



## Aerial/Scissor Lift Program

Environmental Health & Safety Office

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## **INTRODUCTION**

Aerial/scissor lifts pose a serious safety hazard if not used properly. It is the policy of the University of North Carolina at Charlotte to train employees on the hazards of operating aerial lifts and to ensure such equipment is safely maintained.

## **PURPOSE**

This program has been established to:

- Reduce risk by ensuring the safe operation of aerial lifts
- Ensure departments understand and comply with safety standards related to aerial lifts.
- Ensure regulatory compliance and reduce liability.

## **SCOPE**

This program applies to all employees and students operating aerial/scissor lifts on UNC Charlotte's campus.

## **RESPONSIBILITIES**

### Management

- Ensure that responsibilities assigned within this program are carried out within their administrative departments.
- Designate employees responsible for the implementation of this program within their department.
- Actively support this program to demonstrate overall safety culture development.
- Ensure adequate funding is available to support this program.

### Department of Environmental Health and Safety

- Assist departments with implementing regulatory compliant aerial and scissor lift program.
- Approve aerial/scissor lift trainers.
- Periodically review and update the aerial/scissor lift written program.
- Periodically evaluate the work site usage of aerial/scissor lifts.

## Supervisors

- Review and ensure understanding of this program and its applicability to your department.
- Ensure employees comply with all provisions of this program.
- Ensure employees receive training appropriate to their assigned tasks and maintain documentation.
- Ensure employees are provided with and use appropriate personal protective equipment (PPE).
- Take prompt action including disciplinary action when unsafe conditions or acts are observed.
- Investigate aerial and scissor lift usage injuries and damage.
- Ensure periodic maintenance is performed on the lift.

## Aerial and scissor lift operator

- Adhere to owner's manual and all provisions in this program.
- Attend and adhere to all required training.
- Immediate report any unsafe acts or conditions to supervisor.
- Ensure worksite is barricaded.
- Complete worksite inspections and consult with supervisor and/or EH&S regarding any unusual hazards.

## DEFINITIONS:

**Aerial Lifts:** Any powered, mobile, vehicle-mounted device that may elevate, telescopically extend, articulate and may (or may not) rotate around a substantial axis in order to raise and support personnel to elevated job sites.

Aerial lifts include extendible boom platforms; vehicle-mounted aerial ladders; articulating, rotating boom platforms; vertical self-elevating towers; cherry pickers; bucket trucks and any other equipment built in accordance with either ANSI-A92.2 (1990), Vehicle-Mounted Elevating and Rotating Aerial Devices, or ANSI-A92.5 (1992), Boom Supported Elevating Work Platforms.

**Scissor Lifts:** Any powered, mobile device that has a personnel work platform which is mechanically raised vertically above the carriage by means of controls on the work platform.

This equipment is designed and fabricated according to either ANSI-A92.6 (1990), Self-Propelled Elevating Work Platforms, or ANSI-A92.3 (1990), Manually Propelled Elevating Aerial Platforms.

**Anchorage:** A secure point of attachment to be used with personal fall protection equipment.

**Certified Operator:** Certification of aerial/scissor lift operators at UNC Charlotte is a three-step process consisting of classroom instruction, hands-on training and hands-on evaluation. Once the employee has successfully completed all three steps they are considered to be a certified operator.

**Competent Trainer:** An employee who has successfully completed a Train-the-Trainer or equivalent type of training program and is familiar with the type of aerial/scissor lift in their work unit. A contractor or equipment vendor who has experience training aerial/scissor lift safety and operation and is familiar with the equipment is also permitted to be a Competent Trainer.

**Competent Evaluator (Hands-on):** An employee in the department who is experienced and competent with the aerial/scissor lift. An employee must be familiar with the equipment and its safe operation. In order to be considered competent in regards to conducting the evaluation portion of the aerial/scissor lift training, an employee must have successfully completed train-the-trainer course.

**Familiarization:** Providing information regarding the control functions and safety devices for the aerial /scissor lift to an operator of the equipment.

