

HIGH-IMPACT FALL PREVENTION

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 site-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

Falls are one of the most underrated hazards on the job. After motor vehicle accidents, falls represent the greatest hazard to our safety in the workplace. Fall injuries account for a great deal of personal suffering as well as substantial losses in productivity. Employees can prevent most of these accidents if they make a conscious effort to protect themselves in every situation where slip, trip and fall hazards are present.

The 10 accidents re-created* in this video will show employees that short cuts and other common safety mistakes can lead to painful and sometimes fatal falls. Ladder safety, housekeeping, aerial lifts, fall arrest systems, proper footwear, recognizing hazards and other topics related to fall prevention are also featured in the program.

*Accidents re-created in this program are based on OSHA investigations or company records. Details have been changed in the interest of confidentiality and instructional clarity.

PROGRAM OUTLINE

THREE FACTORS THAT AFFECT ALL FALLS

- The amount of *friction* that exists between your shoes and the surface on which you are walking is a major factor in falls.
- *Momentum* affects falls because the more a person weighs and the faster he is moving, the harder he will fall.
- The force of *gravity* continually pulls you to the lowest point possible.

SLIPS

- Slips are loss of balance caused by lack of friction between your feet and surface on which you are walking or working.
- Substances that reduce traction and cause slippery surfaces include water, ice, snow, oil and loose granules.
- Always pay attention to the surface ahead and the manner in which you walk.

- When a walking surface is in less than optimum condition, take short steps to maintain your center of balance and point your feet slightly outward as you proceed.
- Improper footwear can cause loss of traction; choose shoes or boots with the correct sole composition for the area in which you work.
- Neoprene soles work well on wet or dry surfaces, but not on oily ones.
- Crepe soles are best for wet or dry concrete, but are not recommended for tile, smooth concrete or wood surfaces.
- Attachments can be worn with shoes to increase your traction. These include strap-on cleats for ice and boots that pull over your shoes that have the proper sole composition and tread.

TRIPS

- Trips occur when your feet strike an object while your body is moving with enough momentum to be thrown off balance.
- Haste is responsible for many trips; take your time when moving about an area and keep your work area free of clutter.
- If you are using extension cords or air lines, be sure to tape them to the floor or secure them out of the way of co-workers.
- Always store materials and tools when you are not using them to keep others from tripping over them.

SELECTING AND INSPECTING LADDERS

- Select ladders according to the load rating. The load rating should include your weight and that of the equipment to be carried.
- Use a non-conductive ladder when electrical energy is involved; other environments may require other choices of ladder types.
- Before erecting a step ladder, inspect it for broken rungs or footings, slippery or oily steps and check the locking hardware for wear.
- Choose another ladder if the one you have has been painted. Paint covers defects that can cause problems.
- If a ladder is not up to standard, tag it out of service and report it to your supervisor. Don't attempt to repair it unless you are authorized to do so by your company.
- Never assemble makeshift ladders out of chairs, benches, boxes or pallets.

PLACING LADDERS

- Try to avoid passageways, doorways and aisles when placing ladders; if this is not possible, erect barricades to protect pedestrians and lock or secure doorways to prevent the ladder from being struck.
- You may need the assistance of another person in these situations.
- Place the ladder on a firm, level surface. Avoid oily or wet surfaces if possible.
- Spread the ladder to the maximum open position and make sure the locking device is secure.

- Don't place ladders or risers of any kind. Tie them off when possible.

CLIMBING LADDERS

- Before climbing a ladder, check your personal condition. It's not a good idea to climb a ladder if you are overly tired or taking prescription medication.
- Make sure you have the materials and tools necessary for the task at hand before climbing the ladder; leaving the erected ladder unattended could be hazardous to co-workers.
- When climbing the ladder, always face forward and use both hands to secure yourself.
- Keep your belt buckle between the two rails of the ladder.
- Never stand on the last two rungs or use the top of the ladder as a standing surface.
- Once in position, don't overreach the vertical members of the ladder.

