## Review and Updates

<table>
<thead>
<tr>
<th>Date</th>
<th>Reviewed by</th>
<th>Changes Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/20/15</td>
<td>Mary Schlagel</td>
<td>Updated EH&amp;S duties.</td>
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<tr>
<td>5/26/16</td>
<td>Mary Schlagel</td>
<td>Updated Daily Aerial Lift Safety Checklist.</td>
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<tr>
<td>7/6/16</td>
<td>Mary Schlagel</td>
<td>Updated Responsibilities section.</td>
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<td>Updated Responsibilities, Inspection &amp; Operator Training sections</td>
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<td>Mary Schlagel</td>
<td>Updated Responsibilities, Inspection of Lifts, Training sections and Inspection Checklist form</td>
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Purpose
The purpose of the Aerial Lift Safety Program (Program) is to establish procedures for the safe operation of aerial lifts used on NIU property as well as to ensure compliance with applicable safety standards.

Applicable Regulations and Standards
- OSHA 29 CFR 1910.68 (Man-lifts)
- OSHA 29 CFR 1926.20 (General Safety & Health Provisions)
- OSHA 29 CFR 1926.21 (Safety Training and Education)
- OSHA 29 CFR 1926.451 (General Requirements)
- OSHA 29 CFR 1926.452 (Scaffolds)
- OSHA 29 CFR 1926.453 (Aerial Lifts)
- OSH Act of 1970 General Duty Clause Section 5
- ANSI/SIA A92.2-2009 (Vehicle Mounted Elevating and Rotating Aerial Devices)
- ANSI/SIA A92.3-2006 (Manually Propelled Elevation Aerial Platform)
- ANSI/SIA A92.5-2006 (Boom-Supported Elevating Work Platform)
- ANSI/SIA A92.6-2006 (Self-Propelled Elevated Work Platforms)

Scope
This program applies to all powered or manually operated personnel lifting equipment operated by NIU personnel or contractors regardless of location. Types of lifts include:

- Telescoping, such as scissor lifts and vertical man-lifts. The only direction the platform or personnel basket goes is up or down. This type of lift is generally used indoors.
- Articulating. The platform or basket moves up, down and sideways. There may be one or more hinged sections. This type of lift is generally used outdoors but occasionally indoors.
- Vehicle-Mounted or Boom-lift Trucks, where the platform or basket is mounted on a vehicle. There may or may not be hinged boom sections. The boom may or may not be insulated against electrical hazards. This type of lift is used outdoors.

Responsibilities
Environmental Health and Safety Department (EH&S)
- Perform an annual review and update of the Program as necessary.
- Arrange for initial and refresher train-the-trainer training as needed.
- Report unsafe practices to the appropriate supervisor.
- Audit affected departments periodically for compliance.

Department Supervisors/Foremen
- Read and comply with this Program.
- Ensure departmental-assigned aerial lift equipment is properly inspected, tested and maintained in accordance with manufacturer requirements and applicable safety regulations.
- Maintain records of lift inspection, testing and maintenance.
- Ensure operators receive appropriate training as needed.
- Ensure only trained operators use aerial lifts.
- Ensure operators of boom and/or bucket truck lifts are trained in fall protection.
• Ensure operators of boom and/or bucket truck lifts have access to and use appropriate fall protection equipment.
• Ensure operators complete the Aerial Lift Pre Operation Inspection Checklist before operating the lift. (See Appendix A or EH&S website for form.)
• Maintain records of operator training. This includes initial and refresher certificates as well as records of make/model of lifts in which operator was trained.
• Ensure operators are provided with specific familiarization for each model of lift assigned.
• Ensure appropriate personal protective equipment (PPE), emergency safety shower and fire extinguisher equipment located adjacent to the battery charging station are properly maintained.
• Tag all lifts that do not pass daily inspections or are otherwise unsafe for use using the “Out of Service” form provided in Appendix B.
• Observe the operation of aerial lifts and correct unsafe behaviors and practices.
• Inform EH&S when there are changes to the department lift inventory. Please include the make, model, type, serial number, NIU inventory control number, and final disposition.

