



Aerial Lift Program

Environmental Health & Safety Office

July 2009

Table of Contents

AERIAL LIFTS	1
AERIAL LIFT OVERVIEW	1
MAINTENANCE.....	1
PRESTART INSPECTION	2
WORKSITE INSPECTION	2
OPERATION OVERVIEW	3
OPERATING.....	3
TRAINING.....	4
RESPONSIBILITIES.....	4
WORK SUPERVISORS	5
SAFETY AND ENVIRONMENTAL HEALTH.....	5
APPENDIX A DEFINITIONS	6
APPENDIX B DAILY EQUIPMENT INSPECTION	7

AERIAL LIFTS

Various aerial lifts are used at UNC-Charlotte to lift employees safely to an elevated work position. These lifts include self-propelled elevating work platforms (e.g., scissor lifts), manually-propelled elevating aerial lifts (e.g., uprights), extensible and articulating boom-supported elevating work platforms (e.g., aerial man-lifts), and vehicle-mounted elevating and rotating aerial devices and work platforms (e.g., bucket trucks). The Environmental Health & Safety Office (EH&S) aerial lift manual is designed to provide general requirements for the use of aerial lifts on the UNC-Charlotte campus.

AERIAL LIFT OVERVIEW

The following sections provide requirements and best management practices for the various types of aerial 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. Definitions for each type of aerial lift covered in this program can be found in [Appendix A](#).

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

All operators shall be trained before operating aerial 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.

MAINTENANCE

Periodic (depending on activity, severity of service and environment) maintenance inspections shall be performed by the manufacturer or authorized representative of the lift on a timely basis by qualified mechanics. Inspection items listed in the maintenance manuals shall be tested, evaluated and, if applicable, corrected by qualified personnel before the unit is returned to service. Lifts shall not be operated if they are out of compliance with manufacturer specifications. Altering or disabling of safety devices, such as warning beepers, guards or interlocks is prohibited, and modifications shall be done only with the permission of the manufacturer.

PRESTART INSPECTION

The aerial lift shall be inspected for defects prior to each operation. The prestart inspection ([See Appendix B](#)) shall be performed and documented by the operator and will include items in accordance with manufacturer's recommendations for each specific aerial lift, such as:

- Operating and emergency controls.
- Safety devices.
- Personal protective devices.
- Hydraulic, air, pneumatic, fuel and electrical systems for wear, leakage, excessive dirt, moisture or any other condition which may impair the use of these systems.
- Fiberglass and other insulating components for visible damage or contamination.
- Missing or illegible placards, warnings, operational, instructional, and control markings.
- Visual inspection of all mechanical fastenings.
- Cables and wiring harnesses.
- Loose or missing parts.
- Wheels and tires.
- Operating manual(s), and their placement in weatherproof containers on the lift, or in the cab of the truck.
- Outriggers, stabilizers, and other structures.
- Guardrail systems.
- Other items specified by the manufacturer.

The aerial lift shall not be operated if the prestart inspection indicates that repair is necessary.

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.

OPERATION OVERVIEW

This section discusses various phases of operation such as prestart inspections, workplace inspections, and operating requirements. Operators shall be trained before using any aerial lift. The training shall include familiarization with the specific group of lifts to be used and alerting the operators to their responsibilities with respect to the lifts. When an operator is directed to operate an unfamiliar aerial lift, the operator shall receive instructions regarding the location of the manufacturers' manuals, the purpose and function of all controls, and the safety devices and operating characteristics specific to the group of aerial lifts prior to operating. Operators shall also be afforded the opportunity to familiarize themselves with the operation of the lifts.

OPERATING

The operator shall perform all prestart and workplace and operating inspections as specified. When operating the lift, the operator shall follow the Operator Warnings and Instructions.