STRAIGHT/EXTENSION LADDERS

- While straight or extension ladders allow us to reach greater heights, we must also be aware that they provide the opportunity for more serious falls.
- After checking the ladder's mechanical condition, be sure to inspect the feet for wear, proper operation and proper traction.
- Use the one-to-four rule when placing a straight ladder. For every four vertical feet between the resting point and the floor, the base should be one foot horizontally away.
- Make sure the surface where the ladder will rest is secure, level and provides good traction. If it is wet or slippery, secure the feet to ensure good traction.
- Never put wedges or other leveling devices under a foot or use a stepladder as a straight ladder.
- When reaching the top, secure the ladder with a rope or chain to prevent it from slipping.
- If the job requires parts or supplies, hoist them up with a rope after you're in position.

THE FALL ARREST SYSTEM

- The body harness will provide a slow, controlled stop when used correctly with the other fall arrest components.
- The basic fall arrest system is comprised of three elements: the body harness, the lanyard with shock absorber and the tie-off point.
- The tie-off point will be located over your head and must be able to support 5000 pounds of dead weight per person that is tied off to it.
- Objects such as conduit, water pipe and two-by-fours cannot withstand the shock load.
- A lanyard must not exceed six feet in length. If you use a shock absorbing device, you must add three and a half feet for its elongation.
- Make sure there are no knots in the lanyard.
- When attaching the lanyard to a tie-off point, use a choker or a strap that is designed for this purpose.

- Make sure interlocking snaphooks are compatible with the equipment.
- Use double-action snaps that are self-locking to prevent them from folding back on themselves (known as a “roll out”).
- Personal fall protection must be used whenever the potential of a fall exists; it’s our last line of defense against our own mistakes.

AERIAL LIFTS

- You must be trained and authorized to use an aerial lift.
- When using the lift, never exit the cage while it’s elevated. Keep both feet on the cage floor at all times.
- Before moving the basket, check for overhead hazards. You must wear a hard hat and other required PPE when using the lift.
- Follow the manufacturer’s directions for lift operation; make sure you don’t exceed the operating limits.

STAIRS AND STEPS

- The leading cause of falls on stairs and steps is loss of traction; poor housekeeping is another contributor.
- Keep one hand on the stairway rail for added security. Never carry loads that block your vision.
- If you see oil, water or any other substance that could cause a fall, attend to it immediately or notify the proper supervisor.
- Never use steps for storage, not even for a short period of time.

FALL AWARENESS

- Pay attention to walking and working surfaces and your choice of footwear.
- Be qualified, authorized and trained before using ladders and other elevating equipment.
- Understand how falls happen and take the steps to protect yourself.
- Before using personal fall arrest equipment, understand that it is a system and that it will not prevent you from falling; only you can do that.

OTHER SAFETY TIPS

- Be aware that many falls occur through skylights, into excavations, etc. because barricades and guard rails have been removed.
- If you remove railings or guards while moving equipment or supplies, return them to their normal position as soon as the work is complete.
- Using a pallet as an elevated work surface is against company policy and OSHA standards.

ACCIDENTS AND THEIR SAFETY LESSONS

Accident 1: Worker Slips on Oil and Sustains Head Injury

Faith Martin was planning a Christmas dinner for the department. She went to the machine shop to ask George if he would help with the decorations. Running to catch him as he left for the break room, Faith slipped on an oily spot and sustained a nasty cut to her face.

Safety Lessons:

- 1) Understand the need for friction between your feet and where you are walking.***
- 2) Walk in work areas; don't run.***
- 3) Recognize warnings such as the yellow caution sign and hazards such as the oil on the floor.***

Accident 2: Maintenance Worker Injures Arm and Knee in Fall

Boyd Jensen was working on Saturday to rebuild rollers on the transfer line while it was down. He climbed out from under the conveyor to get his crescent wrench when he received a page over the loud speaker. He was expecting a call from his wife and hurried to answer the page. He tripped on a pallet and then fell, hitting his head on a sharp corner of a nearby machine.

