

## The Benefits of Incident / Accident Investigation

### Introduction

Maximizing production is of prime concern in most business operations. Production levels depend on the efficiency of operations. Operational efficiency and production can suffer unless all factors affecting production are tightly controlled to prevent operational errors. In industrial operations, the operational errors that cause production problems are usually the same errors responsible for injuries. An accident can be defined as “an unplanned happening of events that may or may not result in personal injury, property damage, or both”. In this sense, an operational error can be viewed as an accident if it causes damage or production delay, whether or not injuries result. In any case, interference with the smooth flow of production can be expected. Accident investigations should be a vital part of any safety program. A thorough accident investigation is a necessary tool for the prevention of recurring accidents

It is important to remember that an accident investigation is not a trial to find fault or someone to blame. The purpose is to find accident causes so similar accidents can be prevented, either by physical or mechanical improvement, or employee training and motivation. For an accident investigation program to be successful, all accidents resulting in an injury requiring medical attention or significant property damage should be investigated. In addition, all "close calls," (i.e., incidents that could have resulted in a serious injury or significant property damage) should be investigated. What are some benefits of accident investigation? Discover the causes of production interruptions and indicate the corrective action to be taken. Prevent accident recurrence. Eliminate the distress and suffering caused by injury. Eliminate economic losses resulting from damaged tools, machines and materials. Create an awareness of problem areas. Discover how methods and procedures can be improved. Identify areas in the current safety program that can be strengthened. Identify topics that should be included in training programs. Identify additional items to be included in future safety surveys. Relate accident costs to costs of production.

### What accidents should be investigated?

This is a frequent question. Should all accidents be investigated or just those that result in serious injuries? As an employer, managers and supervisors of all levels should be interested in any incident that causes an interruption in production. The time spent investigating an accident will vary according to: How serious it was in terms of

production loss, injury, potential for future recurrence, or more serious injuries; and their complexity and extent of its causes. A minor injury accident may warrant an in-depth investigation because initial information may indicate a serious, potential hazard exists. In other words, all accidents should be investigated to some extent. The more complicated the causes and the more serious the results, the more detailed the investigation should be. In the end, it is a management decision that must be made as to what accidents will be investigated. The broader the definition management selects for “accident” and “incident”, the better the chances are that the causes will be identified and the corrective action taken before a serious loss occurs.

### **Who should conduct the investigation?**

Usually, the first line supervisor should investigate. The supervisor: Knows the most about the employees, and the situation. Has a personal interest in identifying accident causes (views accidents as affecting “MY” workers, equipment, materials, and operation). Is able to take immediate action to prevent an accident from recurring. Can communicate more effectively with the employees. In addition, there are some direct benefits if the supervisor does the investigation as his or her involvement demonstrates concern for employees. Effective investigation reveals a supervisor’s ability and capabilities to superiors. Sound investigation and corrective measures make employees feel their supervisor is in control. They will tend to take pride in working for someone who can do the job. Furthermore, it is the responsibility of the first line supervisor to ensure the existence of safe operating methods and work conditions. He or she is in constant contact with employees and should be fully aware of their attitudes, problems, and all aspects of their job performance.

### **When should an investigation be conducted?**

While it seems obvious that accidents should be investigated immediately, often considerable time elapses before a thorough investigation is carried out. Accidents should be investigated immediately because: Facts are fresh in the minds of witnesses and those involved in the accident. Witnesses have not had a chance to talk and influence each other’s thinking. All physical conditions remain the same. People are still available. Quick response will show the employee management’s concern for reporting, investigating and taking corrective action.

A report should be prepared describing the investigation in detail. All possible questions regarding the accident should be answered, and the corrective actions to prevent a recurrence listed. The following questions should be helpful in completing the report:

### **Who was involved?**

Accidents usually affect more than just the injured person, and very often, more than just the injured person contributed to the cause. Who, therefore, should go beyond who was injured and who was present? Who supervised the injured employee? Who failed to report the unsafe condition?

All of those people involved are important to the underlying cause of the accident. Get the names of everyone involved.

### **Where did the accident occur?**

Again, we must look beyond the obvious answer to this question. The name of the department is not enough. A detailed description of the accident site should be included. Also, determine if the people involved were where they were supposed to be. Was the equipment in its proper location?

### **What happened?**

This question can be further broken down to uncover the following facts:

What was being done? (The answer to this question describes an action or procedure.)

What things were involved? (A description of the tool(s) or equipment involved answers this question.)

What was the result? (This is answered by a description of the actual injury, including the nature of injury and the part of the body injured.) If a near miss, list possible results.

When? The answer to this question requires more than just the date. The time of day, the day of the week, and the time during the shift are also very important

### **How did the accident occur?**

In order to determine or recommend what corrective action should be initiated, it must be determined exactly why the accident occurred.

The following are examples of questions that may be used to get accurate answers as to why the accident happened: Why was the injured person inattentive? Why was he/she poorly trained? Why did someone fail to report an unsafe condition or procedure?

Why did what happened produce an accident? Why did the event result in anything other than an ordinary, everyday occurrence?

These questions, and others you may think of, will help you determine if and why an unsafe act occurred.

**Where to investigate.** All investigations should be made where the accident occurred. At the scene of the accident are the tools, materials, machines, employees, and circumstances that give direct evidence of, or clues to underlying causes. Investigations preferably should not be carried out in the hospital or medical clinic, in the supervisor's office, or in any place other than the scene of the accident.

**What to investigate** There are a number of weaknesses in accident investigations. One primary weakness is that too often the investigator looks only at the obvious conditions and facts; often, many related causative factors go unnoticed. A thorough accident investigation involves exploring: Unsafe practices-departure from an accepted, normal or correct procedure. Unsafe conditions-physical defect, errors in design of equipment, tools or workstations, faulty planning, or omission of recognizing safety requirements.

**Environmental factors**-this may be better interpreted as ergonomic elements, that is, the relationship of employee and his workplace environment. Examples of areas to be considered in the investigation would include noise that can dull a person's senses so he is not alert to sound which could cause or warn of impending danger. Placement of controls of equipment and how they are identified could be included as well as ineffective lighting. If the accident occurs out of doors, report the weather conditions at time of accident. Indoor temperatures and the length of the shift can also be considered.

**Accident agency or source of the accident**-tool, material or equipment involved in order to pinpoint the corrective action.

**The type of accident**-manner in which the person was injured (such as by falling, by being struck by an object, or by getting caught in or between moving equipment). **Part of body affected**-identify part(s) of body that incurred injury. **The personal factor**-reason for the person's unsafe action or practice (such as lack of knowledge of a safe practice, disregard of instructions, physical handicap, or emotional upset).

**Ergonomic factors**-technique, posture or motions used, frequency of the task (per minute or per hour), weights handled and distances objects are moved (lifted from/to, distances objects pushed/pulled).

### **Recommended corrective action**

After evaluating the facts of an accident, you will most likely find that the accident was caused by a combination of unsafe acts and/or unsafe conditions. Recommendations to prevent a recurrence should be directed toward correcting all contributing factors leading to an unsafe condition and/or unsafe act. Once you have developed

recommendations designed to correct all contributing factors, your report should be submitted to top management. After the report has been submitted, it is very important to follow up with those people involved to be sure that recommended changes have taken place.

### **Summary**

Remember, all accidents should be investigated as soon as possible. All people involved should be interviewed to determine exactly how the accident occurred. Once all the facts have been put together, a report should be submitted to top management. The report should answer the questions who, where, what, when, how, and why.

<b>SUPERVISOR'S ACCIDENT INVESTIGATION REPORT</b>	
<b>NOTE TO SUPERVISOR:</b>	
Remember an accident investigation is not designed to find fault or blame. It is an analysis to determine causes that can be controlled or eliminated.	
Date:	Time:
Employee Involved:	
Position	Date Employed:
Supervisor :	Department :
How Long Was Employee Performing This Operation?	
Was The Employee Instructed?	
Did The Accident Result In An Injury?	
Nature And Extent Of Injury?	
WHEN COMPLETING THE INVESTIGATION, TRY TO ANSWER THESE QUESTIONS:	
How Did The Accident Occur? Where Did It Happen? What Materials, Machines, Equipment or Conditions Were Involved? Who Was Injured? When Did It Happen?	Date Injury Reported: Was First Aid Given? If So, When And By Whom? How Did Accident Occur? Cause of Accident: Recommendations To Prevent A Recurrence: What Action Has Been Taken? Signed:                      Dept:                      Date:
<b>MAKE RECOMMENDATIONS!</b>	
No investigation is complete unless corrective action is suggested.	
<b>FOLLOW-UP</b>	
Determine what action is being taken on your recommendations.	
<b>SAFETY COMMITTEE COMMENTS</b>	<b>EXECUTIVE</b>
Recommendations:	Special Orders:
Signed:	Signed:
Date:	Date:

CAUSES	DEFINITION OF CAUSE	SUGGESTED CORRECTIVE MEASURES
ENVIRONMENTAL UNSAFE PROCEDURE	Hazardous process: Management failed to make adequate plans for safety	Job analysis Formulation of safe procedure
DEFECTIVE EQUIPMENT THROUGH USE	Machines or equipment that have become rough, slippery, sharp edged, worn, cracked, broken or otherwise defective through use or abuse.	Inspection Proper maintenance
IMPROPERLY GUARDED EQUIPMENT	Machines or equipment that are unguarded or inadequately guarded.	Inspection : Checking plans, blueprints, purchase orders, contracts and materials for safety. Include guards in original design, order and contract. Provide guards for existing hazards.
DEFECTIVE EQUIPMENT THROUGH DESIGN	Failure to provide for safety in the design, construction and installation of buildings, machinery and equipment. Too large, too small, not strong enough.	Source of supply must be reliable. Checking plans, blueprints, purchase orders, contracts and materials for safety. Correction of defects.
UNSAFE DRESS OR APPAREL	Management's failure to provide or specify the use of goggles, respirators, safety shoes, hard hats and other articles of safe dress or apparel.	Provide safe dress or apparel or personal protective equipment if management could reasonably be expected to provide it. Specify the use or non-use of certain dress or apparel or protective equipment on certain jobs.
UNSAFE HOUSEKEEPING FACILITIES	Facilities no suitable layout or equipment necessary for good housekeeping - shelves, boxes, bins, aisle markers, etc.	Provide suitable layout and equipment necessary for good housekeeping.
IMPROPER VENTILATION	Poorly ventilated or not ventilated at all.	Improve the ventilation
IMPROPER ILLUMINATION	Poorly illuminated or no illumination at all.	Improve the illumination.
BEHAVIORISTIC LACK OF KNOWLEDGE OR SKILL	Unaware of safe practice; unpracticed; unskilled; not properly instructed or trained.	Job training
IMPROPER ATTITUDE	Worker was properly trained and instructed, but he failed to follow instructions because he	Supervision discipline personnel work

	was willful, reckless, absentminded, excitable, or angry.	
BODILY DEFECTS	Worker has poor eyesight, defective hearing, heart trouble, hernia, etc.	Pre-placement physical examinations periodic physical examinations proper placement of workers identification of workers with temporary bodily defects

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