7 Incident Investigation

Once you have completed Element 7, you will have:

- Written an incident reporting policy.
- Developed a standard procedure for investigation of workplace incidents.
- Created a method for recording injuries and incidents over time.
- Developed training for those conducting an investigation.

Introduction

It is very important to develop a policy for incident reporting and investigation. This then provides you with the information to correct the problem. This element provides you tools for developing incident investigation procedures and ways to record injuries and incidents.

OCCUPATIONAL HEALTH AND SAFETY LEGISLATION

The *Occupational Health and Safety Act* requires that any death, serious injury or incident outlined in Section 18, be reported as soon as possible.

Refer to Section 18/19 of the *Occupational Health and Safety Act.*

http://work.alberta.ca/searchAARC/65.html

http://work.alberta.ca/searchAARC/74.html

Investigation

An incident is an unplanned event that results in loss. Should an incident occur, regardless of whether there was any damage or injury, consider it a warning and learn from it. Conduct an investigation to determine the root cause of the incident and then adjust your standard operating practices and training accordingly.

Near miss: An unplanned event that did not result in injury, illness or damage but had the potential to do so.

To understand why an incident or near miss has occurred, you need to find out:

- The immediate events leading up to it.
- What contributed to the incident, such as unsafe actions or conditions, maintenance, training, external influences (weather, distraction, stress, etc.).
- The root causes that set the stage, such as inadequate leadership, insufficient safety policies or work standards, poor maintenance, lack of training and/or unsafe attitudes.

Carefully look at what happened and try to understand why. Consider all possible influencing factors, including weather, operator training, maintenance and inappropriate use of equipment. Talk to anyone who saw the incident or was involved. Use these six questions to get the basic information about the incident:

- Who was involved?
- Where did the incident happen?
- When did it happen?
- What were the immediate causes?
- Why did the incident happen (root cause)?
- How can a similar incident be prevented?

Once you have answered the questions, you need to correct the leadership, policy, process, facility, equipment or level of training to reduce the risk of future incidents.

Keep records of all investigations.

See Appendix 7.1, "Example Incident Reporting and Investigation Policy" for an example of a policy for reporting an incident.

See Appendix 7.2, "Example Incident/ Hazard Reporting Form" for an example of a form.

FACTORS TO CONSIDER WHEN CORRECTING PROBLEMS

- Adequacy of planning, training, orientation or supervision, for example, repairing hydraulics on a front-end loader without blocking the arms or bucket.
- Design of work areas or job procedures.
- Inadequate, defective or obsolete tools, machinery and equipment.
- Unusual circumstances, such as an emergency that requires workers to perform jobs they normally don't do.
- Jobs that are rarely performed, such as silo repairs.
- Instinctive behaviour of animals, chemical reactions, quality of tools or supplies.

Incident Reporting Policy

Begin by creating a written standard that includes the requirement for reporting all incidents, workplace-related illness, property damage and near misses. Include, in the policy, a specific time frame for reporting and the person who should receive the incident reports. Next, develop a standard report form to capture the details important to the investigation.

Train all employees to these standards through employee orientation. Include periodic refreshers in team or safety meetings to reinforce the importance of incident reporting.

Farms with WCB coverage have specific reporting requirements. Visit ***www.wcb.ab.ca*** for reporting information.

Use Worksheet 7.1 "Incident/ Hazard Report Form" to record an incident.

IMPORTANCE OF REPORTING

It is easy to let near misses go without reporting since no-one was injured or killed. However, by reporting and investigating near misses, you will be able to put controls in place to ensure that the incident does not occur again, or with more serious results.

INCIDENT RATIO PYRAMID

The "Incident Ratio Pyramid" illustrates that many near misses occur for every serious injury. By taking action in response to near misses, we can prevent major injuries or fatalities.

INCIDENT RATIO PYRAMID

Incident Investigation Policy and Procedures

Develop a policy statement on the basic standards for the investigation of workplace incidents. You can develop this as a separate policy or in combination with the incident reporting policy.

See Appendix 7.3 "Example Incident Reporting and Investigation Form" for an example of how to fill in an incident investigation report.

Use Worksheet 7.2 "Incident Reporting and Investigation Form" to investigate an incident.

