

## **PRESENTER'S GUIDE**

# **"AERIAL LIFTS IN INDUSTRIAL AND CONSTRUCTION ENVIRONMENTS"**

**Training for the Use of Aerial Lifts**

**Quality Safety and Health Products, for Today... and Tomorrow.**

# **OUTLINE OF MAJOR PROGRAM POINTS**

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The following outline summarizes the major points of information presented in the program. The outline can be used to review the program before conducting a classroom session, as well as in preparing to lead a class discussion about the program.

- **Reaching high places can be challenging in many work environments.**
  - But whether you find yourself on a construction site, changing light bulbs in a warehouse or performing outdoor utility work, aerial lifts can help you reach work areas that would otherwise be almost impossible to get to.
- **OSHA describes an aerial lift as a "vehicle-mounted, boom-supported work platform used to elevate personnel to job sites that are above the ground."**
  - They are mobile, and can usually be set up and operated by a single person.
- **This program will introduce you to various types of aerial lifts, make you aware of the hazards that are associated with them, and give you the information that you'll need to work safely... whether you're using a lift or working around one.**
- **Depending on the work that you're doing, there are a variety of aerial lifts to choose from.**
  - Extensible Boom Platforms use a single arm to lift their work platform to the desired height.
  - Aerial Ladders consist of a single or multiple-section extendable ladder, such as the powered ladders on fire trucks.
  - Articulating Boom Platforms contain two or more hinged boom sections, which allow the arm to maneuver into difficult to reach places.
  - Vertical Towers are designed to elevate a platform straight into the air, using a mechanism such as a telescoping mast.

- **Most aerial lifts are made up of four major elements:**
  - A "base", with supports for the lift's platform or bucket.
  - A "lifting mechanism".
  - The platform or bucket itself.
  - Controls, which are often located on both the base and the platform.
  
- **The main difference between the various types of aerial lifts is in the mechanism that lifts the platform.**
  - Typically it's hydraulic, pneumatic or driven by electrically powered gears.
  
- **In order to operate an aerial lift you need to be authorized and properly trained on the specific type of lift you'll be using. Much of the information that you'll need is included in this program, such as:**
  - An examination of the electrical, "fall" and "falling object" hazards associated with using an aerial lift.
  - Techniques for controlling, minimizing or eliminating these hazards.
  - How to recognize and avoid unsafe conditions in the areas where you'll be using a lift.
  - How to determine whether you're exceeding a lift's maximum load capacity.
  - When and how you should inspect an aerial lift.
  - How to operate a lift correctly.
  - How to safely move a lift.
  
- **OSHA requires that anyone who works with or near aerial lifts be trained on the various hazards related to lift equipment, as well as on how to control or minimize these hazards.**
  - One of the primary hazards related to working with aerial lifts is falling from the platform or bucket.
  
- **If you work on a lift, you must use appropriate fall protection.**
  - Always inspect your equipment before using it.
  - Make sure that there are no cuts, frayed edges or other damage.
  - If the equipment is damaged, it must be removed from service and replaced.

- **Attach the fall protection equipment to the manufacturer's approved anchor point on the boom or bucket.**
  - Never attach it to an adjacent beam or structure (if you do, you could find yourself pulled from the lift and left hanging if the lift moves or tips).
- **Another serious hazard you want to avoid is "tipping".**
  - This can occur if a lift is overloaded or isn't properly stabilized.
- **To minimize the possibility of a tip-over, you should never exceed the load limit of the lift you're working with.**
  - Be sure to take into account your own weight, plus the weight of any tools or other equipment that you'll have with you.
- **Proper placement of the lift will also help in avoiding a tip-over.**
  - If your lift is equipped with outriggers, use them.
  - Make sure that they're set up on stable ground.
- **"Falling objects" can be a hazard when you're using an aerial lift as well.**
  - Even if you're careful, tools or materials can sometimes "leave" the platform and head earthward.
- **Protect people who are working around the lift by marking off the area with safety cones or tape.**
  - If workers must be on the ground while a lift is being used, make sure they are wearing hard hats.
- **Your surroundings can also be hazardous when you're operating an aerial lift.**
  - Overhead hazards can be especially troublesome.
- **If you're working indoors, you need to be aware of beams, rafters and ceiling heights.**
  - Keep your eye out for HVAC ducts, piping and cable race-ways as well.
- **If you're outdoors, you want to pay attention to trees and light poles.**
  - Stay a minimum of ten feet away from any of these hazards.

