ACCIDENT INVESTIGATION
Facilitator Guide

Summit Training Source, Inc.
<table>
<thead>
<tr>
<th>Contents</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>2</td>
</tr>
<tr>
<td>Training Materials</td>
<td>3</td>
</tr>
<tr>
<td>Preparation</td>
<td>3</td>
</tr>
<tr>
<td>Presentation Guidelines</td>
<td>4</td>
</tr>
<tr>
<td>Lesson Plan</td>
<td>5</td>
</tr>
<tr>
<td>Frequently Asked Questions</td>
<td>6</td>
</tr>
<tr>
<td>Employee Introduction</td>
<td>7</td>
</tr>
<tr>
<td>What is an Accident Investigation?</td>
<td>8</td>
</tr>
<tr>
<td>Responding to an Accident</td>
<td>9</td>
</tr>
<tr>
<td>Sources of Information</td>
<td>10</td>
</tr>
<tr>
<td>Interviewing</td>
<td>12</td>
</tr>
<tr>
<td>Analyzing the Details</td>
<td>16</td>
</tr>
<tr>
<td>Implementing the Information</td>
<td>18</td>
</tr>
<tr>
<td>Quiz</td>
<td>19</td>
</tr>
<tr>
<td>Quiz Answers</td>
<td>21</td>
</tr>
</tbody>
</table>

©1998 SUMMIT TRAINING SOURCE® INC. All rights reserved. No part of this book may be reproduced in any form or by any means without written permission from Summit Training Source® Inc. If you wish to purchase additional copies, please call our office at 1-800-842-0466.
Course Overview

As a safety conscious employer your objective should be to eliminate all employee injuries by making the workplace free from hazards and unsafe actions. An effective accident investigation will not only reveal the direct causes of an accident, but also the less obvious root causes which truly need to be corrected to prevent an accident from happening again.

This ACCIDENT INVESTIGATION program discusses...

- The purpose of an accident investigation
- How to properly respond to an accident
- Skills and techniques for conducting the investigation
- Documenting the findings & recommended corrective actions
- Implementing the information for continuous improvement

All accidents—even those that do not result in an injury or environmental impact—should be investigated. The information gathered in an accident investigation is extremely useful in analyzing trends and identifying system failures for future reference.

It is vital that when an accident occurs you are familiar with your company’s investigation procedures. How well you conduct an accident investigation will determine the quality of information you gather and the relevance of your recommended corrective actions.
Training Materials

Collect all necessary materials and supplies before training begins. Here are some suggested materials and supplies.

- A training location that is free of distractions, has good lighting and a comfortable temperature.
- Desks and chairs arranged so that everyone will be able to see the viewing screen the facilitator, and each other.
- The video, a VCR, and a TV with a remote. Make sure the video is rewound.
- An employee handbook and pen/pencil for each trainee. Each handbook includes a quiz at the back which can be used to test comprehension and document training.
- Other supplies and equipment you may need - blackboard, chalk, paper, handouts, transparencies, overhead projector, markers, notepads, etc.
- Additional information, such as a copy of the regulation or other reference tools.

Preparation

A successful presentation requires preparation and planning. Give yourself plenty of days before the training session to get organized.

- Locate and schedule the training site as soon as possible.
- Notify trainees of the training date and time, the training schedule, and proper dress.
- Obtain all necessary equipment and supplies.
- Make sure you know how to operate the TV, VCR, and other equipment. Check that it is working properly and replace or repair any damaged equipment.
- Preview the videotape. Note any key points you want to expand on in your training.
- Review all training materials, including the facilitator guide, handouts, or any other reference materials.
- Prepare your presentation, including a lesson plan or outline of the training. Include the training goals and objectives. Some presentation guidelines are included on the next page. A sample lesson plan has been included on page 6 of this facilitator guide.
- A day or so before conducting the training session, you may want to have participants take the quiz as a pre-test. The results of this test can help you to determine weak areas to focus on during the training session.
Presentation Guidelines

How you present the training course can have a great impact on learning. By following these simple presentation guidelines and keeping your objectives in mind, you can effectively and efficiently get the most out of your training session.

Organize training time efficiently.
In today’s busy work climate, it can be difficult to find the time needed for training. Because of this, it is important that when you do schedule training sessions you are organized and well prepared to use your time efficiently. Whether you use Summit’s suggested Lesson Plan or not, it is important to have a lesson plan prepared that you can implement with relative ease. This ensures that time spent in training is productive and beneficial for everyone.