STANDARD PROCEDURES FOR INVESTIGATIONS

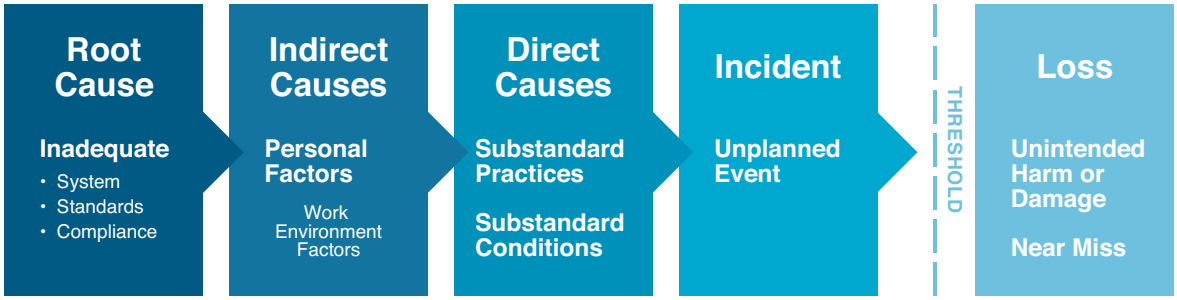
- The time frame for investigations (as soon as possible after the injured have been cared for and all of the potential hazards are removed).
- Who will be responsible for leading the investigation and the training required (e.g., the supervisor responsible)?
- A requirement for participation from all staff working on the farm.
- Basic steps for conducting the investigation.
- A requirement to identify indirect, direct and root causes.
- A requirement to identify corrective action, a specific person responsible for follow-up and an associated timeline for completion.
- A requirement for the most senior position on the farm to review and sign off once investigations are complete and follow-up action has been taken to prevent a recurrence of the incident.
- A standard incident investigation form developed and included with the policy.

Make employees aware of investigation policies and procedures, and share investigation results with employees at safety meetings and post at the work site. Communication of the investigation results is key to preventing a similar occurrence elsewhere in the organization.

Causes of Incidents

The diagram below lists the different levels of causes. This then leads to a variety of corrective actions. By starting at the "Loss" and working back toward the "Root Cause", and asking "Why?" at each step, you will discover the root cause of the problem.

Root Cause Analysis Model



To complete a thorough investigation, you need to look at three levels of causes:

- Direct
- Indirect
- Root

Direct Causes

The following table provides a list of the most common substandard practices and conditions that lead to accidents/incidents.

Substandard Practices	Substandard Conditions
• Operating equipment without authority	• Inadequate guards or barriers
• Failure to warn	• Inadequate or improper protective equipment
• Failure to secure	• Defective tools, equipment or materials
• Operating at improper speed	• Congestion or restricted action
• Making safety devices inoperable	• Inadequate warning systems
• Removing safety devices	• Fire and explosion hazards
• Using defective equipment	• Poor housekeeping/disorderly workplace
• Using equipment improperly	• Hazardous environmental conditions: gases, dusts, smokes, fumes, vapours
• Failing to use personal protective equipment properly	• Noise exposure
• Improper loading	• High or low temperature exposures
• Improper placement	• Inadequate or excessive illumination
• Improper lifting	• Inadequate ventilation
• Improper position for task	
• Servicing equipment in operation	
• Horseplay	
• Under influence of alcohol and/or other drugs	

Indirect Causes

Indirect causes can be divided into personal factors and work environment factors as illustrated in the following table.

Personal Factors	Work Environment Factors
• Inadequate physical/physiological capability	• Inadequate leadership and/or supervision
• Inadequate mental/psychological capability	• Inadequate engineering
• Lack of knowledge	• Inadequate purchasing
• Lack of skill	• Inadequate maintenance
• Physical/physiological stress	• Inadequate tools, equipment, materials
• Mental/physiological stress	• Inadequate work standards
• Improper motivation	• Wear and tear
	• Abuse or misuse

ROOT CAUSES/LACK OF CONTROL

- Inadequate programs
- Inadequate program standards
- Inadequate compliance

Corrective Actions and Follow-Up Process

Once you have identified the cause of an incident, you can start to take corrective action and follow-up procedures. Ensure investigations are conducted according to the policy and training.

Have managers review investigation reports and ensure that appropriate corrective actions are implemented. Workers will be curious to know what happened, especially to ensure their co-worker is doing well and for ways to ensure an incident isn't repeated in the future. How will you communicate changes to work practices, policies or expectations to all workers?

Keep track of types of incidents and injuries over time. Note any areas of the worksite where more incidents or particular types of injuries occur. Look for trends.

If certain types of incidents continue to happen, this is a signal to investigate further.

Investigation Training

Provide training, and document that training, for those responsible for conducting the investigation. Worker involvement is key. Make sure employees know the purpose of investigations (so that the same incident is not repeated); also ensure employees understand that you want to find out the facts rather than place the blame on someone.

