
IMPROVING INCIDENT INVESTIGATIONS

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But, I did stay at a Holiday Inn Express.

Learning Outcomes

- ▶ Describe the characteristics of an effective incident investigation program.
- ▶ Identify advanced incident investigation concepts.
- ▶ Describe enhanced Root Cause Analysis (RCA) and other methods for conducting incident investigations.
- ▶ Describe the use of trend analysis to improve workplace safety.

§3203. Injury and Illness Prevention Program

(4) Include procedures for identifying and evaluating work place hazards including scheduled periodic inspections to identify unsafe conditions and work practices. Inspections shall be made to identify and evaluate hazards:...

(5) Include a procedure to investigate occupational injury or occupational illness.

(6) Include methods and/or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures in a timely manner based on the severity of the hazard:...

Pre-Test Question

True or False

The main reason for incident investigations is to attach blame somewhere or on someone.

What do you think it is?

FALSE

Presentation Outline

- ▶ Introduction
- ▶ Characteristics of an effective incident investigation program.
- ▶ Advanced incident investigation concepts.
- ▶ Root Cause Analysis (RCA) and other methods for conducting incident investigations.
- ▶ Trend analysis to improve workplace safety.



Incident vs Accident

In occupational health and safety, the words “incident” and “accident” both refer to an *unexpected*, unintentional event.

Are they synonymous?

Incident vs Accident (cont'd)

"Incident" is an umbrella term that includes the following:

- ▶ **Employee Fatalities**
- ▶ **Employee Injuries or Illnesses**
- ▶ Non-Employee Injuries or Illnesses
- ▶ Environmental Releases or Spills
- ▶ Security Breaches
- ▶ Property Damage
- ▶ Near Misses/Close Calls

All accidents are incidents. However, not all incidents are accidents

ACCIDENT INVESTIGATION PRESENTATION

Why Conduct an Incident Investigation

- ▶ Prevents future injuries and illnesses
- ▶ Demonstrates a commitment to health and safety
- ▶ Promotes positive workplace morale
- ▶ Reduces costs

DID YOU KNOW?

The National Safety Council estimates that a medically-consulted work injury costs an average of \$44,000.

Source: National Safety Council, "Injury Facts", 2020 edition

Incident Investigation Program

- ▶ A formal process for investigating incidents, including performing, documenting, and tracking investigations.
- ▶ The trending of incident data to prevent recurring incidents

Program Components

- ▶ Formal **written** Incident Investigation Policy and Procedures.
 - Clearly stated and easy-to-follow for:
 - How and when management is to be notified of the incident;
 - Who is authorized Cal/OSHA of serious injuries, illnesses, and exposures;
 - Who is authorized to notify outside agencies (i.e., fire, police, etc.);

Program Components (cont'd)

- Who conducts investigations and what training they should receive;
- Timetables for completing the investigation and developing/implementing recommendations;
- Who receives investigation recommendations; and
- Who is responsible for implementing corrective actions

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Characteristics of an Effective Incident Investigation Program

▶ **Pre-Incident Preparation**

- SOPs, Forms and Checklists
- Designated Investigator/s*
- Formal Training
- Investigation Tool Kit

▶ **Incident Investigation**

- Fact-Finding

▶ **Incident Analysis**

- Enhanced Root Cause Analysis

▶ **Reporting/Follow-up**

- Findings
- Recommendations



**Note: For severe or complex incidents, an investigation team, including an outside third-party may be more effective than a single investigator.*

Investigator/Investigative Team

- ▶ Ideally, an investigation should be conducted by an individual/individuals who are:
 - Experienced in investigative techniques and incident causation models;
 - Knowledgeable of legal/regulatory requirements;
 - Knowledgeable in occupational health and safety fundamentals;
 - Knowledgeable in work processes and environments; and
 - Able to review and analyze the data and findings gathered.

Steps for an Effective Investigation

Investigate

Analyze

Report



Step 1 – Investigate

- After an incident occurs, the initial response should be as follows:
 - ***Get treatment for individual(s) that may be injured.***
 - Assure the safety of others.
 - Secure/preserve the scene.
 - Collect perishable evidence.
 - Video, photograph, drawings, measurements of the area, etc.

