Safety Climate/Highly Reliable Organizations

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One Question....... How does your safety program compare to the “Best Companies?”
# Building the Safety Climate Score

<table>
<thead>
<tr>
<th>Climate Name</th>
<th>Safety Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal</td>
<td>%95</td>
</tr>
<tr>
<td>Red Stop:</td>
<td>50</td>
</tr>
<tr>
<td>Orange Stop:</td>
<td>75</td>
</tr>
<tr>
<td>Yellow Stop:</td>
<td>95</td>
</tr>
</tbody>
</table>

Input weight values to enable a score. Input a blank or zero to disable a score. The weight values must add up to 100 total. To use the Auto Weight feature, just put any value greater than zero into the weight box and it will automatically adjust the appropriate weight value.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Incident Type</th>
<th>Incident Goal</th>
<th>Name</th>
<th>Desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.00</td>
<td></td>
<td>% Trained</td>
<td>% Trained</td>
<td>Percentage of missed or late classes vs the total number of required classes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% Corrective Actions closed on time</td>
<td>% Corrective Actions closed on time</td>
<td>Percentage of corrective actions closed before or on the target date (For one year past)</td>
</tr>
<tr>
<td>20.00</td>
<td></td>
<td>% Safe observations</td>
<td>% Safe observations</td>
<td></td>
</tr>
<tr>
<td>20.00</td>
<td></td>
<td>% BBS Compliance</td>
<td>% BBS Compliance</td>
<td>Percentage of required or volunteered employees doing observations vs expected number of employees</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% BBS Participation</td>
<td>% BBS Participation</td>
<td></td>
</tr>
<tr>
<td>20.00</td>
<td></td>
<td>% Task Reviews Completed</td>
<td>% Task Reviews Completed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Audit Scores</td>
<td>Audit Scores</td>
<td>(Compliance)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% Audits Completed</td>
<td>% Audits Completed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>% of incidents related to a task</td>
<td>% of incidents related to a task</td>
<td>if 0% of incidents have been linked to a task then no task analysis have been done</td>
</tr>
</tbody>
</table>
Safety Climate
Safety Dashboard
Foundational strengths of a dashboard

- Measures what is important
- Key performance indicators
- Ultimately measures effectiveness

So before we build a dash board lets talk about what quality building blocks to use.
Building the dashboard review

- Review where you are currently?
  - Risk assessment
  - Safety
    - Assessment survey
  - Culture
    - Evaluate

- Where do you want to be?
  - Specific goals

- How are you going to get there?
  - Actions

- Who is going to be involved?
  - Action items
    - Assignment
Share Information - Sustainability

- Communication
  - Positive results
    - Accomplishments
    - How do you communicate
- Strength in knowledge
  - Head in sand otherwise
- Keeps safety efforts in the fore front
- Safety does not need to be a dirty word
  - Make it what you want
    - If you only communicate the failures then that’s what the perception will be.
•What gets measured, gets done!
Highly Reliable Organizations

What Are They and What Traits Do They Display?
What Are Highly Reliable Organizations?

High reliability organizations are organizations with systems in place that make them exceptionally consistent in accomplishing their goals and avoiding potentially catastrophic errors.

Examples: nuclear plants, airline industry, petro-chemical industry

To do this: Best Practices have to be identified and established, metrics give us the direction for identifying them.
PATHOLOGICAL
Who cares as long as we don’t get caught

REACTIVE
Safety is important, we do a lot every time we have an accident

CALCULATIVE
We have systems in place to manage all hazards

PROACTIVE
Safety leadership and values drive continuous improvement

GENERATIVE (HRO)
HSE is how we do business around here

Levels of Safety
Characteristics of HROs: The AIER Model

Anticipation
- Always seeking

Inquiry
- Always questioning

Resilience
- Correcting course and learning
- Staying true to process

Execution
- Staying true to process
The Leader’s Role In Preventing Catastrophic Events

1. **Anticipation**. Fostering systems and behaviors that are sensitive to “weak signals” that may be indicative of increased risk of catastrophic events.

