Accident Investigation

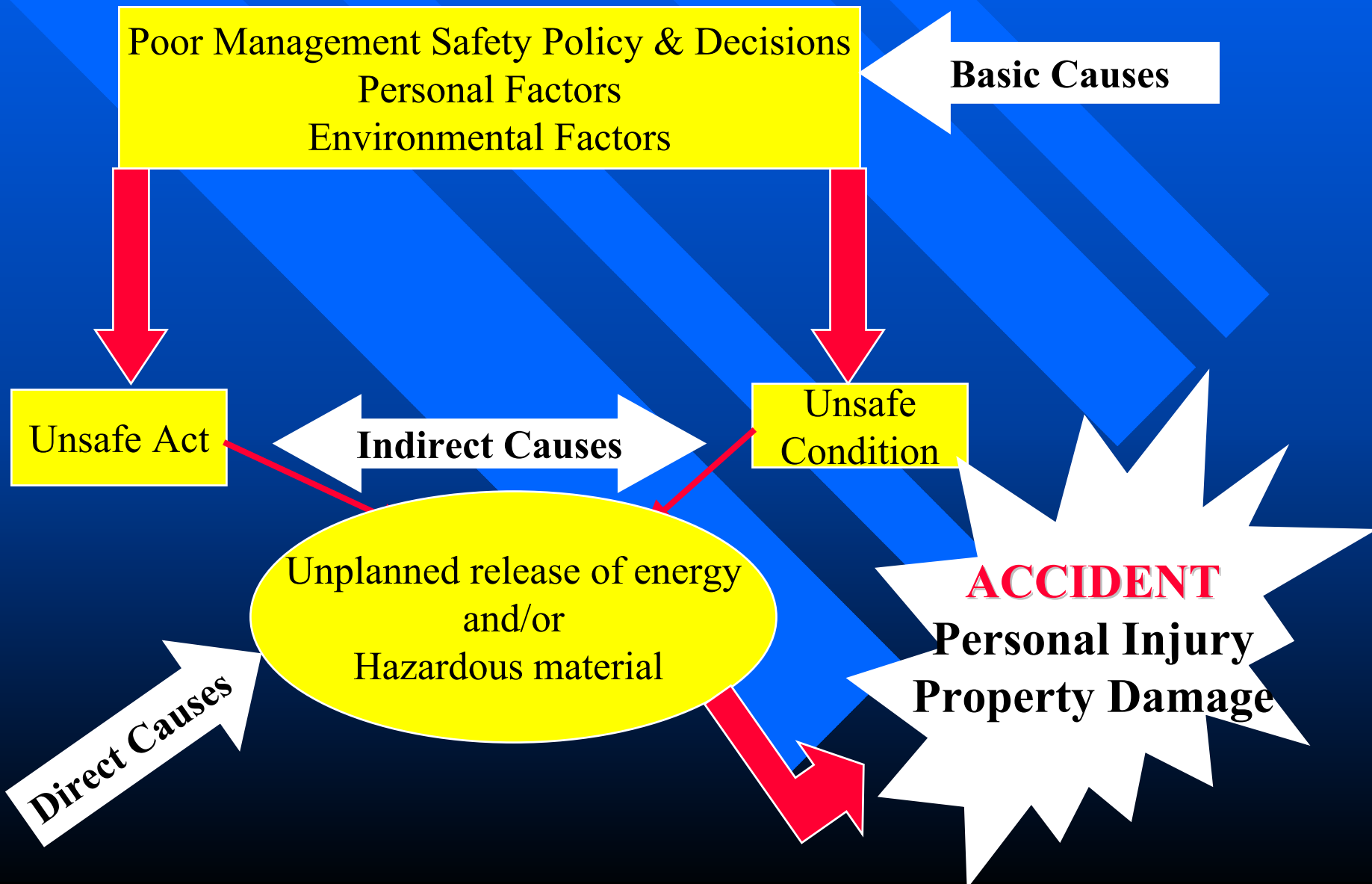
What is an Accident?

- An unintended happening, mishap.
- Most often an accident is any unplanned event that results in personal injury or in property damage.
- The failure of people, equipment, supplies or surroundings to behave or react as expected causes most accidents.

Accident Investigation

- Will determine how and why of failures.
- Examine possible corrective action.
- Aid in the accident prevention and elimination of a clearly identified hazard.
- Most important-**Investigation is not intended to place blame.**

The Three Basic Causes



Be Prepared

- Develop contingency plans prior to the accident.
- Designate an investigator
  - 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.