Operators
• Read and comply with this Program.
• Receive training and ensure training is updated as needed.
• Receive fall protection training if operating boom and/or bucket trucks.
• Review the operating instructions and safety procedures for the equipment to be used.
• Complete the Aerial Lift Pre Operation Inspection Checklist (See Appendix A or form in EH&S website) before operating any lift.
• Tag lifts that do not pass daily inspection (as unsafe, contributing to unsafe conditions or in need of repair) using the “Out of Service” form provided in Appendix B. Report any deficiencies or need for repairs to the supervisor.
• Do not use equipment that has failed any inspection(s) or has an “Out of Service” tag affixed to it for any reason until it has been repaired and returned to service.
• Observe the operation of aerial lifts and report unsafe practices, problems or malfunctions to the supervisor.
• Charge battery at its designated charging station after operating lift. Don proper PPE (safety glasses, face shield, long sleeves, chemical apron, chemical gloves) when adding electrolyte or water to the battery.

Contractors
Contractors are expected to provide their own aerial lifts when working on NIU property. The NIU project manager and/or the department coordinating the contractor work must provide written approval to the contractor in the event there is a need to deviate from this practice. Contractor employees are allowed to use aerial lifts owned by NIU as long as the lift is operated by an NIU trained operator. The contractor is expected to provide all appropriate aerial lift and fall protection training as well as personal fall arrest equipment for contractor employees. Such training documentation should be provided upon request.

Maintenance and Repair of Lifts
Qualified service technicians are required to service, maintain and repair lifts in accordance with applicable OSHA and ASNI Standards and manufacturer’s requirements. Modifying lifts is prohibited unless performed in
accordance with applicable requirements outlined in ANSI A92.2 (Vehicle-Mounted Elevating and Rotating Platforms) and OSHA 1910.68 (Man lifts).

**Inspection of Lifts**

Aerial lifts shall be inspected annually by a qualified service technician certified to work on that make and model. When a lift passes inspection the technician shall affix a label noting the date of the inspection and place on a conspicuous location on the lift. A record of the inspection shall be kept on file by the department owning the equipment.

Prior to each use the operator shall inspect the lift for damage and defects which may affect the safe operation of the lift. Inspections must include, but not limited to, the following:

- Bent or broken structural members
- Cracked welds
- Hydraulic, pneumatic or fuel leaks
- Damaged controls, cables and wiring harness
- Loose wires
- Tire and wheel condition
- Absence or damage to outriggers, stabilizers and other structures
- Absence of a guardrail system
- Low electrolyte levels in batteries
- Slippery conditions on the work platform
- Other items specified by the manufacturer

The Aerial Lift Pre Operation Inspection Checklist form is found in Appendix A and also on the EH&S website under Forms. Operators are required to complete a copy of the form prior to using a lift. Operators must review the operating instructions and safety procedures before using the lift. (If the manual is absent inform the supervisor so a replacement manual can be ordered.)

Any defect or deficiency shall be reported to the supervisor and the head of the department owning the lift. The lift must be tagged ‘out of service’ (See Appendix B for sign) and kept out of service until the lift is evaluated and appropriate repairs have been made. Repairs shall be made by a technician certified to work on that make and model. The department owning the lift shall keep a record of repairs and safety inspections for each lift in its inventory.

**Operator Training**

Prior to using a lift, operators must receive training which includes both classroom instruction and a ‘hands-on” exercise. Trained aerial lift operator safety trainers are located in the following NIU departments:

- Building Services
- Convocation Center
- Department of Information Technology
- Materials Management

Foremen/supervisors shall contact a supervisor from one of the departments noted above to arrange training for designated operators.
Trained operators are required to receive refresher training every five years unless:

- The operator is observed using a lift unsafely.
- The operator is involved in an accident or near miss.
- The operator evaluation indicates a need for additional training and/or practice.

