

OREGON MILITARY DEPARTMENT	NUMBER: AGP-99.200.11
ADJUTANT GENERAL PERSONNEL	EFFECTIVE DATE: July 1, 2020
SUBJECT: Aerial Lift Policy	

APPLICABILITY:

This policy and the procedures contained herein are applicable to state employees

AUTHORITY/REFERENCE:

OAR 437-003-0074, OAR 437-004-3660, 29 CFR 1926.453, 29 CFR 1926.502, 29 CFR 1910.269 (p)

ATTACHMENTS:

1. Scissor Lifts
2. Energized Power Lines
3. Pre-Start Inspection Guidelines

PURPOSE:

This policy provides direction and safety protocols for employees that use powered boom-supported elevated work platforms (aerial devices) and bucket trucks in the performance of their job duties.

This document does not address manually propelled aerial platforms, lifting personnel by crane or fork lifts.

RESPONSIBILITY:

Employees:

- Shall follow the written requirements as defined in this policy.
- Shall attend required training prior to operating equipment covered in this policy.

Supervisors/Managers

- Shall ensure this safety policy is implemented and followed in their areas of responsibility.
- Shall make available adequate training for all employees that are affected by this policy and provide adequate time for training, practice, review of manuals and equipment inspections.

Employee Safety Staff:

- Shall provide consultation as necessary on matters related to the implementation and compliance with this standard.
- Shall assist in arranging for the necessary training.

DEFINITIONS:

Aerial Device: A vehicle-mounted device, telescoping or articulating or both, which is used to position personnel.

Aerial Ladder: An aerial device consisting of a single or multiple-section extendable ladder.

Bucket Truck: A vehicle-mounted single or multi-worker bucket which telescopes or articulates or both which is used to position personnel.

Clear Zone: A visibly marked area around an aerial device or bucket truck which is exposed to the hazards of falling materials from the elevated work platform or the rotating structure of the device. A clear zone falls under OSHA's General Duty Clause (see definition below). Toe boards are required to be in place any time a lift is used to minimize the hazard possibility from falling objects.

Competent Person: A worker who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are hazardous and is authorized to take prompt correcting measures to eliminate them.

General Duty Clause (OSHA): "Each employer shall furnish to each of his employees, employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees".

Ground Person: Worker on ground supporting the "up" workers in the basket or platform, by observing operational hazards, providing tools and supplies, and assisting in emergencies.

Insulated Aerial Device: An aerial device designed for work on energized lines and apparatus.

Manually Propelled Elevating Aerial Platform: A manually propelled aerial platform where the platform cannot be positioned completely beyond the base. The guardrail system generally provides the fall protection.

Platform: Any personnel-carrying device (basket or bucket) which is a component of an aerial device.

Scissor Lift: A self-propelled aerial platform having a work platform that cannot be positioned completely beyond the base (generally only goes up or down). The guardrail system generally provides the fall protection.

Toeboard: A toeboard shall be erected along the edge of platforms more than 10 feet (3.1 m) above lower levels for a distance sufficient to protect employees below, except on float (ship) scaffolds where an edging of (¾ x 1 ½ inch (2 x 4 cm) wood or equivalent may be used in lieu of toeboards. Toeboards must be at least 3.5" **tall**, with no more than a 1/4" gap at the bottom. It also must be able to withstand 50lbs being applied to it.

GUIDANCE:

Employees shall not operate aerial devices without proper training in their use and safety.

Operations shall not exceed the rated lift capacity of the aerial device.

Operators shall comply with the fall protection and/or fall restraint procedures and training requirements.

Anchoring an employee in the lift to adjacent structures, poles or equipment while on the elevated platform is not permitted.

Employees shall stand firmly on the floor of the platform and shall not sit or climb on the edge or railing of the platform or basket.

Operators shall read and understand the material that is contained in the operator's manual for the equipment being used prior to operation.

The operator shall conduct the required pre-trip/pre-use inspection as required by the licensed operator's license and the operator's manual.

Before each day's use, the lift equipment shall be inspected and the controls tested.

A task assessment/Job Hazard Assessment (JHA) shall be conducted and/or reviewed for the work being done with the equipment before operations begin.

Maintain a Minimum Safe Approach Distance (MSAD) from energized power lines. (See Attachment 2).

When moving a bucket truck with workers in the bucket, the bucket should be cradled in the down position, and moved at very slow speeds (less than 3 mph). When moving a scissor lift, the lift should not be in an elevated position. Follow the manufacturer's instructions for safe movement

The “Ground Person” shall not operate the equipment controls without permission of the employee “in the air”, except in emergencies.