Safety Lessons:

- 1) Understand the role momentum plays in tripping situations.***
- 2) Remember that hurrying can increase the chance of serious injury.***
- 3) Learn to recognize tripping hazards and pay particular attention to housekeeping at all of your work locations.***

Accident 3: Improper Footing at the Top of the Ladder Results in Fall

Bruce Rainer was using a step ladder to reach a valve on the process tank. He placed one of his feet on a nearby pipe. As his foot slipped off, Bruce and the ladder fell to the concrete below. He was fortunate that his injuries were not more serious.

Safety Lessons:

- 1) Always keep both feet on the ladder when reaching the height at which you intend to work.***
- 2) Don't overreach the ladder. Get down and reposition it as needed.***

Accident 4: Worker Falls from Ladder Placed on Pallet

Aaron Jackson was repairing a loud speaker in the production area. His ladder was too short, so he used a nearby stack of pallets as a platform to make it higher. He knew he needed a longer ladder, but he was thinking about his lunch break and ignored his own safety. The injuries he received from the fall cost him a lot more than a few minutes to get the right ladder.

Safety Lessons:

- 1) Never let other issues distract you from taking responsibility for your own safety.***
- 2) Don't place ladders on risers of any kind. The feet must always be secure, level and stable.***
- 3) Tie off ladders whenever possible.***

Accident 5: Overreaching Causes Employee to Fall to His Death

Tom Stewart and Robert Miksall were doing regular maintenance work on the air tool system in the assembly area. After setting up the extension ladder, Robert climbed up to change some fittings as Tom worked on the tools below. Tom noticed that Robert was leaning out too far but didn't say anything to him. After hearing the yell, Tom looked up to see Robert falling through the air and the ladder going the other way. Robert was killed instantly when his body was impaled by the steel rod.

Safety Lessons:

- 1) When you see someone taking chances with their safety, tell them immediately. It could save a life.***
- 2) Keep your body within the side rails of the ladder; don't overreach.***
- 3) Tie off the ladder whenever possible.***

Accident 6: Worker Climbs Out of Lift Cage and Is Killed in Fall

Orin Millburg and Josh Hanson were servicing the overhead crane in the fabrication shop when Orin decided to unhook his lanyard so he could climb out on the crane. He knew he was violating safety rules,

but thought he would save time by not having to move the lift. Besides, it would just take a minute to finish the job. He ignored Josh's warning not to leave the basket and then fell to his death.

Safety Lessons:

- 1) Knowing the safety rules is not enough. You must believe in them so you will always do the right thing for your own safety as well as the safety of co-workers.*
- 2) When you are in an elevated cage or basket, keep both feet on the bottom at all times.*
- 3) Always wear personal fall protection while elevated and be sure to tie off.*
- 4) Never use aerial lifts (or other equipment) unless you have been trained and authorized by the company.*
- 5) Listen to co-workers when they warn you about unsafe actions.*

Accident 7: Employee Falls from Area Where Guard Rails Have Been Removed

Al Duchek was in charge of hoisting spare parts up to the upstairs warehouse. Part of the job involves removing guardrails and putting them back in place after the job is complete. He was putting the basket back in its proper storage place and was getting ready to put the rails back up when he lost his balance and fell through the open hatchway. Fortunately, Al believed in always using his personal fall protection equipment and it saved his life.

Safety Lessons:

- 1) Always wear required personal fall protection equipment.*
- 2) Replace guardrails as soon as possible.*
- 3) Think about the hazards you face and take proper actions to assure your safety.*

Accident 8: Fall from Makeshift Platform Kills Worker

Worth Janick and Claude Mathias were asked to replace a sodium vapor lamp on the shipping bay. It was a rush job and the two experienced electricians were glad to respond. They should have known better than to use a pallet as an elevated work platform, but it was quicker and easier than going back to their shop for the proper equipment. When the pallet broke and Worth fell to the floor, he was killed instantly.