Record the Facts

- Interview witnesses as soon as possible.
- Document the accident scene before any changes are made.
  - Take photos
  - Draw scaled sketches
  - Record measurements
- Gather support documents such as maintenance records, reports, production schedules or process diagrams.

Record the Facts

- Keep all notes and remarks in a bound notebook or three ring binder.
- Record:
  - Pre-accident conditions
  - Accident sequence
  - Post-accident conditions
- Document victim location, witnesses, machinery, energy sources and other contributing factors.

Record the Facts

- Even the most insignificant detail may be useful.
- Document and then document some more.
- The investigator should be concentrating solely on the investigation at hand.

Interviewing

- Excellent source of first hand knowledge.
- May present pitfalls in the form of:
  - Bias
  - Perspective
  - Embellishment
- It is important to maintain a clear thought process and control of the interview.

Interviewing

- Get preliminary statements as soon as possible from all witnesses.
- Locate the position of each witness on a master chart (including the direction of view)
- Explain the purpose of the investigation (accident prevention) and put each witness at ease.

Interviewing

- Let each witness speak freely and take notes without distracting the witness (use a tape recorder only with consent of the witness).
- Use sketches and diagrams to help the witness.
- Emphasize areas of direct observation and label hearsay accordingly.
- Record the exact words used by the witness to describe each observation.

Interviewing

- Word each question carefully and be sure the witness understands.
- Identify the qualifications of each witness (name, address, occupation, years of experience, etc.).
- Supply each witness with a copy of their statements (signed statements are desirable).

Problem Solving Techniques

Change Analysis

- This technique emphasizes change to correct the problem.
- Examination of deviations from the norm are scrutinized.
- Consider all problems to result from some unanticipated change.
- Analyze the changes to determine its cause.

Problem Solving Techniques
Change Analysis

- Use the following steps in this method:
  - Define the problem (What happened?).
  - Establish the norm (What should have happened?).
  - Identify, locate, and describe the change (What, where, when, to what extent).
  - Specify what was and what was not affected.
  - Identify the distinctive features of the change.
  - List the possible causes.
  - Select the most likely causes.

Problem Solving Techniques

Job Safety Analysis

- Job safety analysis (JSA) is part of many existing accident prevention programs.
- In general, JSA breaks a job into basic steps, and identifies the hazards associated with each step as well as prescribing controls for each hazard.
- A JSA is a chart listing these steps, hazards, and controls.
- Review the JSA during the investigation if a JSA has been conducted for the job involved in an accident.
- Perform a JSA if one is not available to determine the events and conditions that led to the accident.

Problem Solving Techniques

Job Safety Analysis

Job Safety Analysis	Job:	Date:
Title of Worker Who Performs Job:	Foreman or Supervisor:	Analysis By:
Department:	Section:	Reviewed By:
Required and/or Recommended Personal Protective Equipment		

Sequence of Basic Job Steps	Potential Accidents or Hazards	Recommended Safe Job Procedures
1. Remove fire extinguisher from wall bracket 2. Carry to fire 3. Operate the unit to extinguish the fire 4. Place used extinguisher near exit door of fire area to be picked up for servicing	1. Unit is heavy and awkward to handle 2. It weighs 29 lbs. 3. Dropping unit 4 Arm strain 5. Back strain 6. Pinch hand on handle 7. Cut finger on pin 8. Shoot water into face 9. Empty extinguishers are easy to upset 10. If upset, they roll and cause tripping hazards	1. Get a firm grip with both hands before removing to prevent dropping the unit 2. Lift properly and lower to walking position 3. Be sure you can carry the unit; if you can't, get help 4. Walk briskly to fire, being alert for slipping and tripping hazards 5. Hold to support extinguisher while removing the safety pin 6. Grip firmly to avoid dropping 7. Be sure discharge is always directed at the fire area 8. Place used extinguisher in approved location 9. Complete any reports required by the company

Investigation Report

- An accident investigation is not complete until a report is prepared and submitted to the proper authorities.
- Suggestion of items to include in your report.

