

Incident Investigation Course for supervisors and safety officers

OHS & Injury Management
University of Sydney
August 2006



Learning Objectives

- This on-line course is designed to:
 - explain the reasons for investigating incidents
 - provide supervisors and safety officers with guidance on dealing with serious incidents
 - provide supervisors and safety officers with basic incident investigation skills
 - enable supervisors and safety officers to complete meaningful incident reports.



Outline

- # What is an incident?
- # What is a serious incident?
- # Why investigate incidents?
- # Who should investigate incidents?
- # How should incidents be investigated?
Investigation steps
- # Quiz
- # Examples

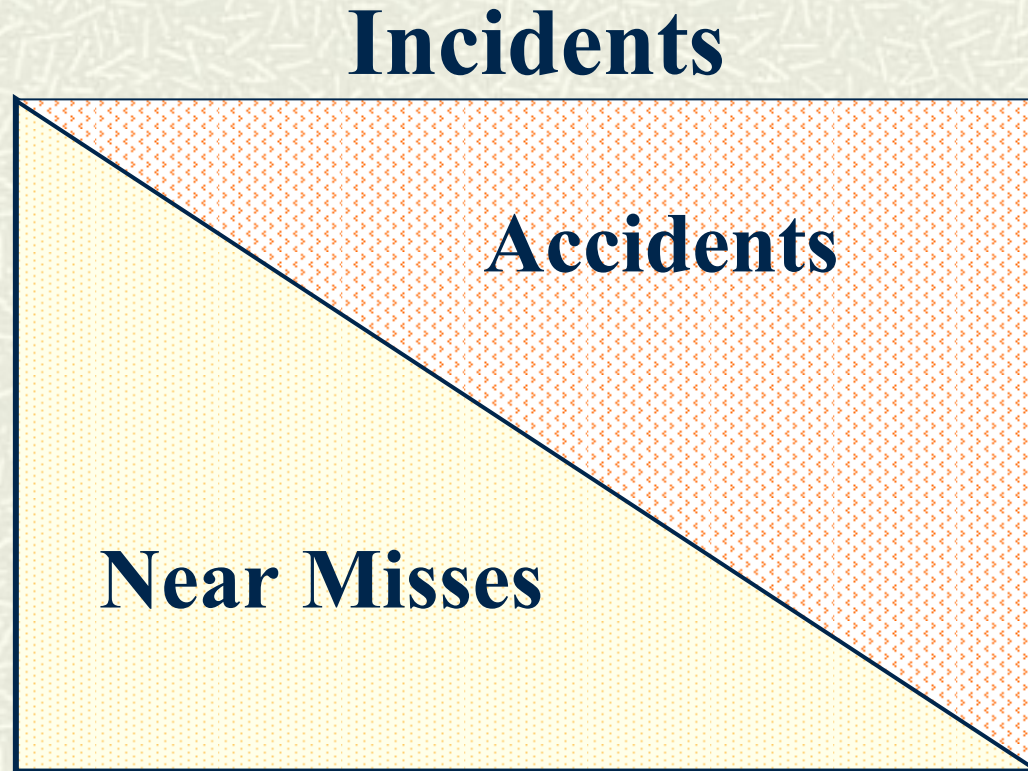


What is an incident?

- An **incident** is an **unexpected, unplanned, undesired event**, which may or may not involve injury, illness, property damage, or interruption to normal activities.
- An **accident** is a type of **incident in which injury, illness, or damage to property occurs**.
- A **near miss** is an **incident in which interruption to normal activities may occur**, but no injury, illness or damage.



Interrelationship of incidents, accidents and near misses.



What is a serious incident?

- # an incident where a person has been killed or placed on life support, or where a limb has been amputated
- # an event or circumstance that presents an immediate threat to life, such as
 - loss of consciousness of a person from exposure to physical force, hazardous substances, electric shock or lack of oxygen
 - uncontrolled explosion, fire or release of dangerous goods
 - serious burns to a person
 - person trapped in confined space or machinery
 - major damage to any plant, equipment, building or structure or collapse of excavation.