Safety Lessons:

- 1) Never use a pallet on a lift truck as an elevated work platform.*
- 2) Don't let a rush job cause you to compromise your safety sense.*
- 3) Take the extra time to get the appropriate tools and equipment; it will be beneficial in the long run.*
- 4) Be concerned about the safety of your co-workers. Let them know when you see a problem.*

Accident 9: Running Down Stairs Results in Fall and Injury

Steve Runsford was in a hurry when he ran down the outside steps of the precipitator building. He stepped on some wet steps and his feet went out from under him. He was carrying something in each hand, so he was not holding the handrail at all. He knew better, he just didn't do better. His serious injuries were not worth the small amount of time he was trying to save.

Safety Lessons:

- 1) Always walk on stairs; never run.*
- 2) Keep one hand on the handrail.*
- 3) Anticipate hazards such as wet steps and take extra precautions.*
- 4) Understand the huge risks you take when you sacrifice safety for speed.*

Accident 10: Fatal Fall Occurs After Worker Fails to Hook Up Lanyard

Milt Cummins, the welder on the crew, was late in arriving at the work site. Milt had his harness and lanyard on and the crew chief told him to hook up and cut some pieces loose that were holding up progress. As Milt was getting into position, another crew member tripped on some tools and fell into him. Milt lost his balance and fell off the platform to his death. If he had been hooked up, his harness would have saved him.

Safety Lessons:

- 1) Always hook up when a fall hazard exists.*
- 2) Don't let hurrying and the stress of being late cause you to ignore safety rules.*
- 3) Housekeeping is even more important when your work surface is elevated.*
- 4) When working on an elevated work surface, use extra care to spot all safety hazards.*

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 make employees aware of fall protection measures that will prevent them from becoming injured or killed and the importance of taking these measures in every situation where the potential for a fall exists.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline. Lead discussions about work situations at your facility where the potential for falls exists and what employees can do to prevent them. 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 explain the following:

- How short cuts and other safety errors lead to falls that result in serious injury and death;
- How to properly select, inspect, place and climb different types of ladders;
- Components of the fall arrest system and other forms of fall protection;
- Hazards associated with aerial lifts and other lifting devices;
- Common causes of slips, trips and falls and how to prevent them.

**HIGH-IMPACT FALL PREVENTION
REVIEW QUESTIONS**

Name _____ Date _____

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

1. What should you do if the ladder you have chosen has been painted?
 - a. inspect the ladder thoroughly for damage
 - b. make sure not step on any painted surfaces while climbing
 - c. sand down any slippery surfaces
 - d. choose another ladder

2. The tie-off point located above your head must be able to support _____ pounds of dead weight per person that is tied off to it.
 - a. 250
 - b. 500
 - c. 5,000
 - d. 10,000

3. You should not wear shoes with neoprene soles if the surface you are working on is _____.
 - a. wet
 - b. dry
 - c. oily
 - d. wooden

4. For every _____ vertical feet between the resting point and the ground, a ladder's base should be one foot horizontally away.

5. What is the leading cause of falls on steps and stairs?
 - a. carrying large objects that block person's view
 - b. loss of traction
 - c. poor housekeeping
 - d. using stairs as storage

6. A lanyard must not exceed _____ feet in length.
 - a. 6
 - b. 12
 - c. 15
 - d. 25

7. When is it safe to climb out of an aerial lift cage while it is elevated?
 - a. after you have hooked up
 - b. if you aren't more than 10 feet above ground
 - c. as long as one foot remains on the cage floor
 - d. never

8. It's never safe to use a pallet on a lift truck as an elevated work surface.
 - a. true
 - b. false

9. When you see someone taking chances with their safety while working above ground, you should _____.
 - a. tell him or her about it after he comes down so you don't distract him
 - b. tell your supervisor once the job is complete
 - c. tell him or her immediately
 - d. ignore it—his or her safety is not your concern

ANSWERS TO THE REVIEW QUESTIONS

1. d

2. c

3. c

4. 4

5. b

6. a

7. d

8. a

9. c