- **"High voltage power lines can be extremely dangerous, and have their own set of rules based on the amount of electricity that they're carrying."**
  - If possible, the lines should be de-energized.
  - If it's not possible to de-energize the lines, you should stay as far away from them as possible.
- **OSHA says that if you aren't a qualified electrical worker you and any conductive objects that you're holding should not come within 10 feet of a line carrying 50,000 volts.**
  - For higher voltage lines you must stay even further away.
- **Before you use an aerial lift you want to make sure it's in good working order and there aren't any problems with the area where you'll be set up.**
- **There are two different inspections that must be performed before using a lift:**
  - The "pre-start inspection".
  - The "work site inspection".
- **You should inspect your lift prior to the start of every work shift.**
  - This will ensure that nothing's happened to it while you've been away, and that it's still in good working condition.
- **You'll find a list of things to be inspected in the operator's manual.**
  - It's been compiled by the equipment manufacturer and should be followed rigorously.
- **However, there are a number of things that you should look at on any lift.**
  - Check that fluids are at their proper levels.
  - Make sure wheels and tires are not damaged and are properly inflated.
  - Verify that the battery and charger are in good working order.
- **Confirm that the controls operate correctly, and that the horn, gauges, lights and alarms work properly.**

- Test the steering and brakes as well.
- **Be sure to inspect all the "lift components", especially the power system, guardrails and other safety devices.**
  - Never use a lift if any of its components are defective.
  - Remove it from service until a qualified person has made repairs.
- **It's also important to inspect the work site where you'll be using an aerial lift.**
  - Survey the work zone and eliminate any hazards before operating the lift.
- **If you're working outside, look for:**
  - Drop-offs, holes or other potentially unstable surfaces.
  - Slopes, ditches or bumps.
  - Overhead power lines.
  - High wind, rain and other hazardous weather conditions.
- **If you're working inside, look for:**
  - Low ceilings, beams or rafters.
  - Driving obstructions, such as other equipment or storage racks.
  - Materials or debris on the floor.
- **Doing these pre-inspections on your equipment and your work area are essential, and will help you to avoid dangerous situations.**
- **Once you have ensured that your aerial lift will operate correctly and the area where you'll be working is safe, it's time to set up your lift for use.**
- **First, position the lift where you want it.**
  - If the lift has outriggers or other stabilizers are available, position them on a level, solid surface.
  - If you're outdoors, you may need to move some earth or lay down "pads" to get a proper base.
  - Make sure that the access gates and openings can be closed and locked.

- **Look through the Operator's Manual for any instructions or "tips" on using the lift.**
- **Review the signs and notices that are posted on the lift itself, including any warnings, cautions, restrictions, rated workload and maximum platform height.**
- **Set up work zone warnings, such as cones, tape or signs this will:**
  - Restrict access and let others know that you're working in the area.
- **Examine your fall protection equipment prior to putting it on.**
- **Once you've determined that your lift is stable and everything is set up correctly, you're ready to go to work.**
  - Climb into the platform or bucket, then close and lock any gates or doors.
- **Make sure your fall protection is attached to an appropriate point on the lift.**
  - Never attach fall protection to adjacent structures.
  - This could cause you to be pulled out of the lift if it tips or fall.
- **Remember to stand firmly with both feet flat on the platform's floor.**
  - Don't lean on the guardrail or gate, and never sit or climb on the rails.
- **Test the controls to make sure the lift operates smoothly and will maneuver correctly.**
- **Some aerial lifts may have safety features built in, such as a "dead man's switch", that halts the machine if the operator is injured or incapacitated.**
  - Make sure these are functioning as well.
- **Slowly raise yourself to the desired height and location.**
  - It's important that you never try to use ladders, planks, stools or other devices on the lift to extend your reach, or to bridge gaps between the lift and the area where you want to work.



