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INTRODUCTION TO THE FACILITATOR’S GUIDE

The Principles of Accident Investigation

The aim of this Facilitator’s Guide, when used in conjunction with the Video program, is to provide the facilitator with discussion points important to the overall development of the program and to allow participants the opportunity of discussing the impact the program may have on current work practices and whether in fact changes may be required. Twenty

The time allocated to the program will be determined by which areas are seen as important to each Organisation, the time taken to develop the points made in the program and whether other data specific to your own environment is included in addition to, or instead of, the program examples.

EACH FACILITATOR SHOULD CAREFULLY READ THE GUIDE DISCUSSION NOTES SUGGESTED, AND PREPARE THEIR OWN INPUT ACCORDINGLY.

The program transcript is included to allow your Organisation to fully research the program content and develop specific examples critical to the performance of your own workforce.

Where the Video program is made available to small or remote sections of your Organisation, some other examples or discussion points may be preferred to suit the needs of these people and if so, should be developed prior to distribution of the program. Maximum benefit will then be obtained by your people.

All information included in the Facilitator’s Guide may be copied and distributed with the exception of the transcript of the Video program. Any information which is copied or distributed must only be used internally by the Organisation which purchased the guide.
INTRODUCTION TO THE VIDEO PROGRAM

Duration: 11 minutes

There are laws and regulations that require the investigation and reporting of certain types of accidents. Insurance requirements also lead to many Accident Investigations as do potential claims at common law.

However, from an Occupational Health & Safety point of view, the main aim of Accident Investigations is not to fulfil these legal and insurance obligations, but rather to prevent recurrences of the same or similar accidents.

Accident Investigations therefore should be regarded as an important part of accident prevention.

This program covers:

- A definition of an accident
- Contributory factors leading to accidents
- Who should be involved in an investigation?
- The strategy of the investigation
- Gathering the facts
- Interviewing
- Isolating the key contributory factors
- Determining corrective actions

Learning why and how accidents occur is fundamental to making improvements in both working conditions and operational methods.

The Accident Investigation process will reduce the number of workplace accidents and should be regarded as an important component of any workplace health and safety strategy.
There are laws and regulations that require the investigation and reporting of certain types of accidents.

Insurance requirements also lead to many Accident Investigations as do potential claims at common law.

However, from an Occupational Health & Safety point of view, the main aim of Accident Investigations is not to fulfill these legal and insurance obligations, but rather to prevent recurrences of the same or similar accidents. Accident Investigations therefore should be regarded as an important part of accident prevention.

Any serious accident, whether causing injury or not, every dangerous occurrence and many “near-miss” incidents should be investigated.

The Accident

An accident can be broadly defined as an unplanned and unwelcome event which interrupts normal activity.

There are three basic types of accidents.

- First, minor accidents, such as small cuts or the dropping of objects.
- Second, more serious accidents that cause injury and or damage, such as someone falling from a ladder or a forklift dropping a load.
- And third, accidents that occur over an extended time frame, such as an illness resulting from an exposure to a hazardous substance. These types of accidents are best addressed by on going accident prevention programs that include risk assessments and the implementation of appropriate safe work procedures.

It is the second group, the more serious accidents, that is clearly the main group that should be investigated. However it should be remembered that very often there is only a fine line between a minor accident and a major one.

Contributory Factors Leading to Accidents

All accidents have one thing in common; they all have reasons why they occur. These reasons are commonly referred to as contributory factors.
Contributory factors that lead to all accidents fall into one or more of the following broad categories:

- Environmental
- Design
- Systems and Procedures, and
- Human Behaviour.

Environmental factors include such things as, light, rain, wind, fog, fumes, heat, cold and noise.

Design factors include workplace layout and the design of equipment, machinery and tools.

Systems and procedures that are inappropriate, not present, or simply ignored can contribute to accidents, and

Human Behaviour is a factor arguably common to all accidents. This human factor is not limited to the person or people involved in the accident but can include such things as purchasing an inappropriate piece of equipment, that is, it could be human behaviour not directly linked to the accident itself.

**Who Should be Involved in an Investigation**

The composition of the investigation team often varies depending upon the severity of the accident. In many cases the team should consist of individuals involved in the accident, others with the same or similar job function and the supervisor of the work area concerned.

In more serious accidents additional people with relevant experience and expertise and even outside consultants could be added to the team. Very often the best person to head the investigation team is the supervisor of the area directly involved in the accident.

**The Strategy of the Investigation**

The three main stages of an investigation are:

- To gather all the relevant information and establish the facts.
- To isolate the essential contributory factors, and
- Finally, to determine appropriate corrective actions.

