

Aerial Lifts

Acknowledgments: Occupational Safety & Health Administration

Aerial lift is any vehicle-mounted device used to elevate personnel, including: Extendable boom platforms, Aerial ladders, Articulating (jointed) boom platforms, Vertical towers, and Any combination of the above. Aerial lifts have replaced ladders and scaffolding on many job sites due to their mobility and flexibility. They may be made of metal, fiberglass-reinforced plastic, or other materials. They may be powered or manually operated and are aerial lifts whether they can rotate around a primarily vertical axis. Many workers are injured or killed on aerial lifts each year. OSHA provides the following information to help employers and workers recognize and avoid safety hazards they may encounter when they use aerial lifts.

Hazards Associated with Aerial Lifts

The following hazards, among others, can lead to personal injury or death:

- Fall from elevated level
- Objects falling from lifts
- Tip-overs
- Ejections from the lift platform
- Structural failures (collapses)
- Electric shock (electrocutions)
- Entanglement hazards
- Contact with objects
- Contact with ceilings and other overhead objects.

Training

Only trained and authorized persons can operate an aerial lift. Training should include:

- Explanations of electrical, fall, and falling object hazards
- Procedures for dealing with hazards
- Recognizing and avoiding unsafe conditions in the work setting
- Instructions for correct operation of the lift (including maximum intended load and load capacity)
- Demonstrations of the skills and knowledge needed to operate an aerial lift before operating it on the job
- When and how to perform inspections
- Manufacturer's requirements

Retraining

Workers should be retrained if any of the following conditions occur: An accident occurs during aerial lift use, Workplace hazards involving an aerial lift are discovered, or a different type of man lift is used. Employers are also required to retrain workers who they observe operating an aerial lift improperly.

What to Do Before Operating an Aerial Lift

Pre-start Inspection

Prior to each work shift, conduct a pre-start inspection to verify that the equipment and all its components are in safe operating condition. Follow the manufacturer's recommendations and include a check of:

Vehicle components

- Proper fluid levels (oil, hydraulic, fuel and coolant)
- Leaks of fluids
- Wheels and tires
- Battery and charger
- Lower-level controls
- Horn, gauges, lights and backup alarms
- Steering and brakes

Lift components

- Operating and emergency controls
- Personal protective devices
- Hydraulic, air, pneumatic, fuel and electrical systems
- Fiberglass and other insulating components
- Missing or unreadable placards, warnings, or operational, instructional and control markings
- Mechanical fasteners and locking pins
- Cable and wiring harnesses
- Outriggers, stabilizers and other structures
- Loose or missing parts
- Guardrail systems

Do not operate any aerial lift if any of these components are defective until it is repaired by a qualified person. Remove defective aerial lifts from service (tag out) until repairs are made.

Work Zone Inspections

Employers must assure that work zones are inspected for hazards and take corrective actions to eliminate such hazards before and during operation of an aerial lift. Items to look for include:

Drop-offs, holes, or unstable surfaces such as loose dirt, Inadequate ceiling heights, Slopes, ditches, or bumps, Debris and floor obstructions, Overhead electric power lines and communication cables; Other overhead obstructions, Other hazardous locations and atmospheres, High wind and other severe weather conditions, such as ice, and The presence of others in close proximity to the work.

What to Do While Operating an Aerial Lift

Fall Protection

- Ensure that access gates or openings are closed. & Stand firmly on the floor of the bucket or lift platform.
- Do not climb on or lean over guardrails or handrails & Do not use planks, ladders, or other devices as a working position.
- Use a body harness or a restraining belt with a lanyard attached to the boom or bucket & Do not belt-off to adjacent structures or poles while in the bucket.

Operation/Traveling/Loading

- Do not exceed the load-capacity limits. Take the combined weight of the worker(s), tools and materials into account when calculating the load.
- Do not use the aerial lift as a crane & Do not carry objects larger than the platform.
- Do not drive with the lift platform raised & Do not operate lower level controls unless permission is obtained from the worker(s) in the lift (except in emergencies).
- Do not exceed vertical or horizontal reach limits & Do not operate an aerial lift in high winds above those recommended by the manufacturer.
- Do not override hydraulic, mechanical, or electrical safety devices.

Overhead Protection

- Be aware of overhead clearance and overhead objects, including ceilings
- Do not position aerial lifts between overhead hazards if possible
- Treat all overhead power lines and communication cables as energized, & stay at least 10 feet away
- Ensure that the power utility or power line workers de-energize power lines in the vicinity of the work

Stability in the Work Zone:

- Set outriggers on pads or on a level, solid surface & Set brakes when outriggers are used.
- Use wheel chocks on sloped surfaces when it is safe to do so & Set up work zone warnings, such as cones and signs, when necessary to warn others.

Insulated aerial lifts offer protection from electric shock and electrocution by isolating you from electrical ground. However, an insulated aerial lift does not protect you if there is another path to ground (for instance, if you touch another wire). To maintain the effectiveness of the insulating device, do not drill holes in the bucket.