

 Environmental Health and Safety TITLE: Aerial Lifts Safety	Effective Date: 09/25/2023	Procedure Number: EHS_SOP201
	Revision: 2	Page 1 of 13
	Approved by Director, Environmental Health & Safety	

1. APPLICABILITY

This procedure applies to all university departments, and units, including Direct Support Organizations (DSO) and business operations on all University of Central Florida (UCF) campuses involved in using aerial lifts as part of their duties.

2. PROCEDURE STATEMENT

This program establishes procedures for the safe operation of aerial lifts, scissor lifts, or boom lifts at UCF. All permanent or temporary employees operating this type of equipment are required to be trained and to be monitored in the use and safe operation of such equipment. The intent of this procedure is to provide guidance to the superintendents, supervisors, employees, and other UCF affiliated groups for their protection against hazards when working with aerial lifts, scissor lifts, or boom lifts. This procedure meets the requirements of the Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.453 Aerial Lifts and the ANSI/SIA A92.2–92.6 standard.

As stated in the UCF Design and Construction Standards (01/19/2023) Section C.7 Environmental Health and Safety Construction Information, contractors are individually responsible for meeting and monitoring their job specific requirements set forth by OSHA.

3. DEFINITIONS

Authorized Operator: An employee who has satisfactorily completed training on aerial lifts, scissor lifts, or boom lifts.

Aerial Platform: A mobile device that has an adjustable position platform, supported from ground level by a structure.

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

Competent Person: Employee that is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Directional Controls: Controls that initiate functions that affect movement of the aerial lift.

Guardrail System: A vertical barrier primarily intended to protect against personnel falling to lower levels.

Hazardous Location: Any location that contains, or has the potential to contain an explosive or flammable atmosphere.

Instability: A condition of an aerial platform in which the sum of the moments, which tend to overturn the unit, exceeds the sum of the moments tending to resist overturning.

Maintenance: The act of upkeep such as inspection, lubrication, refueling, cleaning, adjustment, and scheduled parts replacement.

Manufacturer: A person or entity that makes, builds, or produces an aerial lift.

Modification: Changes made to an aerial lift which affects the operation, stability, safety factors, rated load, or safety of the aerial platform in any way.

Operator: A qualified person who controls the movement of an aerial lift.

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

Override: To take over aerial lift movement control functions at the upper control station by those at the lower control station.

Platform: The portion of an aerial lift intended for occupation by personnel, tools, and materials.

Platform Height: The vertical distance measured from the floor to the surface upon which the aerial lift is being supported.

Rated Work Load: The carrying capacity of the aerial lift as specified by the manufacturer.

Repair: The act of restoring to good condition that which has been broken, damaged, or worn due to use, abuse or other reasons.

Stabilizers: Devices that increase the stability of the aerial lift.

Supervisor – Refers to supervisors, superintendents, or any other UCF personnel in charge of an operation or providing instructions to other UCF staff on how to perform a specific task.

4. RESPONSIBILITIES

- **Environmental Health and Safety (EHS)**

- Responsible for overseeing all aspects of this procedure, provide all training needed, and will assign one specific staff member to be responsible for this program. This individual will have the professional training and experience necessary to serve as the primary point of contact for all Aerial Lifts safety issues or concerns within UCF.
- The specific responsibilities are:
 - Coordinate and conduct periodic field inspections to monitor compliance.
 - Document all inspection findings and communicate relevant information, recommendations, etc. to the supervisor in charge of implementing the corrective actions, and other affected parties.
 - Recognize the need for bringing in additional professionals or field experts to help evaluate special situations if necessary (these professionals can be from either in-house sources or independent consultants).
 - Assist supervisors in coordinating Aerial Lift training with the EHS Training Coordinator.
 - Conduct periodic reviews of this procedure as needed.

- **Supervisors**

- Promote safe practices when using aerial platform lifts.
- Provide the EHS with a list of all the aerial platform lifts they use or rent including: the make, model, serial # and any other related information.

