

HIGH-IMPACT MAINTENANCE SAFETY

This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation. Featured are:

INTRODUCTION: A brief description of the program and the subject that it addresses.

PROGRAM OUTLINE: Summarizes the program content. If the program outline is discussed before the video is presented, the entire program will be more meaningful and successful.

PREPARING FOR AND CONDUCTING THE PRESENTATION: These sections will help you set up the training environment, help you relate the program to cite specific incidents, and provide program objectives for focusing your presentation.

REVIEW QUESTIONS AND ANSWERS: Questions may be copied and given to participants to document how well they understood the information that was presented. Answers to the review questions are provided separately.

ATTENDANCE RECORD: Document the date of your presentation as well as identify the program participants. The attendance record may be copied as needed.

INTRODUCTION

All employees need to be reminded regularly how safety is an important part of their job responsibility. Safety meetings and posters are often used for this purpose. But maintenance craftsmen are especially at risk. While other workers are protected by guards and other types of engineering controls, maintenance workers must often work closely to moving machinery, electricity and other hazards without protection.

This video uses real accident stories and tips from experienced industrial professionals to show the viewer how their personal safety attitude can give them a wall of protection from dangerous safety hazards.

PROGRAM OUTLINE

GOOD SAFETY ATTITUDES

- More than one thousand maintenance workers are killed each year. It is imperative that these workers follow safe work procedures at all times.
- Because maintenance people come in contact with so many hazards, good personal safety attitudes are the most important defense against injury and death.
- The following three principles build the foundation of the maintenance worker's good safety attitude:
 - ❶ **Accidents will happen if not anticipated and prevented;**
 - ❷ **If a job can't be done safely, don't do it;**
 - ❸ **Safe work practices and job procedures are inseparable.**

THE "VOICE OF EXPERIENCE"

- Real maintenance people use their "voice of experience" to describe their safety attitudes:
 - *"You must begin your workday everyday with the attitude that I'm going to do the best possible job I can, in the safest manner I can. If you don't come to work with that attitude then the odds of you being hurt on any given day are very high."*
 - *"We should all stop and think before we do any job and be sure to do it the right way. If it takes a little longer, just say to yourself, 'I am going to take my time and do this right because I don't want to get hurt'."*

- *“Any job that you undertake, if it cannot be done safely, then the job is really not worth doing. It’s not worth taking a chance on injuring yourself, injuring someone else or tearing up a piece of equipment.”*

REAL ACCIDENTS- REAL LESSONS

ACCIDENT 1

FATAL LADDER ACCIDENT

Working from an extension ladder to install a wall receptacle, Matthew Tony leaned out from the ladder to the left to reach a junction box. The ladder was not tied-off and slid to the right as he leaned. As the ladder kicked out, Tony fell to his death.

LESSON: *With nine years of experience, Tony knew the right way to use a ladder. He didn’t use his “voice of experience.” It cost him his life.*

ACCIDENT 2

WELDING MISHAP LAUNCHES OXYGEN CYLINDER

Frank Guildford was preparing to weld a bracket onto an existing guardrail. Because he wasn’t close enough to the job, he pulled the hose to get more length. He had failed to chain the cylinder to the welding rig. When the oxygen cylinder fell over, the valve broke and the escaping oxygen turned the cylinder into a rocket. The cylinder flew through the plant and crashed into the office of Al Davis. Davis was struck in the head by the cylinder.

LESSON: *Although Frank Guildford knew the cylinder should be chained at all times, he failed to realize that safety practices cannot be separated from procedures. Al Davis is dead because of his mistake.*

ACCIDENT 3

INJURY WHILE GRINDING

John Spratt was cleaning up a weld with a hand-held grinder when he decided not to inspect the grinding disk before use. He also did not wear his face shield. The disk came apart, sending pieces flying in all directions. He lost several teeth. **LESSON:** *Always wear the proper personal protective equipment when necessary; inspect equipment before use to avoid injury.*

ACCIDENT 4

CUTTING DRUMS CAUSES EXPLOSION

Bill Carranza was cutting the tops of 55-gallon drums behind the shop. The drums had been cleaned prior to the cutting, but Bill didn’t know that one of the drums had been used by a painter for flushing his paint sprayer. Bill did not check the drums himself to see that they were clean. When Bill’s torch cut into the top of the drum with the paint vapors, they ignited and caused a major explosion.

