Every injury is the final link in a chain of events. There are four links in this chain:

Background Unsafe acts or conditions Accident Injury

An example:

## Background

A press operator with after work plans is anxious to finish wash-up by the normal quitting time. (or your next class)

## **Unsafe Act**

The operator attempts the wash-up by cleaning the roller ends with the press running.

## Accident

The rag being used is caught in an inrunning nip, and pulls the operator's arm into the rollers.

## Injury

The operator's arm and hand are severely lacerated.

# How can the chain of events leading to this injury be broken?

Answer: Identify the weak links and remove them.

The last two links in the chain are results, and can be eliminated only if one of the "cause" links can be broken. When an operator comes to work, he or she brings with them many private thoughts, feelings, and worries, all of which influence how their work will be conducted. In the pressroom, we cannot directly control this **Background** link; we can only stress that workers should be aware of the dangers **Background** problems may cause and should concentrate on performing their work in a safe manner. **Unsafe Acts or Conditions**, however, can be changed and controlled directly. They are the weak links in the chain leading to an accident and injury that can be eliminated.

**Unsafe Acts or Conditions** are due to carelessness, ignorance, and a lack of planning, and if allowed to continue they can become as difficult to eliminate as are bad habits. As a first line of attack, look closely at these "habits" and know how to change them.

# **Unsafe** Acts

## **Cleaning and Adjusting Equipment**

Do not clean, lubricate, or adjust equipment while it is moving. Moving machinery is dangerous. Workers who take short cuts or "don't bother" to place the equipment in safe condition before making even minor adjustments run the risk of serious personal injury.

### Failure to Shut Down Equipment Properly

When maintaining or repairing equipment, always place the machine in SAFE condition and LOCK OUT the power to avoid the danger of serious injury to yourself and other workers. Disconnect all electrical power, bleed off all hydraulic and pneumatic systems, secure all parts that can fall, and take any other precautions required for the particular equipment. A warning tag or power box lock should be installed to prevent others from starting the equipment before maintenance is completed. When not in use, turn the equipment OFF.

### **Bypassing Safety Devices and Procedures**

While safety procedures may seem to be a nuisance at times, these procedures are the



workers' best defense against injurycausing accidents. Ignoring safety precautions,

failing to inspect safety signals, valves, and switches, or purposely bypassing safety devices invite unnecessary risk of harm for you and for your co-workers, who may be unaware of the dangers created by your carelessness. Safety systems should be frequently inspected to insure that they function properly. Any defects should be promptly reported.

# Failure to Warn Others of Your Intent to Begin Work

Failure to warn other workers of your intention to perform work on the equipment can result in injury. Before beginning to work, signal your co-workers, using verbal, written or other warnings to be sure you have their attention before proceeding.

# Failure to Wear and Use Protective Gear



Injuries in the pressroom can be reduced by wearing proper eye, ear, head, foot, and other protective gear. Long hair should be covered to avoid entanglement in equipment. Teachers should be consulted when you are

in doubt as to the proper protective equipment to be used.

# Wearing Loose Clothing and Jewelry

Loose articles of clothing, rings or dangling jewelry can easily become entangled in moving machinery, pulling the wearer along with them. Wiping rags, tools, or other work materials loosely attached to your clothing also can be caught in the machine's moving parts. To avoid serious personal injury, never operate equipment with loosely rolled sleeves, exposed shirttails, dangling ties or similar loose clothing or jewelry. Remove loose or dangling work accessories when operating equipment. Be sure to wear footwear that offers protection for you in the event of falling or dropped material.

# **Operating Equipment without Proper Training and Authority**

Proper training in the safe operation of equipment is essential to ensure the safety of the operator and other pressroom workers. Make sure all bystanders keep away from the equipment. When in doubt as to the proper operation of the equipment, consult your supervisor.

# Using Defective or Improper Tools or Equipment

All equipment becomes worn with time and should be periodically checked for damage and repaired, or replaced, if necessary. Any tool or other equipment can be dangerous if it is not used for its intended purpose. Be certain you always use the proper equipment for the job at hand. Periodically examine tools and equipment for wear or damage and take necessary action.

## Working in Unsafe Positions

A worker who works in an awkward position reduces mobility and balance, thereby increasing exposure to safety hazards. Position yourself properly while working.

#### Horseplay

A worker's risk of serious injury is often at its greatest when distracted from work by the teasing, abuse, or practical jokes of coworkers. Horseplay cannot be tolerated in an industrial environment.

# **Unsafe Conditions**

#### Missing or Unused Safety Guards

Never operate the equipment unless all safety guards are in place. Use extreme care when operating machines that have moving parts.

#### Worn or Broken Equipment

Any machine or tool can be dangerous if it is worn or damaged. Always check your equipment and tools and report signs of wear and tear, damaged items should be repaired, or, if necessary, replaced.

#### **Cluttered Storage and Work Areas**

Always keep the work and storage areas as orderly and uncluttered as possible. Keep fire exits and aisles leading to fire exits clear.

#### **Dangerous Materials**

All flammable materials or irritating solvents must be kept in safe storage areas or in approved, clearly identified, containers.



All rags that contain solvent residue should be kept in metal cans with properly fitting lids to avoid exposure to solvent vapor. Exercise extreme care when exposed to dangerous materials. Proper personal

protective equipment should be worn and smoking or creating sparks is not permitted.

# **Improper Ventilation**

Clean air, free from the by-products of the printing equipment, is a key element of plant safety. Report signs of poor ventilation such as smoke or persistent, unusual odors or dust.

## **Improper or Insufficient Lighting**

Proper lighting is crucial for plant safety. Workers should report any distracting glare, shadows, or other inadequate lighting.

# **High Noise Levels**

High levels of noise may cause permanent hearing damage. Always wear hearing protection devices when exposed to loud noise. Keep hearing protection devices clean to prevent infection.

# Suggested Safety Procedures

Recognizing Unsafe Acts and Conditions is an essential element of pressroom safety. In addition, following the shop's safety procedures will prevent you from creating unnecessary hazards and help you avoid safety hazzards that do exist. Read this Pressroom Safety Manual carefully and follow both the procedures in the operating manual provided with the equipment, and the warnings posted in the shop before operating any equipment. As a worker, you have a responsibility to your co-workers and to yourself to promote shop safety. Remember, by being aware of these **Unsafe Acts and Conditions**, workers can break the chain leading to injuries. Keep these factors in mind, recognize them when you see them, and take steps to avoid them. Help keep yourself and your co-workers on the job and out of the hospital.

Machines in a pressroom contain hazardous voltages that can cause serious personal injury or death.

- Keep away from live circuits
- Only authorized personnel should service or maintain electrical equipment

Caution: Do not operate or service any equipment unless:

- You are authorized to do so;
- You have read all safety instructions
- You have all safety guards and switches in their proper positions.

Read and follow all warning signs and labels.



*This sign indicates the need for wearing ear protection. Ear Plugs are to be worn while performing this operation.*