What to do if a serious incident occurs

- # Assess the situation and assist any injured or trapped people only if safe to do so.
- # Call for emergency services on 000 & notify Security.
- # Contact OHS & Injury Management so that WorkCover can be notified immediately.
- # Prevent disturbance of the incident scene as far as possible .
- # Co-operate with the formal investigation team.



What to do if any incident occurs

- # Injured person or witness - report the incident immediately to your supervisor.
- # Supervisor
 - submit a preliminary report within 24 hours to OHS & Injury Management – see <http://www.usyd.edu.au/ohs/report/index.shtml>
 - Submit the completed report within one week of the incident, following your investigation.

Why investigate workplace incidents?

- # To discover the causes of the incident, ie find out why and how it happened.
- # To prevent a repeat of the incident by eliminating or controlling risks.
- # To accurately report the incident to WorkCover, relevant insurers and the University community as required.



Who should investigate workplace incidents?

- # The supervisor of the area and the worker/student involved know the work processes and work environment.
- # The supervisor is responsible for initiating remedial actions to prevent a repeat of the incident.
- # Departmental Safety Officers and Heads of Schools/Departments/Units can assist supervisors.
- # OHS & Injury Management and external authorities will become involved in investigation of serious incidents.



Incident Investigation Steps

1. Ensure area is safe
2. Talk to witnesses
3. Consider the work processes & tasks
4. Consider the work environment
5. Consider the management systems
6. Determine the incident sequence
7. Determine the causes of the incident
8. Decide on corrective actions in consultation with affected staff
9. Finalise the incident report



Step 1: at the scene

- Depending on the seriousness of the incident, a brief survey of the scene may be all that is needed.
- Ensure the area and people in the area are made safe from any immediate risks.
- Preserve the scene as far as possible until you have recorded details, eg position and state of objects, equipment, etc.

Step 2: witnesses

- # Find out who saw and/or heard the incident.
- # Talk to all involved, one at a time if possible.
- # Ask what they saw, heard and did immediately before and at the time of the incident.
- # Ask what happened to try to establish the sequence of events (see Step 6).



Step 3: work processes & tasks

Find out

- What process or task was underway at the time?
- Was the process/task repetitive or of long duration?
- Was there any pressure to complete the task quickly?
- What was hazardous about the process/task?
- Had the hazards been identified and the risks assessed in consultation with the workers involved?

http://www.usyd.edu.au/ohs/docs/ohsrm/Part_A.pdf

http://www.usyd.edu.au/ohs/docs/ohsrm/Part_B.pdf

- Were there any formal, documented safe work procedures?
- What was the normal, safe process that should have occurred?
- What risk controls should have been in place?

Step 4: work environment

■ Consider the work environment

- Was it clean and tidy or cluttered?
- Was it cramped or spacious?
- Was it hot or cold?
- Was the surface wet or slippery, uneven, rough, broken?
- Was the lighting satisfactory?
- Was any equipment being used in good working order?
- Was the person working in isolation?



Step 5: management systems

- # Consider aspects of management systems such as
 - Was the worker trained for the task?
 - Was there adequate supervision?
 - Were safe work processes documented in consultation with workers?
 - Were documented safe procedures followed?
 - Were risk controls implemented?
- # If not, why not?

Step 6: incident sequence

- Refer to witness information (Step 2).
- What happened before, during and after the incident?
- What went wrong?
- When did things start to go wrong?
- Summarise the sequence of events resulting in the incident.

Step 7: incident causes

- Consider all the information gathered.
 - How did the incident happen?
 - Why did it happen?
 - What causal factors can you identify?
 - What risks need to be controlled to prevent a repeat of the incident?
 - What management systems need to be changed?

Step 8: corrective actions

- # How can the risks be controlled immediately and in the longer-term?
- # Refer to the [ohsrm Program Guidelines](#) for the Hierarchy of Hazard Controls.
- # Determine short, medium and long-term corrective actions in consultation with staff who perform the processes/tasks.