**Insulated Platform:** A platform designed and tested to meet the specific electrical insulation ratings consistent with the manufacturer's identification plate.

**Outriggers:** Devices that increase the stability of the aerial lift platform and that are capable of lifting and leveling the aerial / scissor lift platform.

**Rated Work Load:** The designated capacity of the aerial platform as specified by the manufacturer.

**Stabilizers:** Devices that increase the stability of the aerial lift platform but are not capable of lifting or leveling the aerial / scissor lift platform.

## **GENERAL REQUIREMENTS**

The following sections provide requirements and best management practices for the various types of aerial and scissor lifts used at UNC Charlotte. When in doubt, default to the manufacturer's instructions for the particular make and model of the lift for more detailed guidance.

The information in this document shall be supplemented by good judgment, safe operation, and caution in evaluating each situation. Since the operator is in direct control of the aerial/scissor lift, conformance with good safety practices is the responsibility of the operator. The operator shall make decisions on the use and operation of the aerial/scissor lift with due consideration for the fact that his or her own safety as well as the safety of others is dependent on their actions.

All operators shall be trained before operating aerial/scissor lifts. Operators are ONLY qualified to use lifts to the rated capacity of the equipment for which they are trained and evaluated. All operations shall be done safely and in accordance with accepted work practices and lift manufacturer guidelines. Various departments may impose additional restrictions on their operations as necessary.

## **PURCHASE/RENTAL APPROVAL**

Any aerial/scissor lift purchase or rental must be approved by Environmental, Health and Safety (EH&S) office (Appendix A). Please contact EH&S at 704-687-1111 or [ehsoffice@uncc.edu](mailto:ehsoffice@uncc.edu) for consultation and approval.

## **PRE-USE INSPECTION**

- Every aerial/scissor lift must undergo a pre-use inspection prior to use on each shift. Aerial/scissor lifts not used during a shift do not have to undergo an inspection during that shift
- Pre-use inspections must be documented using an appropriate checklist for the aerial/scissor lift similar to the one in Appendix B. Refer to the manufacturer's inspection requirements for complete inspection details.
- Completed checklists will be kept on file for one year.
- The pre-use inspection will identify conditions that could affect the safe use of the aerial/scissor lifts. If any unsafe conditions exist, the aerial/scissor lift shall be removed from service. In order to remove an aerial/scissor lift from service, the operator shall remove the keys and place an "Out of Service" tag near the operator control panel.
- Operators must immediately report any unsafe aerial/scissor lift conditions to their supervisor. When an aerial/scissor lift has been removed from service, the operator must give the keys to the supervisor for safekeeping. The supervisor is then responsible for ensuring the necessary arrangements are made for repair.
- Only authorized personnel shall perform aerial/scissor lift repairs and adjustments. All replacement parts shall be the same design as the original or an equivalent design as designated by the manufacturer.

## **WORKSITE INSPECTION**

Operators will inspect the workplace to remove hazards before and during aerial lift use. The worksite will be inspected for hazards such as:

- Overhead obstructions and high voltage hazards.
- Slope(s), ditches, bumps, debris, drop-offs and floor obstructions.
- Wind and weather conditions.
- Other hazardous locations and atmospheres.
- Inadequate support (The working surface that the lift is sitting on cannot support the weight of the machine, men, etc. for the operation).
- Presence of unauthorized persons or other hazardous conditions.

The EH&S office at the request of the operator's supervisor shall determine if there are any unusual hazards in areas where lifts will be used.

## **PERSONAL PROTECTIVE EQUIPMENT**

Fall protection equipment must be used as follows when operating aerial/scissor lifts:

1. Aerial Lifts:
  - a. Operators shall be secured to the anchor point provided by the equipment manufacturer by either a self-retracting lanyard or by a lanyard short enough to prevent the employee from being ejected.
  - b. Operators must follow manufacturer's recommendations as to which fall protection system to use.
2. Scissor Lifts:
  - a. The guardrail system provides fall protection. If the manufacturer has installed an anchorage point, a fall protection system (restrain, positioning, personal fall arrest system) as designated by the manufacturer's instructions must be utilized.
  3. Tying a lanyard off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted.
  4. Other types of personal protective equipment (PPE) such as hard hat, safety glasses, safety gloves, shall be worn according to the task specific PPE hazard assessment.