- Ensure that all supervised personnel are knowledgeable of the safety procedures for the use of aerial lifts included in this program.
- Ensure that the employees have all the necessary equipment to do the job in a safe way. (For example: wind velocity meter, personal fall arrest system, etc.)
- Enforce the compliance of supervised personnel regarding this procedure.
- When purchasing, leasing, or borrowing an aerial lift:
 - Contact EHS prior to the acquisition to ensure that the requirements of these procedure are followed.
 - Ensure that the operating and maintenance manuals are received and are available to each operator.
 - Place the operating manual in a weatherproofed compartment on the lift.
 - Ensure the completion of the “Operating Manual Acknowledgement Form” (*EHS_SOP201_FORM001*) by all the operators that will use the lift.
 - Request training for all operators prior to the initial use of the aerial lift and coordinate it with the EHS Training Coordinator.
 - Coordinate with the vendor or Rental Company to provide the initial “Lift Familiarization Training” for the operators prior to use of the lift. EHS Training Coordinator and EHS shall also be notified and included in any vendor training.
- When inspecting and repairing the lift:
 - Ensure that Pre-Start Inspections, Frequent Inspections, Workplace Inspections (if applicable), and Annual Inspections are being performed on the lift according to the manufacturer’s recommendations and this procedure.
 - Work with EHS to create a Pre-start Inspection form based on the manufacturer’s recommendations and the operating manual (this should be consistent with the one found on *EHS_SOP201_FORM002*. In addition, the Workplace Inspection form *EHS_SOP201_FORM003* shall be completed for the proposed worksite).
 - Ensure that, when safety-related deficiencies have been identified through any inspections, the lift is locked out of service until the deficiencies has been repaired. Then immediately notify the EHS.

- Ensure that all the operators observe safe practices and attend all required training.
- Keep records of all training, inspections and maintenance to the aerial lifts, and any other related documents; provide EHS with a copy of those records (in case of rentals, the last Annual Inspection and Frequent Inspection is enough.)

Note: For UCF Facilities and Business Operations, records of all inspections, maintenance to the aerial lifts, and any other related documents, must be submitted to the Facilities Auto Shop supervisor. All other departments shall designate a person to be in charge of the maintenance, inspection, and any other document of their aerial lifts.

- Ensure that weather conditions are continuously monitored while the aerial lift is in use. (The aerial lift shall not be used when wind speeds are over 20 mph or when other weather conditions affect the safe use of the lift.)

- **Employees**

- Follow safe practices at all times.
- Review the Operator's Manual before the initial use of the aerial lift and document it by reading and signing the "Operating Manual Acknowledgment Form" (*EHS_SOP201_FORM001*.)
- Attend all required training and refreshers as requested by the supervisor.
- Inform the supervisor if the information provided during training is not understood, or if there is any other safety concern before using the lift (only trained personnel and personnel in training with a qualified trainer can operate an aerial lift).
- When performing the Pre-Start Inspections:
 - Ensure that Pre-Start Inspections take place prior to each day's use, or each shift's use of the lift.
 - Document the Pre-Start Inspections using the "Aerial Lift Pre-Start Inspection Form" (see *EHS_SOP201_FORM002*), or an alternate form approved by the department that owns or rent the lift and EHS.
 - Inform the supervisor when an aerial lift is not in proper operating condition, or if it failed the inspection, so the unit can be removed from service.

- When performing Workplace Inspections:
 - Conduct a Workplace Inspection to identify any potential workplace hazard prior to setting up the lift at each new location (see *EHS_SOP201_FORM003*.)
 - Never elevate an aerial lift when wind speed exceeds 20 mph or the manufacturer's recommended maximum operating wind speed, whichever is smaller.
 - Never elevate an aerial lift when lightning is observed, heavy rain, or during severe weather conditions.
 - Monitor weather conditions at all times and use an anemometer (wind velocity meter) at the top of the lift.

5. TRAINING

Employees must be trained before using any aerial lift, scissor lifts, or boom lifts. The supervisors will coordinate with the EHS Training Coordinator to set up all aerial training.

- EHS will provide all training needed or required by this procedure. This training shall include the following topics:
 - Manufacturer's Operating Manual as well as where it is located;
 - Pre-Start Inspections;
 - Identification of malfunctions and problems;
 - Stability of the aerial lift;
 - Placards and Decals;
 - Workplace Inspections;
 - Safety Rules and Regulations;
 - Operator warnings and instructions;
 - Fall Arrest Systems;
 - Weather monitoring and wind monitoring equipment.
- The Aerial Lift Practical Training shall include information on the specific model of lift that will be used by the trainee. The trainer should be an experienced and competent operator, a representative of the lift manufacturer, a representative of the lift distributor, or a contracted certified training provider. The trainer and trainee will sign an "Aerial Lift Practical Training Form" (see *EHS_SOP201_FORM004*).

