

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.

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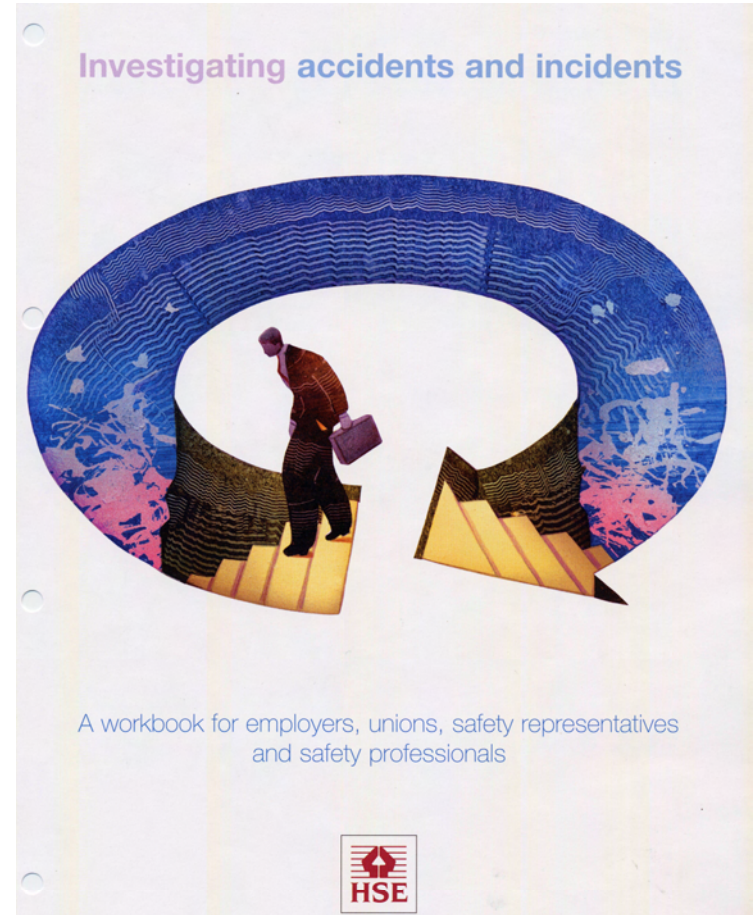


- Understanding the language
- What to investigate
- Who should investigate
- What makes a good investigation

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- 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
 - Serious 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?



Likelihood of recurrence	Potential worst consequence of adverse event			
	Minor	Serious	Major	Fatal
Certain	Yellow	Brown	Red	Red
Likely	Yellow	Brown	Red	Red
Possible	Yellow	Brown	Red	Red
Unlikely	Blue	Yellow	Brown	Red
Rare	Blue	Yellow	Brown	Red

What to Investigate - Accidents



What to Investigate – Ill Health



What to Investigate – Near Misses



What to Investigate



What to Investigate - Dangerous Occurrences



What to Investigate - Undesired Circumstance



What to Investigate



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