Personnel on the ground around the equipment should maintain a clear zone (defined in Definitions above) while the work platforms are elevated and wear appropriate Personal Protective Equipment (PPE).

The use of a Bucket Truck Ground Person is encouraged. Review the expectations of the ground person (Attachment 2) to ensure a clear understanding of the role and responsibilities

Employees or other non-authorized persons who are not training in aerial device use or safety are not allowed in an aerial device.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Employees operating aerial devices or bucket trucks must use PPE that is applicable to the hazards that are present at the job site.

Typical PPE based on task hazard assessment may include:

- Head protection: Hard hat
- Eye Protection: Safety glasses or other approved equipment as identified by task and/or managers approval.
- Fall Protection: A body harness shall be worn and a lanyard attached to the boom or basket when working from an aerial lift.
- Hi-visibility garment: ODOT approved vest or Class II or better American National Standards Institute (ANSI) garment when working on highway or highway right-of-way.

Visitors on elevated platform must use:

- Same as the “Employees.” Exception: Foot protection shall be at a minimum, durable closed toe shoes.
- The trained operator shall ensure proper fitting and use of PPE.

Ground personnel must use:

- Adjacent personnel shall wear hard hats when workers are elevated.

RESCUE:

Operational planning shall include rescue plans for workers in aerial devices.

Working alone is not recommended; however, at a minimum, elevated workers shall have communication device(s) to call for assistance or they shall have self-rescue provisions (descending devices) along with appropriate training and practiced use.

EQUIPMENT INSPECTION:

Periodic inspections of aerial devices shall be according to the manufacturer’s recommendation.

Non-conductive/insulated booms shall be periodically tested according to manufacturer recommendations.

Pre-operation inspections (See Attachment 3) shall be conducted (the day prior to use) including controls operated per the manufacturer's owner manual.

Aerial lifts shall be taken out-of-service while awaiting repair.

Aerial devices having missing or illegible labels or missing operator's manuals may only be operated by employees who are pre-qualified on these devices while awaiting replacement.

All inspections shall be documented using an inspection checklist (Obtained from the manufacturer of the machinery). Periodic (Manufacturer recommended) reports shall be maintained for the life of the equipment. Daily inspection reports may be discarded after 1 year.

WORKING NEAR POWER LINES:

Most aerial devices are not designed to be operated near power lines.

Only employees specially trained for electrical hazards (Example: electricians) operating in certified non-conductive/insulated aerial devices may work in the required "Minimum Safe Approach Distance" restricted spaces. (See Attachment 2 and reference OSHA 437-002-0047).

A pre-task safety review should be completed before working near power lines.

A safety observer should be used when it becomes difficult for the operator to identify the restricted space. The safety observer's only task is to watch the clearance and audibly warn the operator if it appears that the restricted space will be breached.

TRAINING REQUIREMENTS:

Training is required by OSHA before operating an aerial device or bucket truck. Exception: New operators may work under the direct supervision of qualified staff to develop skills.

Employees shall complete training through a competent person, online or classroom and shall 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.

An evaluation of each aerial operator's performance shall be conducted at least once every 3 years by the supervisor or competent person designated by the supervisor. The evaluation shall ensure that the operator is able to demonstrate proficiency in the safe operation of the equipment.

Refresher training, provided by a Competent Person, may be required to maintain and demonstrate proficiency.

Refresher/Retraining in relevant topics shall be provided to the operator when:

- The operator has been observed to operate the vehicle in an unsafe manner.
- The operator has been involved in an incident or near-miss.
- The operator has received an evaluation that reveals the operator is not operating the equipment safely.
- A different type of aerial lift is used.
- Workplace hazards involving an aerial lift are discovered.

Training on basic fall protection and rescue plans is required for all bucket truck or aerial lift operators.

- All training and evaluations must be documented and maintained on-site as well as in AGP.
- Formal training documentation shall reflect: date of training, date of evaluation, person(s) conducting training/evaluation.

Employees operating rented aerial devices for short term use shall complete training and proficiency testing adequate to the specific piece of equipment, prior to operation of the equipment.

This training may be brief and delivered by the equipment rental agency or by another competent operator, but must cover the safety key points, especially:

- Equipment tip-over hazards.
- Requirements for fall protection, self-rescue and PPE.
- Vehicle stability considerations, the effects of uneven ground and wind.
- Electrical and overhead hazards.
- Equipment controls and operator responsibilities, including a review of the operator's manual.
- Training may be documented in the same manner as crew safety meetings.

INQUIRIES/QUESTIONS: Questions pertaining to this guidance may be directed to AGP at (503) 584-3588.