Conclusion

You should now have a policy for incident reporting and a procedure for investigating incidents. Along with your policy and procedure, you should have a system for recording incidents and training of those involved in incident investigations. Corrective actions and follow-up procedures are important to prevent future incidents.

Element 7
Self Evaluation Checklist

	Yes	No
I have a written policy that requires the reporting of occupational incidents and illnesses.	☐	☐
Employees are aware of their responsibilities to report work-related incidents and illnesses.	☐	☐
I have a written procedure for investigating occupational incidents and illnesses.	☐	☐
I involve workers in the investigation process.	☐	☐
I have trained key people in investigation techniques.	☐	☐
Investigations focus on identifying root causes and corrective action.	☐	☐
Supervisors are held responsible and accountable for the investigation process.	☐	☐
Investigation reports/results are signed off by management.	☐	☐
I share completed investigation reports/results with employees.	☐	☐
I ensure corrective actions are taken to prevent recurrence.	☐	☐
I have an investigation report form.	☐	☐

Appendix 7.1

Example Incident Reporting and Investigation Policy

_____ [Farm Name] _____

Reporting

- All incidents and illnesses, including near misses, equipment failures, aggressive or unusual behaviour of livestock, chemical exposures and so on shall be immediately reported to management.
- If the incident is serious, such as a critical injury, steps must be taken to remove or protect the injured person and prevent any further risks. Do not clear the scene until authorized to do so by management or a regulatory authority.
- Details of the incident shall be recorded on an incident report form.

Investigation

A joint investigation of the situation will be undertaken by management and a worker. The process will follow the one outlined in our FarmSafe plan. Procedures or actions as required will be instituted to prevent the recurrence of a similar event.

Signature: _____

Date: _____

Appendix 7.2
Example Incident/Hazard Reporting Form

Sample Form: *Smith Family Farm's* Incident/Hazard Report

Name: **George**	Date: **Oct 14, 2016**

Location: **Hay yard**

Person/equipment/animal/chemical/other involved:
George, Kyle, hay truck, front-end loader

Description of incident/hazard:

Loading bales onto flatbed truck.

As George put last round bale on truck with the front-end loader, Kyle went around the truck to start strapping down the load. The bale was not balanced and it fell off the truck nearly hitting Kyle.

Suggested corrective action:

The tractor operator must have visual contact with other workers at all times. Ground workers cannot approach the truck until given the "all clear" by the tractor operator.

Actions taken:

Work procedure reviewed and rewritten to include corrective actions (Oct. 14, 2016)
All employees informed of near-miss incident and procedure change (Oct. 15, 2016)
Complete a staff toolbox safety talk to update on new procedure change (Oct. 15, 2016)

Date: **October 14, 2016**	Owner/Supervisor Signature: **George Smith Sr.**

Appendix 7.3

Example Incident Reporting and Investigation Form

A	Identifying Information	
Exact location of Incident: **Hay yard of farm**		
Incident Date: **Sept 20**	Incident Time: **9:45pm**	Report Date: **Sept 21**
Injury or Illness		Injury or Illness
Part of body: **Potential of being pinned**		Property Damaged: **Paint Chip**
Nature of injury or illness:		Nature of Damage:
Object/Equipment/Substance Inflicting Harm: **Farm wagon/tractor**		
Person in Control of Activity at Time of Occurence: **Kim**		
WCB Account #:		Industry Code:
Name of First Aid Attendant: **None**		Injury recorded in First Aid Log: **Yes / No**
Type of Emergency Service Required: **None**		

B	Employee Information
Name: **Kim**	Telephone #:
Address:	Date of Birth:
SIN:	Provincial Health Care #:
Witness Names (attach statement): **Tractor driver/son**	

C	Hazard Assessment
Potential Severity: ☐ 1 (i.e., medical aid) ● 2 (i.e., lost time) ☐ 3 (i.e., fatality)	
Frequency: ☐ 1 - yearly or less ● 2 - monthly ☐ 3 - daily/weekly	
Probability: ☐ 1 - low ● 2 - medium ☐ 3 - high	
Risk Criticality Ranking (3 to 9 from least to most hazardous): **6**	

D	Incident Description

Describe how the incident occured:

- **Followed son into yard — he was driving tractor/hay wagon**
- **Stopped, Kim got out and pulled hitch pin on hay wagon**
- **Wagon rolled towards Kim**
- **Son yelled**
- **Kim held on to hitch and directed into tractor**
- **Wagon stopped when hitch wedged against tractor**

