A Rules-based System to Support Effective Incident and Near-Miss Management Programs

Daniel Hillman, AMS
Bill Qualls, AMS

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Outline

- What is a Near-Miss?
  - Notable Examples – Near-Misses Ignored
  - The Safety Pyramid
- Benefits of Incident Tracking and Near-Miss Programs
- Opportunities for Improvement
- Tr@ction™ - An Example of Automated Best Practices In Action
What is a Near-Miss?

... an opportunity to improve environmental, safety, and health practice based on a condition, or an incident with potential for more serious consequence.
Why is Near-Miss and Incident Tracking Important?

- Unaddressed or un-remedied unsafe conditions can lead to significant OHSA penalties.
- Sound management of risk depends on accurate information about state of follow up actions in an organization.
- Public scrutiny of hazardous facilities increasing with consequences for bottom line results.
Notable Examples of Near-Misses Ignored

- 1986 Space Shuttle Challenger Explosion (US)
- 1997 Hindustan Refinery Explosion (India)
- 1999 Paddington Rail Crash (UK)
- 1998 Morton Explosion and Fire (US)
The Safety Pyramid

- **Incidents**
  - 1 serious injury
  - 10 minor injuries
  - 60 incidents with property damage
  - 600 incidents without damage or loss
  - ? unsafe / hazardous conditions

- **Near-Misses**
Benefits of Near-Miss Programs

- Identify weaknesses in safety management systems through accident precursors.
Additional Benefits

- **Delegation of Safety Responsibility**
  - Harnessing the larger workforce to identify unsafe operations.

- **Increased Safety Awareness**
  - Making individuals more safety-conscious.

- **Creation of an Information Pool**
  - Creating a knowledge base to reduce risk exposure.
Elements of a Near-Miss and Incident Tracking Management System

- Identification/Reporting – incident recognized/reported.
- Disclosure – individual / group reports incident, case file opened.
- Causal Factors Analysis – direct / root causes identified.
- Solution Identification – find solution to each causal factor.
- Resolution – complete follow-up, close out, summarize and report.

37% of the respondents felt this was an area for significant improvement.

- Adopt broadly-encompassing definition of what constitutes a near-miss or incident.
- Automate identification of near-misses.
- Automate reporting of incidents.
- It is estimated that 1/3 of sites do not have effective systems to aid in identification of near-misses.
Identification/Reporting – Best Practices

- Examples of near-misses under this definition:
  - Unsafe conditions.
  - Unsafe behavior.
  - Minor accident/injuries that had the potential to be more serious.
  - Events where injury could have occurred but did not.
  - Events where property damage resulted.
  - Events where a safety barrier was challenged.
  - Events where potential environmental damage could result.
Disclosure – Best Practices

- Make report forms simple and readily available
- Encourage reporting
- Provide incentives for reporting
- Share near-miss reports widely
- **26%** of the respondents felt this was an area for significant improvement
Distribution/Dissemination - Best Practices

- Provide clear guidelines
- Empower employees and supervisors
- Provide electronic platforms
- Automate dissemination
- Initiate action tracking
- Disseminate to a broad audience
- **58%** of the respondents felt this was an area for significant improvement
Causal Factors Analysis – Best Practices

- Train supervisors in methods of causal factor analysis
- Capture direct causes and root causes
Solution Identification – Best Practices

- Link solution identification to causal factors
- Develop at least one solution or corrective action for each causal factor
- Link to work order system
- Address Management of Change issues
Resolution – Best Practices

- Automate action tracking
- Integrate with work order system
- Integrate with HR systems
- Provide feedback to reporter when corrective actions are completed
- **53%** of the respondents felt this was an area for significant improvement
What Is Tr@ction?