Investigation Report

- Background Information
  - Where and when the accident occurred
  - Who and what were involved
  - Operating personnel and other witnesses
- Account of the Accident (What happened?)
  - Sequence of events
  - Extent of damage
  - Accident type
  - Agency or source (of energy or hazardous material)

Investigation Report

- Discussion (Analysis of the Accident - HOW; WHY)
  - Direct causes (energy sources; hazardous materials)
  - Indirect causes (unsafe acts and conditions)
  - Basic causes (management policies; personal or environmental factors)

Investigation Report

- Recommendations (to prevent a recurrence) for immediate and long-range action to remedy:
  - Basic causes
  - Indirect causes
  - Direct causes (such as reduced quantities or protective equipment or structures)

Discussion of OSHA Investigated Accidents

- Utilizing information collected by OSHA investigated accidents and available at the website:

  http://www.osha.gov/cgi-bin/inv/inv1

several accidents will be discussed.

Accident #1

Accident Investigation Summary

Summary Nr: 000724286 Event: 03/26/1994 Employee Killed When Struck in Head By Rotating Stock

Employee #1 was turning a piece of cold roll steel in a Do-All lathe, model LT13. The stock section extended 44 inches out from the in-feed point on the lathe. The extended stock bent approximately 80 degrees from its starting position, causing a whipping effect. Employee #1 was struck by this rotating stock while operating the machine. Employee #1 sustained multiple trauma to the head and died.

Review: E Keywords: struck by,rotating parts,head,lathe

Inspection	Age	Sex	Degree	Nature	Occupation
1 108721010	48	M	Fatality	Other	

Violation Items

ID	Type	Standard	Issuance	Abate	Curr$	Init$	Fta$	Contest	LastEvent
1 01001	Serious	19100147 C07 I	04/26/1994	06/30/1994	2500.00	2500.00	0.00		I-Informal Settlement
2 01002	Serious	19100212 A01	04/26/1994	05/30/1994	5000.00	5000.00	0.00		I-Informal Settlement
3 01003	Serious	19100332 B01	04/26/1994	06/30/1994	2000.00	2000.00	0.00		I-Informal Settlement
4 02001	Other	19100147 C04 II	04/26/1994	05/30/1994	0.00	0.00	0.00		-
5 02002	Other	19100333 B02	04/26/1994	05/30/1994	0.00	0.00	0.00		-

Accident #2

Accident Investigation Summary

Summary Nr: 000785279 Event: 10/24/1996 Employee'S Hand Fractured By Lathe

At approximately 3:30 p.m. on October 24, 1996, in Portland, OR, Employee #1 was boring a hole in a metal cast part with a Turrett lathe. The lathe was in gear and the chuck engager was in neutral. When Employee #1 reached to turn on the coolant switch, he slipped on the floor and hit the lever for the chuck engager. The engager turned, catching the top of the employee's right hand, breaking the palm and ripping the skin away.

Review: E Keywords: slip,fracture,hand,lathe

	Inspection	Age	Sex	Degree	Nature	Occupation
1	126688944	24	M	Hospitalized	Fracture	

* Note that more than one inspection number is shown when multiple inspections are performed during the investigation. Additional inspections will be indicated as a link.

Violation Items

	ID	Type	Standard	Issuance	Abate	Curr$	Init$	Fta$	Contest	LastEvent
1	01001	Serious	701076001 A	12/12/1996	12/17/1996	500.00	500.00	0.00	12/20/1996	J-ALJ Decision
2	01002	Serious	19100219 C03	12/12/1996	12/17/1996	195.00	195.00	0.00		-
3	02003	Other	701070501	12/12/1996	12/17/1996	100.00	100.00	0.00		-

Accident #3

Accident Investigation Summary

Summary Nr: 171020308 Event: 09/12/1995 Employee Killed When Thrown By Revolving Part in Lathe

On September 12, 1995, Employee #1, of Vail Rubber Company, was using emery cloth to polish a part in a lathe. The cloth caught on the part, pulling him in and over the lathe and causing his head and upper body to strike the other side of the machine. Employee #1 suffered multiple fractures and was killed.

Review: E Keywords: cleaning,lathe,caught by,head,torso,struck against,fracture,lockout,work rules,rotating parts

	Inspection	Age	Sex	Degree	Nature	Occupation
1	124996018	46	M	Fatality	Fracture	

* Note that more than one inspection number is shown when multiple inspections are performed during the investigation. Additional inspections will be indicated as a link.

Violation Items

	ID	Type	Standard	Issuance	Abate	Curr$	Init$	Fta$	Contest	LastEvent
1	01001	Serious	40812611 A	10/13/1995	10/13/1995	1250.00	2500.00	0.00		I-Informal Settlement

Any Questions

Section 4