E Direct Cause Checklist

Substandard Actions

- [ ] Operating equipment without authority
- [ ] Failure to warn/communication
- [x] Failure to secure
- [ ] Operating at improper speed
- [ ] Making safety devices inoperable
- [ ] Removing safety devices
- [ ] Using defective equipment
- [ ] Failing to use PPE properly
- [ ] Improper loading
- [ ] Improper placement
- [ ] Improper position for task
- [ ] Horseplay
- [ ] Under influence of alcohol/drugs
- [ ] Other

Substandard Conditions

- [x] Inadequate guards or barriers
- [ ] Inadequate or improper protective equipment
- [ ] Defective tools, equipment or materials
- [x] Congestion or restricted action
- [ ] Inadequate warning system
- [ ] Removed safety devices
- [ ] Poor housekeeping
- [ ] Hazardous environmental conditions (gases/dusts/fumes/vapours/smoke)
- [ ] Noise exposure
- [ ] High or low temperature exposures
- [ ] Inadequate or excess illumination
- [ ] Inadequate ventilation
- [x] Other **Ground was not level**

F Direct Cause Analysis

Immediate Causes (What substandard actions and/or conditions caused or could cause the event?):

- **Failure to secure/chock tires**
- **Ground was not level**

G Indirect Cause Checklist

Personal Factors

- [ ] Inadequate capability
- [ ] Lack of knowledge
- [ ] Lack of skill
- [ ] Stress
- [ ] Improper motivation
- [x] Other

Job Factors

- [ ] Inadequate leadership
- [ ] Inadequate engineering
- [ ] Inadequate purchasing
- [ ] Inadequate maintenance
- [ ] Inadequate tools and equipment
- [x] Inadequate work standards
- [ ] Defective equipment
- [ ] Improperly used equipment
- [x] Other **Change in environmental conditions**

H Indirect Cause Analysis

Basic Causes (What personal and/or job factor caused or could cause this event?):

- **Complacency/improper motivation**
- **Inadequate work standards**
- **Changing conditions**

I Root Cause Checklist

- ☐ Management Commitment & Administration
- ☐ Leadership Training
- ☐ Planned Inspections
- ☐ Preventative Maintenance
- ☑ Hazard identification
- ☑ Safe Work Practices and/or Procedures
- ☐ Inadequate Previous Accident Investigation
- ☐ Off-the-Job Safety Promotion
- ☐ Other
- ☐ Emergency Preparedness and Response
- ☑ Company Safety Rules
- ☐ Worker Knowledge & Skill Training
- ☐ Personal Protective Equipment
- ☐ Personal or Group Communications
- ☐ Hygiene and Sanitation
- ☐ Hiring & Placement Standards
- ☐ Purchasing Controls
- ☐ Other

J Root Cause Analysis

Safety Program Elements (Which safety program components/elements need to be reviewed?):

- **Hazard ID**
- **Safe work procedure**
- **Company rules**

K Recurrence Prevention Checklist

- ☑ Training/Retraining of Involved Workers
- ☑ Job Procedures/Design Changes
- ☐ Equipment Repair or Replacement
- ☐ Perform in depth Hazard Assessment & Analysis
- ☑ Supervisory Communication
- ☑ Improved Hazard Controls (Engineering/Admin/PPE)
- ☐ Improve Safety Inspection Process
- ☐ Reassignment of Involved Worker
- ☐ Liaison with Manufacturer or Equipment
- ☐ Facilities Layout Review & Redesign
- ☐ Installation of Safety Guards/Barriers
- ☐ Other:

L Action Plan

Corrective Actions (What has and/or should be done to control the causes listed?) Show date completed.

Corrective Actions	Date Completed
Train Worker	**March 23, 2016**
Job procedures	
Provide chock blocks	**March 24, 2016**

Report filed by:	Signature:
Investigation team: **Kim Laura Jessica**	The investigation team participated in the event reconstruction and cause analysis.
Reviewed by:	Date:

Worksheet 7.1
Incident/Hazard Report Form

Available online at: ***www.agriculture.alberta.ca/farmsafety***

Sample Form

Name:	Date:
Location:	
Person/equipment/animal/chemical/other involved:	
Description of incident/hazard:	
Suggested corrective action:	
Actions taken:	
Date:	Owner/Supervisor Signature:

Worksheet 7.2
Incident Reporting and Investigation Form

Available online at: ***www.agriculture.alberta.ca/farmsafety***

A	Identifying Information
Exact location of Incident:	

Incident Date:	Incident Time:	Report Date:

