Integrating Culture and Leadership into Catastrophic Event Prevention

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BST Profile

- BST helps clients achieve world-class safety performance by aligning their people, processes and metrics on reducing exposure in the workplace.
- Projects at over 3,100 locations representing over 70 countries.
- BST has worked extensively across all industries.
- Making Work Safer through culture, leadership, and employee engagement
Latest findings in research on Serious Injuries and Fatalities (SIF)
Why is This So Important?

Rate of fatal work injuries, 2006–2011*

<table>
<thead>
<tr>
<th>Year</th>
<th>Fatal work injury rate (per 100,000 full-time equivalent workers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>4.2</td>
</tr>
<tr>
<td>2007</td>
<td>4.0</td>
</tr>
<tr>
<td>2008</td>
<td>3.7</td>
</tr>
<tr>
<td>2009</td>
<td>3.5</td>
</tr>
<tr>
<td>2010</td>
<td>3.6</td>
</tr>
<tr>
<td>2011</td>
<td>3.5</td>
</tr>
</tbody>
</table>

OGP HSE Performance trend lines

- Red: Company FAR
- Green: Company TRIF
- Purple: Company LTIF
Traditional Safety Triangle is Descriptive

Data from 2008-2009

<table>
<thead>
<tr>
<th>Category</th>
<th>Average Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious Injuries and Fatalities</td>
<td>0.0014</td>
</tr>
<tr>
<td>Restricted and Lost Workday Cases</td>
<td>0.30</td>
</tr>
<tr>
<td>Medical Treatment</td>
<td>0.98</td>
</tr>
</tbody>
</table>

1028 Total Cases Studied
Traditional Safety Triangle *is not* Predictive

Not all injuries have Serious Injury and Fatality (SIF) potential.

A reduction of injuries at the bottom of the triangle does not correspond to an proportionate reduction of SIFs.
A New Paradigm

Precursors

High-risk situations in which management controls are either absent, ineffective, or not complied with, and which will result in a serious or fatal injury if allowed to continue.

Fatalities

Lost Time Injuries

Recordable Injuries

SIF Exposures

A new way of thinking about the Safety Pyramid: focus on prevention of SIFs
The SIF Blind Spot is Significant.
There Are Four Things You Must Do.
Four Things You Must Do

1. Educate Senior Leaders on SIF:
   - They need to understand this problem before they can act on it.
   - The solutions to the SIF problem require their attention.
   - Enlist their sponsorship.

2. Provide Visibility to SIF Exposure:
   - Define “SIF: Life-Threatening vs. Life-Altering.
   - Calculate SIF Exposure Rate: SIF Recordable and SIF Total.
Four Things You Must Do (continued)

3. Know Your SIF Precursors:
   - Three places where they hide:
     1. High Risk/High Exposure Tasks (71% Routine).
     2. Management Systems Missing, Deficient, or Not Complied With.
     3. Allowed to Continue.

4. Integrate Interventions into Existing SMS:
   - Life Saving Safety Rules, Pre-Task Risk Assessments, Pausing Work, Incident Handling Systems (reporting, reaction, investigation, etc.)
Accident Investigations Are Not As Good As You Think They Are.
 Integrating Culture and Leadership into Catastrophic Event Prevention
How confident are you that your organization can not have a catastrophic event (Significant fire, explosion, chemical release, multiple fatality incident, or major public impact)?

- Extremely Confident
- Somewhat Confident
- Not Confident
- Don’t Know
Traditional focus of process / catastrophic event safety has been enabling systems

Process Safety Elements
- Process Safety Information
- Process Hazard Assessment (PHA)
- Operating Procedures – Training
- Contractor Management
- Mechanical Integrity
- Non Routine Work Authorizations
- Management of Change (MOC)
- Incident Investigation
- Emergency Planning and Response
- Self-Audits
**People:** Relationship Between Culture and Process Safety is Demonstrable

OCDI** Culture Scores and Process Safety Outcomes

- **OCDI Scores**
  - Top half
  - Bottom half

- **Process Incident Rate** (Tier 1+2 per million man-hrs)
  - Top half: 15
  - Bottom half: 30

- **n=27**
People create and sustain a strong process safety culture

Anticipation

Organisation seeks and uses “weak signals”

Resilience

Organisational performance

Knowledge and culture that minimise impacts

Execution

Effective analysis that counteracts cognitive biases

Inquiry

Consistent and reliable use of enabling systems
People create and sustain a strong process safety culture
Anticipation

- Awareness of process vs. personal safety
- Reporting encouraged
- Curiosity encouraged
- Rewards & recognition reinforce desired culture
- All data is acted upon
- Open communication upward and downward
Inquiry

- Leadership & culture actively work to avoid influence of cognitive bias on analyses
- Risk acceptance decisions made by appropriate people
- Value for quality of content (not just “checking the box”)
- Open communication upward and downward
Execution

- Leadership & culture support behavioral reliability and accountability
- All employees feel safe and encouraged to raise issues
- Employees feel ownership for the safety systems
- Issues addressed promptly and with appropriate feedback
Resilience

- Leadership & culture support employee intervention to minimize impact
- Exceptional conditions, metrics, alarms, etc., consistently produce response
- Exceptional conditions fed back to analysis
- Tolerance of false negatives
- Rewards & recognition reinforce desired culture
Creating a Process Safety Culture

Conviction
Demonstrating Safety as a Personal Core Value

Knowledge
Exposure and Risk, Leading & Lagging Metrics

Skills & Practices

Reinforcement

Sustainability
Thank You

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