Step 9: final reporting

- # You are now ready to finalise the incident report. This should include:
 - What happened and why?
 - What causal factors were found?
 - What corrective actions will be taken?
 - Who will take the corrective actions?
 - When the corrective actions will be completed?
- # Send the completed report, with any necessary attachment detailing investigation findings and corrective actions, through your management chain to OHS & Injury Management.
- # A properly completed incident report submitted promptly will reduce the likelihood of intervention by OHS & Injury Management.



Quick Quiz

1. Why do we investigate incidents?
2. Who should lead the investigation?
3. What broad factors should be considered as causing incidents?



Quiz Answers

1. See slide 9.
2. See slide 10.
3. See slides 14, 15, & 16.



Example 1: Overuse Injury

- A worker complains of neck pain and numbness in the right hand, which has worsened over the past two months. The worker now can't cope with normal computer-based tasks.

Example 1: observations at the scene

- Observation of the worker's workstation reveals a keyboard tray in use under the desk. The tray is too small to fit the mouse as well as the keyboard. The worker is stretching to the right to reach the mouse, which is used on the desk.
- The monitor is positioned directly on the desk top, requiring the forward bending of the worker's head.

Example 1: witness information, work processes & tasks

- 1. Witness information:** the worker explained that a colleague was on leave for 4 weeks and not replaced. The worker had to cope with the extra workload and is still catching up on backlog. Pain started soon after the colleague went on leave, when the worker often worked through lunch and stayed back late.
- 2. Tasks:** the worker's tasks are about 80% computer based. The worker does not take regular breaks, tending to work instead intensively on each task until it is finished.

Example 1: work environment

- # There is no document holder – referenced documents are placed on the desk top to the left of the worker, requiring twisting to the left and bending the head forward.
- # The monitor is directly on the desk top, also requiring the worker to bend the head forward.
- # The keyboard tray under desk is not large enough for mouse as well as keyboard.

Example 1: management systems

1. The worker is not aware of [Office Ergonomics Guidelines](#).
2. Planning for leave cover did not occur.
3. No guidance was provided to the worker on prioritising work.
4. The worker felt discouraged from reporting pain when it first started.

Example 1: incident sequence & causal factors

Incident Sequence:

1. The worker had poor workstation set up.
2. When the colleague went on leave the additional workload placed extra, unsustainable demands on the worker.

Causal Factors:

- ✦ Poor posture, lack of task variation, insufficient breaks and unsustainable workload resulted in overuse injury.

Example 1: corrective actions

- # Review and improve workstation set up. Raise monitor and provide document holder.
- # Review the worker's posture and habits – supervisor to reinforce task variation, taking breaks, etc.
- # Supervisor to plan for leave cover in consultation with workers next time.

Example 2: Manual Handling Injury

- A worker sustains a lower back injury whilst moving a computer from one workstation to another.

Example 2: observations at the scene & witness information

- Checking the scene reveals workstations were 5m apart.
- Talking to the worker reveals the desktop unit and monitor were lifted together. The worker had to reach to the rear of the desk to lift them. They were carried across the room, placed on another desk and pushed to the back of that desk. It was the first task of the day.

Example 2: work tasks & environment

- # This was an infrequent task. There was no trolley available to be used. The worker had difficulty carrying the items, due to their bulk, weight and poor grip characteristics.
- # The work environment was tidy, with clear passageways between the desks. The floor was flat and would have been suitable for a trolley. The desks were deep and the computer was positioned to the back of the desk.

Example 2: management systems

- # The worker was not trained for manual handling tasks such as this.
- # The task was not planned and there was no documented safe work method to follow.

Example 2: incident sequence

- # The worker bent and reached to the back of one desk to lift the computer and monitor together off the desk.
- # The worker carried both items together to another desk 5m away and bent forward again to place the items onto the second desk top, then pushed them to the rear of that desk.
- # A short time later the worker reported back pain.

Example 2: incident causes & corrective actions

- # The injury resulted from bending, lifting, carrying and pushing heavy and awkward items, without planning, training in appropriate techniques or mechanical aids.
- # Undertake a risk assessment in consultation with workers.
- # Use a trolley.
- # Move one item at a time using safe lifting techniques.

