

How to Perform an Incident Investigation

Steps of an investigation:

1. Initial Response
 - a. Assure the safety of others
 - b. Secure the site and leave scene intact (important for step #2)
 - c. Get treatment for individuals who may be injured
2. Information Gathering – inspect the incident site and note information such as:
 - a. Positions of controls on machinery
 - b. Damage to equipment
 - c. Housekeeping of the area
 - d. Physical evidence
 - e. Weather conditions
 - f. Lighting levels
 - g. Noise levels
 - h. Position of injured worker
 - i. Position of machine guards
 - j. Maintenance records and equipment, machines, or tools involved
 - k. Materials being used
 - l. Safety devices in use
 - m. Floor or working surface condition
 - n. Location of work area

Note: It might be helpful to take photographs or make diagrams.

- o. Other things to note that are less visible may include:
 - i. Procedures and rules for the area
 - ii. Date and time
 - iii. If the incident occurred during the affected individual(s) normal shift or working hours
 - iv. If the affected individual(s) were performing normal job duties or a non-routine task
 - v. If the affected individual(s) were properly trained for the task
 - vi. If the task involved repetitive motion
3. Interviewing – Injured person(s), witnesses, AND employees who perform the same job duties should be interviewed. Here are some things to keep in mind:
 - a. Put the interviewees, who are probably upset, at ease
 - b. Emphasize that the investigation is to determine what happened, why, is used to prevent recurrence, and not to find blame
 - c. Let the witness talk, you listen
 - d. Confirm that you have their statement correct
 - e. Make short notes only during the interview
 - f. Ask open ended questions so answers aren't suggested
 - g. Stick to Who? What? Where? When? How? Why?
 - h. Conduct interviews separately
 - i. Choose a private place to talk
 - j. Keep conversations informal

How to Perform an Incident Investigation

4. Analysis and Conclusion – determine contributory factors (would the incident have occurred if this factor was not present?); these are examples of potential contributory factors
 - a. **Ergonomics** – What strain did the task cause the human body?
 - b. **Safe work procedures** – What measures were taken to reduce risk and what else might help?
 - c. **Condition changes** – Did the process, materials, or workers change?
 - d. **Appropriate tools/materials** – Has an operating procedure been developed for the task to determine appropriate tools and materials? If so, were they available and used?
 - e. **Safety devices** – Were safety devices functional and used during the completion of the task?
 - f. **Equipment failure** – Did anything that was used in the task not perform as it should?
 - g. **Machinery design/guarding** – What about the equipment could have presented a hazard? (for example, are there exposed moving parts or heating elements, clogged parts/excessive debris present on equipment, etc.)
 - h. **Hazardous substances** – Were any involved in potentially harmful amounts?
 - i. **Substandard material** – Were all components used in good repair and adequate for their proposed use?
 - j. **Weather conditions** – Did any weather conditions contribute to the incident?
 - k. **Housekeeping** – Was the work area clean and uncluttered?
 - l. **Temperature** – Was it too hot or cold?
 - m. **Lighting** – Was there enough lighting in the work area?
 - n. **Air contaminants** – Were there any airborne contaminants, such as mist, smoke, vapor, allergens, etc. that affected the people or process?
 - o. **Personal protective equipment** – Did the environment warrant the use of personal protective equipment (PPE)? Was the PPE used rated to perform in the work environment?
 - p. **Level of experience** – How familiar were the personnel with their task?
 - q. **Level of training** – When were personnel last trained and what did the training consist of?
 - r. **Physical capability** – Was it reasonable to expect that the individuals assigned would be physically able to perform their duties?
 - s. **Health** – Were personnel in sound physical and mental condition?
 - t. **Fatigue** – Were the personnel tired?
 - u. **Stress** – What physical and/or mental pressures could have influenced the behaviors of personnel?
 - v. **Visible active senior management support for safety** – Did this exist in the eyes of the employees?
 - w. **Safety policies** – Did they exist for this task? Were they appropriate?
 - x. **Enforcement of safety policies** – Does anyone watch for safety infractions, and is any action taken when they are encountered?

How to Perform an Incident Investigation

- y. **Adequate supervision** – Are there enough resources to reasonably supervise work?
- z. **Knowledge of hazards** – Are the employees being informed of all hazards associated with their work?
- aa. **Hazard corrective action** – Have similar incidents been promptly and adequately addressed?
- bb. **Preventive maintenance** – Are equipment, machines, and the environment regularly checked and maintained?
- cc. **Regular audits** – Is there a functional safety audit process in place?

This step also involves determining the root cause and a likely sequence of events. When determining the root cause, keep asking “Why?” to the problem. It typically takes asking this 5 times to determine a root cause. Here is a basic example using the problem of a machine not working:

1. Why is the machine not working? Answer: Because the motor is not turning
2. Why is the motor not turning? Answer: Because the belt is slipping
3. Why is the belt slipping? Answer: Because the belt is worn out
4. Why is the belt worn out? Answer: Because the belt wasn't replaced during the scheduled maintenance.
5. Why wasn't the belt replaced during scheduled maintenance? Answer: We did not have the correct part in the shop and had to order one. The shipment was delayed, and we are still waiting for it to arrive. **ROOT CAUSE** – Inadequate stocking of needed parts that are on a regular maintenance schedule.

5. Write a Report

- a. A report template can be found by clicking on the link, “Documenting an Investigation” on EHS’s website under Injury and Illness Reporting.
- b. Corrective actions should be chosen based on key contributing factors and the root cause; set a timetable and person responsible for implementation.
- c. Submit the report to EHS.
- d. Also, make sure that an electronic injury/illness form has been submitted.

Why should incidents be investigated?

- Prevent future occurrences
- Identify and eliminate hazards
- Expose deficiencies in the process and/or equipment
- Document events
- Reduce injury and worker compensation costs
- Maintain worker morale

What should be investigated?

- Near misses, property damage, hazards, major and minor injuries and illnesses

Who should perform investigations?

- Supervisors, team leaders, managers