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Step 1 – Investigate (cont'd)

- Conduct Interviews of people who were:
 - Involved in the incident
 - Witnesses to the incident
 - Supervising the area
 - Other employees who have done the job in question

Interview any witnesses as soon as possible so details and memory will be fresh

- Use open-ended questions
- Interview witnesses individually



Step 1 – Investigate (cont'd)

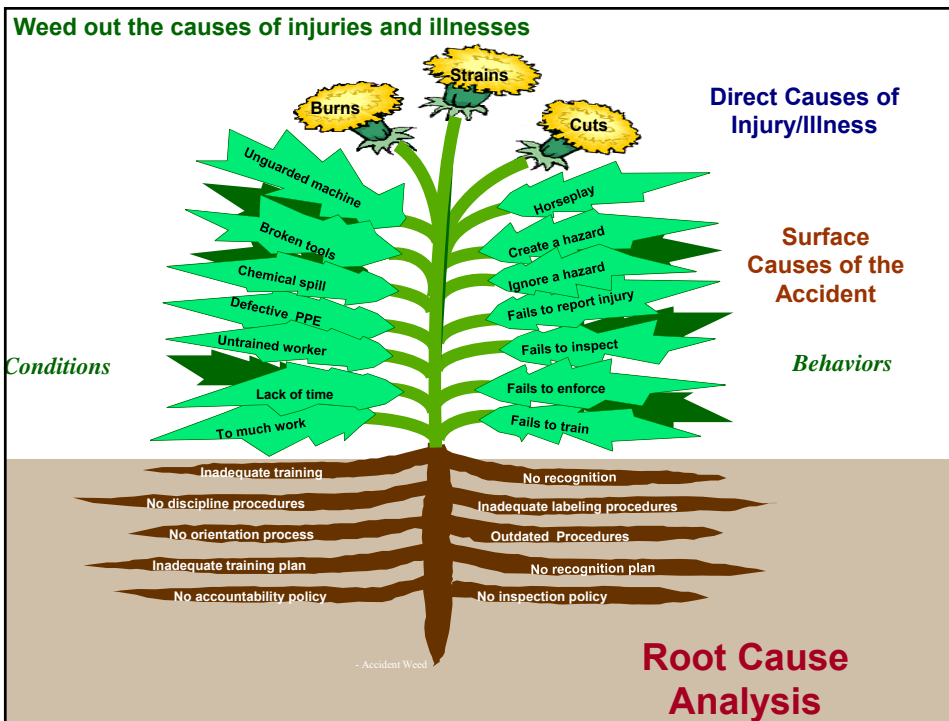
- Obtain Other Sources of Information:
 - Equipment manuals
 - Industrial guidance documents
 - Company policies and records
 - Maintenance schedules, records, logs, etc.
 - Training records
 - Audits, inspection and follow-up reports
 - Enforcement policies and records
 - Previous corrective action recommendations

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Step 2 - Analysis

Analyze incidents from three different points of view:

1. Direct cause of injury
2. Surface causes of accident
3. Root causes of the accident



Step 2 - Analysis

- ▶ Root Cause Analysis (RCA)
 - The process of discovering the root cause(s) of incident in order to identify appropriate solutions.

Step 2 – Analysis (cont'd)

- ▶ RCA Tools
 - The 5 Whys
 - Fishbone Diagram
 - The Challenger Interview
 - Role Playing
 - Flowchart

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The 5 Whys

Step 1: State the problem.

Step 2: Ask yourself, “Why did the problem occur?”

Step 3: Once you’ve come up with a potential reason, ask why *that* happened.

Step 4: Do this in succession until you’ve asked “why?” five times.

Building a Fishbone Diagram

Step 1: Define a problem or issue.

Step 2: Construct the skeleton of a fishbone, and name each of the six lines coming out of the “spine”:
Measurements, Materials, Personnel, Environment, Methods, Machines.

Step 3: Conduct a 5-minute brainstorm for each of the categories you just listed. Ask, “How could [CATEGORY] have caused the issue to occur?” Add responses to the diagram.