Example 3: Slip, Trip or Fall incident

- # A worker returns from lunch with cuts, grazes and bruises on hands and knees and reports falling while descending stairs.

Example 3: observations at the scene

- # Examination of the stairs reveals
 - the second step up from the landing has a large chip out of it.
 - lack of non-slip strips
 - only one handrail.
 - Steps are even in height and depth.
- # All surfaces are dry.
- # Lighting is satisfactory.

Example 3: witness information

- # Using these stairs is a routine task, performed by many workers every day.
- # Questioning the worker reveals the worker answered mobile phone whilst going down the stairs, and was not concentrating at the time. The worker reports have missed a step near the bottom and falling onto the landing. The worker was not able to stop the fall by grabbing the handrail. The worker's shoes are sensible, with non-slip soles.

Example 3: management systems & incident sequence

- # Management Systems: no-one has reported the steps to CPS or equivalent (maintenance department) for repair, though they are used daily by many people.
- # Incident Sequence: the worker was most likely distracted when answering a mobile phone and missed the edge of a step. Since a step near the landing was broken, this was probably the one that was missed. The worker fell forward onto landing.

Example 3: causal factors

- # Step edges were chipped in places, which could easily result in a missed step.
- # All step edges lacked non-slip strips.
- # The worker was distracted and not concentrating on the task, which also contributed.

Example 3: corrective actions

- # Report condition of stairs to Campus Property Services.
- # Encourage staff to report this type of problem immediately themselves.
- # Conduct routine inspections of the stairs and other parts of the building to identify hazards like this.



Example 4: chemical or biological spill incident

- # A worker reports that a hazardous chemical/biological solution has spilled in the lab. The worker may have been splashed.



Example 4: at the scene

- # At the scene you notice that an area of the floor has been covered in absorbent pads.
- # On an adjacent bench-top puddles of liquid surround a number of containers and pieces of equipment. A partly empty flask is on its side amongst these items.
- # The worker is wearing an unbuttoned lab coat that appears to be wet at the front.



Example 4: witness information

- # The worker tells you the full flask was accidentally knocked over when reaching for a stopper on a shelf at the back of the bench. The worker reports being behind schedule.

Example 4: work tasks

- # The flask contains a solution that was made up in an adjacent fume cupboard/biological safety cabinet.
- # The worker forgot to take the stopper to the cupboard/cabinet so the flask was not stoppered before being put onto the bench.
- # The usual procedure is to put the stopper in inside the cupboard/cabinet.

Example 4: work environment & management systems

Work Environment

- # The lab bench is cluttered. There are lots of items on it.
- # The shelf at the back of the bench is difficult to reach.
- # There was a spill kit on the wall near the door, which has been used to soak up the liquid on the floor.

Management Systems

- # There are standard operating procedures for the task, but they were not followed. The worker was rushing.

Example 4: incident sequence

- # The worker did not follow the usual sequence in preparing to make up the solution.
- # The flask stopper was left on a shelf instead of being put into the cupboard/cabinet.
- # When the worker had put the flask on the bench and was reaching for the stopper on the shelf behind, the flask was knocked over and the contents spilt onto the bench and the floor.
- # The worker's lab coat and clothing were splashed.

Example 4: incident causes & corrective actions

Causal Factors:

- ✘ The main cause was lack of preparation.
- ✘ Rushing due to being behind schedule was a contributing factor.
- ✘ The shelf behind the bench is too high to reach safely.

Corrective Actions:

- ✘ Reinforce correct preparation and adherence to procedures, including proper wearing of lab coats.
- ✘ Tidy up clutter on bench.
- ✘ Modify the storage of items on the shelf.



Example 5: Machinery

- A casual worker was assisting an academic staff member to wind cord onto a spool using a lathe. During this process the casual worker's hand was caught between the chuck key and the lathe. The worker suffered serious bruising to his fingers and subsequently went into shock, fell down and lacerated his knee on scrap metal.

Example 5: Observations at the scene

- A spool, partly wound with cord, was still on the lathe.
- There was a pile of scrap metal protruding into the walkway between the lathe and the sink.
- The workshop looked generally untidy.