- Re-training will be required every three (3) years or if any operator has been involved in an incident, an accident, or when a supervisor has observed them performing unsafe practices involving the aerial lift.

6. INSPECTIONS

Aerial lifts that are not in proper operating condition shall be removed from service until authorized and trained maintenance personnel have corrected the problems.

- Pre-Start Inspections: A Pre-Start Inspection shall be performed before each day's use or at the beginning of each shift. This involves a visual inspection and functional test.
 - Each make and model is different, so the inspection criteria may vary. Please refer to the operator's manual for the specific criteria required for each particular aerial lift. *EHS_SOP201_FORM002* shall be used in conjunction with the operator's manual.
 - Each supervisor shall identify a place to store the completed Pre-Start Inspection forms and notify EHS where to access the form when needed. At a minimum, the last completed Pre-Start Inspection shall be stored in a weather resistant compartment or container on the lift.
- Workplace Inspections: The operation of aerial lifts is prohibited when wind speeds reach 20 mph or more, when there is a wind warning in effect of 20 mph or more, when lightning is visible, or when thunderstorm warnings are in effect (an exception to this could be possible if more advanced weather notification services or weather alert systems are available).
 - Before the aerial lift is used, the operator shall visually check the workplace area where the aerial lift will be used to identify potential hazards.
 - Use the workplace Inspection Form *EHS_SOP201_FORM003* and the Manufacturer's Manual to Perform Workplace Inspection
- Annual Inspections: All aerial lifts shall be inspected every year (no later than 13 months from the date of the last annual inspection).
 - UCF staff assigned by the department owning the lift to be in charge of it will coordinate the annual inspections and will use funds from their units to cover the costs. This person also will be responsible for keeping the records of these inspections.
 - A qualified mechanic on the specific type of aerial lift or one having similar design characteristics shall perform the inspection.

- Each department who owns or rents the lift shall contract a qualified vendor to conduct the annual inspection. They shall include all items specified by the manufacturer for an annual inspection.
- Frequent Inspections: Frequent inspections shall be performed every 3 months, or after 150 hours of service use, whichever comes first.
 - These inspections could be required more often if recommended by the manufacturer.
 - An inspection should also be completed if the aerial lift has been out of service for more than 3 months.
 - UCF staff assigned by the department owning the lift to be in charge of it will coordinate these inspections. This person will also be responsible for keeping the records of these inspections.
 - A qualified mechanic on the specific type of aerial lift or one having similar design characteristics shall perform this inspection.
 - This inspection shall include all items specified by the manufacturer for a frequent inspection.

7. MAINTENANCE

- Only trained and experienced professionals shall perform all maintenance on the aerial lifts. Battery charging and fueling aerial lifts shall be done according to the manufacturer's instructions and taking all necessary safety precautions.

8. PERSONAL FALL PROTECTION

The use of Personal Fall Protection Equipment is required. A full-body harness with a retractable lifeline is required.

- Only the anchorage (tie off point) designed by the manufacturer will be used. If the aerial lift does not have a designated anchorage point, the supervisors shall contact the manufacturer for a consultation and recommendations. They shall also notify EHS. The Aerial Lift Specific Practical Training Form for that unit should be updated to include the adequate anchorage according to the manufacturer's recommendations.
- An inspection and maintenance program for the Personal Fall Protection Equipment shall be in place. The Personal Fall Protection Equipment shall be

inspected at least every week (seven days), or before each use if it has not been used for more than a week. Please use the form provided in *EHS_SOP201_FORM005*.

9. OTHER PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Hard hat for overhead impact or electrical hazards.
- Eye protection with side shields.
- Gloves chosen for job hazards expected.
- High-visibility reflective vest.
- ANSI-approved protective footwear.
- Respiratory protection as necessary.

10. FUELING

The following steps shall be followed when fueling an aerial lift:

- Fuel tanks may not be filled while the engine is running to avoid spillage.
- Contact EHS (Environmental Management) immediately in the event of a spillage of oil or fuel. Use vermiculite or other approved absorbing material to contain the spill while EHS arrives and do not re-start the engine.
- Disposal of any spill clean-up debris must be coordinated with EHS (Environmental Management).
- No equipment can be operated with a leak in the fuel system.
- Open flames are not to be used when checking electrolyte levels in storage batteries, or gasoline levels in fuel tanks.

11. SAFE WORK PRACTICES

- Only authorized, trained personnel shall operate aerial lifts.
- Before the start of a shift, a visual inspection must be conducted; employees shall not operate an unsafe aerial lift at any time.