- The lower controls of aerial lifts shall not be used for continuous operation with personnel in the platform.
- Aerial lifts are not normally insulated for use near electrically energized circuits such as power lines or exposed bus bars. In general, scissors lifts are not electrically insulated and will not provide protection from contact with or proximity to electrical current. Any aerial lift intended for use around electrically energized circuits shall meet the electrical requirements of American National Standards Institute/Scaffold Industry Association (ANSI/SIA) A92.2-2001, "Vehicle-Mounted Elevating and Rotating Aerial Devices." Refer to the manufacturer's owner's manual and identification plate affixed to the machine for the category of insulating aerial device (if applicable). Operators shall maintain safe distances from electrical power lines and apparatus in accordance with governmental regulations and the Minimum Safe Approach Distance (MSAD).
- Aerial lifts are not normally designed for use in hazardous locations. Do not operate an aerial lift in hazardous locations or areas where potentially flammable or explosive gases, vapors, toxic substances and Carbon Monoxide (CO) or Carbon Dioxide (CO₂) can accumulate. Refer to the manufacturer's owner's manual and identification plate affixed to the machine to determine whether it is permissible to operate the machine in hazardous locations (if applicable). The EH&S Office shall review and agree to all indoor work that involves lifts with internal combustion engines. For additional information on the indoor use of internal combustion engines contact the EH&S Office.

TRAINING

Only employee's who have received instructions regarding the inspection, application, and operation of an aerial lift, including recognition and avoidance of hazards from a competent person shall operate that aerial lift. The operator shall be retrained if any performance deficiencies are noted and/or management deems it necessary. Please contact the EH&S Office for more information.

RESPONSIBILITIES

Before operation, the operator shall:

- Ensure that their training is current.
- Read and understand the manufacturers' manuals.
- Understand all labels, warnings and instructions on the lift.
- Ensure all occupants of the platform wear appropriate personal safety equipment for the conditions under which the platform will be operated (e.g., fall protection, hard hats).
- Have been instructed by a qualified person in the intended purpose and function of each of the controls.
- Ensure that manufacturers' machine manuals, such as operations manuals, the maintenance manuals for each make and model of lift owned, and the manual of responsibilities (if it is a scissor lift) are in the weatherproof containers located on the lifts or in the mobile unit.
- Perform written prestart inspections before use of the lift each day and perform a visual and functional test.
- Conduct worksite inspections before and during aerial lift use.
- Barricade or otherwise protect by standards from overhead work areas.
- Observe operator warnings and instructions to be used before and during each movement of the platform.
- Shut down lift operations in case of any suspected malfunction, or if a hazard or potentially unsafe condition exists. Notify the work supervisor about any problems or malfunctions that affect the safety of operations. These problems or malfunctions shall be repaired prior to the use of the lift.
- Perform prestart activities prior to performing work.

WORK SUPERVISORS

Work supervisors (e.g., Direct Supervisor, Job Site Supervisor) shall:

- Ensure that the aerial lift is used only for intended applications as defined in the operating manual, and that recognized safety practices are followed.
- Select operators based on their experience and physical qualifications.
- Ensure that operators' training is current.
- Monitor the performance of lift operators to ensure that they comply with safety rules.
- Ensure that unauthorized persons do not operate the lifts.
- Monitor daily written prestart inspections.
- Ensure that lifts are equipped with required safety equipment (e.g., overrides, back-up beepers, anchorage points for personal fall arrest systems).
- Ensure that lifts are maintained and that qualified personnel perform periodic inspections.
- Ensure that lifts are not operated if they are out of compliance with their applicable maintenance schedules.

ENVIRONMENTAL HEALTH & SAFETY

The EH&S shall:

- Determine, in conjunction with the supervisor, the safety measures to be taken if the lift will be used in a location that has unusual hazards.
- Review and approve indoor work that involves lifts with internal combustion engines.
- Provide technical assistance where necessary.
- Stay current with regulations governing the operation of lifts and transmit changes to the appropriate parties. (The Aerial Lift Subject Matter Expert has this responsibility.)
- Review and update the aerial lift safety program.

REFERENCE DOCUMENTS

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

Appendix A - Definitions



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 - Daily Equipment Inspection

Department Name:	Equipment # :	Inspector Name:
------------------	---------------	-----------------

Place the appropriate symbol in the box: OK, R = Repairs Needed, N/A = Not Applicable

Weeks Beginning Date:	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Comments:
Controls & Indicators								
Motion Alarms								
Tires								
Brakes								
Hydr. Lines								
Hydr. Fluid								
Limit Switches								
Batteries								
Fluid Levels								
Belts & Hosts								
Boom								
Angle Indicators								
Safety Devices								
Guard Rails								
Emergency Stops								
Steering								
Control Cables								
Oil levels								
Pins in Places								
Over all Condition								
Inspected by:								

Note: The lift controls will be tested each day prior to use to ensure that the controls are in safe working condition (per OSHA 1910.67).