

UNIVERSITY OF MINNESOTA
University Health and Safety
POWERED AERIAL LIFT PROGRAM



Effective: October 1, 2012; Revised: January 6, 2016

PURPOSE:

The purpose of this program is to establish minimum safe work practices to ensure that all aerial lifts utilized and operated by University employees are operated in a consistent and safe manner. The primary goal of this program is to prevent harm to all University employees, students or the public and property damage during utilization of an aerial lift.

SCOPE:

This program applies to all University departments who own, rent or utilize aerial lifts, as defined below.

DEFINITIONS:

Aerial Lift – Any type of portable device which uses power to elevate and position employees, materials and/or tools to perform duties, not to include scaffolding. Examples of aerial lifts can include vehicle or trailer mounted aerial lifts/bucket trucks, vertical personnel lifts, scissors lifts, boom lifts (articulating and non-articulating), cherry pickers, extendable/telescoping aerial lifts.

RESPONSIBILITIES

Departmental Managers/Supervisors

University Departmental Managers and/or Supervisors who supervise employees that utilize aerial lifts have the primary responsibility for implementation of the Aerial Lift Program. These managers and supervisors primary responsibilities related to aerial lifts are:

- Identifying work assignments or tasks which may require the use of an aerial lift.
- Identifying load restrictions for work surfaces, such as those above underground spaces and building interiors.
- Purchasing, renting or utilizing only the appropriate type of aerial lift for the work activity to be performed.
- Assuring this Aerial Lift Program is implemented and procedures are being followed by employees assigned to utilize aerial lifts as a part of their work assignment.
- Seeking assistance from the Program Administrators when questions or problems arise that involve the University of Minnesota, Aerial Lift Program.
- Ensuring employees under their supervision which utilize aerial lifts receive initial and re-fresher aerial lift operator training as defined under the Training Section of this program prior to operation of an aerial lift.
- Maintaining training records for all authorized aerial lift operators under their supervision as outlined in the Records Retention Section of this program.
- Maintaining inspection and maintenance records as outlined in the Records Retention Section of this program for each aerial lift their Department owns including:
 - Serial number and date of purchase
 - Written documentation of all annual inspections performed as referenced in the Inspections Section of this program
 - Written documentation of maintenance and repairs performed

- Ensuring all required inspections outlined in the Inspections Section of this program are performed on the aerial lifts utilized by their employees.
- Requiring any aerial lift with safety related concerns to be locked and tagged “Out of Service” until needed repairs are completed.

Employees

University employees that utilize an aerial lift are responsible for the following:

- Attending initial aerial lift operator training and gaining authorization from their supervisor prior to operating an aerial lift.
- Prior to use, reviewing the operator’s manuals for the specific aerial lifts they utilize.
- Maintaining, properly storing, inspecting and taking reasonable care of aerial lifts under their use.
- Performing a pre-start inspection of the aerial lift and work site before use as required in the Inspections Section of this program.
- Monitoring weather conditions continuously when aerial lifts are used outdoors, including wind speeds. Immediately taking aerial lifts out of service during adverse, unsafe weather conditions.
- Informing their supervisor when an aerial lift needs to be repaired or replaced due to defects or damage or when the aerial lift does not pass the pre-start inspection.
- Lowering the work platform and stopping their work activities if, at any time, they are concerned for their safety or that of other University employees or the public.
- Ensuring the safety of co-workers and the public while operating an aerial lift such as securing the area of operation.

Program Administrators

University Health and Safety (UHS) is responsible to oversee the Aerial Lift Program including:

- Developing and implementing a training program to ensure all University employed aerial lift operators are trained on the proper use of aerial lifts.
- Providing consultation to University departments and employees in the administration and implementation of the Aerial Lift Program.
- UHS will evaluate the Aerial Lift Program annually and revise it as necessary.

TRAINING

Prior to a University employee being authorized to operate an aerial lift, the supervisor will ensure their employee has completed a formal training session covering the proper use of the specific aerial lift to be utilized. A Safety Training Attendance Record is available in Appendix A to document attendance at Aerial Lift training. Following the initial training, aerial lift operators will be required to attend and receive refresher aerial lift training every five (5) years. An employee must demonstrate they understand the contents of the training by completing a written test at the end of the training. Training resources for University departments can include qualified department staff, University Health and Safety, certified trainers or a manufacturer representative.

Formal training will include a review of:

- Hazards associated with operation of aerial lifts
- The University of Minnesota Aerial Lift Program and its requirements
- Aerial lift stability and factors affecting stability
- All control and safety features and devices of the aerial lift

- Safety operation requirements
- Fall protection requirements
- Pre-start and worksite inspections and maintenance requirements
- Warning labels and placards and location of operator's manual
- Identifying and maintaining adequate distance from electrical hazards
- Weather conditions prohibiting outdoor use of aerial lifts

Following completion of the formal training and written test all operators must be shown the location and proper operation of controls and safety devices on the specific aerial lift that will be utilized including how to perform the daily pre-start aerial lift inspection and worksite inspection.

