Accident Investigation

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1.1 Why Investigate?

The Health and Safety Employment Act 1992 mandates that the employer must investigate any accident or harm and determine whether the harm was caused by or arose from a significant hazard.

An accident may indicate the control of hazards has not been effective. The main purpose of accident investigation is to identify the immediate and underlying causes and improve the health and safety management system to prevent a reoccurrence.

1.2 Selecting the Level of Investigation and Investigators

Events which do not cause serious harm and that are unlikely to reoccur do not warrant a full investigation. Investigation into harm only cases or near misses is to be completed by the supervisor or manager of injured person or person responsible for the area where the harm occurred, in conjunction with

- Trained Health and Safety Representative, and
- Departmental Health and Safety personnel.

Events which have caused serious harm must be investigated to establish the following:

- The way things were and how they came to be like that (i.e. who, what, where, when)
- What happened: the sequence of events that lead to a particular outcome (the how and with what result)
- Why things happened as they did. Analyse both immediate and underlying causes (the why)
- The actions that are needed to avoid repetition of the harm

Serious harm investigations are to be led by the appropriate Regional Health and Safety Advisor or Manager - Health and Safety on behalf of the Head of Department. Trained Health and Safety Representatives can also be designated as Health and Safety Investigators. Where necessary, specialists may be engaged to assist with the investigation.
The following people should be consulted in the investigation process:

- Injured persons
- Witnesses and concerned colleagues
- Managers
- Health and Safety Representatives
- Department Health and Safety personnel

Important Note:
If significant shortcomings are identified during the investigation, consideration should be given to immediate engagement of University solicitors. This allows reports to be unguarded as the University and staff can be protected by client lawyer legal privilege. In a serious event while people are in shock, statements may be regretted later if they become part of litigation evidence.

1.3 Documentation
For all accidents the Massey University internal accident report form is to be completed by the injured person/witness and forwarded to the appropriate Regional Health and Safety Advisor immediately.

The lead accident investigator must ensure

- that serious harm notification is completed and notified to DoL, and
- accident investigation form is completed much detail as possible, and
- copy of investigation is forwarded to appropriate Health and Safety Advisor for review by health and safety committee.

1.4 Key Steps in the Investigation Process
1.4.1 Collection of evidence
Collect information about the accident. Information can take the form of physical evidence, written evidence and personal testimony. Each of these is considered in turn below.

It is essential that the investigator's behaviour and questions are neutral and do not allocate responsibility or blame. It is important to retain objectivity and accuracy without bias.

Physical evidence can be obtained by observation and measurement. The level of detail and accuracy will depend on these circumstances and the nature of the serious harm. It may be necessary to get assistance with technical measurement. Observations and physical measurements must be recorded. Use of photographs and diagrams will assist.

Documentary evidence may vary in relevance, usefulness and reliability. Records are not always a reliable indication that events occurred as stated. Records may not give an indication of the standard to which the events or associated work were carried out.

Personal testimony is essential in establishing the sequence of events. It needs to be recognised that different people will give different versions of the same events
depending on their perspective. There is a need to distinguish fact, opinion and point of view. Attitude or circumstances may influence individual interpretation of events.

**Summary -** Given the above sources of evidence the investigators should:
- Observe the scene and collect information from the scene
- Examine documents relative to the circumstances and the premises, plant and equipment, substances and work procedures involved
- Interview those involved or who witnessed the event or the conditions leading up to the event.

1.4.2  **Assemble evidence from varying sources**
An attempt should be made to place the events in a sequence and show the links between them and their relative importance. It should be kept in mind that judging the reliability of sources, while recognising that the "truth" may not always be ascertainable.

Events usually have more than one cause and usually more than one consequence.

If you can understand why people behaved as they did, then links between motive, cause and consequence may emerge.

In practise evidence is assembled and hypothesis tested as it is collected. However, at the conclusion a coherent picture should emerge in the form of a written report of the events to clearly establish what happened and why. The investigator must test and assess the evidence in terms of its relevance, reliability, and relative importance.

Resolution of conflicting or incomplete evidence should be attempted but may be impossible.

1.4.3  **Compare conditions with suitable standards and existing controls**
The objective here is to decide whether suitable standards or controls have been established to control the factors influencing the event, and if these standards or controls exist, whether they are suitable and sufficient. If the standards and controls were suitable and sufficient were they applied and implemented in practice?

1.4.4  **Establish immediate and underlying causes**
The collection of evidence will usually identify the immediate causes which led up to the event. The investigator should try to determine what led to the immediate causes by establishing underlying causes. Remedy underlying causes will result in more effective prevention of reoccurrence of the event. Appendix 1 gives more information on determining accident causes.