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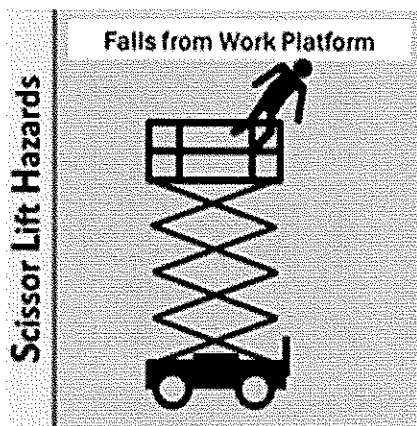
SCISSOR LIFTS: Attachment 1

Scissor lifts are mobile supported scaffold work platforms used to safely move workers vertically and to different locations in a variety of industries including construction, retail, entertainment and manufacturing. Scissor lifts are different from aerial lifts because the lifting mechanism moves the work platform straight up and down using crossed beams functioning in a scissor-like fashion. Although scissor lifts present hazards similar to scaffolding when extended and stationary, using scissor lifts safely depends on considering equipment capabilities, limitations and safe practices.

Employers must comply with the following OSHA standards (29 CFR) to protect workers from hazards associated with scissor lifts.

Many scissor lifts are covered under OSHA's Scaffolding standard. For technical assistance, please refer to OSHA's eTools and other resources on scaffolding.

Employers need to assess the worksite to identify all possible hazards in order to select the appropriate equipment for the task. Employers who use scissor lifts need to evaluate and implement effective controls that address fall protection, stabilization and positioning. Only trained workers are allowed to use scissor lifts, and employers must make sure that those workers show that they can use a scissor lift properly. Safe scissor lift use includes properly maintaining the equipment, following the manufacturer's instructions, providing workers training and needed personal protective equipment (PPE), and implementing safe work practices.



Scissor lifts must have guardrails installed to prevent workers from falling (see 29 CFR 1926.451(g) or 29 CFR 1910.29(b)). [Note: for this section, the criteria and practices requirements for guardrail systems on scaffolds are contained in 29 CFR part 1926, Subpart L or 29 CFR 1915.73].

Employers should train workers to:

- Check to see that a guardrail system is in place before working on the scissor lift.
- Only stand on the work platform; never stand on the guardrails.
- Keep work within easy reach to avoid leaning away from the scissor lift.

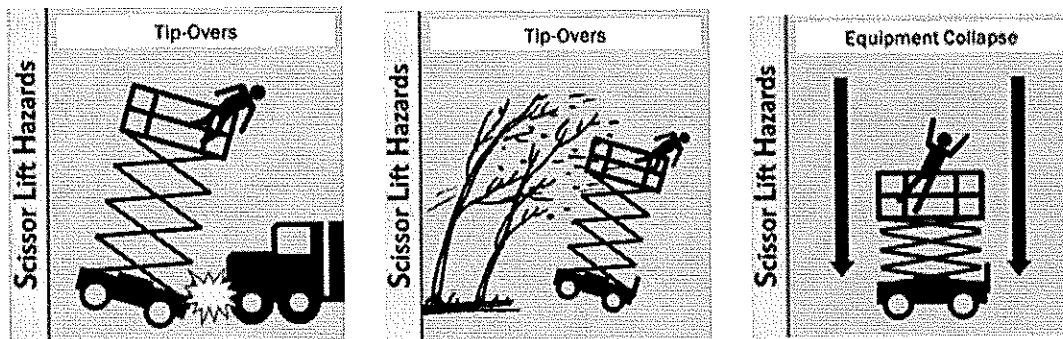
Employers should ensure that scissor lifts are stable and will not tip over or collapse.

Some safe work practices to ensure safe, stable conditions for scissor lift use include:

- Follow the manufacturer's instructions for safe movement—this usually rules out moving the lift in an elevated position.
- Isolate the scissor lift or implement traffic control measures to ensure that other equipment cannot contact the scissor lift.
- Select work locations with firm, level surfaces away from hazards that can cause instability (e.g., drop-offs, holes, slopes, bumps, ground obstructions, or debris).
- Use the scissor lift outside only when weather conditions are good.
- Scissor lifts rated for outdoor use are generally limited to wind speeds below 28 miles per hour.

Although rare, the collapse of scissor lifts can be prevented if employers:

- Ensure that safety systems designed to stop a collapse are maintained and not bypassed.
- Never allow the weight on the work platform to exceed the manufacturer's load rating.
- Never allow equipment other than the scissor mechanism to be used to raise the work platform (e.g., using a forklift to lift the work platform).
- Keep the lift from being struck by other moving equipment on the worksite.