Clearly, for the accident investigation process to be effective it is important that there is also a commitment and a mechanism in place to carry out these corrective actions.

An investigation should take place as soon as practical after an accident or incident occurs. If anyone is injured, obviously the first priority is for their health and well-being. Procedures for dealing with these emergencies should be followed to ensure no one else is put at risk and the injured receive quick and appropriate treatment.
Gathering the Facts

The object of an investigation is to be impartial and objective. The accident scene should be isolated as soon as possible. Factual material, such as safe work procedures, relevant material safety data sheets and maintenance records for any equipment involved should be gathered.

Photographs, diagrams and videos of the scene may be appropriate and it is important not to destroy or discard anything related to the accident.

Interviewing

Information should be quickly obtained from people directly involved in the accident.

When time elapses, distortion of the facts can occur for a number of reasons ....
- People can simply forget important detail
- Witnesses can also influence each other
- And of course, as time passes, people may become increasingly concerned about incriminating or involving others.

Everyone to be interviewed by the investigation team should be interviewed separately. It should be made clear to all that the purpose of the interview is to gather the facts and the function of the investigation is to prevent a recurrence of the same accident.

Question should be asked such as:
- What were you doing?
- How do you think the accident occurred?
- How were you trained for the job?
- What is the safe work procedure for this task?

Questions with a negative connotation should be avoided. Questions which start with words such as:
- Didn’t you know..., and
- Why didn’t you...
These types of questions can imply blame.

The investigation should not be concerned with judgements made by individuals but rather concentrate on gathering the facts surrounding the accident.

Often the investigation team will develop a time-line of the events leading up to the accident. This chronological sequence is frequently helpful in identifying some of the less obvious accident causes.
Isolate the Key Contributory Factors

After gathering all the facts it is then up to the investigation team to evaluate the reasons why the accident or incident actually occurred.

Each factor should be individually examined. A common approach is to ask the question:

‘Would the accident have happened if this particular factor was not present?’

For example, if a machine guard was not in place, would the accident still have occurred if the machine was properly guarded? Or

If a new employee was involved were they aware of the safe operating procedures and, if not, was this a factor that had a direct bearing on the accident?

It becomes a logical progression through all the contributory factors; to establish which of these were indeed the essential, or key factors that resulted in the accident.

Determine Corrective Actions

It now becomes the job of the investigation team to interpret and draw conclusions. A clear distinction between the immediate causes and the underlying causes must also be made.

Immediate causes include such things as:
- Not wearing required personal protective equipment
- Using incorrect manual handling techniques
- Tripping in an untidy work area
- Using the wrong tool for the job, and
- Not following safe work procedures

The related underlying causes include:
- Poor training
- Lack of enforcement of established safety practices
- Poor maintenance, and
- A poor safety culture

It is important therefore that the recommendations of the investigation team address the key contributory factors and the related underlying causes. To prevent a recurrence of an accident, something must change.

The recommendations must be clearly communicated to all concerned and an appropriate time table established for implementation, and follow up must be part of the process to ensure that changes have been made.
An accident investigation is a positive reaction to a negative situation.

Learning why and how accidents occur is fundamental to making improvements in both working conditions and operational methods.

The Accident Investigation Process will reduce the number of workplace accidents and should be regarded as an important component of any workplace health and safety strategy.
PART ONE
THE ACCIDENT

An accident can be broadly defined as an unplanned and unwelcome event which interrupts normal activity.

There are three basic types of accidents.

- First, minor accidents, such as small cuts or the dropping of objects.
- Second, more serious accidents that cause injury and/or damage, such as someone falling from a ladder or a forklift dropping a load.
- And third, accidents that occur over an extended time frame, such as an illness resulting from an exposure to a hazardous substance. These types of accidents are best addressed by ongoing accident prevention programs that include risk assessments and the implementation of appropriate safe work procedures.

It is the second group, the more serious accidents, that is clearly the main group that should be investigated. However, it should be remembered that very often there is only a fine line between a minor accident and a major one.

DISCUSSION

Why are more serious accidents (that cause injury and/or damage) the main group that should be investigated?
PART TWO
BASIC TYPES OF HAZARDS WHICH CAUSE INJURIES

Following are the four groups of hazards that cause injuries:

1. Struck by or Strike against an object
2. Caught on, in or between something
3. Fall to foot level or lower
4. Exposure to things such as:
   - Radiation
   - Electricity
   - Fumes
   - Noise
   - Chemicals
   - Fire
   - Heat (or lack of)
   - Light (or lack of)

Without one or more of these hazards present in an accident, there will be no injury.

