Safety Culture & Leading Indicators of Safety

- Purpose: to enable organizations with cargo-carrying vessels to self-assess their safety culture and leading indicators of safety

- Contents:
  - How to administer the survey
  - Actual safety culture questionnaire
  - Definition of safety factors
  - How to perform data analyses
  - Lists of potential objective and subjective leading indicators
  - How to interpret the results
  - How to develop an action plan
Safety Culture Survey (Shipboard & Shore-Side)

- 40 Statements/Questions (in 3 Sections)
  - Ship Safety
  - Health & Safety
  - Survey Respondent’s Own Job

- 8 Safety Factors (5 Statements per Safety Factor)
  - Communication (COM)
  - Promotion of Safety/Leadership (POS)
  - Empowerment (EMP)
  - Feedback (FDB)
  - Mutual Trust (MTR)
  - Problem Identification (PID)
  - Responsiveness (RSP)
  - Safety Awareness (SAW)

- Demographics, Free-Text & Optional Questions
Safety Culture Survey: Scoring

- Survey responses receive a score Disagree = 1 to Agree = 5
- The ABS SC questionnaire contains forty (40) 5-scale questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Average Response</th>
<th>Safety Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shore-side managers never put schedule or costs above safety</td>
<td>3.66</td>
<td>POS</td>
</tr>
<tr>
<td>Language differences in multi-cultural crews are not a threat to safety</td>
<td>3.88</td>
<td>COM</td>
</tr>
<tr>
<td>There are no differences in the performance of crew members from different cultures</td>
<td>4.11</td>
<td>MTR</td>
</tr>
</tbody>
</table>

MTR = Mutual Trust  COM = Communication  POS = Promotion of Safety/Leadership
## Traffic Light Snapshot of Results

What is your position aboard ship?

<table>
<thead>
<tr>
<th>Values</th>
<th>A/B</th>
<th>D/CDT</th>
<th>MSTR</th>
<th>CHF/OFF</th>
<th>CHF/ENG</th>
<th>2/OFF</th>
<th>E/CDT</th>
<th>ORD/SEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responses</td>
<td>474</td>
<td>236</td>
<td>232</td>
<td>214</td>
<td>201</td>
<td>197</td>
<td>197</td>
<td>191</td>
</tr>
<tr>
<td>2. Shore-side managers never put schedule or costs above safety</td>
<td>3.90</td>
<td>3.81</td>
<td>3.77</td>
<td>3.64</td>
<td>3.83</td>
<td>3.65</td>
<td>3.75</td>
<td>3.86</td>
</tr>
<tr>
<td>6. This company has excellent maintenance standards</td>
<td>4.62</td>
<td>4.59</td>
<td>4.24</td>
<td>4.14</td>
<td>4.39</td>
<td>4.34</td>
<td>4.58</td>
<td>4.63</td>
</tr>
<tr>
<td>8. People are hired for their ability and willingness to work safely</td>
<td>4.81</td>
<td>4.70</td>
<td>4.29</td>
<td>4.40</td>
<td>4.43</td>
<td>4.55</td>
<td>4.71</td>
<td>4.82</td>
</tr>
<tr>
<td>9. Language differences in multi-cultural crews are not a threat to</td>
<td>4.19</td>
<td>4.03</td>
<td>3.90</td>
<td>3.81</td>
<td>4.00</td>
<td>3.74</td>
<td>4.29</td>
<td>4.20</td>
</tr>
<tr>
<td>10. There are no differences in the performance of crew members from different cultures</td>
<td>4.36</td>
<td>4.30</td>
<td>3.75</td>
<td>3.90</td>
<td>4.06</td>
<td>3.94</td>
<td>4.37</td>
<td>4.31</td>
</tr>
<tr>
<td>Overall Response Average</td>
<td>4.37</td>
<td>4.28</td>
<td>3.99</td>
<td>3.98</td>
<td>4.14</td>
<td>4.04</td>
<td>4.34</td>
<td>4.36</td>
</tr>
</tbody>
</table>

- Experience (in maritime, with company, in position)
- Age/Gender
- Nationality
### Areas of Excellence: Benchmarking