Positioning the scissor lift to avoid crushing or electrocution hazards is important for safe use.

Crushing hazards are present in workplaces using scissor lifts and may expose workers nearby, even those not working on the scissor lift.

Scissor lifts present crushing hazards similar to vehicles and other mobile equipment at worksites. Employers should train workers to be watchful when:

- A moving scissor lift is near a fixed object.
- A moving vehicle and the scissor lift are operating closely.
- The scissor lift passes under a fixed object, such as a door frame or a support beam.

Positioning the scissor lift to avoid electrocution, arc flash, and thermal burns is important for safely using scissor lifts near energized power lines. Since electricity can arc or jump from the power line to the scissor lift or worker, electrocution can occur even if neither the scissor lift nor the worker touches the power line.

The following work practices ensure that scissor lifts are safely positioned:

- Implement traffic control measures around the scissor lift to prevent other workers or vehicles from getting too close.
- Use ground guides when operating or moving the scissor lift around the workplace.
- Select work locations that do not approach electrical power sources (e.g., power lines, transformers) by at least 10 feet and that do not pose other overhead hazards (e.g., other utilities, branches, overhangs, etc.).
- If the job task requires work near an electrical source, the employer must ensure that the worker is qualified and has received the required electrical training. [29 CFR 1910.269; 29 CFR 1910.333; 29 CFR 1926 Subpart V]

Employers should regularly maintain scissor lifts to ensure that they are safe to use (e.g., prevent the lifting mechanism from collapsing). Manufacturer's maintenance and inspection instructions will generally include how to:

- Test and inspect controls and components before each use.
- Ensure that guardrail systems are in good working condition.
- Verify that brakes once set will hold the scissor lift in position.

Employers must provide workers training on hazards, including how to work safely with or near scissor lifts. [29 CFR 1926.454] Training must, at a minimum, include:

- The correct procedures (e.g., the manufacturer's instructions) for operating the scissor lift vertically and while in transit.
- How to handle materials on the scissor lift, including weight limits.
- Other worksite hazards workers may encounter when working on a scissor lift (e.g., contact with electrical wires).
- Employers should also train workers in reporting any equipment defects or maintenance needs.

Minimum Safe Approach Distance to Energized Power Lines Attachment 2

Electricity is one of the main causes of operator deaths and demands your respect. Operating NON-INSULATED bucket/aerial lifts around overhead electrical wires is regulated by law and these steps must be followed.

- Prior to lifting the work platform, walk your route to identify overhead wire proximity.
- Keep a minimum of 10 ft. from power lines greater than 300 volts.
- As the voltage increases, the Minimum Safe Approach Distance (MSAD) increases. Use the chart to determine the safe distance. Contact the power company to determine the voltage.
- High humidity/rain can cause electricity to arc farther than the 10 ft. minimum distance, so allow extra distance in these conditions.
- Contact the electrical companies/utilities in your area if you have questions about work under and around electrical wires.

MSAD (Minimum Safe Approach Distance) To Energized (Exposed or Insulated) Power Lines

Voltage Range (Phase to Phase)	Minimum Safe Approach Distance (feet)
0 to 300 volts	AVOID CONTACT
Over 300 volts to 50 KV	10 feet
Over 50 KV to 200 KV	15 feet
Over 200 KV to 350 KV	20 feet
Over 350 KV to 500 KV	25 feet
Over 500 KV to 750 KV	35 feet
Over 750 KV to 1,000 KV	45 feet

Effects of Wind on Aerial Lifts:

- Wind is an additional concern of any bucket truck or aerial lift operator.
- Wind will create additional force to the load weight already in the platform/boom.
- Wind does not actually add additional weight only applied force.
- Wind may not be a concern at ground level, but it might be totally different at sign or traffic signal height.
- Wind's forces can make marginally stable equipment easy to tip over.

Expectations of the Ground Person:

- Be alert and aware at all times. Use appropriate PPE.
- Be instructed and practiced in the use of the lower controls in case of an emergency.
- Check the placement of the aerial device/bucket truck and the traffic control.
- Keep a constant eye on the traffic for high and wide loads.
- Keep in contact with the "UP" person.
- Check the "UP" person placement for limbs, wires and other hazards, and advise the "UP" person of status.
- Support the "UP" person with needed tools, parts, etc. Help limit the exposure time.
- Stay out of the "Clear Zone" whenever possible. Keep your hard hat on at all times.

Pre-Start Inspection Guidelines
Attachment 3

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.