Stress the purpose and goals of training.
Training needs to be goal oriented. State the purpose of training in a clear, specific manner - whether it’s to reduce injuries, increase production, improve quality, improve working conditions, etc. Review the goals and objectives of the training so trainees know what is expected of them.

Capture their attention.
Training needs to be interesting and compelling to hold trainees’ attention. To help motivate learners, give them specific evidence that their effort makes a difference, and provide feedback on their progress. Also, remember that the first experience with a new subject usually forms a lasting impression on the learner. By making that experience a positive one, you can help ensure your audience retains the information learned.

Make new learning experiences pleasant.
For some adults, past experiences with education were unpleasant and not helpful. Adults learn best when they feel comfortable. By making the learning environment open and friendly, you can help adults to feel secure in their new learning experience. Offer support and feedback as often as possible, and be ready to provide extra attention to those who may require it.

Ask if there are any questions.
When most adults learn new information that conflicts with what they already know, they are less likely to integrate those new ideas. It is very important to make sure participants fully understand the training and do not have any unresolved questions. Provide for a question and answer period so participants can resolve those questions, and/or answer questions throughout the training session.
The key to any successful training program is to be well organized and knowledgeable about your subject. As a qualified trainer, your job is to effectively communicate a great deal of information in a well organized manner. By preparing a lesson plan, you can ensure that each minute of the training session is productive.

1. Introduce Yourself & the Training Topic
   Research proves that audience retention is higher when programs are given a brief introduction before viewing them. Prepare an introduction which identifies: reasons for the training, training objectives, desired outcomes, and how the training will be beneficial.

2. Provide An Overview of the Training Session
   - Topics covered in training
   - When a Q & A period will be provided
   - Any training activities (demonstrations, group activities, etc.)
   - When the quiz will be given

3. Show the Video: "Accident Investigation"

4. Discussion Topics & Exercises
   You may wish to include discussion topics and exercises in your training session. Some key points or exercises to include might be:
   - Discuss and demonstrate proper evidence collection methods & photographing and videotaping procedures.
   - Discuss the methodology used at your facility to analyze the information & develop recommended corrective actions.

5. Questions and Answers
   Provide for a Q & A session to answer any questions. It may be necessary to review some of the material when providing answers. The employee handbook, the regulation, and other reference tools can be helpful.

6. Testing
   Each employee handbook includes a quiz at the back which can be used to test comprehension and document employee training. Answers to the quiz are provided on a separate page.
When should an accident investigation be conducted?
The investigation should begin as soon as possible after the accident or near miss has occurred. The first priority is to provide assistance and care to any injured personnel. After that has been done and any additional hazards have been contained and controlled, the investigation can begin. Don’t wait too long to begin the investigation; Evidence could be destroy and witnesses may forget what they have observed.

Who should be on the investigation team?
The incident investigation team should be selected on the basis of their training, knowledge and ability to contribute to the investigation. The team should have a team leader who is responsible for directing the team’s efforts and using the skills and knowledge of all employees and team members. If a contractor was involved, then one person representing the contractor should be on the team.

When should the investigation begin?
The investigation should begin as soon as any injuries have been tended to and any hazards have been contained or controlled. The scene of the accident should be investigated before any physical evidence is disturbed and while witnesses memories of the events are still fresh.

What method should be used to analyze the information?
There are a number of different methodologies that can be used to analyze the information gathered during the investigation. Two of the most common ones are the “WHY Tree” and the “Fishbone Diagram.” The key is to determine all of the direct and root cause and develop recommended corrective actions for each.
An accident has just occurred at your facility.

Does it need to be investigated?

Who should be involved in the investigation?

What are the direct and root causes of the accident?

Who witnessed the accident?

When an accident happens at your facility—whether an injury occurs or not—it should be investigated. The purpose of the investigation is NOT to find out whose fault it is, but to determine why the accident occurred so you can prevent it from happening again.

This training program outlines the basic steps of an accident investigation, including...

