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Accident Investigation: A Critical Effort to Preventing Future Events

All incidents, whether a near miss or an actual injury-related event, should be investigated. Conducting a thorough and detailed investigation is an important part of injury reduction efforts. By investigating all incidents, you will improve procedures and conditions, and create a safer work environment.

An accident investigation is not used to establish fault, create blame, or justify the incident, but to prevent a similar occurrence. Investigations are a requirement under the Occupational Safety & Health Administration (OSHA), Standard 1904 (record keeping requirements).

Persons conducting an investigation need to look beyond obvious causes such as human error or worker carelessness. Investigations need to identify underlying problems concerning all locations, equipment and materials used, and the systems of work and management practices that may have contributed to the incident.

It is important to remember that the first and foremost purpose of an investigation is to find a cause without bias. To accomplish this, the person(s) investigating the incident must be impartial and completely objective. Although it is sometimes difficult, the investigation must separate facts from feelings and opinions.

Basic Incident Investigation Phases

There are four basic phases involved in investigating incidents:

1. Gathering information
2. Photography
3. Analyzing the information and drawing conclusions
4. Making recommendations

Gathering Information

The investigation should begin as soon as possible after the incident occurs. If the investigation is conducted immediately, the investigator is more likely to gather information about conditions as they were at the time of the incident and easily identify witnesses. Focus on finding answers to the “what, when, why, where, who, and how” during the investigation. Do not jump to conclusions; focus on gathering as much information as possible for evaluation.

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In gathering information about the incident, consider:

- Events leading up to the incident
- The system of work being done
- The instruction given for the work
- Variations from instructions or safe working practices
- Workplace conditions
- The exact location of the incident
- The materials in use or being handled
- The type of equipment in use
- The fact of the incident itself
- The persons directly involved and those indirectly involved
- The tools, equipment, and materials directly involved
- The date/time when incident occurred
- What happened after the incident
- Injuries or damages that occurred
- The events leading to consequential injury or damage

There may or may not be other departments involved with incidents. In general, supervisors or security may respond to an incident, conduct an initial investigation, and write a report. If injuries are presented, Emergency Medical Services (EMS) may also write a report. If reports are completed by security or EMS, an additional incident investigation should be conducted with the sole purpose of identifying cause and future prevention measures. When conducting an investigation, attain all reports, as appropriate, as it pertains to the incident. The report should include:

- The security report (if available)
- EMS report (if available)
- If the incident involves a contractor, the contractor's report should also be included
 - The investigators may only be entitled to the contractor's report if it is contractual (specified in the contract)
- Any written statements by witnesses
- Photographs/sketches (if applicable)
- Review of security cameras (if applicable)

Photography

It is often necessary to present an accurate depiction of the incident, which may include not only any damages sustained, but also circumstances surrounding the incident site. Photography and video can be a very productive and practical tool for accomplishing this objective. Photographs are typically taken by the responding supervisor and/or security officer, but anyone conducting the investigation should consider taking photographs as well.

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Physical evidence is generally subject to rapid change or obliteration as time progresses from the accident. Based on knowledge of the work process, check items such as:

- Position of injured workers
- Equipment being used
- Materials or chemicals being used
- Safety devices in use
- Position of appropriate guards
- Position of controls of machinery
- Damage to equipment
- Housekeeping of area
- Weather conditions
- Lighting levels
- Noise levels
- Time of day

Take photographs or videos before anything is moved, both of the general area and specific items; careful study of these may reveal conditions or observations missed previously. Diagrams of the accident scene based on measurements taken may also help in subsequent analyses and can clarify any written reports. Written notes about the location should accompany accident scene photographs and videos.

Analyzing the Information and Drawing Conclusions

Once the investigation identifies what happened and how it happened, the next step is to consider **why** it happened. It is important to look past the easy option of blaming employees/patrons involved in the incident, and keep asking, “What circumstances allowed an incident to occur?” Consider possible human factors:

- Unfamiliarity
- Untrained
- Lack of or poor policies/procedures
- Poor maintenance

An often overlooked source of information can also be found in documents such as technical data sheets, health and safety committee minutes, inspection reports, company policies, maintenance reports, past accident reports, formalized safe-work procedures, and training reports. It is to a company’s advantage to review training records of the injured party, as well as those of other workers who perform the same job and other workers who were involved in the incident. Any pertinent information should be studied to see what might have happened, and what changes might be recommended to prevent recurrence of similar incidents.

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Making Recommendations

It is essential that the incident investigation should identify what action will be taken to prevent a re-occurrence. The whole incident investigation process should be documented and records should be kept when the investigation is completed. When making recommendations, base the recommendations on:

- Facts
- Policies
- National standards (OSHA, ANSI, UBC, UFC, U. S. Food Code, etc.)
- Local codes

The final step is to develop a set of well-considered recommendations designed to prevent recurrences of similar accidents. Recommendations should:

- Be specific
- Be constructive
- Arrive at root causes
- Address contributing factors
- Identify owners and timelines for completing corrective actions

Resist the temptation to make only general recommendations to save time and effort. For example, rather than recommending "eliminate blind corners" it would be better to suggest:

- Install mirrors at the northwest corner of building X (specific to this accident)
- Install mirrors at blind corners where required throughout the worksite (general)

Specific corrective actions address root causes directly; however, some corrective actions can be general, across-the-board improvements to the workplace safety environment. Sample global corrective actions to consider are:

- Strengthening/developing a written comprehensive safety and health management program
- Revising safety policies to clearly establish responsibility and accountability
- Revising purchasing and/or contracting policies to include safety considerations
- Changing safety inspection process to include line employees along with management representatives

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Never make recommendations about disciplining a person or persons who may have been at fault. However, when a thorough investigation reveals that an employee was at fault, then this fact should be pointed out. Failing to point out human errors that contributed to an accident will not only downgrade the quality of the investigation, it will also allow future accidents to happen from similar causes because they have not been addressed. The intention is to remedy the situation, not to discipline an individual. Any disciplinary steps should be done within the normal personnel procedures.

In the unlikely event that the causes of an accident cannot be determined with any certainty, other safety weaknesses will most likely be uncovered. It is appropriate that recommendations be made to correct any safety or hazard deficiencies identified in the investigation.

Ensure all corrective action recommendations are documented and have assigned owners and timelines for completion. This is a critical step and required to ensure that corrective actions are implemented to reduce potential for injury.

Resources

1. OSHA Incident Investigation website: <https://www.osha.gov/incident-investigation>
2. Importance of Root Cause Analysis Fact Sheet (OSHA):
<https://www.osha.gov/sites/default/files/publications/OSHA3895.pdf>
3. Accident Investigation Sample Safety Program – please send request to riskcontrol@alliant.com.

For additional information, contact:

Alliant Risk Control Solution Center Toll Free Help Line: (888) 737-4752.