DISCUSSION

Discuss specific examples in your workplace that fall into the following groups of hazards:

- Struck by or strike against an object
- Caught on, in or between something
PART THREE
FACTORS CONTRIBUTING TO ACCIDENTS

Environmental & Working Conditions
- Temperature (hot or cold)
- Moisture (rain, condensation)
- Wind (outside activities)
- Untidy and Dirty Work Area
- Availability of Protective Equipment

Workplace Design & Layout
- Plant Layout
- Lighting
- Warning Systems
- Guards and Barriers
- Ventilation

Procedures & Systems
- Operating Methods
- Safety Procedures
- Rules and Responsibilities
- Technical Advice
- Lack of Supervision

Human Factor - Behavioural
- Inexperience
- Lack of Understanding
- Emotional Problem
- Misconduct
- An Altered Consciousness (Alcohol or Drugs)
- Language Problems

DISCUSSION

What are some Environmental and Working Conditions factors that could contribute to accidents in your workplace?

How can these specific factors be properly addressed to reduce the risk of accidents occurring?
**PART FOUR**
UNSAFE PRACTICES COMMONLY FOUND IN THE WORKPLACE

- Unauthorised smoking
- Working without appropriate permits
- Ignoring lock-out procedures
- Not wearing protective equipment
- Not wearing safety footwear
- Using incorrect tools
- Using incorrect lifting techniques
- Poor housekeeping practices
- Climbing without proper equipment
- Uneven floor surfaces
- Uninsulated heat (cold) sources
- High noise levels
- Absence of warning signs
- Guards not present
- Guards not in place
- Cutting hazards
- In-running nip points
- Hazardous atmospheric conditions
- Faulty equipment
- Unreported electrical faults - cords and switches
- Not using designated pedestrian walkways
- Not obeying internal traffic rules

**DISCUSSION**

What are some unsafe practices commonly found in your workplace?
PART FIVE
GUIDELINES FOR CONSIDERATION BY THE INVESTIGATION TEAM

- Purchase new equipment
- Develop new maintenance procedure
- Protect equipment from weather
- Move storage location
- Redesign the work area
- Remove unnecessary material
- Remove unnecessary equipment
- Improve ventilation
- Improve lighting
- Limit access
- Provide new tools
- Revise tool specifications
- Develop or revise safety procedure
- Install warning devices
- Add to existing signage
- Re-train
- Provide new training
- Increase level of supervision
- Train personnel in hazard recognition
- Revise work permit procedure
- Improve internal communication
- Remove tools or equipment in poor conditions
- Purchase materials handling equipment
- Re-schedule hazardous operations
PART SIX
OUTCOMES OF ACCIDENTS

Primary Outcomes:

- Death
- Injury
- Illness
- Damage to Equipment
- Damage to Property
- Lost Time
- Lost Productivity

Secondary Outcomes:

- Litigation Costs
- Insurance Costs
- Compensation Costs
- Accident Investigation
- Rehabilitation

DISCUSSION

How can each of us contribute to the prevention of accidents?
1. What kind of accident should be investigated?
   a) Only accidents that cause injuries
   b) Any serious accident
   c) Only accidents involving hazardous chemicals
   d) Only minor accidents

2. Which of these is not a possible contributing factor to accidents?
   a) Heat or cold
   b) Safety data sheets
   c) Workplace layout
   d) Human behaviour

3. Which of these may be included in an accident investigation team?
   a) The supervisor of the relevant work area
   b) People involved in the accident
   c) People with the same job function as those involved
   d) All of the above

4. What is the first stage of an accident investigation?
   a) To gather all the relevant information and establish all the facts
   b) To determine appropriate corrective action
   c) To cause an accident
   d) To improve training

5. What is the second stage of an accident investigation?
   a) To apply first aid
   b) To isolate the essential contributory factors
   c) To cause an accident
   d) To form the investigation team
6. What is the *third and final* stage of an accident investigation?

- a) To gather the facts
- b) To hire outside consultants
- c) To determine appropriate corrective action
- d) To ignore safe work procedures

7. Which of these should *not* be done when gathering the facts?

- a) Taking photographs of the scene
- b) Looking at relevant material safety data sheets
- c) Throwing out equipment maintenance records
- d) Interviewing witnesses

8. Everyone to be interviewed by the investigation team should be interviewed _____.

- a) Separately
- b) Aggressively
- c) Together
- d) Negatively

9. Which of these would *not* be described as an immediate cause of an accident?

- a) Incorrect manual handling techniques
- b) Treatment of injuries
- c) Failing to follow safe work procedures
- d) Not wearing personal protective equipment

10. Which is an underlying cause of accidents?

- a) Poor training
- b) Follow-up of an investigation
- c) Safe work procedures
- d) Interviews
ANSWERS

1. **ANSWER: b) Any serious accident.** Accident investigations are aimed at preventing such accidents from recurring.