An integrated incident reporting and action tracking system to allow manufacturing organizations to:

- Monitor and analyze trends and identify areas for improvement.
- Analyze safety performance across business units.
- Identify areas for pro-active loss prevention/reduction.
- Track actions associated with EHS incidents, safety audits, general EHS audits and, Hazop Reviews.
As an acknowledged leader in HSSEQ management, BP knew what features were required for a successful tool:

- Global application / multilingual access
- Ease of use / local configuration
- Progress on actions transparency
- Delivery of regulatory requirements worldwide
- Data protection / data migration
- Simple flexible reporting
Tr@ction Was Developed Because Market Products Failed to Meet BP HSSEQ Management and Visionary Needs

As an acknowledged leader in HSSEQ management, BP knew what features were required for a successful tool:

- Universal Access
- Unplanned Events (Major to Minor/Cradle to Grave)
- Electronic Management / Efficient Operations
- Management of Organizational Change
- Modularity / Beyond HSSEQ
- Consistent Data
TR@CTION MAIN PAGE

create new:
- Incident Report
- Advanced Safety Audit
- Audit
- HazOp
- Other Event

find existing:
- Incident Report
- Advanced Safety Audit
- Audit
- HazOp
- Other Event
- Action Item

reports:
- ASA Concerns/Comments Summary
- ASA Recognition Summary
- ASA Safety Deviation Summary
- Action Item Aging
- Alaska Spill Report
- Blank Advanced Safety Audit
- Blank Incident
- Completed ASAs
- Document Audit Report
- Employees Listing
- Hours Worked
- Injury/Illness Summary
- North Slope Spill
- Organisation Hierarchy
- Rolling Frequency
- StreamBU Monthly Report
- Web Intelligence
Follow the Incident Information Wizard

Near Miss Capture box

Pop-up explanations and hints
Example of business rule logic to enforce safety policy.
Incident Report Interviewer - General Information 1

Please enter general information about the event.

**Date Occurred (DD/MM/YYYY):** 25/04/2002

**Short Description:** Employee fell from ladder

**Event Description:** Employee injured ankle when he fell from ladder. Supervisor brought employee to on-site medical clinic. Ladder taken to maintenance shop for inspection. Onsite staff were interviewed, action plan is being developed.
Enter initial estimates of causes

Early capture of causal information
Create action items for follow up tracking

Initial Solution Identification process
Dissemination and Distribution processing according to business rules
Reports and workflow mgmt.

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<th>Responsible Organisation Information</th>
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<tr>
<td><strong>Stream:</strong> Commercial</td>
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<tr>
<td><strong>Site:</strong> Commercial Site</td>
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<td><strong>Business Unit:</strong> Comm 10</td>
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<th>Location Information</th>
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<tr>
<th>General Information 1</th>
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<td><strong>Date Occurred (DD/MM/YYYY):</strong> 25/04/2002 10:00</td>
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<tr>
<td><strong>Short Description:</strong> Employee fell from Ladder</td>
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<td><strong>Event Description:</strong></td>
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<tr>
<td><strong>Primary Company Involved:</strong> BP</td>
</tr>
<tr>
<td><strong>Overtime:</strong> N</td>
</tr>
<tr>
<td><strong>Operation(s) in Progress:</strong> Product Loading</td>
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<tr>
<td><strong>Immediate Action Taken:</strong> Site secured by staff</td>
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<tbody>
<tr>
<td><strong>Summarize Lessons Learned:</strong> Inspection of ladders prior to use is necessary</td>
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<tr>
<td><strong>Police Report:</strong> #2 4567899</td>
</tr>
<tr>
<td><strong>Check here if security protocols were breached:</strong></td>
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Example of workflow – self managing inbox dedicated to near miss and incident follow up
# Open Action Item Aging

**February 2002**

**Stream:** Downstream  
**Site:** Not Applicable  
**Business Unit:** BP South Houston  
**Action Item Category:** All

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<tr>
<th>Aging in month</th>
<th>Priority 1 (HIGH)</th>
<th>Priority 2 (MEDIUM)</th>
<th>Priority 3 (LOW)</th>
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<td>13-24</td>
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|                | 0-6               | 7-12                | 13-24            | 24+ |
| Closed during month | 1     | 0                   | 0                | 0   |
| Created during month  | 8     | 20                  | 6                | 34  |

*Generated on: 19/02/2002*
Incident Summary Report

Generated on: 25/04/2002

Stream: Traction Test
Organisation/Primary Company: -All-
Incident Type: -All-
Incident Subtype: -All-

Site: Traction Site
Organisation2: -All-

Business Unit: Traction BU
Organisation3: -All-

Injury/Illness Classification: -All-

01/01/2002 To 25/04/2002

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<th>First Aid</th>
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<td>Loss/Damage</td>
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<tr>
<td>Occupational Injury/Illness</td>
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Total Number of Incident Reports: 47

25/04/2001 To 25/04/2002

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Total Number of Incident Reports: 224