- What is an Accident Investigation?
- Preparing for & Responding to an Accident
- Sources of Information
- Conducting Interviews
- Analyzing the Details
- Implementing the Information

By being properly prepared and using the skills and techniques identified in this training program you can determine why accidents and near misses occur—and correct the problems that contribute to them.
When an accident occurs at your facility it should be investigated—even if it does not result in an injury or environmental damage. An incident investigation is a systematic process of identifying the underlying causes of incidents and implementing steps to prevent similar incidents from occurring. The purpose of an incident investigation is to find out why the accident happened and try to prevent it from happening again. The purpose is NOT to find out whose fault it was or who to blame.

The information gathered in an investigation is used to determine the “who, what, where, when, why and how” of the accident. It is also used to implement effective measures to prevent it from happening again.
When an incident occurs at your facility, it is important to take immediate action. The first priority is to provide assistance and emergency response to any injured persons. Steps should also be taken to prevent further accidents, injuries or property damage.

Depending on your training, this could vary from notifying the proper emergency response personnel to isolating electrical equipment or containing the release of hazardous chemicals.

Other actions that may need to be taken include...

- Securing, barricading, or isolating the scene of the incident
- Collecting samples of evidence that may evaporate or deteriorate
- Assessing the extent of the damage
- Determining when operating functions can be safely restored

The type of accident and its severity will determine the scope of the investigation and the involvement of various personnel.

An investigation should be performed as soon as any injuries have been tended to and any hazards have been contained or controlled.
Sources of Information

Fairness and impartiality are essential when gathering information. There are three primary sources of information about an incident:

- Incident Scene
- Documentation
- People

The Incident Scene

The scene of the accident should be investigated before any physical evidence is disturbed, and so it can be restored to safe operating functions as soon as possible.

- At the scene, identify all witnesses—either direct or indirect—who should be interviewed later. Note their location when the accident happened.

- If appropriate, collect samples of all substances in the area such as chemicals, vapors, residue and dust.

- Document all conditions and factors related to the scene. This can be done by videotaping, photographing and sketching the area. If you videotape or photograph the area, film from every possible angle. Place a tape measure or ruler in the picture to provide a scale of reference.

- If the mechanical integrity of a piece of equipment is suspected it should be preserved at the scene or well document if it is analyzed, repaired or modified.
Documentation

Records, logs and other documentation can provide valuable details. It will not tell you what happened, but it can provide a previous history and some insight into why an accident occurred. The types of information that documentation can provide include...

- Who was trained and when
- Standard operating procedures
- Inspections and audits of equipment
- Procedures and environmental conditions
- Maintenance records
- Previous injury and illness logs

People

Probably the most important source of information about an incident are people. This includes anyone who...

- witnessed events leading up to the incident
- involved in the incident
- saw what happened
- came on the scene immediately after the incident
- is knowledgeable about procedures or equipment related to the incident

Unlike the other two sources of information, people add a human element which can dramatically affect the results of the investigation if not handled properly.
Interviewing

Anyone involved in the investigation, whether it is a witness or an investigation team member, must understand that the purpose of the investigation is to find opportunity for improvement—NOT to lay blame.

The person being interviewed must feel that the information he or she provides is an important contribution. If the person fears possible consequences, it may create a barrier to an effective investigation.

Since witnesses are vital in determining the causes of an accident, information must be gathered in an accurate and non-biased manner.

When to Interview

Interviews should be conducted as soon as possible after the incident. A person’s recall of the incident is most accurate at this time. It reduces the likelihood of the person subconsciously adjust his or her story to protect a co-worker or to provide you with what they think you want to hear. It also lessons the possibility that the person’s statement will be influenced by others.

Before Interviewing

Before an interview, you should visit the scene of the accident and become familiar with the area. This helps you to better understand the witness’s perspective.

Also, since an incident usually happens without warning, a witness may have only observed a few details or thought they saw something else; so it is important for the interviewer to be familiar with the scene of the incident.
The way a question is asked can affect the response. You should prepare your questions in advance, so you know how to best ask your questions in a non-biased manner that seeks only the facts. Write your questions down on paper so that the same questions will be asked to all witnesses in the same way. Follow-up questions should be used, as needed.

**Conducting Interviews**

Interviews should be conducted on a one-on-one basis. Conduct interviews in an informal and private area. If necessary, have an interpreter present. The witness should be able to feel comfortable with the surroundings and not intimidated. Minimize any possible disruptions, such as someone entering the room or the phone ringing.

Interview as many people as necessary to answer your questions. You should have a list of questions that have all been answered before concluding this fact gathering stage.

▲ **State the Purpose & Objective**

State the purpose of the interview and your objectives at the beginning of the interview.

