Chubb Construction Risk Engineering

Accident Investigation

CHUBB®

Accident Investigation

Conducting An Accident Investigation

Recording the Incident

Overview

Introduction

To prevent accidents, you have to know how and why they are caused.

Accident investigation is a systematic effort to determine what happened, how and why it happened, and what must be done to prevent future occurrences. There are numerous benefits to performing effective accident investigations, including:

- Reducing employee injuries by preventing similar accidents in the future
- Identifying the root causes of accidents so that corrective actions can be taken
- Lost time is decreased
- Decreasing accident frequency and severity leads to decreased potential for moreserious accidents, and high insurance costs

It shows employees that management cares about their welfare and well being.

Root Causes

All accidents are "caused" by something. These causes are generally predictable andpreventable. If we predict accidents, but don't do anything to correct or modify the situation,they will not be prevented.

The immediate causes, such as slipping on water on the floor, putting a finger in an unguardedmachine, are usually the last events to happen and the easiest to identify. These, however, areonly symptoms of larger, deeper issues, or root causes.

Accidents follow familiar patterns with similar circumstances applied time and again. Becausethe root causes aren't addressed adequately, those circumstances keep occurring, sometimes causing injury or other types of loss.

Rule #1: Employee "Carelessness" is never a Root Cause

This is an easy answer to choose since it stops you from digger deeper to find out the true causes of an accident. Either way, this doesn't make sense:

- If an employee has a history of failure to follow rules or conduct him/herself properly, the fault is in management failing to take action to correct the worker.
- If an employee has no such history, it's unlikely he or she suddenly began acting "carelessly."

For example, a laborer strains his back while moving a box. Seven days are lost. The corrective action taken by the supervisor is to instruct the worker to "be more careful."

Will the "action taken" prevent similar incidents from happening in the future? If the answer is no, then the root cause(s) of the accident has not been determined.

The Complete Circuit
There are nearly always multiple circumstances that take place to cause a loss. Like light switches, all must be turned on to get current through the circuit. The water on the floor may have come from an overhead water line on a hot day, which caused condensation, combined with oil from a nearby machine. The injured person may have been wearing smooth-soled shoes and was in a hurry at the time. Removal of any of these circumstances may have eliminated the fall – THIS TIME. An employee can do the same work procedure in the same manner for 20 years, but if all the circumstances line up right, an accident can occur. We will go through a simple slip and fall scenario with multiple potential situations, to detail how the accident in the scenario occurs, pointing out facets to investigate and their possible outcomes.

A "fall" occurs when an employee slips on water on the floor. When we inspect some of the "immediate" causes we find water on the floor, smooth floors, and the fact that the employee was wearing smooth-soled shoes and was in a hurry. If we further investigate, we might find that our maintenance budget has not kept pace with the growth of the plant, indicating that maintenance and housekeeping are having difficulty keeping up with the needs of the plant.

Upon further inspection, we notice that a machine added last winter that uses cold water has lines that go directly overhead the area where the employee fell. Now that it is warm and humid outside, we notice that there is the condensation forming on pipes overhead and it is dripping on the area where the fall occurred.

We also discover that the floor cleaner that has been used in the last month or so has not been the same one that we've normally used. This may be because it is cheaper or because we ran out of our usual cleaner. Maybe we changed vendors and this is what they had on sale. The new cleaner is not as good at removing the grease and oil mist that builds up on the floors.

We may have a footwear policy suggesting slip-resistant soles and athletic shoes, like the ones worn by this employee, but his shoes are found to be worn to a point where the tread is gone. We find that the employee didn't attend training on this subject, or maybe we didn't provide training, figuring that just having the policy was enough. Maybe the employee didn't realize that the tread *could* wear out.

Completing the circuit and finding all the immediate causes will help us determine the root cause – the underlying reason circumstances came together at this time:

- It could be the maintenance budget was not increased along with the last expansion.
- Maintenance personnel are over-burdened, not able to maintain all machinery to keep oil from leaking. This makes other employees scurry around trying to get things done in addition to their normal jobs.
- The water pipes were supposed to be insulated before hot weather to prevent condensation from forming and dripping.

Basic Skills Required
Investigators need to be able to:

- **Observe** things, or objects, people, actions around the accident scene
- **Listen** to what is being communicated, not just what is said
- **Empathise** with the injured and witnesses, to understand the point of view of each of these people involved.

They also need to be able to:

- **Sequence** disjointed information into logical order
- **Reason** with the information to make logical and useful recommendations and
- To **question** in an open manner to reach understanding answers.

The Best Question
Thinking about "open-ended" questions, there is one question, which will get the farthest with an investigation. That question is **"Why?"** This question should be used more than any other should, although several open-ended questions will also be appropriate.

Conducting an Accident Investigation

Onsite
While investigating, there are only two possible places around the incident to obtain the information:

- **People** involved will include the injured, any witnesses of the event, and anyone who may have been in the area immediately before or after the event. Also, maintenance, purchasing and other personnel may be good sources of information to fill in the gaps.
- **Things** around the incident may be the floor itself, the object being carried or lifted, the state of housekeeping in the area, or the arrangement of furniture, equipment or machinery. Things may include the water on the floor, looking to see where it came from, signs of how long it has been there and what other substances are mixed with it. The machine guards, fastening devices, or warning signage may be other 'things' to observe.