Some questions which will assist in investigation follow:
- Who was injured?
- Who saw the accident?
Who was working with the person at the time?
Who else was involved?
Who was supervising?
What events and circumstances existed before the accident?
What is the damage or injury?
What is the description of the injury?
What were people doing at the time?
What equipment, tools, substances or plant were being used at the time?
What procedures were in place?
What similar accidents or near misses have occurred?
What did witnesses see?
What training had been given?
What were the causes of the accident?
What activities were occurring in a 24 hour period prior to the accident (both work and non work)?
When did the accident occur?
When did the person start shift or work?
Why did the injury occur?
Why were procedures not in place?
Why was personal protective equipment not being used?
Why was the hazard not identified?
Where did the accident occur?
Where did the damage occur?
Where were the witnesses at the time?
How did the accident occur?
How could the accident be avoided?

1.5 Recommendation to prevent reoccurrence
The investigation needs to be specific as to what actions are required for hazard control and corrective action, and these conveyed to the area or injured person’s manager. Agreement needs to be obtained as to who would arrange or complete the action and the time frame in which these actions should occur. There needs to be a follow-up process to validate that these actions have occurred.

It is the responsibility of the Head of Department to ensure that follow up actions have been completed.

1.6 Advising all of those who are involved in the investigation
The investigation report should be made available to:
- Injured persons
- Witnesses and concerned colleagues
- Managers
- Health and Safety Representatives
- Regional safety committees
- Regional Health and Safety Advisors
- Regional Chief Executives
Appendix I: Accident causes
To establish causes of the accident, the ACC WorkSafe Injury Model (as at July 2006) follows below.

The ACC WorkSafe Injury Model lets you trace an ‘event’ – a workplace injury, illness or death - back to several causal factors, rather than a single cause. It helps you consider a range of factors that could have contributed. The model will assist with determining all of the causes of the accident and thus assist with preventing further accidents. The purpose of the accident investigation is fact finding and not fault finding.

Culture factors
Culture factors include management decisions and organisational processes that influence ‘the way things are done around here’.

A positive workplace culture is one that gives attention and priority to preventing injury and work-related illness. Does that sound like your workplace? Take a moment to find out by answering these questions.

1. Do any ‘culture’ factors get in the way of putting appropriate workplace safety systems in place?
2. Is health and safety a priority relative to other goals?
3. Do people with a role in health and safety share the same status in the workplace as (say) managers or Heads of Departments?
4. Is health and safety integrated into the day-to-day running of the department?
5. Are managers aware of, and committed to, injury prevention?
6. Is injury prevention adequately resourced?

Systems factors
Systems – or lack of systems - shape the working environment and influence how a worker may act.

Examples of systems include:

- People management and communication
- Physical and environmental features of the workplace - including workstations, machinery, hand tools and their design, housekeeping and maintenance
- Health and safety systems such as
  - Hazard management,
  - Incident reporting and investigation,
  - Training and supervision and injury management.
A workplace that doesn’t give enough attention to injury prevention will tend to lack systems that prevent injury and work-related illness. Does that sound like your workplace? Take a moment to find out by answering these questions
1. Are business systems (e.g. good people management and effective communication) in place?
2. Are environmental features of the workplace (e.g. noise levels, air quality, temperature, lighting) managed to prevent injury and illness?
3. Is the prevention of illness and injury included in the purchase, design and use of machinery, tools and equipment?
4. Is the workplace kept tidy?
5. Are equipment, machinery and tools well maintained? (Look for maintenance records).
6. Are health and safety systems (e.g. hazard management, incident reporting and investigation, and injury management) in place?
7. Is the person trained or supervised appropriately?
8. Are health and safety systems and safe work practices understood and used by all employees and students?

**Task factors**
Task factors are the actions and movements used by people to perform their work.

Examples of actions and movement that contribute to injury include:
- Awkward or prolonged posture
- Repetitive movement and/or manual handling
- Errors/mistakes
- Breach of safety rules

Poorly designed systems, environments and equipment may encourage people to act and move in ways that promote injury while they work. Do any of the following occur in your workplace?
1. What actions and activities are involved in the task?
2. Who is performing these actions?
3. When are the actions and activities performed?
4. How are the actions and activities performed?
5. Are safe work procedures used?

**The Event**
The event refers to the workplace injury, illness, fatality or near-hit.

**Post Event**
Post event matters include the workplace response to the event such as first aid, emergency response, rehabilitation, injury management and incident investigation.