Example 5: Sequence of events (1)

1. The lathe was being operated by the academic, in reverse and at low speed. The casual assisted by ensuring that the cord was compacted and evenly wound onto the spool.
2. Just prior to the incident it was decided that the spool needed to be re-positioned.
3. The casual walked to the rear of the lathe and used the chuck key to loosen the chuck and adjust the spool.



Example 5: Sequence of events (2)

4. The academic sought confirmation that the lathe was ready to re-start. He received a positive verbal response and re-started the lathe.
5. At this point the casual was still holding the chuck key, which was positioned in the chuck. When the lathe re-started the chuck rotated towards the casual, trapping his fingers between the chuck key and the lathe.

Example 5: Sequence of events (3)

6. The academic saw this and activated the emergency stop button immediately. Fortunately, the positioning of the chuck key, slow speed setting and quick activation of the emergency stop prevented the casual's fingers from being crushed.
7. The casual worker withdrew his hand and started walking to the sink to wash off the grease. He suddenly felt light headed and fell, striking his knee on some scrap metal that was protruding into the walkway.



Example 5: Causal factors (1)

- # The academic had limited workshop experience and had no formal trade qualifications.
- # The casual worker was untrained and inexperienced.
- # There is an inherent risk when working with rotating machinery such as lathes.
- # There was no documented safe work method for the task.
- # The workshop was not managed or supervised by a trained and experienced trades person.

Example 5: Causal factors (2)

- # The workshop was untidy.
- # The two-person operation lead to a miscommunication between the workers.
- # The lathe operator failed to make a visual check that all was clear before re-activating the lathe.

Example 5: Corrective actions (1)

- A suitably qualified staff member has been allocated responsibility for the workshop.
- Access to the workshop has been restricted to those with trade qualifications and appropriate experience, and those under the direct supervision of the workshop supervisor.
- Only one person may work at a machine at a time.
- Housekeeping has been improved, including disposal and re-organisation of stored materials.

Example 5: Corrective actions (2)

- # A risk assessment program has been implemented. This has resulted in the development of a set of general controls/operating procedures for each piece of machinery in the workshop. In addition, each job must be assessed on a case-by-case basis. Where additional controls are identified, these specific must be adopted for that job and documented in the workshop logbook.

Useful References – OHS & Injury Management

- # What to do in an emergency - http://www.usyd.edu.au/ohs/ohs_manual/emergency/help.shtml
- # Reporting claims and incidents - <http://www.usyd.edu.au/ohs/report/index.shtml>
- # Policy on Incident & Accident Reporting & Investigation - <http://www.usyd.edu.au/ohs/policies/ohs/acc-rep.shtml>
- # ohsrm Program documents - http://www.usyd.edu.au/ohs/ohs_manual/ohsrm.shtml
- # Office Ergonomics Guidelines - http://www.usyd.edu.au/ohs/ohs_manual/ergonomics/ergoguide.shtml
- # Manual Handling - http://www.usyd.edu.au/ohs/ohs_manual/manual_handling/mhdlg.shtml
- # Hazardous Substances - http://www.usyd.edu.au/ohs/ohs_manual/haz-subs/index.shtml



Useful References - Other

- # Campus Property Services e-Service Desk -
<http://www.facilities.usyd.edu.au/afm/reports/index.cfm>
- # WorkCover information on notifying workplace incidents -
<http://www.workcover.nsw.gov.au/QuickLinks/IncidentNotification/Default.htm>

Bibliographic References

- # Canadian Centre for Occupational Health and Safety - <http://www.ccohs.ca/oshanswers/hsprograms/investig.html>
- # Treasury Board of Canada Secretariat - http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/tbm_119/chap5_2-PR_e.asp
- # University of Manchester - UMIST Guidance on accidents and accident investigation - <http://www2.umist.ac.uk/staff/safety/pdfs/GN%20on%20accident%20investigations.pdf>
- # Incident report and risk assessment, Geosciences, 2003/4
- # Earlier version of this course, Risk Management Office, May 1999.