- **Be sure not to exceed the vertical or horizontal limits recommended by the manufacturer.**
  - This information can be found in the operator's manual or on warning stickers affixed to the lift.
- **Never override hydraulic, mechanical, electrical or pneumatic safety devices.**
  - These are in place to keep the machine operating safely.
- **If the lift can't take you to the work, you may need to move the lift, consider using another type of lift, or use a ladder or scaffold to reach your destination.**
  - But never move a lift while it's raised, unless it's specifically designed for this purpose.
- **There may be times when you need to get off a lift to get your work done.**
  - If you have to transfer from the lift to an adjacent structure, the platform must be within one foot of the structure.
  - Use a "two lanyard" system, with one lanyard anchored to the platform and the other anchored to the structure.
  - Once you've successfully moved to the structure, you can disconnect the lanyard from the platform.
- **Finally, remember that unless there is an emergency situation, lower-level controls should not be operated while the lift is raised unless the worker in the lift grants permission.**
- **Once your work on a lift is done, there are still things you need to do to break down and return your lift to its "home".**
  - When you're ready to lower the lift, make sure that there are no tools, debris or people below.
  - You may want to enlist the aid of a "spotter" to ensure that the area is clear.
  - If you choose to use a spotter, be sure to work out the verbal instructions or hand signals that you'll be using to communicate.

- **Bring the lift down slowly and carefully, until it's resting on its supports.**
  - Secure the platform or bucket to the supports, to prevent it from moving during transport.
  - If you've used them, return and stow outriggers or other stabilizers.
- **Lastly, remove any warning signs, caution tape or safety cones from the work area.**
- **Even if you're not operating a lift, you may be affected by having one around.**
  - If you're working in the vicinity of an aerial lift, be sure that you understand the hazards a lift can create.
  - On the ground you can still face equipment "tip-overs", falling objects, even electrocution.
- **Whenever possible stay clear of the work area where the lift is located.**
  - If you have to go into the area, wear appropriate personal protective equipment, including a hard hat.
- **Be on the lookout for other lifts that may be entering or exiting your work area.**
  - Be aware of the lift's "blind spots" and make sure that the operator can see you.
  - And be sure to stay clear of lifts that are raising or lowering their booms.
- **You may likely have to move a lift during the course of working with it.**
  - Following "safe driving" practices is a must when transporting the lift any distance.
  - Never drive a lift when the bucket or platform is up, unless the lift is specifically designed for that purpose.
- **Avoid reckless driving or "horseplay" when you're moving.**
  - Even though they're large, lifts can be easily damaged and expensive to repair.

- **Obey the posted speed limit at all times.**
  - If there is no posted speed limit, maintain a slow, steady speed.
  - Always give pedestrians the right of way.
- **Aerial lifts can help you to reach places that you'd never be able to reach safely without them.**
  - But they can be dangerous if you don't know how to use or work around them properly.

**\* \* \* SUMMARY \* \* \***

- **Make sure you're trained to use all of the aerial lifts you'll be working with.**
- **Know the hazards associated with aerial lifts and how to avoid them.**
- **Inspect an aerial lift for damage or unsafe conditions before you use it.**
- **When you're working on the ground, be aware of the hazards aerial lifts can present.**
- **Know how to properly set up and operate your lift, as well as how to break it down and return it to its "home".**
- **When your work requires you to go "above and beyond," aerial lifts can make your job a lot easier.**
  - And with the proper training and safety precautions, you can avoid the hazards that can come with working off the ground!