LESSON: *Not inspecting the drum cost Bill Carranza his life. He ignored his welding experience that told him that cutting drums was extremely dangerous unless all vapors have been removed.*

ACCIDENT 5

WORKER FALLS IN CHEMICAL VAT

The basket lift on the stripper line was stuck and Albert Martinez was called to unjam it. He knew the vat was filled with sodium hydroxide that was heated to 190° F. Unable to reach the basket lift from the floor, Albert climbed onto the top of the guardrail so he could reach for the basket. His co-workers found his body in the vat when the first shift reported for work a short time later.

LESSON: *Never disregard safety policies. Think about the job you’re doing and its dangers. If it can’t be done safely, don’t do it.*

ACCIDENT 6

HOT DOG ATTITUDE KILLS MECHANIC

Maintenance mechanic Frank Ragston was called to investigate a problem on the overhead crane that served the pot line. Although he had never had an accident before, the company had threatened to fire Frank if his “hot-dog” attitude didn’t improve. While attempting to service the crane, Frank failed to lock

out a second crane on the rail that was radio controlled. Against company policy and all common sense, he also climbed out of the man lift and attempted to shimmy along the crane rail to get closer to the crane. Fueled by his hot dog attitude, he unhooked his safety line from the man lift. The radio controlled crane caused the track to become energized. Frank was first electrocuted and then fell to his death.

LESSON: *Frank's greatest flaw was his attitude about safety; this attitude is your most important defense against injury and death.*

ACCIDENT 7 FORKLIFT CRUSHES LEG

Roper Harde was checking out the mast hydraulic system on the company forklift. Unable to find someone to operate the levers that controlled the mast, he decided to work alone. While standing between the mast and the fork truck, he attempted to operate the levers with his other foot. When his foot slipped and activated the wrong lever, his leg and foot were crushed between the fork truck and the mast.

LESSON: *Harde's experience should have told him that what he was doing was dangerous, but his desire to finish the work kept him from hearing his "voice of experience." Safety isn't about good intentions; it's about what you are doing at the moment.*

ACCIDENT 8 ELECTRICIAN'S MISCOUNT LEADS TO DEATH

Maintenance electrician Red Fricks discovered an electric motor he had installed was turning in the wrong direction. He decided to reverse the motor's rotation by changing the power leads in the control panel. After locking out the power on the front of the motor control center, he went to the rear to access the motor leads. The motor control center was located in a row of panels. Red counted the panels from right to left to locate the correct panel when he should have counted left to right. He didn't check the power on the motor leads with his meter and proceeded to unhook them. The leads were hot and Red Fricks was electrocuted.

LESSON: *Red should have checked the leads with his voltage meter. There is no room for short cuts when it comes to job procedures.*

ACCIDENT 9 PRY BAR IMPALES WORKER

Lloyd Fleetmore was called to remove a jammed part on one of the large presses at the plant. He taped the interlock switch closed to allow the machine to operate. He then turned off the light curtain that provided additional protection. He cut the jammed part in half with a torch to make removal easier, then proceeded to use a pry bar to try to free it. As he was leaning against the pry bar to free the part, the machine forced the pry bar back towards Lloyd's midsection. The impaling bar killed him.

LESSON: *Lloyd knew the machine should have been put through a complex lockout procedure before being repaired. Work practices and safety procedures cannot be separated under any circumstance.*

ACCIDENT 10 POOR COMMUNICATION CAUSES ACID SPILL

A contractor crew at the plant had just cleaned a chemical storage tank and was refitting the tank with new lines. At the same time, the regular maintenance crew had just finished replacing the feed lines to the revamped tank. When the maintenance crew finished their work, they coupled the lines and opened the valve to check for leaks. The supply valve that fed the tank had not been locked out and the line had not been blanked. The unsuspecting contractor crew opened the line to check for leaks and was sprayed with acid coming through the pipeline.

LESSON: *Had proper communication taken place, a coordinated lockout plan would have been developed. Communication between contractors and maintenance crews is essential for ensuring everyone's safety.*

ACCIDENT 11

WORKERS DIE IN CONFINED SPACE

Ron Owens, Jim Kraycu and Tyrell Jones were working on a valve repair job on a mixing tank in a permit required confined space. Upon completion, Ron discovered that he had left his tools in the tank. Without putting his air mask back on, Ron returned to the tank to retrieve his tools. Due to lack of oxygen, he passed out at the bottom of the tank. Jim tried to rescue Ron and lost consciousness after he removed his air mask and placed it over Ron's face. After contacting a rescue team, Tyrell attempted to rescue his co-workers and also passed out. He was rescued but Jim and Ron were not.