## **TRAINING**

1. Training must be completed prior to any use of the aerial/scissor lift. Certification of aerial/scissor lift operators at UNC Charlotte is a three-step process consisting of classroom instruction, hands-on training and hands-on evaluation.
2. Classroom instruction, hands-on training and hands-on evaluation can be conducted by either a competent trainer in the department, equipment manufacturer, safety professional and/or a vendor who specializes in aerial/scissor lift training.
3. To become a competent UNC Charlotte aerial/scissor lift trainer the employee must complete a train-the-trainer session and acknowledgement form provided by Environmental, Health and Safety (EH&S) office. EH&S must approve all trainers and provide certification cards.
4. Training must be specific to the type of aerial/scissor lift being used.
5. Training must cover the following:
  - a. The purpose and use of the equipment manuals.

- b. That operating manuals are an integral part of the lift and must be properly stored on the vehicle.
  - c. Pre-use inspection.
  - d. Responsibilities associated with problems or malfunctions affecting the operation of the lift.
  - e. Factors affecting stability.
  - f. The purpose of placards and decals.
  - g. Worksite inspection and barricades.
  - h. Applicable safety rules and regulations.
  - i. Authorization to operate.
  - j. Operator warnings and instructions.
  - k. Proper use of personal fall protection equipment.
  - l. Hands-on operation.
6. Employees shall not be allowed to operate rented equipment unless they have been previously certified on similar equipment. Operators are also required to review the owner's manual and shall be given ample time to become familiar with the equipment and its controls before operation is permitted. The vendor is required to review equipment with the user when the user is not familiar with the type of aerial/scissor lift.
7. Trainees must successfully complete hands-on training and a hands-on evaluation before being allowed to operate an aerial/scissor lift independently. Trainees will be given adequate supervision and time to learn basic operating skills.
8. Initial operator hands-on evaluations must be completed using the checklist found in Appendix C or equivalent.
9. Documented re-evaluation of each aerial/scissor lift operator will be completed at least once every three years using Appendix C or equivalent.
10. Re-evaluations can be conducted by a train-the-trainer certified competent employee in the department who is experienced and competent with the aerial/scissor lift.
11. Refresher training in relevant topics will be provided to an aerial/scissor lift operator when any of the following occur:
- The operator has been observed to be using the aerial/scissor lift in an unsafe manner.
  - The operator has been involved in an accident or a near-miss incident.
  - The operator has received an evaluation that reveals the operator is not using the aerial/scissor lift safely.

- The operator is assigned to operate a different type of equipment.
- A condition in the workplace changes in a manner that could affect safe operation of the equipment.

## MAINTENANCE

Periodic (depending on activity, severity of service and environment) maintenance evaluations shall be performed by the manufacturer or authorized representative. The items listed in the owners' manual shall be tested, evaluated and, if applicable, corrected by qualified personnel before the aerial/scissor lift is returned to service. Lifts shall not be operated if they are out of compliance with manufacturer specifications. Modifications or disabling of safety devices, such as warning beepers, guards or interlocks is prohibited.

## REFERENCE DOCUMENTS

<a href="#"><u>OSHA 29 CFR 1910.67</u></a>	Vehicle-mounted elevating and rotating work platforms
<a href="#"><u>OSHA 29 CFR 1926.452</u></a>	Additional requirements applicable to specific types of scaffolds
<a href="#"><u>OSHA 29 CFR 1926.453</u></a>	Aerial lifts

## Appendix A – Examples of Aerial/Scissor Lift



**Articulating Boom Platforms** – An aerial device with two or more hinged boom sections. They are designed to reach up and over obstacles.