Retraining on aerial lifts will be required if:

- Changes in the worksite or type of aerial lift used by the employee render previous training obsolete;
- Employee work practices or performance indicate important information has not been retained or implemented;
- An aerial lift is involved in an accident; or
- Any other situation indicates re-training is necessary.

FALL PROTECTION REQUIREMENTS

Standard guardrails are to be installed and maintained around all sides of the aerial lift while personnel are in an elevated position. Employees are required to maintain contact with the floor of the work platform/basket of the lift at all times; using a ladder on the platform or climbing on the guardrails is not permitted at any time.

Employees operating aerial lifts where the platform travels only in the vertical plane directly above the wheel base of the lift including scissor lifts or vertical personnel lifts are not required to wear personal fall protection.

Employees operating aerial lifts where the platform travels in both the vertical and horizontal planes and articulates out beyond the wheel base of the lift which can include: vehicle or trailer mounted aerial lifts/bucket trucks, articulating boom lifts, cherry pickers and extendable/telescoping aerial lifts are required to wear personal fall protection. Personal fall protection includes a personal body harness and lanyard. The lanyard is attached to a designated anchor point in the basket of the platform. Under no circumstances will a lanyard be attached to the guardrail of the platform or an object outside the aerial lift.

INSPECTIONS

Aerial lifts that are not in proper operating condition shall be immediately removed from service until the problems have been corrected by an authorized and trained maintenance technician. The following are the required inspections to be performed on all owned, rented or utilized aerial lifts used by University employees:

a. Pre-Start Aerial Lift Inspections

Each day an aerial lift is utilized, a pre-start inspection is required to be completed by the operator prior to use. The pre-start inspection involves a visual inspection and functional test that includes the following criteria:

- Operating and emergency controls.

- Safety devices.
- Personal protective devices.
- Air, hydraulic and fuel system leaks.
- Cables and wiring harness.
- Loose or missing parts.
- Tires and wheels.
- Placards, warnings, control markings and operating manual(s).
- Outriggers, stabilizers and other structures.
- Guardrail system.
- Other items specified by manufacturer.
- If outdoors, a functioning anemometer is attached to the platform

Because each make and model is unique, the inspection criteria may vary. Please refer to the operator's manual for the specific criteria required for each particular lift that needs to be inspected. An example of a pre-start inspection can be found in Appendix B.

b. Worksite Inspections

Before an aerial lift is utilized, the operator shall visually check the worksite area where the aerial lift is to be used, identifying potential hazards such as, but not limited to:

- Drop-offs or holes.
- Slopes.
- Bumps and floor obstructions.
- Debris.
- Overhead obstructions and high voltage conductors.
- Hazardous locations and atmospheres.
- Inadequate surface and support to withstand all load forces imposed by the aerial platform lift, including locations above underground garage spaces, tunnels, etc.
- Wind and weather conditions.
 - Wind speeds must be less than 28 mph and the forecast is to be monitored
 - No lightning is visible and there are no active thunder storm warnings
 - No other weather related concerns are in the forecast
- Presence of unauthorized people.
- Other possible unsafe conditions.

Depending on the nature of the worksite and the type of work being performed, additional items may be added to this list of criteria. An example of a Worksite Inspection can be found in Appendix B.

The following inspection is required to be performed on all owned aerial lifts used by University employees:

c. Annual Inspections

An annual inspection and re-certification will be performed by trained and experienced professionals on all aerial lifts used by University employees. The inspection and re-certification services must comply with the manufacturer recommendations and all applicable requirements of the current standards. Documentation of the completed inspections must be provided to the University

department identifying the specific equipment inspected, inspection results including all repairs or adjustments made, deficiencies found and date of inspection. Equipment found to have a safety hazard which could lead to a personal injury will be tagged and placed out of service. Equipment tagged out of service is not to be put back into service until necessary repairs have been completed.

MAINTENANCE

All maintenance performed on aerial lifts will be performed by trained and experienced professionals. The owning or renting department shall make arrangements with an approved vendor/contractor for maintenance and repairs of their aerial lifts.

Battery charging and fuelling aerial lifts will be completed in an intrinsically safe environment with adequate ventilation. Where battery charging takes place, an ABC fire extinguisher will be provided within 20 feet of the charging station. Where propane cylinder change-outs are needed, tank storage shall take place in an approved location, such as a garage or exterior storage space. While changing out tanks, employees will wear appropriate eye and hand protection.