Step 4: If in a group, discuss the potential root causes and share relevant information.

Step 5: Determine a root cause or a few leading contenders to further investigate.

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The Challenger Interview

Step 1: Clarify the problem with people experiencing it.

Step 2: Ask, “Why does this problem matter to you?”

Say it in a way that shows your compassion, not in a way that sounds judgmental.

Step 3: Once they’ve come up with a reason, ask why *that* matters to them.

Step 4: Do this in succession until you understand people’s underlying goals or motivations.

Role Playing

Step 1: Define the character for your role. Include their attitudes, motivations, goals, and pain points. They can be a real person, or a typical person within a group.

Step 2: Define the scenario your character is in. Include the problem, the environment, and other people involved.

Step 3: Imagine yourself as this person. Get into character by changing into costume or traveling to a place this person would be.

Step 4: Act out your character’s attempts to solve their problem or achieve their objective. Take notes when you discover new insights into their obstacles.

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Building a Flowchart

Step 1: Define a process you want to build a flowchart for.

Step 2: Brainstorm all the various steps and decision points for your process.

Step 3: Define a beginning and end of your process. Add these to your flowchart.

Step 4: Fill in the middle steps of the process, including branches for decision points along the way.

Step 5: Check to see whether you've included all the steps. Ask a friend or colleague to help you verify. Take notes when you discover new breaking points in the process.

Step 3 - Report

➤ Describe what happened, who it happened to, where it happened (including conditions at the scene), how it happened (including RCA).

➤ Include relevant details (photographs, diagrams, etc.).

Don't include extra material that is not relevant.

➤ Clearly identify where evidence is based on certain facts, witness accounts, or on the team's assumptions.

If doubt exists about any particular part of the event, say so.

The measure of a good report is quality, not quantity.

Step 3 – Report (con'd)

State the reason(s) for conclusions, followed by recommendations that should address:

- Issues related to the specific incident
- Issues related to similar situations, conditions, equipment
- Management system deficiencies
- Effective controls and prevention actions
- Employee training
- Preventive maintenance activities
- Evaluation of job procedures
- Conducting job hazard analyses;
- Engineering changes.

Step 3 – Report (con'd)

➤Communication mechanisms.

Examples:

- Formal investigation report publication
- Alerts
- Newsletters
- Presentations
- Meeting topics

Follow-up and Evaluation

Summary

Investigate

Collect/document the facts

Analyze

Develop the sequence of events

Determine the cause(s)

Report

Describe the event(s)

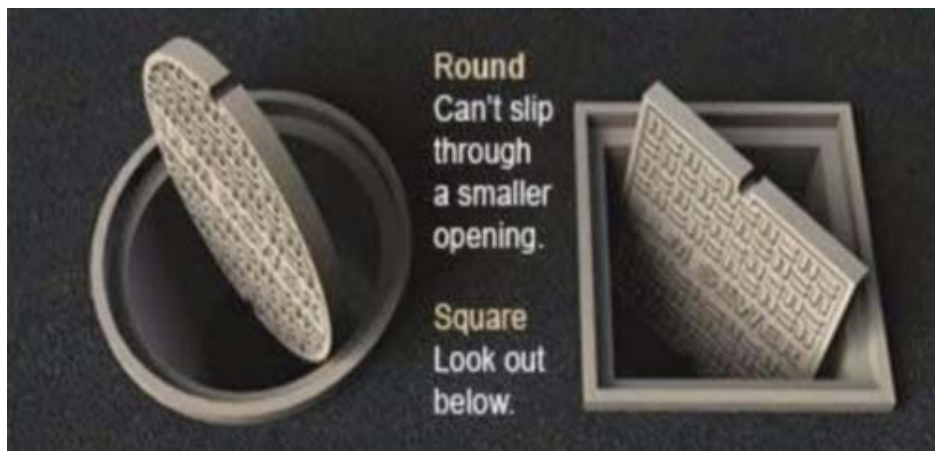
Make recommendations

Communication



Question

Why are manhole covers round?



Any Questions?

