At-risk Behaviour and Suggestions
3-31/12/2007  Safety Performance Percentage 安全表現百分率

Work Safe Behaviour Observation Chart
Interventions

• Using ABC (Antecedent, behaviour and Consequence) Analysis
• Looking for patterns and trends
• Recommend appropriate interventions in action plans
Successful Experience

Leading enterprises such as CLP, MTR, Exxon Mobil, Gammon, PCCW, Shui On, EMSD and Hongkong Post had carried out behaviour-based safety programme.
SCI Survey
Period: 11-16 April 2008
Place: HA Site
Total: 883 cases (12 Sites)
Maintenance: 89 cases (3 sites)
Building: 794 cases (9 sites)
Uplifting the Safety Performance of Construction Contracts Scheme

Safety Climate Index Survey (SCI)” and “Work Safe Behaviour Programme (WSB)
Challenges Ahead

- How to promote SCI survey and WSB programme in Hong Kong construction industry to achieve continual improvement in safety performance?

- Legislation

- Contractual requirement

- Promotion and Competition
Incentives

- Successful experience of Pay for Safety Scheme and Independent Safety Audit Scheme introduced by the Hong Kong Government

- Possibility to make use of SCI tool and WSB programme as an contractual requirement
• Safety Inspection Programme (existing) mainly focused on environmental factors

• Behavioural-base Observation focused on high risk critical behaviours of employees
Competition on Safety Culture

1. The Best Safety Culture Sites
2. The Best Safety Culture Project Manager/Site Agent
3. The Best Safety Culture Activity Team
4. The Best Safety Culture Subcontractor
The Best Safety Culture Site

- 告知文化 (Informed Culture)
- 學習文化 (Learn Culture)
- 公平及關愛文化 (Just and Caring Culture)
- 匯報文化 (Reporting Culture)
- 危害意識及計劃文化 (Risk Awareness and Planning Culture)
The Best Safety Culture Activity Team

- 計劃 (Planning)
- 實行 (Implementing)
- 建立及發展特別工具或安排 (Establishing and developing special tools and arrangements)
- 安全施工程序 (Safe Working Cycle)
- 工作安全行為 (WSB)
- 安全氣候指數 (SCI)
- 危害識別 (Hazard Identification)
3.4 最佳「安全文化」分判商小組

The Best Safety Culture Subcontractor

- 配合 (Collaboration)
- 獨立 (Independence)
- 安全施工程序 (Safe Working Cycle)
- 工作安全行爲 (WSB)
- 安全氣候指數 (SCI)
- 危害識別 (Hazard Identification)
Thank You

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