STANDARD OPERATING PROCEDURES

To ensure safe practices are used, the following general procedure will be used when an authorized employee operates an aerial lift:

- a. Obtain authorization to operate the aerial lift from your supervisor prior to use.
- b. Perform a pre-start inspection on the aerial lift.
- c. Perform a worksite inspection of the area the aerial lift will be used. It may be necessary to verify underground conditions with the Facilities Management or Records Department.
- d. Move the aerial lift to the work location and extend and adjust outriggers, stabilizers, extendible axles or other stability enhancing means if available. If the work location does not allow enough space to properly set up stabilizing mechanisms, the operator will refer to the operator's manual to ensure that the height, weight or wind conditions are within the limits of the aerial lift while the stabilizing mechanisms are not being used.
- e. Ensure all guardrails are properly installed and in place and the load being placed on the aerial lift is within the rated capacity of the lift.
- f. Ensure weather and wind conditions or other horizontal forces are within acceptable limits per the operator's manual.
- g. Ensure all personnel riding on the lift understand the safety requirements and procedures.
- h. For aerial lifts whose platform extends beyond the wheel base of the lift or when guardrails are not in place, as described in the Fall Protection Section of this program, fall protection is required to be worn and utilized for all personnel on the platform.
- i. Un-insulated aerial lifts are not to be operated within ten (10) feet of overhead power lines of 50 kilovolts or less. If operating in areas with overhead power lines greater than 50 kilovolts, work units must consult with their safety representative prior to beginning any work. Only qualified individuals with proper personal protective equipment and insulated equipment may work in close proximity to energized overhead power lines.

RECORDS RETENTION

Maintenance and annual inspection records will be maintained by the University Department for each aerial lift owned or leased by the Department. Training records will be maintained for each aerial lift operator working for the University Department.

Record retention for each University owned or leased aerial lift includes:

- Serial number and date of purchase to be maintained for the entire ownership of the lift.
- Written documentation of all maintenance and repairs performed on the lift to be maintained for the entire ownership of the lift.
- Written documentation of annual inspections referenced in the Inspections Section of this program to be maintained for the entire ownership of the lift.

Record retention for training completed by each University employee operating an aerial lift is to be maintained for the length of employment of the operator.

Legal References:

29 CFR 1910.67

29 CFR 1926.453

29 CFR 1926.454

ANSI Standards

Appendix A

**University of Minnesota
SAFETY TRAINING
Attendance Record**

Campus/Unit/Shift: _____

Training Topic: _____

Presenter(s): _____

Date: _____ Start Time: _____ End Time: _____

	Name	Signature	Work Area	Compass ID No.
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Appendix B

Aerial Lift Pre-start Inspection

Each day an owned, rented or utilized aerial lift that is used by University employees is employed, a pre-start inspection is required to be performed by the authorized operator prior to use. Because each make and model is unique, the inspection criteria may vary. Please refer to the operator's manual for the specific criteria required for each particular lift that needs to be inspected. At a minimum, the pre-start inspection involves a visual inspection and functional test including the following criteria:

Visual Inspection

- Condition of Personal Protective Devices
- Condition of Cables/Wiring Harness
- Condition of Guardrail System
- Pneumatic System (Leaks)
- Fuel System (Leaks)
- Hydraulic System (Leaks)
- Loose/Missing Parts (Locking Pins/Bolts)
- Condition of Tires and Wheels
- Placards and Warnings Visible
- Location of Operators Manual

Functional Test

- Operating controls
- Emergency controls
- Operational Locking Gate
- Outriggers/Stabilizers
- Operational Safety Devices
- Anemometer Present/Operational (if using outdoors)

Aerial lifts that are not in proper operating condition must be immediately tagged “Out of Service” and removed from service until the problems have been corrected by an authorized and trained maintenance technician.

Worksite Inspection

Before an aerial lift is used, the operator shall visually check the worksite area where the aerial lift is to be utilized, identifying potential hazards such as, but not limited to:

- Drop-offs or Holes
- Slopes
- Bumps and Floor Obstructions
- Debris
- Overhead Obstructions
- Overhead High Voltage Conductors
- Hazardous Locations and Atmospheres
- Inadequate surface and support to withstand all load forces imposed by the aerial platform lift, including locations above underground garage spaces, tunnels, etc.
- Wind and Weather Conditions
 - Wind speeds must be <28 mph and forecast is being monitored
 - No lightening is visible and there are no active thunder storm warnings
 - No other weather related concerns are in the forecast
- Presence of unauthorized people
- Other possible unsafe conditions

Depending on the nature of the worksite and the type of work being performed, additional items may need to be added to this list of criteria.