- XXXXX results vs. ABS’ Combined Safety Culture Dataset (CSCD)

<table>
<thead>
<tr>
<th>Question</th>
<th>XXXXX Average Response</th>
<th>CSCD Average Response</th>
<th>Safety Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>• I fully understand my responsibilities for health and safety</td>
<td>4.96</td>
<td>4.96</td>
<td>MTR</td>
</tr>
<tr>
<td>• Crew members are actively encouraged to improve safety</td>
<td>4.94</td>
<td>4.87</td>
<td>EMP</td>
</tr>
<tr>
<td>• I always ask questions if I don’t understand the instructions given to me, or I am unsure of the relevant safety precautions</td>
<td>4.94</td>
<td>4.95</td>
<td>COM</td>
</tr>
<tr>
<td>• Safety is the top priority for crew onboard this ship</td>
<td>4.94</td>
<td>4.91</td>
<td>SAW</td>
</tr>
<tr>
<td>• The crew has access to all necessary personal protective equipment (PPE)</td>
<td>4.92</td>
<td>4.81</td>
<td>RSP</td>
</tr>
</tbody>
</table>
# Opportunities for Improvement: Benchmarking

- XXXXX results vs. ABS’ Combined Safety Culture Dataset (CSCD)

<table>
<thead>
<tr>
<th>Question</th>
<th>XXXXX Average Response</th>
<th>CSCD Average Response</th>
<th>Safety Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Shore-side managers never put schedule or costs above safety</td>
<td>3.66</td>
<td>3.89</td>
<td>POS</td>
</tr>
<tr>
<td>• Language differences in multi-cultural crews are not a threat to safety</td>
<td>3.88</td>
<td>4.16</td>
<td>COM</td>
</tr>
<tr>
<td>• There are no differences in the performance of crew members from different cultures</td>
<td>4.11</td>
<td>4.27</td>
<td>MTR</td>
</tr>
<tr>
<td>• Mistakes are corrected without punishment and treated as a learning opportunity</td>
<td>4.67</td>
<td>4.59</td>
<td>MTR</td>
</tr>
<tr>
<td>• People are hired for their ability and willingness to work safely</td>
<td>4.69</td>
<td>4.69</td>
<td>MTR</td>
</tr>
</tbody>
</table>
Shipboard & Shore-side: Shared Themes

- Training/instruction (for new crew, before changing jobs, hands-on/drills, hand-over, and general refresher training)
  - Safety training while on shore leave also mentioned
- Increased safety meetings and communication
  - Onboard, ship to shore, shore to ship
- Implement a no blame culture
- Improve safety culture
- “Close the loop” ships/shore safety issues
- Keep crews up to date on company and regulatory issues
Utilizing the Results

• Study the findings, and note the safety factors (SFs) that need to be addressed
• Study the desired activities, attitudes, and behaviors, and activities for improvement for those safety factors
• Consider if the findings could relate to a different SF as there may be overlap
• Communicate the results to the workforce and let them know how weak areas will be addressed and monitored…
Identifying Leading Indicators

- Objective Leading Indicators are identified by correlating:
  - Safety metrics with safety performance data
  - 5+ years of safety metrics and safety performance data required for organizational level analysis
  - 12+ months for business unit or vessel level analysis
- Subjective Leading Indicators are identified by correlating:
  - Survey responses with safety performance data
- Example Safety Performance Data:
  - Ship Safety (e.g., operational incidents frequency)
  - Individual H&S (e.g., total recordable case frequency)
  - Etc…
The Metrics Hierarchy

- **Baseline Metrics**
  - Typically expressed as absolutes (presence/absence of an activity)
- **Subsidiary Metrics**
  - Useful until they peak
- **Core Metrics**
  - Continue to vary in a mature safety culture
Sample Leading Indicators

• Subjective Leading Indicators
  - Employee perception about management support of safety improvements efforts
  - Employee empowerment to fulfill safety responsibilities
  - Management response to safety issues and concerns

• Objective Leading Indicators
  - Number of near miss reports
    - Percent closed-out
  - Time to implement corrective actions
  - Size of safety budgets (YoY)
  - Number of safety meetings involving senior management
  - Number of incidents/near misses followed by incident investigations
Thank You

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