Injury or Illness	Property Damage
Part of body:	Property Damaged:
Nature of injury or illness:	Nature of Damage:
Object/Equipment/Substance Inflicting Harm:	
Person in Control of Activity at Time of Occurence:	
WCB Account #:	Industry Code:
Name of First Aid Attendant:	Injury recorded in First Aid Log: **Yes / No**
Type of Emergency Service Required:	

B	Employee Information
Name:	Telephone #:
Address:	Date of Birth:
SIN:	Provincial Health Care #:
Witness Names (attach statement):	

C	Hazard Assessment
Potential Severity: ❑ 1 (i.e., medical aid) ❑ 2 (i.e., lost time) ❑ 3 (i.e., fatality)	
Frequency: ❑ 1 - yearly or less ❑ 2 - monthly ❑ 3 - daily/weekly	
Probability: ❑ 1 - low ❑ 2 - medium ❑ 3 - high	
Risk Criticality Ranking (3 to 9 from least to most hazardous):	

D	Incident Description
Describe how the incident occured:	

E Direct Cause Checklist

Substandard Actions

- ☐ Operating equipment without authority
- ☐ Failure to warn/communication
- ☐ Failure to secure
- ☐ Operating at improper speed
- ☐ Making safety devices inoperable
- ☐ Removing safety devices
- ☐ Using defective equipment
- ☐ Failing to use PPE properly
- ☐ Improper loading
- ☐ Improper placement
- ☐ Improper position for task
- ☐ Horseplay
- ☐ Under influence of alcohol/drugs
- ☐ Other

Substandard Conditions

- ☐ Inadequate guards or barriers
- ☐ Inadequate or improper protective equipment
- ☐ Defective tools, equipment or materials
- ☐ Congestion or restricted action
- ☐ Inadequate warning system
- ☐ Removed safety devices
- ☐ Poor housekeeping
- ☐ Hazardous environmental conditions (gases/dusts/fumes/vapours/smoke)
- ☐ Noise exposure
- ☐ High or low temperature exposures
- ☐ Inadequate or excess illumination
- ☐ Inadequate ventilation
- ☐ Other

F Direct Cause Analysis

Immediate Causes (What substandard actions and/or conditions caused or could cause the event?):

G Indirect Cause Checklist

Personal Factors

- ☐ Inadequate capability
- ☐ Lack of knowledge
- ☐ Lack of skill
- ☐ Stress
- ☐ Improper motivation
- ☐ Other

Job Factors

- ☐ Inadequate leadership
- ☐ Inadequate engineering
- ☐ Inadequate purchasing
- ☐ Inadequate maintenance
- ☐ Inadequate tools and equipment
- ☐ Inadequate work standards
- ☐ Defective equipment
- ☐ Improperly used equipment
- ☐ Other

H Indirect Cause Analysis

Basic Causes (What personal and/or job factor caused or could cause this event?):

I Root Cause Checklist

- ☐ Management Commitment & Administration
- ☐ Leadership Training
- ☐ Planned Inspections
- ☐ Preventative Maintenance
- ☐ Hazard identification
- ☐ Safe Work Practices and/or Procedures
- ☐ Inadequate Previous Accident Investigation
- ☐ Off-the-Job Safety Promotion
- ☐ Other
- ☐ Emergency Preparedness and Response
- ☐ Company Safety Rules
- ☐ Worker Knowledge & Skill Training
- ☐ Personal Protective Equipment
- ☐ Personal or Group Communications
- ☐ Hygiene and Sanitation
- ☐ Hiring & Placement Standards
- ☐ Purchasing Controls
- ☐ Other

J Root Cause Analysis

Safety Program Elements (Which safety program components/elements need to be reviewed?):

K Recurrence Prevention Checklist

- ☐ Training/Retraining of Involved Workers
- ☐ Job Procedures/Design Changes
- ☐ Equipment Repair or Replacement
- ☐ Perform in depth Hazard Assessment & Analysis
- ☐ Supervisory Communication
- ☐ Improved Hazard Controls (Engineering/ Admin/PPE)
- ☐ Improve Safety Inspection Process
- ☐ Reassignment of Involved Worker
- ☐ Liaison with Manufacturer or Equipment
- ☐ Facilities Layout Review & Redesign
- ☐ Installation of Safety Guards/Barriers
- ☐ Other:

L Action Plan

Corrective Actions (What has and/or should be done to control the causes listed?) Show date completed.

Corrective Actions	Date Completed

Report filed by:	Signature:
Investigation team:	The investigation team participated in the event reconstruction and cause analysis.
Reviewed by:	Date: