

**April 1** – Infection Control Risk Assessment (ICRA)

April 2 – Competent Person Qualified Rigger / Signal Person

**April 2** – 2 Hour Webinar: PPE Requirements

April 3, 10, 11, & 17 – OSHA 30- Hour General Industry

**April 8-** Compliance Luncheon – Hand & Glove Safety

April 9 - BUSTR—Bureau of Underground Storage Tank Operator Training

April 14 - CPR/AED/BBP & First Aid

**April 16** - Annual BWC Update

April 22 – 2 Hour Webinar: Electrical Safe Work Practices & Lockout/Tagout

www.scnwo.org



# 34th Northwest Ohio Safety and Health Day

Wednesday May 14, 2025

Owens Community College – Center for Fine and Performing Arts

www.safetyandhealthday.com





# Workplace Accident Investigations

Presenter
Robert Momany, COSS, COSM
Executive Director
Safety Council of Northwest Ohio
March 27, 2025

### Objectives

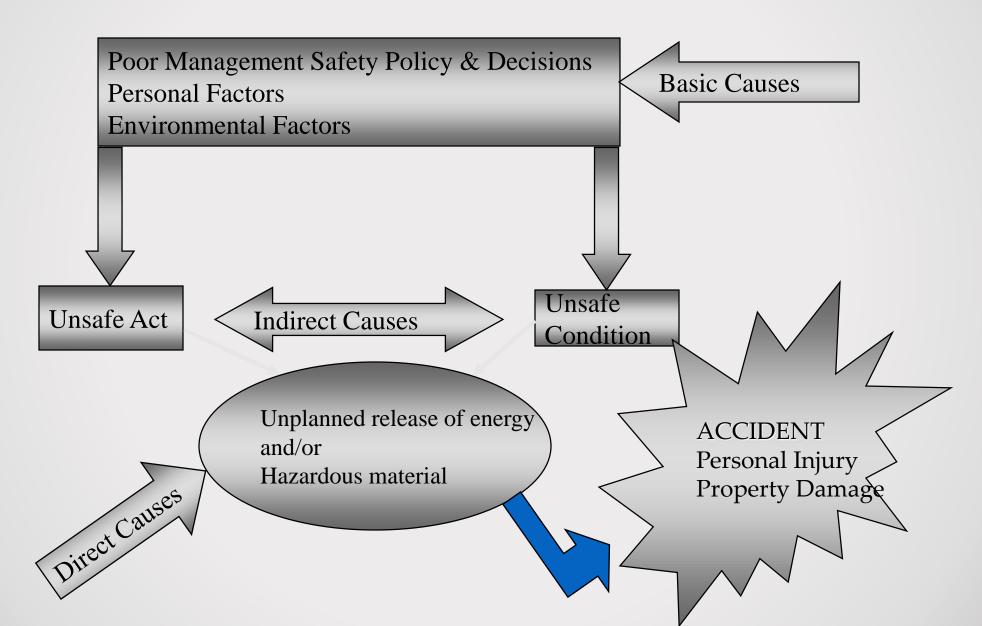
- Describe what an accident is
- Identify the basic causes of an accident
- Describe the steps involved in an accident investigation
- Describe the various problem solving techniques of accident investigation
- Describe reporting techniques

#### Accident Investigations

#### Purpose

- The purpose of this program is to help define and document the accident investigation process.
- This program defines the responsibilities of those investigating an accident and analyzing the causes of accidents and implementing appropriate corrective actions. <u>To prevent similar situations</u> <u>from recurring.</u>

#### Causes of Accidents



Accident

Any unwanted happening, movement or release of energy



- Accident Types
- > Near miss
- Plant/equipment damage
- > Minor injury
- > Lost time injury
- ➤ Disablement/fatality



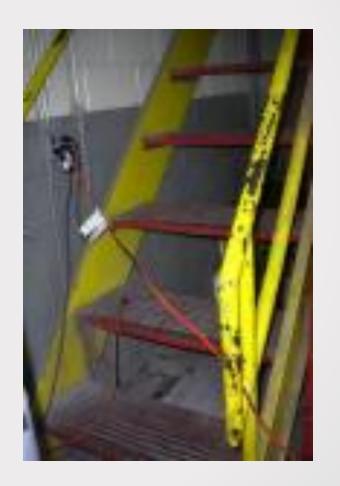
 Accident Investigation

The process of determining the causes of accidents and implementing corrective actions to prevent recurrence.



Hazard

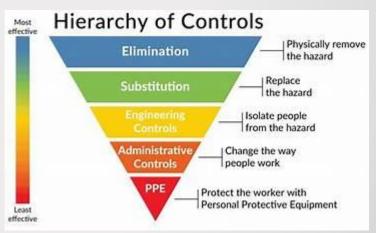
Anything that presents a danger to individuals or property



Hazard Control

Any method used to reduce or eliminate a hazard, including:

- Engineering controls
- Administrative controls
  - Housekeeping
  - Safe Work Practices
  - Training
- Personal Protective Equipment



#### Incident

Any accident that caused or could have caused an injury, illness, or property damage.



## Definitions OSHA 300 & 300A

Log and summary of Occupational Injuries and illnesses, on which fatalities, regardless of the time between the injury and death, or length of the illness; or lost workday cases; non-fatal cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment; or involve loss of consciousness, restriction of work or motion. Also used to summarize the log at the end of the year to satisfy employer posting requirements.

#### OSHA 300 Form

OSHA's Form 300

#### Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

U.S. Department of Labor onal Safety and Health Administ

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this

Log of Work-Related Injuries and Illnesses

Form approved OMB no. 1218-0176 form. If you're not sure whether a case is recordable, call your local OSHA office for help. Classify the case (C) (D) (E) Using these four categories, check ONLY the most serious result for each case: Case Employee's name Job title Date of injury Where the event occurred Describe injury or illness, parts of body affected, (e.g., Welder) (e.g., Loading dock north end) and object/substance that directly injured of illness or made person ill (e.g., Second degree burns on right forearm from acetylene torch) or restriction 0 days D D D D Page totals Be sure to transfer these totals to the Summary page (Form 300A) before you post it. Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments (1) (2) (3) (4) (5) about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics. Room N-5644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

#### OSHA 301 Form

OSHA's Form 301

#### **Injury and Illness Incident Report**

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.



Form approved OMB no. 1218-0176

This Injury and Illness Incident Report is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the Log of Work-Related Injuries and Illnesses and the accompanying Summary, these forms help the employer and OSHA develop a picture of the extent

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

and severity of work-related incidents.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Completed by		
Title		
Phone ( )	Date	

Information about the employee	Information about the case
1) Full name	10) Case number from the Log
Information about the physician or other health care professional  6) Name of physician or other health care professional	15) What happened? Tell us how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."
T) If treatment was given away from the worksite, where was it given?  Facility  Street	16) What was the injury or illness? Tell us the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or sore." Examples: "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."
State	17) What object or substance directly harmed the employee? Examples: "concrete floor"; "chlorine"; "radial arm saw." If this question does not apply to the incident, leave it blank.
9) Was employee hospitalized overnight as an in-patient?    Yes   No	18) If the employee died, when did death occur? Date of death//

Public reporting burden for this collection of information is eximated to average 22 minutes per response, including time for reviewing instrustionsearching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information unless it displays a current valid Office of Satistics, Room N-5614, 200 Genution Avenue, NW, Washington, De 2021 (D. One need the completed forms to this office.)
Washington, De 2021 (D. One need the completed forms to this office.)

### Why Accidents Happen

- Single Event Theory
- The Domino Theory
- Multiple Cause Theory



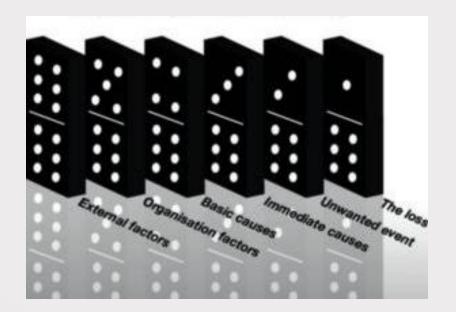
### Single Event Theory

• An accident is thought to be the result of a single, one-time easily identifiable, unusual, unexpected occurrence that results in injury or illness.



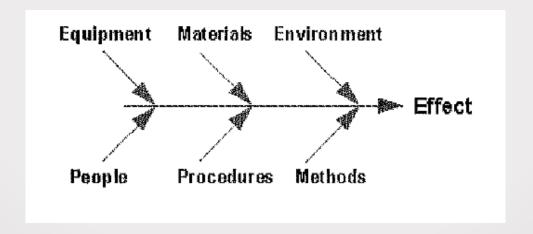
#### The Domino Theory

• Describes an accident as a series of related occurrences which lead to a final event that results in injury or illness.



#### Multiple Cause Theory

- Goes beyond the single event or domino theory.
- Accidents are a series of random related and/or unrelated actions that somehow interact to cause the accident.



## Why Should An Accident Be Investigated???

- Accident investigation is conducted to find out the root cause of accidents and to prevent similar accidents in the future
- To fulfill the legal requirement
- To determine the cost of an accident
- To determine compliance with applicable safety regulations
- To process workers' compensation claims

## Why Accident Don't Get Investigated



- Accidents just happen
- We don't have many accidents
- Safety is expensive
- Safety is just common sense

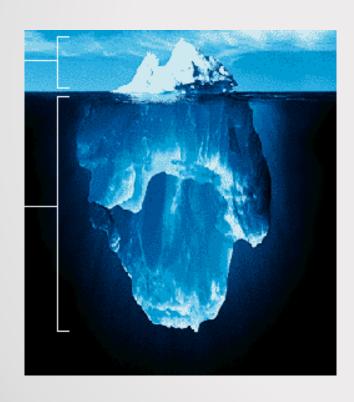
### Why Investigations Fail



- o lack of time to complete
- o lack of accountability
- o lack of skills & knowledge
- o investigation stopped short and didn't reveal all causes of the accident
- o lack of motivation to complete



# Let's Look at the Financial Cost\$ of Accidents



Accident Costs

- Direct costs
- Indirect costs

#### Accident Cost Direct

- Cost that are directly associated with a specific event.
  - Easy to determine
    - Medical costs
    - Physical therapy costs
    - Repair costs for damaged equipment
    - Compensation
    - Continuation of pay



#### Accident Cost Indirect

- "Hidden" cost of an injury
  - Not easily identified
    - Time lost from work
    - Loss of earning power
    - Time lost to investigate accident
    - Lost time by fellow workers
    - Loss of efficiency by breakup of crew
    - Lost time by supervisor
    - Cost of breaking in new worker
    - Damage to tools and equipment



#### Other Expenses

- Loss of productivity
- Loss of product
- Loss of customers
- Morale lowered
- Slip in schedule
- Cleanup
- Overhead/Overtime

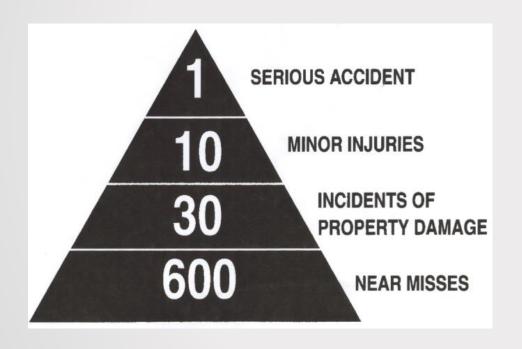
- Legal Fees and Settlements
- Clerical /Administrative fees
- OSHA/Civil fines
- Training
- Worker's Comp and insurance

#### "Near Miss"

 Incidents that involve no injury or property damage should still be investigated to determine the hazards that should be corrected.

- o These are often called "NEAR-MISS" incidents.
- 75% of industrial accidents are forecast by a near miss incident.

## Accident Reporting & Investigation

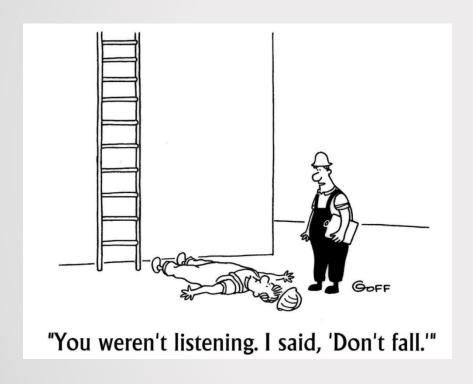


- Frank Bird (Accident Triangle)
  - o 600 near misses
  - o 30 property damage
  - 10 minor injuries
  - 1 serious injury (lost time or fatal)

## Who Should Do An Accident Investigation?

- Members of a committee who have been trained in the investigative process.
- At times someone from outside the organization may have to be called upon for expert advice/opinions.

#### Root Cause

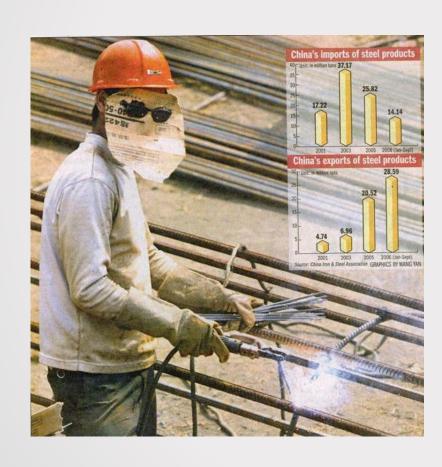


- Accident Investigation is done to find root cause, identify and eliminate hazard.
- It is NOT done to place blame.

Seldom, if ever, is there only a single cause of an accident. An accident investigation that concludes with worker carelessness and goes no further fails to answer important questions such as:

- O Was the worker distracted? If yes, Why?
- Was a safe work procedure being followed? If not, Why?
- Were safety devices in order? If not, Why?
- o Was the worker trained? If not, Why?

## Accident Investigation Should Be Impartial



- unsafe act
- unsafe condition
- unsafe procedures

- causal factors
  - individual
  - job
  - organization





- causal factorsindividual
  - knowledge
  - skills
  - training (none, or failure to apply)
  - experience
  - attitude
  - risk perception
  - task exceeds physical/mental capabilities



- causal factors-job
  - task
  - workload
  - equipment
  - controls
  - procedures
  - environment (housekeeping)



"Take him back to work. He can still hold a hammer."

- causal factorsorganization
  - culture
  - leadership
  - resources
  - work patterns

## 9 Steps of Accident Investigation

- 1. Report the accident occurrence to a designated person.
- 2. Provide First Aid / Medical Care to the injured.
- 3. Investigate the accident
- 4. Identify the causes
- 5. Report the findings.

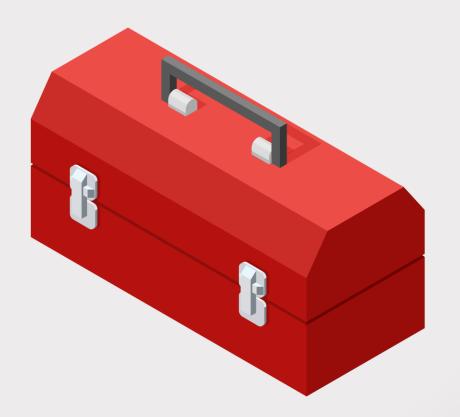
- 6. Develop a plan for corrective action
- 7. Implement the plan
- 8. Evaluate the effectiveness of the corrective action
- 9. Make changes for continuous improvement.

#### Be Prepared

- Develop contingency plans prior to the accident.
- Designate an investigator(s)
  - > This person should only be responsible for investigating.
  - > Should have a good working knowledge of operating procedures.
- Be equipped with the right tools to do the job thoroughly.

# Accident Investigation

**Toolkit** 



## Accident Investigation Kit

- Barricade Tape
- Camera
- Film
- Graph Paper
- Pencil
- Sample Containers w/ covers and labels
- Flashlight with batteries

## Accident Investigation Kit (cont.)

- Warning signs
- Tape measure
- Rubber gloves
- Accident report forms
- Sample interview questions
- Witness statement forms





- One picture is worth a thousand words –Take several!!
- 1. Start with photographing an overall view of the equipment/area involved in the incident.
  - Take shots from several angles wide angle, medium angle and close up.
  - Make sure you get all sides of the equipment/area.
- 2. Slowly narrow in on the incident area.



- 3. Include the data plate when photographing.
  - This will document the equipment involved.
- 4. Does the equipment have an emergency stop system?
  - Take measurement from the button/cord to the incident area.
  - -Take photograph of the overall measurement (measuring tape in photograph)



- 5. Is there guarding for the area of injury?
  - Photograph this.
  - Measure the guarding (length, width, depth)
  - Photograph the measurements.
  - Capture how it is attached.
- 6. Is PPE an issue?
  - Where is the PPE stored?
  - Take a photograph of inventory on hand (or what is at job site)
  - Show access with photographs (unlocked closet, etc.)



- 7. Make sure to include the surrounding area to the incident to document condition at the time of the incident.
- 8. Photograph warning stickers/signs.
- 9. Scaffold/ladder involved? Photograph.
  - Base, feet, side rails, rungs, planks, guard rail, anchors for fall protection.
  - Was any piece of equipment missing? Was it on job site? Photograph and show job site.
  - Was there alternate equipment available? Photograph equipment and show where located.



- Avoid photographing the injured
- Take photographs as soon as possible to include appearance of damaged equipment, spilled product and other items that will be moved from the scene.

#### Photograph measurements

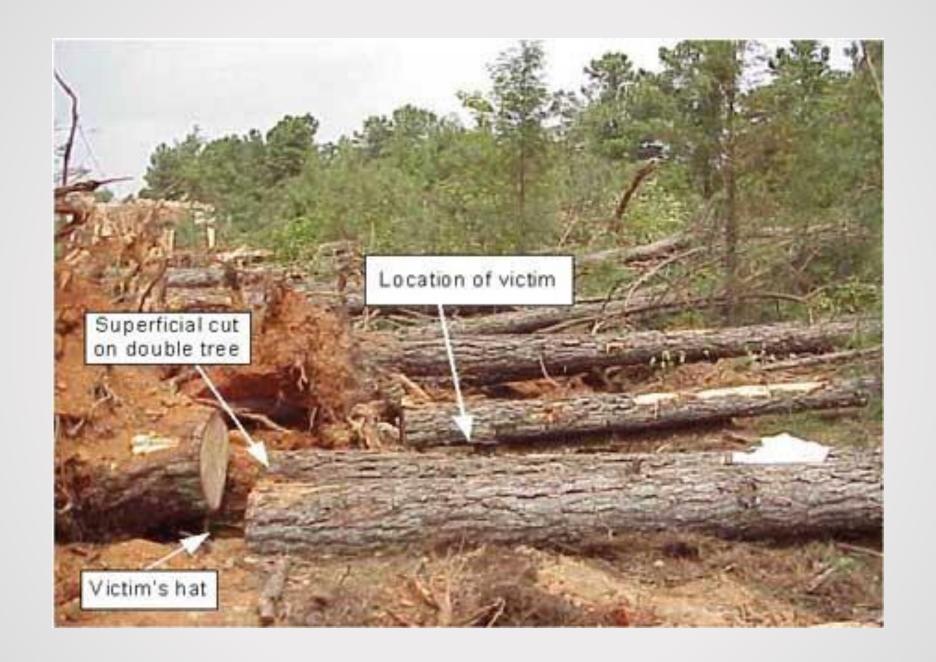
Example: If measuring the emergency stop button to the injury area, show the overall measurement with the tape measure in the photograph in the first photo and then zoom into the actual measurement.

#### Take measurements of:

- Emergency stop system to injury area
- Guarding (how large was any opening: width, length, height)
- If a fall, take measurements from area standing on prior to the injury to where landed
- Any guardrail: take measurements from floor to mid rail and top rail.

  Also include toe board.
- Saw involved: measure blade, how far above table, diameter.







### Taking Video

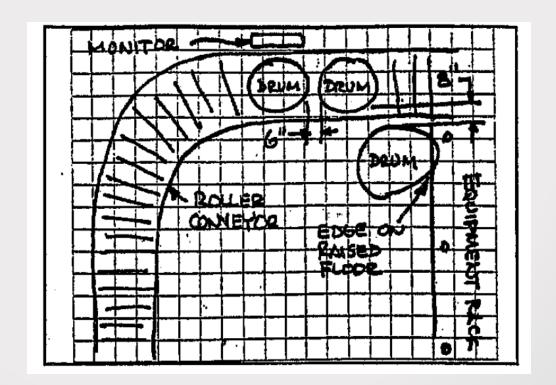
- Video equipment once it has been inspected for safety and it is safe/able to operate.
- Lift trucks: include any visual and audible signals (horns, lights, back up alarms), show the brakes stopping the truck, and raising and lowering the forks, etc.
- Presses: cycle normally and include showing how press is actuated, if equipped with an interlocked guard or light curtain show how press reacts if open/broken, show reaction when e-stop is used.
- Other equipment: show in operation and include any safety mechanisms/guards.

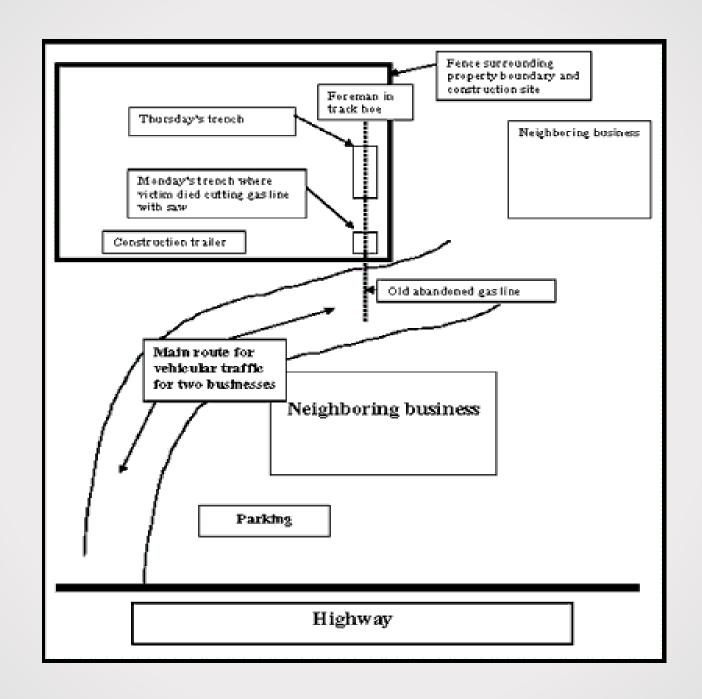
### Sketching the Scene

- Using grid paper, sketch the position of objects and make notes of what you observe.
- Use a tape measure to note distance
- Remember to use vertical as well as horizontal measurements.

### Sketching the Scene

• Look up! Are there any lighting grids, water pipes or other items suspended from the ceiling?





#### Written Report

- If a limited space is provided for an answer, the tendency will be to answer in that space.
- If a checklist of causes is included, possible causes may be overlooked
- Headings such as "unsafe conditions" will usually elicit a single response even when more than one unsafe condition exists.
- Differentiating between "primary cause" and "contributing factors" can be misleading. All accident causes are important and warrant consideration for possible corrective action.

## Accident Investigation Form

PART 1 IDENTIFICATION INFORMATION					
Employee Name					
Date of Accident	19	Time		AM PM	
Occupation		Shift			
Department		ID			
P	ART 2 SUPPLEME	NTARY INFORM	MATION		
Company					
Mailing Address					
City	State		Zip		
Telephone ( )					
Establishment Location (if diffe	rent from above)				
Remarks: Risk No.	Manual(s)		Claim No.		
Employee Address					
City	State		Zip		
Telephone ( )					
Sex Age	Date of Birth		SSN /	1	
Was injured person performing	regular job at time of	accident?	es □ No		
Length of Service: With Employer		On thi	s job		
Time shift started AM PM		Overtime?	□ Yes □ No		
Name and address of physician:					
City	State		Zip		
If hospitalized, name and address					
	State		Zip		
City					

#### Gather Data

- Data is classified into four categories
  - 1. People
  - 2. Position
  - 3. Parts
  - 4. Paper

#### People

- Victims
- Witnesses
- Manufacturing Company
- Maintenance personal

#### Position

- Physical location of the injured, the equipment, spills or skid marks.
- Electrical and mechanical switches and controls, the location and arrangement of scattered products (any tools that may be key pieces of evidence)

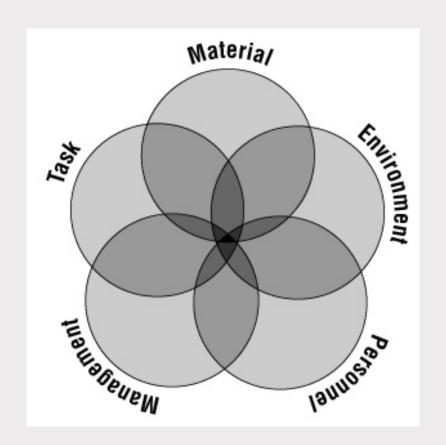
#### Parts

• Parts data includes parts of any equipment that may have failed, interfered with or interrupted normal operation, thus contributing to the accident.

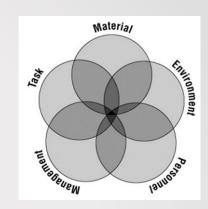
#### Paper

- Employee training record
- Equipment maintenance records
- Safety compliance records
- Job procedures

#### Accident Causation Model



#### **TASK**



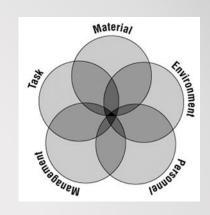
- Was safe work procedure used?
- Had conditions changed to make normal procedures unsafe?
- Were the appropriate tools and materials available?
- Were they used?
- Were safety devices working properly?
- Was lockout used when necessary?

#### Equipment & Material

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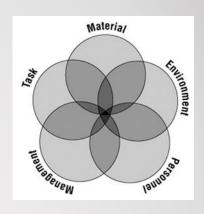
- Was there equipment failure?
- What caused it to fail?
- Was machinery poorly designed?
- Were hazardous substances involved?
- Were they clearly identified?
- Was a less hazardous alternative substance possible and available?
- Was the raw material substandard in some way?
- Should personal protective equipment have been used?
- Was the PPE Used?

#### Environment



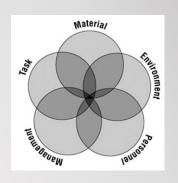
- What were the weather conditions?
- Was poor housekeeping a problem?
- Was it too hot or too cold?
- Was noise a problem?
- Was there adequate light?
- Were toxic or hazardous gases, dusts, or fumes present?

#### Personnel



- Were workers experienced in the work being done?
- Had they been adequately trained?
- Can they physically do the work?
- What was the status of their health?
- Were they tired?
- Were they under stress?

### Management



- Were safety rules communicated to and understood by all employees?
- Were written procedures available?
- Were they being enforced?
- Was there adequate supervision?
- Were workers trained to do the work?
- Had hazards been previously identified?
- Had procedures been developed to overcome them?
- Were unsafe conditions corrected?
- Was regular maintenance of equipment carried out?
- Were regular safety inspections carried out?

#### Collecting Information

- Injured Person
- Physical Evidence
- Eyewitness Accounts
- Interviewing
- Background Information

#### Physical Evidence

- Position of injured person
- Equipment being used
- Materials 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



## Injuries

• Rescue, medical treatment, prevention of further injuries, and rescuer's safety are first priorities.

• When these matters are under control the investigation can begin.

### Eyewitness Accounts

- Because witnesses may be under severe emotional stress or afraid to be completely open for fear of recrimination, interviewing witnesses is probably the hardest task facing an investigator.
- Witnesses should be interviewed as soon as practical after the accident.
- Witnesses should be interviewed alone, rather than in a group.

#### Interviewing

- Dos...
  - Put the witness at ease
  - Emphasize the real reason for the investigation, to determine what happened and why
  - Let the witness do the talking
  - Confirm that you have the statement correct
  - o Try to sense any underlying feelings of the witness
  - Make short notes only during the interview
  - Ask open-ended questions

### Interviewing

- Don'ts...
  - Intimidate the witness
  - o Interrupt
  - o Prompt
  - Ask leading questions
  - Show your own emotions
  - Make lengthy notes while the witness is talking.

#### Interview Questions

- Where were you at the time of the accident?
- What were you doing at the time?
- What were the environmental conditions at the time?
- What was the injured worker doing at the time?
- In your opinion, what caused the accident?
- How might similar accidents be prevented in the future?

Attachment [number]

#### **Accident Witness Statement Form**

Name:	Job Title:			
Phone:	Supervisor:			
Work Location:				
Location of Accident:				
Accident Time and Date:				
Please fully describe the accident sequence from start to finish (use additional space as needed):				
Please fully describe the work and conditions in progress leading up to the accident (use additional space as needed):				
Note anything unusual you observed before or during the accident (sights, sounds, odors, etc.) (use additional space as needed):				
	· · · · · · · · · · · · · · · · · · ·			
What was your role in the accident sequence? (use additional space as needed)				

What conditions influenced the accident (weather, time of day, additional space as needed)	equipment malfunctions, etc.)? (use
What do you think caused the accident? (use additional space as	needed)
How could the accident have been prevented? (use additional sp.	ace as needed)
Please list other possible witnesses (use additional space as need	ed):
Additional comments/observations (use additional space as need	led):
Signature:	Date/Time:

#### Accident Witness Interview Instructions

In general, experienced personnel should conduct interviews. If possible, the team assigned to this task should include an individual with a legal background. Follow these procedures for conducting interviews:

- 1. Appoint a speaker for the group.
- 2. Get preliminary statements as soon as possible from all witnesses.
- 3. Locate the position of each witness on a master chart (including the direction of view).
- 4. Arrange for a convenient time and place to talk to each witness.
- 5. Explain the purpose of the investigation (accident prevention) and put each witness at ease.
- 6. Listen, let each witness speak freely, and be courteous and considerate.
- 7. Take notes without distracting the witness. Record the interview only with consent of the witness.
- 8. Use sketches, diagrams, and photographs as appropriate to help the witness.
- 9. Emphasize areas of direct observation. Label hearsay accordingly.
- 10. Be sincere and do not argue with the witness.
- 11. Record the exact words used by the witness to describe each observation. Do not put words into a witness's mouth.
- Word each question carefully and be sure the witness understands.
- 13. Identify the qualifications of each witness (name, address, occupation, years of experience, etc.).
- 14. Supply each witness with a copy of his or her statements. Signed statements are desirable.

After interviewing all witnesses, analyze each witness' statement. Re-interview one or more witnesses to confirm or clarify key points if needed. While there may be inconsistencies in witnesses' statements, assemble the available testimony into a logical order. Analyze this information along with data from the accident site.

### Making Analysis and Conclusions

- When your investigation is complete, jot down a step by step account of what happened working back from the moment of the accident, listing all possible causes at each step.
- It is supported by evidence
- Are conclusions based on
  - o the evidence direct or based on eyewitness accounts
  - o assumption

### Investigation Report

- Suggestion of items to include in your report:
  - Background information
  - Account of the accident (what happened?)
  - Discussion (analysis of the accident how; why?)
  - Recommendations (to prevent a recurrence) for immediate and long-range action to remedy