**Personal Aerial Manlift** – Portable aerial device that lifts vertically, but not horizontally. They are usually lightweight and designed for one person to use indoors.



**Scissor Lifts** – An aerial device that lifts straight up and down, but not horizontally. They extend into the air via crisscross supports.



**Extensible or telescoping boom lifts** - Are aerial devices with an extensible or telescopic boom. They are designed to reach vertically or horizontally.



**Vehicle mounted bucket lifts** - Are usually attached to a vehicle and used to repair utility lines.

## **Appendix B -PRE-USE AERIAL / SCISSOR LIFT INSPECTION CHECKLIST**

**Instructions:** Follow the below guidelines to complete a hands-on lift inspection. Sign and date acknowledging you have completed the inspection.

**Equipment Make/Model:** \_\_\_\_\_ **Serial Number:** \_\_\_\_\_

- Owner's manual legible and stored inside the container located on the platform.
- All decals legible and in place.
- Fluid levels checked. (Hydraulic oil, engine oil, coolant, etc)
- Structural and other critical components present and all associated fasteners and pins in place.
- Battery packs in place, properly connected and not leaking.
- Compartment covers in place.

**Check the following components or areas for damage, modifications, and improperly installed or missing parts:**

- Electrical components, wiring, and electrical cables
- Hydraulic power unit, reservoir, hoses, fittings, cylinders, and manifolds
- Drive and turntable motors and torque hubs
- Boom wear pads, Gauges, Beacon, Lights
- Tires, wheels, limit switches, warning alarms, horn, fasteners, damage to machine
- Test all controls for proper operation
- Fall Protection Devices (railing, gates, toe boards, anchor/connecting points, etc)

**Check worksite to ensure lift is away from:**

- Traffic, pedestrian pathways, building overhangs, overhead hazards, and power lines.

**Equipment operation:**

- Obtained supervisor permission to use the aerial/scissor lift.
- Barricade area with 4 cones and danger tape or other appropriate methods.
- Wear appropriate PPE (hard hat, safety glasses, gloves, etc.)
- Ensure you have a valid aerial lift card during lift operation.

<b>Operator Signature</b>	<b>Date</b>	<b>Comments</b>
1.		
2.		
3.		
4.		
5.		

## Appendix C - Performance Test for Aerial Lift Operators

RATINGS:	✓ = SATISFACTORY	X = UNSATISFACTORY	N/A = NOT APPLICABLE
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Operator Name:	Department:
Equipment Manufacturer:	Date:
Model:	

1. Checked all items on pre-use inspection checklist (shows familiarity with the controls).  
\_\_\_\_\_  
Inspected work site for hazards (drop-offs, holes, floor obstructions, electrical hazards etc.).
2. Fall protection (guardrail system in place, fall arrest system).
3. Function test of lower control stations.
4. Planned route ahead, checked doorways.
5. Kept a clear view of direction of travel.
6. Verified lift balance and stability.  
\_\_\_\_\_  
Barricade area (Ensure 4 cones and barricade tape are used to barricade area or other appropriate device)
7. Boom up, down, in and out (Fully extend lift while maintain safe control of operation.)
8. Turn lift 360 degrees right and left.
9. Maneuvered the lift if equipped with proper wheel drive train.
10. Turn off lift using the emergency stop function.
11. Lowered the basket before attempting to move the lift.  
\_\_\_\_\_  
Entrance and dismount using 3 point contact (two hands, one foot or two feet, one hand).
12. Deploy/setup and store outriggers – Refer to owner's manual.
13. Followed proper procedures at both start and finish.  
\_\_\_\_\_  
Comments: \_\_\_\_\_  
\_\_\_\_\_
14. \_\_\_\_\_
15. \_\_\_\_\_
16. \_\_\_\_\_

Comments: \_\_\_\_\_

Operator: \_\_\_\_\_ Signature: \_\_\_\_\_

Evaluator: \_\_\_\_\_ Signature: \_\_\_\_\_