Accident Investigations in Practice

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Aims and Objectives

• To enable SMEs to carry out investigations
• To improve the number and quality of investigations carried out
• To ensure full employee involvement
• To ensure that immediate, underlying and management failings are all addressed
Aims and Objectives

• To ensure that firm recommendations and an action plan result from an investigation

• To ensure that senior managers and decision makers are involved in, and committed to, the action plan

• To ensure that the action plan is implemented

• To feed the investigation findings back into the risk assessments.
Accident Investigations in Practice

• Understanding the language
• What to investigate
• Who should investigate
• What makes a good investigation
Accident Investigations in Practice

- Guidance - HSG245
- Four step approach to investigating
- Series of questions linked to an adverse event investigation form
Understanding the Language

• Adverse Event:
  – Accident - results in injury or ill-health
  – Incident
    • Near Miss
    • Undesired Circumstance
  – Dangerous Occurrence
Understanding the Language

• Consequence:
  – Fatal
  – Major injury/ill health
  – Serous injury/ill/health (3 days)
  – Minor injuries – first aid less 3 days
  – Damage Only
Understanding the Language

• Likelihood
  – Certain – again & soon
  – Likely – re-occur but not an everyday event
  – Possible – occurs from time to time
  – Unlikely – not expected in foreseeable future
  – Rare – not expected to happen again
Understanding the Language

• Hazards – Potential to cause harm

• Risk – Combination of likelihood of a hazard occurring and the severity of the consequences

• Risk control measures – precautions to reduce risk to a tolerable level
Understanding the Language

• Immediate Cause
  – Obvious reason of an adverse event
  – There may be several causes

• Underlying Cause
  – Less obvious system or organisational reasons for an adverse event

• Root Cause
  – Initiating event or failing, which all other causes or failings spring
Understanding the Language

- **Immediate Causes**
  - Blade, substance, dust, open wrong valve etc.

- **Underlying Cause**
  - Unsafe acts & unsafe conditions (guard removed, ventilation switched off etc.)

- **Root Cause**
  - Failure to identify training needs, assess competence; little use of risk assessments. Etc
Causes of Adverse Events
Domino Effect

• Each domino
  – a failing or error combined cause an adverse event

• B Immediate cause
  – prevent sequence

• A root causes
  – prevent a series of adverse events.
Where do I start?
What to Investigate?

• Accidents – Injuries & Ill-health

• Dangerous occurrences

• Near misses and undesired circumstances
What to Investigate?

• Near Misses & Undesired Circumstances
  – You do not have injured people, their families and a demoralised workforce; no civil claims
  – Criminal action is unlikely
  – Witnesses more likely to be helpful and tell the truth.

• Pure luck determines if it is an undesired circumstance, a near miss or an accident
What to Investigate?

• Adverse Event Assessment
  – Potential consequences - Consider worst
  – Frequency / likelihood of the adverse event recurring should determine the level of investigation,

• Consider
  – Potential for learning
  – Similar events

• Best practice – Members of public
The Decision to Investigate?

<table>
<thead>
<tr>
<th>Likelihood of recurrence</th>
<th>Potential worst consequence of adverse event</th>
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<tbody>
<tr>
<td></td>
<td>Minor</td>
</tr>
<tr>
<td>Certain</td>
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<tr>
<td>Likely</td>
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<td>Unlikely</td>
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<td>Rare</td>
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</tbody>
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- Likely: Yellow
- Unlikely: Blue
- Certain: Green
- Rare: Purple
What to Investigate - Accidents
What to Investigate – Ill Health

HSE
What to Investigate – Near Misses
What to Investigate
What to Investigate - Dangerous Occurrences
What to Investigate -
Undesired Circumstance
What to Investigate
Who should Investigate?

• Management & Workforce
  – Supervisors, line managers, union safety reps, H&S professionals, employee reps & senior management/partners/directors

• Range of practical knowledge & experience
  – Detailed knowledge of work activities
  – Familiar with health & safety good practices
  – Standards & legal requirements
Who should Investigate?

• Minimal level investigation - relevant supervisor - circumstances of the event and try to learn any lessons which will prevent future occurrences

• Low level investigation - Short investigation by relevant supervisor or line manager into the circumstances and immediate, underlying and root causes of the adverse event.
Who should Investigate?

- Medium level investigation - more detailed investigation by the relevant supervisor or line manager, the health and safety adviser and employee representatives and will look for the immediate, underlying and root causes.

- High level investigation - team-based investigation, involving supervisors or line managers, health and safety advisers and employee representatives - under the supervision of senior management or directors and will look for the immediate, underlying, and root causes.
Who should Investigate?

• Investigation team must include
  – People with investigative skills
    • Information gathering
    • Interviewing
    • Evaluating
    • And analysing

• Led by or reports to persons in authority
Who shouldn’t Investigate

• Anyone involved in the incident
  – Line Managers, Supervisors, Operators
• Potential conflict of interest
• Potential to compromise findings
• Many site accident procedures refer to immediate supervisors and managers carrying out the initial investigation
When should it start?

- Urgency will depend on the magnitude and immediacy of risk.
- Adverse events should be investigated and analysed as soon as possible.
- Memory is best and motivation greatest immediately after an adverse event.
- **NB** – Consider the state of those being interviewed – May be in shock.
What does it involve?

- Analysis of all information available
  - Physical – scene of incident
  - Verbal – accounts of witnesses
  - Written – documents
    - Process drawings (P&ID’s)
    - Risk assessments
    - Permits to work
    - Procedures
    - Instructions, job guides etc.
Operator Error

- Investigations conclude - ‘operator error’
  - Was the design or layout of controls confusing
  - Was the equipment suitable
  - Were people competent
  - Were they adequately supervised
  - Were people overloaded with work
  - Under time pressure – long or double shifts
  - Physically and mentally fit for the work
  - Were there safe working procedures and instructions etc etc
What makes a good Investigation?

• “To get rid of weeds you must dig up the root. If you only cut off the foliage the root will grow again.”

• Investigations which identify root causes that organisations can learn from their past failures and prevent future failures
What makes a good Investigation?

- Is suitable for purpose – proportionate to risk
- Thorough systematic and structured
- Is carried out with prevention in mind NOT apportioning blame.
- It does not jump to conclusions
- Based on facts provided
- Follows the causal chain all the way up to Management level
What makes a good Investigation?

• Explores all lines of enquiry
• Timely, objective and unbiased
• Identifies immediate, underlying and root causes
• Reviews existing risk control measures
• Action plan AND implementation
Risk Control Measures

• identify the risk control measures which were missing, inadequate or unused
• compare with standards, guidance and good practice
• identify additional measures needed to address the immediate, underlying and root causes
• provide meaningful recommendations which can be implemented.
Action Plan & Implementation

- Set SMART objectives (Specific, Measurable, Agreed, and Realistic with Timescales)
- Feedback to all parties - ensure findings and recommendations are correct - address the issues and are realistic
- Ensure that the people who ‘can make it happen’ are part of the decision process
- Monitor progress against the Action Plan
- Review relevant Risk Assessments and Safe Working Procedures
How do we achieve all of this?

• Health and safety policy sets the standard you want to achieve

• Suitable procedure explains how you want to achieve it
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Desired or Undesired?
Any Questions