“Barb, thank you for coming in. Our objective is to find out what happened and why so it can be corrected. As you know, our goal is to eliminate employee injuries by making the workplace free of hazards and unsafe acts. The information you provide can help us prevent it from happening again. Also, I want you to be assured that we are not pinning down any blame here.”

▲ **Recording the Interview**

Let the witness know if you will be recording the interview with an audio recorder or video camera. Make sure the device can be easily turned on so that you do not have to deal with it for the rest of the interview. Otherwise, it can be distracting. It is important to note that tape recording may limit the willingness of witnesses to “open up.”
Asking Questions

The key to interviewing is asking open-ended questions that allow a person to explain what he or she saw or knows about the incident. Open-ended questions usually begin with the words, “who, what, when, why, or how” and require more than a simple “yes” or “no” response.

What you ask and how you ask it can influence the information you receive. Your questions should be neutral and focus on getting the facts from the witness, NOT his or her conclusions. The following are two examples of neutral, open-ended questions that ask only for the facts:

“What did you see that day?”
“What were you doing when the incident occurred?”

Other points to remember include . . .

■ Avoid asking questions with YES or NO answers. Ask questions that will require a witness to provide specific details.

■ Let the person answer each question completely. If he or she mentions a detail you want to explore further, make a note to discuss it later. This allows the person to completely answer your question without being interrupted.

■ Let the person continue at his or her own pace.

■ Allow for periods of silence.

■ Your tone, manner and body language can influence the interview as much as the questions you ask. Always maintain a calm and professional manner throughout the interview.
Avoid postures or mannerisms that could distract the person, or make them nervous or uncomfortable.

Do not phrase questions in a manner that leads the witness or biases the answers.

Most people you interview are not trained observers. Since an accident happens without warning, a witness may have observed only a few details or thought they saw something else. This is why it is important that the person conducting the interview be familiar with the scene of the accident.

After Conducting Interviews
After conducting interviews, compare the information you have gathered. Make a note of any statements or evidence that disagree. Try to resolve any inconsistencies. If possible, validate the information from witnesses with your other sources of information.

Carefully document the sources of your information. Make sure you have gathered as much information as possible.

The quality and effectiveness of your analysis and recommendations will strongly be determined by the accuracy and thoroughness of the facts you have obtained.
Most accident investigations that fall short do so in the analyzing and corrective action stages. Informally identifying sequences and causes often only reveals the obvious, direct causes and often misses the underlying root causes.

**Root causes** are the reasons why direct causes occur. For example, a worker trips over an electrical cord in the workplace. The *direct cause* of the accident might be a failure to secure the cord to the floor or to pick up the cord off the floor. The *root cause* might be a failure to properly train employees on good housekeeping practices.

Better knowledge of how an accident happened usually comes from using an organized approached. There are a number of methodologies you can use to analyze the information gathered. Two commonly used methods are the “WHY Tree” and the “Fishbone Diagram”.

### The WHY Tree

The advantage of the WHY TREE is it provides a simple framework for fitting the different pieces of information together to form a picture of the incident and its causes. The WHY TREE method involves three steps.

The first step is to map the accident. Based on your interviews and physical evidence, develop a flow chart of the sequence of events from start to finish. Describe each event as an occurrence with one noun or verb. Describe the events precisely as they happened. Draw a box around each event.

After the sequence of events is established, the causes of each event can be described. This involves asking why, how or what. You may decide not to ask questions for all events in the sequence, just the ones critical for understanding the causes.
The last step is to find the root causes. Continue asking “why” in order to develop the information needed to establish the root causes. The answers to the “why” questions should be placed one below the other, in order. The answers closest to the sequence of events are usually the direct causes, while the answers furthest away are the root causes. Root causes are usually not physical things. They are program and/or related behavioral deficiencies.

The Fishbone Diagram

The fishbone diagram is a tool to help in identifying the root causes of each event in the accident sequence. A diagram like this is drawn with a single event placed in the box on the right side. The topics shown in the boxes above and below the center line are identified as program areas in which the root causes of a large number of environmental, health and safety accidents may be found.

Brainstorm reasons why the event occurred for each of the environmental, health and safety program areas. The reasons should be based on the facts gathered during the investigation. The process should be repeated for each event in the sequence until all the root causes that contributed to the event are understood.
The most important function of an investigation—after determining why an accident occurred—is recommending corrective actions. Corrective actions must be developed for all direct and root causes identified. If all causes are not corrected, then the possibilities exist for the same type of accident to happen again.