- Fill fuel tanks outdoors while the engine is off.
- Operators shall drive with both hands on the controls; **horseplay** is **prohibited**; do not drive with wet or greasy hands.
- No person shall ride as a passenger unless they have completed fall protection training and wearing the proper PPE.
- No person shall stand or walk under elevated or extended boom or telescope handle.
- Operators should avoid making jerky starts, quick turns, or sudden stops.
- Slow down on wet and slippery surfaces and at cross aisles, between buildings, or locations where vision is obstructed.
- Operators entering a building or nearing a blind corner shall make their approach at a reduced speed; sound horn and proceed carefully.
- Operators shall give pedestrians the right-of-way at all times.
- Operators shall not drive toward any person who is in front of a fixed object or wall.
- Operators shall not overtake and pass another aerial lift traveling in the same direction, at intersections, blind spots, or hazardous locations.
- The total load shall not exceed the basket allotted weight; load plus personnel weight must be added.
- Extra care should be exercised when handling long lengths of bar stock, pipe, or other materials.
- Avoid sharp or fast end-swing.
- When raising or extending boom or telescopic arms, the aerial lift shall be placed on stable ground and wheels extended for proper balance.
- Aerial lifts must be safely parked when not in use; the controls shall be neutralized; power shut off; wheel chocked, key removed, and the boom or telescopic arms left in an up position and cleared any walking area.
- Aerial lift shall not be left on an incline unless it is safely parked, and the wheels blocked.

12. TRAVELING

- On the roads the aerial lift must be followed by a safety observer in a follow me vehicle.
- When vision is obscured, the operator will slow down and sound the horn.
- If the operator's view is blocked in congested area, the operator will need a safety observer.
- The operator will keep a clear view on the path of travel.
- The raising or extending boom or telescopic arms should not be operated while the aerial lift is traveling.

13. MARKINGS AND DECALS

The following information shall be displayed on all aerial lifts in a clearly visible, legible, accessible area, and in a durable manner:

- Make, model, serial number and manufacturer's name.
- The rated workload, including rated number of occupants. (If the rated number of occupants is not displayed on the aerial lift, it should be indicated in the operating manual.)
- The maximum elevation of the aerial lift.

14. PROCEDURE

The following steps shall be followed when operating an aerial lift:

- Attend all necessary training.
- Check the last Pre-Start Inspection for any comments or notes.
- Perform a new Pre-Start Inspection on the lift.
- Document the inspection, and place it in the reserved weather proved storage location on the lift.
- Perform a Workplace Inspection in the area that the lift will be used, if necessary.

- Check the Operator's Manual to ensure that the high, weight or wind conditions are within the limits of the lift.
- Inspect the personal fall protection equipment.
- Decide if the job can be done in a safe way.
- Ensure that a communication system is in place in case of an emergency.
- Contact the supervisor with any questions.
- Ensure that the guardrails are installed that, they are in place, and that the load is within the rated capacity of the lift.
- Perform the job in the safest way possible.

15. RECORD KEEPING

The supervisors or the UCF staff assigned by the department owning the lift to be in charge of it, shall maintain the following records:

- Workplace Inspections for a period of four years.
- Pre-Start Inspections for a period of four years.
- Annual Inspections for the entire ownership of the lift. This section does not apply to rented aerial lifts if the equipment was returned without incidents or accidents.
- All maintenance performed on the lift for the entire ownership of the lift. This section does not apply to rented aerial lifts if the equipment was returned without incidents or accidents.
- All "Operating Manual Acknowledgement Forms" for the entire ownership of the lift. This section does not apply to rented aerial lifts if the equipment was returned without incidents or accidents.
- All training records for three years.

16. ASSOCIATED DOCUMENTS

- EHS_SOP201_FORM001 Operating Manual Acknowledgement Form
- EHS_SOP201_FORM002 Aerial Lift Pre-Start Inspection Form

- EHS_SOP201_FORM003 Aerial Lift Workplace Inspection Form
- EHS_SOP201_FORM004 Aerial Lift Practical Training Form
- EHS_SOP201_FORM005 Inspection & Maintenance of Personal Fall Protection Equipment

17. PROCEDURE REVIEW

This procedure should be evaluated and updated by EHS as needed.

18. DOCUMENT HISTORY

Date	Revision number	Author	Modifications
09/07/2023	0	Franco Del Pino	New format based on EHS_SOP001
09/25/2023	1	Renee Michel	Annual Review