Causes
Causes can generally be placed into two categories, Hazards and Operational Controls. The hazards are usually more apparent and are normally what we "find" is the cause. Operational controls are those things that "management" does to prevent accidents. These controls can be divided into two categories as well. They include those designed to control the *environment*, and those designed to control the *people*.

Operational Controls
- *Environment:* Some examples of environmental controls include the overall design, arrangement and workflow, the specifications used to purchase materials and equipment, and the adequacy of housekeeping and maintenance programs.
- *People:* Some prime examples of people controls are how employees are selected and placed, the scope and extent of rules and enforcement and the adequacy of staff training

Hazardous Practices
Hazards are typically easy to tie to Operational controls as they occur for some specific operational reason(s). These may include, but are certainly not limited to:

- A lack of knowledge, which is a training issue,
- A Refusal to follow known rules, which is an enforcement issue, or
- Rushed schedules, unreasonable workloads, lack of sufficient staff, etc., which are planning or hiring issues.

Witness Interviews
Witness interviews during an investigation can easily be construed as adversarial. We must be tactful and able to put the witness, including the injured person, at ease during our interview using these points.

The interview should not take place in your office, unless this is a normal place where the person being interviewed may be. Going to your office will immediately raise the level of tension. Above all else, we must attempt to get the witness to give us information, not just answer questions. The best way to do this, of course, is by using open-ended questions (remember the best question? - And Then What Happened?) Use photos or diagrams whenever possible to aid the witness in telling the factual story.

There are many questions that may need to be answered. Some of these will vary with the circumstances of the incident and with the involvement of the witness.

Note: Let the witness tell you the information to figure out these questions. You will get much better information and have less chance of coming to wrong conclusions.

- Did this accident involve hazards known to exist prior to the accident?
- Are the inspection procedures inadequate in identifying the hazards and corrective actions? How should inspections be improved?
- Did a design or arrangement characteristic of the building, the equipment, the materials, or the process contribute to this accident?
- Were there maintenance issues contributing to the accident? Did poor housekeeping practices contribute?
- Did the injured person's lack of skill or capability contribute to this accident?
- Was our training inadequate?
- What hazardous conditions were involved in this accident?
- Are these conditions typical here or elsewhere in this facility? How about other facilities?
- What action should be taken to eliminate or control these hazards?

All-important is that we stress to the witness or injured person that we are not trying to place blame (in fact, as we learned earlier, the blame will normally rest on the management for lack of sufficient operational controls).

These are some typical responses found on accident investigation reports under the cause of the incident"

- "Debbie was not paying attention."
- "John was careless."
- "He should have been more careful."

If we ask for help from the witness, we often get better, more useful information. It is said that a person will first protect himself. If he thinks he will get in trouble for something, he will not reveal that fact. This fact may be crucial in knowing what truly happened.

Accident Investigation Process
Let's go through the five steps in investigating an accident, or loss. Many of these appear to be common sense things to do, but things get confused in an emergency situation, when it is most important to have these steps in our mind.

- **Step 1:** Secure the accident scene.
  - Identify all injuries and damages
  - Take necessary medical emergency action
  - Control on-lookers
  - Keep the accident scene undisturbed as much as possible
  - Identify witnesses
  - Take pictures in event of serious injury

- **Step 2:** Gather basic information while the scene is fresh and while the incident is fresh in people's minds.
  - It is important to talk to the witnesses as soon as possible because as people speculate on what happened, as they talk about what others saw, and as they hear rumors, the truth can change in the mind of the witness.

- **Step 3:** Determine what corrective actions should take place to prevent such an occurrence again.
  - Immediately remove hazards creating the incident or created by the incident, including cleaning up the incident.
  - Take action to prevent the hazard, condition or activity from reoccurring.

Determining which corrective measures to take may involve some planning, discussion with those who may be involved in the remedial actions, etc. We must determine if our recommendations will work.

In order to place the appropriate importance on the projects, no matter how small they may be, we need to have accountability, or responsibility. Some of the responsibility may be put on the maintenance manager, on the operations manager or on any particular supervisor.

- **Step 4:** After determining what corrective measured must be taken, we must actually take those actions!
- **Step 5:** Follow-up is needed to determine if the corrective actions were completed and that the actions we took actually had an impact on the root cause of the event. If not, we need to go back to step three and figure something else out.

Recording the Incident

A report should be completed for each incident. An OSHA First Report of Injury is not enough, as it does not get to the heart of the problem that caused the incident. In the end, all that will remain of the incident is the report. Over time, people come and go, memories will fade, and the physical scene will change. You will need to make sure the report states the facts accurately and in whole.

Be sure to report your findings to management, including your recommended actions and estimated time of completion. It is also important to communicate these findings with the other employees so they know what is being done to protect them from future similar fates.

Closing
The root cause is ***usually*** an Operational Control - training, equipment, workstation layout, PPE, etc. The ultimate accountability for operational control lies with Management.

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