LESSON: *Never enter confined spaces without taking the proper safety precautions. Short cuts can and do kill.*

REVIEW

- Confined space entry, lockout/tagout, hot-work permits are all examples of jobs where safety practices cannot be separated from job procedures.

- Accidents will happen if they are not anticipated and prevented. Take your time and think through your actions before you do them.

- An unsafe job is not worth doing. If you need help, ask for assistance. Don't let time restraints push you into doing unsafe tasks.

PREPARE FOR THE SAFETY MEETING OR TRAINING SESSION

Review each section of this Leader's Guide as well as the videotape. Here are a few suggestions for using the program:

Make everyone aware of the importance the company places on health and safety and how each person must be an active member of the safety team.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline.

Copy the review questions included in this Leader's Guide and ask each participant to complete them.

Copy the attendance record as needed and have each participant sign the form. Maintain the attendance record and each participant's test paper as written documentation of the training performed.

Here are some suggestions for preparing your videotape equipment and the room or area you use:

Check the room or area for quietness, adequate ventilation and temperature, lighting and unobstructed access.

Check the seating arrangement and the audiovisual equipment to ensure that all participants will be able to see and hear the videotape program.

Place or secure extension cords to prevent them from becoming a tripping hazard.

CONDUCTING THE PRESENTATION

Begin the meeting by welcoming the participants. Introduce yourself and give each person the opportunity to become acquainted if there are new people joining the training session.

Explain that the primary purpose of the program is to help maintenance workers develop good safety attitudes and to be prepared for the hazards that they can encounter on the job.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline. Lead discussions about dangerous situations at your facility that may confront maintenance employees. Use the review questions to check how well the program participants understood the information.

After watching the videotape program, the viewer will be able to identify the following:

- The components of a good safety attitude;
- Why these attitudes and safe work practices are important for preventing accidents;
- Specific tasks where safety practices are an integral part of the maintenance worker's job function;
- Why maintenance workers cannot afford to take short cuts.

**HIGH-IMPACT MAINTENANCE SAFETY
REVIEW QUESTIONS**

Name _____ Date _____

The following questions are provided to check how well you understand the information presented in the program.

1. ***Which of the following is not one of the three principles necessary for a good safety attitude?***
 - a. Accidents will happen if not anticipated and prevented.
 - b. Short cuts are sometimes necessary but require your supervisor's permission.
 - c. If a job can't be done safely, don't do it.
 - d. Safe work practices and job procedures are inseparable.

2. ***What did the welder who was instantly killed when the 55-gallon drum exploded fail to do?***

3. ***What two things should have been done by the maintenance worker who was struck in the mouth by the piece of grinding disk to avoid the accident?***
 - a. worn the proper protective equipment
 - b. used a different tool to grind the weld
 - c. inspect the grinding disk before using
 - d. gotten closer to the work so he could see it better

4. ***The contractor crew in the video was sprayed with acid because proper _____ had not take place with the regular maintenance crew.***

5. ***Frank Ragston, the worker with the "hot dog attitude," committed several mistakes. Which of the following is not a mistake he made while servicing the crane?***
 - a. he didn't lockout the second crane
 - b. he wasn't authorized to service the crane
 - c. he climbed out on the man lift
 - d. he didn't use the proper fall protection

6. ***Albert Martinez, the worker who fell into the vat of sodium hydroxide, should have listened to his "voice of experience" that would have told him to _____.***
 - a. cover up the vat before reaching for the basket lift
 - b. go get a ladder to reach the basket lift
 - c. ask a co-worker to help him with the task
 - d. all answers are correct

7. ***According to the video, oxygen cylinders used in welding should be chained _____.***
 - a. when time permits
 - b. when there is a risk of fire
 - c. at all times
 - d. when you need to extend the hose

8. ***What two things did Lloyd Fleetmore, the worker impaled by the pry bar, do instead of performing the complex lockout procedure on the press?***
 - a. he cut off the power to the press
 - b. he removed all of the machine's guards
 - c. he taped the interlock switch closed
 - d. he turned on the light curtain

ANSWERS TO THE REVIEW QUESTIONS

1. b
2. to check the drums for flammable vapors
3. a & c
4. communication
5. b
6. d
7. c
8. b & c