2. **Inquiry**. Making effective use of information to analyze, understand, and plan mitigation of risks, while making a conscious effort to overcome bias.

3. **Execution**. Monitoring, reinforcing, and verifying program execution, while staying true to the process.

4. **Resilience**. Developing and exercising the ability to react in ways that prevent upset conditions from becoming catastrophic events — and then learning from the experience.
Five Traits of High Reliability Organizations:

1. Sensitivity to operations (systems)
2. Reluctance to oversimplify the reasons for problems
3. Preoccupation with failure
4. Deference to expertise and
5. Resilience.
The Value of Safety Management Systems

• RCI Safety, (now known as Dekra Insight)
• 600 companies, 3600 locations
• Training (People to classes) 7,058,782
• Incidents 420,000
• Audits 58,179
• Corrective Actions 463,982
• BBS observations... 2,336,656
• RCI Staff:
  • 3 CSPs
  • 2 Retired Corporate Safety Directors
  • 6 programmers
  • Knowledgeable and experienced staff
Challenge: Safety is Hard!

• Organizations have limited time and money resources, where should they start to get the most impact?
• How can they tell if their efforts are successful?
• Why should companies all have to learn the same lessons over and over?
• How can they tell if they are improving?
• How can they set effective goals for injury reduction?
Heat Map

- Compares performance in specific areas against best in class from benchmark group
- Results are shown in performance quartiles (normalizes different scales)
- Points out improvement areas for organizations
- Tracks performance over time, visualizes improvements or slippage
- Can compare to current best in class or historic best in class (norms)
## Benchmarking Snapshot

<table>
<thead>
<tr>
<th>4th Quartile</th>
<th>3rd Quartile</th>
<th>2nd Quartile</th>
<th>1st Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIR</td>
<td>DART</td>
<td>LTIR</td>
<td>FAR</td>
</tr>
</tbody>
</table>

[Image of a benchmarking snapshot chart showing performance metrics across different quartiles.]
Suggestions

Target Metric: TIR

Projected Impact:

- Increase Audits by 20%
- Increase % Compliant Training to 80%
- Increase Time Allotted for Investigations by One Week
- Reduce word count in Unsafe Comments to less than 300

Projected Impact:

Stands to reduce TIR to 56 by end of Q3

The chart would show the expected decrease of the relevant target metric with respect to the adjustment of the suggested metrics. It should graphically fit a polynomial equation and the suggested changes should equal either the global maximum or the global minimum of the derivative, based on a rule set. This guarantees the highest impact before getting into diminishing returns. In most cases, the global maximum will suffice but in cases where it means an impossible objective, the derivative can be calculated to find the greatest proportional rate of change.

This would allow the user to visualize the difference in impact as the objective is deviated from. The chart could be interactive wherein the user drags a vertical line to recalibrate the expected impact.
Machine Learning Model

RCI
- Benchmark Data
- New Data
- Algorithm

S3
- CSV

AWS ML
- Data source
- Model
- Prediction(s)

Multi-variate
Machine learning and suggestions

• Develop algorithms to identify highest impact improvement areas
• Use machine learning to offer suggested actives to improve performance
• Allow organizations to set “SMART” goals based on learning to develop new KPI’s
• Continuous improvement…. System always learns.
Plan for Implementation

1. Benchmark injury rates against peers to understand current performance
2. Benchmark current efforts against best practices to identify highest impact improvement areas to lower injury rates
3. Use machine learning to suggest and measure activities, help clients develop smart goals and new KPI’s
4. Loop… system learn offering clients continuous improvement
Closing Points

• Exciting potential tool to help manage a company’s safety performance.
• Is this the next evolution in safety management?
• Results are based against Best Practices of the best companies.
• Need to have a safety management system and must put valid data into the system, including employee hours.
• All of this is coming from data, not opinions.
Please come see me at the DEKRA Insight booth if you’d like more information.

Thank You!!!