It is important to list all possible corrective actions. Short-term, immediate fixes as well as long-term solutions should be identified. In developing recommended actions, identify and document who will be responsible for implementation and timing. Give consideration to eliminating the hazard entirely. If this is not possible, then consider controlling it through the use of engineering controls, management controls or work practices—in that order.

All information supporting an investigation, including interviews, photographs, diagrams and documentation, should be maintained as a single file. If all accident reporting, investigation and recommendations are well documented, analysis can be done quickly and accurately and the information shared throughout your company.

A report containing the causes of the accident and recommended corrective actions should be forwarded in accordance with your facility’s written procedures.
1. An accident investigation is only necessary if an injury is involved.
   A. True
   B. False

2. The purpose of an accident investigation is to find out...
   A. who is at fault.
   B. why the accident happened & prevent it from happening again.
   C. practice your investigation skills.
   D. intimidate employees.

3. The first priority when an accident occurs is to...
   A. take photos of the scene.
   B. interview witnesses.
   C. assist any injured persons.
   D. barricade the area.

4. The type of accident and its severity will determine the scope of the investigation and
   the involvement of different personnel.
   A. True
   B. False

5. When should the accident investigation begin?
   A. Within 72 hours of the accident
   B. As soon as injuries have been tended and hazards contained or controlled
   C. After the accident scene has been cleaned up
   D. None of the above

6. What are the primary sources of information about an incident? Select all that apply.
   A. Second-hand gossip
   B. The scene of the incident
   C. Document and records
   D. People

7. What should you do if the mechanical integrity of a piece of equipment is suspected?
   Select any that apply.
   A. Document it if it is analyzed, repaired or modified
   B. Preserve it at the scene
   C. Throw it out
   D. None of the above

8. When videotaping or photographing, you should provide a scale of reference in the
   picture such as a tape measure or ruler.
   A. True
   B. False
9. What should you do before conducting interviews? Select all that apply.
   A. Visit the accident scene
   B. Recommend corrective actions
   C. Analyze the information using the “WHY Tree”
   D. Develop a list of questions

10. Which are characteristics of a good interview? Select all that apply.
    A. Interview witnesses in groups of 2 or more
    B. State the purpose of the interview up front
    C. Conduct interviews in a public area
    D. Ask open-ended questions

11. Most accident investigations that are not successful tend to fail in what areas?
    A. Assisting the injured and collecting evidence
    B. Gathering documentation and photographing the scene
    C. Interviewing witnesses and documenting the information
    D. Analyzing and recommending corrective actions

12. Read the following scenario and then identify the root cause of the accident. Select all that apply.
    A forklift driver turns a corner too fast with a load of boxes on the forks. The driver sees a worker walking across the aisle too late and steps on the brakes. The pedestrian is hit and suffers a broken leg.
    A. The forklift driver was not properly trained.
    B. There is no posted speed limit.
    C. There is no forklift safety program.
    D. The worker should not have been walking in the aisle.

13. When recommending corrective actions, you should...
    A. only recommend long-term solutions.
    B. identify who will be responsible for implementing the solutions.
    C. develop corrective actions for all direct and root causes.
    D. only list possible solutions that are not too costly.

14. All information supporting the investigation—including interviews, photographs, diagrams and documentation—should be stored in individual files.
    A. True
    B. False

15. A report of the causes of the accident and all recommended corrective actions should be forwarded according to your facility’s written procedures.
    A. True
    B. False
Quiz Answers

1. B False  When an accident occurs, it should be investigated--even if it does not result in injury or environmental damage.

2. B why the accident happened & prevent it from happening again.

3. C assist any injured persons.

4. A True

5. B As soon as injuries have been tended and hazards contained or controlled

6. B The scene of the incident  
   C Document and records  
   D People

7. A Document it if it is analyzed, repaired or modified  
   B Preserve it at the scene

8. A True

9. A Visit the accident scene  
   D Develop a list of questions

10. B State the purpose of the interview up front  
    D Ask open-ended questions

11. D Analyzing and recommending corrective actions

12. C There is no forklift safety program.

13. B identify who will be responsible for implementing the solutions.  
    C develop corrective actions for all direct and root causes.


15. A True