   *If the wrong answer is given:* Any serious accident, whether it causes an injury or not, should be investigated, as should every dangerous occurrence and many “near-miss” incidents.

2. **ANSWER: b) Safety data sheets.** Contributory factors that lead to all accidents fall into the following categories: environmental, design, systems and procedures, and human behaviour.

   *If the wrong answer is given:* Factors that contribute to accidents fall into one or more of the following categories: Environmental factors, including light, rain, wind, fog, fumes, heat, cold and noise; Design factors, including workplace layout and design of machinery and equipment; Systems and procedures that are inappropriate, absent or ignored; and human behaviour, which is arguably a factor in all accidents.

3. **ANSWER: d) All of the above.** With more serious accidents, additional people relevant experience and expertise, or outside consultants, could be added to the team.

   *If the wrong answer is given:* The make-up of an investigation team depends upon the severity of the accident. Often the team will comprise those involved in the accident, others with the same or similar job function, and the supervisor of the relevant work area.

4. **ANSWER: a) To gather all the relevant information and establish all the facts.** In the first stage, the accident scene should be isolated as soon as possible, all relevant factual material should be gathered, and nothing related to the accident should be destroyed or discarded.

   *If the wrong answer is given:* The three main stages of an investigation are: To gather all the relevant information and establish the facts; To isolate the essential contributory factors; and finally, to determine appropriate corrective actions.

5. **ANSWER: b) To isolate the essential contributory factors.** Each factor should be individually examined, often by asking the question, “would the accident have happened if this factor was not present?”

   *If the wrong answer is given:* The three main stages of an investigation are: gathering all the relevant information and establishing the facts; isolating the essential contributing factors; and finally, determining appropriate corrective actions.

6. **ANSWER: c) To determine appropriate corrective action.** The investigation team’s recommendations must address both the immediate and underlying causes of the accident.

   *If the wrong answer is given:* The three main stages of an investigation are: gathering all the relevant information and establishing the facts; isolating the essential contributing factors; and finally, determining appropriate corrective actions.
7. ANSWER: c) Throwing out equipment maintenance records. It is important not to 
destroy or discard anything related to the accident.

*If the wrong answer is given:* In the first stage of an investigation, gathering the facts, 
factual material such as safe work procedures, relevant material safety data sheets and 
maintenance records for any equipment involved, should be gathered. Photographs, 
diagrams and videos of the scene may be appropriate. Information should be obtained 
from people involved in the accident, as quickly as possible. It is important that nothing 
related to the accident is destroyed or discarded.

8. ANSWER: a) Separately. It should be made clear to all that the purpose of the 
interview is to gather the facts, and the aim of the investigation is to prevent the same 
accident happening again.

*If the wrong answer is given:* The investigation team should interview everyone 
separately, asking such things as what they were doing at the time, how they think the 
accident happened, how they have been trained for the job, and what the safe work 
procedure is for the task. Questions with a negative connotation should be avoided.

9. ANSWER: b) Treatment of injuries. The accident investigation team must not only 
address the immediate causes of an accident, but also the underlying causes.

*If the wrong answer is given:* Immediate causes include such things as not wearing 
required personal protective equipment, using incorrect manual handling techniques, 
tripping in an untidy work area, using the wrong tool for the job and not following safe 
work procedures.

10. ANSWER: a) Poor training. The investigation team must draw conclusions and 
determine corrective action. The team must distinguish between immediate and 
underlying causes.

*If the wrong answer is given:* Underlying causes include things like poor training, lack of 
enforcement of safety practices, poor maintenance and poor safety culture.
## ACCIDENT INVESTIGATION REPORT

<table>
<thead>
<tr>
<th>DATE OF REPORT: <strong><strong><strong>/</strong></strong><em>/</em></strong>_</th>
<th>DATE OF INCIDENT: <strong><strong><strong>/</strong></strong><em>/</em></strong>_</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATION OF INCIDENT: ________________</td>
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</table>

### MEMBERS OF INVESTIGATION TEAM:

1. ________________________________ (TEAM LEADER)
2. ________________________________
3. ________________________________
4. ________________________________
5. ________________________________

### DETAILS OF INJURIES:

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

CHECK AS APPROPRIATE: ☐ Lost Time ☐ Medical Treatment
☐ First Aid ☐ None

### DETAILS OF DAMAGE: (PLANT / EQUIPMENT / PROPERTY)

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

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