Operator training records shall be maintained in the operator’s department. Records shall include:

- Name of individual trained
- Subject of training (operator or train-the-trainer)
- Date of training
- Name of trainer
- List of the makes and models the operator has received familiarization

**Safe Work Practices**

**Pre Lift Operation**

- Inspect the lift from the ground. Test operations.
- Inspect work area and route to work area.
  - Single man lifts - Ensure that outriggers (if so equipped) are in a stowed position for moving and deploy them when in proper position for work. Stow them before moving the lift.
  - Scissor lifts - If the lift is designed to be driven from work site to work site it shall be done with the platform low to the ground.
  - Boomlifts - Retract boom but keep platform high enough for the operator to see over the lift.
    Drive platform to observe traffic or pedestrians in the path of travel.
- Guardrails must be in place and access gates or gaps must be closed before raising the platform.
- Boom and platform load limits specified by manufacturer shall not be exceeded.
- Protect bystanders by placing barricades around worksite, posting another employee to keep bystanders at a safe distance or other effective means to isolate the work area from pedestrian and motor traffic.
- Observe wind speeds and/or anticipated gusts. At 20 mph lifts shall be lowered to a height of no more than 20 feet. At 25 mph the basket shall be grounded. If there is thunder or lightning, bring the basket all the way down and get the crew to safe shelter until the storm has passed. Wait for a minimum of one half hour after the last rumble of thunder to avoid chance of lightning strike before resuming work.
- Pay particular attention to overhead electrical lines and other electrical hazards.

**Work Area Inspection**

Areas where aerial platforms are to be used shall be inspected prior to operating an aerial lift and rechecked during use. The operator shall examine the work area for possible hazards, including but not limited to:

- Slopes, holes, drop-offs, trenches, pits or other leading edges
- Soft soils, particularly near creeks, streams, ponds or lagoons
- Ground or floor obstructions, such as bumps, debris, tools, other lifts or other equipment
- Inadequate height and width clearance for the platform and chassis
- Inadequate surface and support to withstand all load forces imposed by the aerial lift platform.
- Overhead obstructions and power lines
• Wind and weather conditions (winds in excess of 20 mph, lightning, audible thunder, weather warnings, snow obscuring view of ground conditions)
• Presence of unauthorized pedestrians in work area.

**Lift Operation**

- In the case of boom lifts, raise basket to a height sufficient for the operator to see over the lift’s drive platform and observe any pedestrians or possible obstructions in the path of travel.
- Pay attention to direction of travel and clearances above, below and to all sides of lift.
- While driving pay attention to road hazards such as potholes, obstacles in road, uneven surfaces or soft surfaces.
- Limit the speed of mobile aerial lifts, taking into account ground surface conditions, visibility, slope, congestion, location of personnel and other factors that may cause hazards to other people nearby.
- Lift shall not be operated on grades, side slopes or ramps that exceed manufacturer’s recommendations.
- Once in position, brakes shall be set and outriggers, if used, shall be positioned on pads or solid surfaces. When working on an incline, wheel chocks must be in place before using the lift.
- Do not sit or climb on guard rails.
- Operator’s equipment must be secured inside the work basket.
- No ladders or any other equipment or device intended to gain further height shall be used in or on the aerial lift.
- Do not exceed manufacturer’s load limits posted on lift. Load limit total includes the weight of the operator and any tools or equipment present in the platform or basket.
- Occupancy limits shall not be exceeded.
- Do not move lift while boom is extended.
- Lift shall not be used as a crane.
- The basket shall not be rested against another object (building, pole, tree, etc.) to steady the elevated platform. (Hydraulic pressure will decrease and the basket will suddenly drop several feet.)
- Horseplay and stunt driving shall not be permitted.
- Operators shall call for assistance if the basket or any part of the machine becomes entangled.
- In the event of a mechanical failure, operators shall not attempt to climb out of the basket or platform or climb down the boom. Ground controls can be used by another certified operator with the stranded operator’s permission. Permission is implied if the operator is unconscious.

**Post Lift Operation**

- Position lift in a suitable parking area with the basket in the stowed position, controls placed in neutral, engine idling for gradual cooling. Turn off all power. Take necessary steps to prevent unauthorized use.
- Shut off power prior to fueling. Fueling must be done in a well-ventilated area free of flame, sparks, electric arcs or other hazards that may cause fires or explosions.

**Battery Charging Operations**

- A designated area for battery charging must be established with PPE kept on site. The area must be free of ignition sources. These could ignite the hydrogen gas coming off a battery with insufficient electrolyte.
- There must be facilities for flushing and neutralizing spilled electrolyte, fire protection and adequate ventilation for dispersal of vapors arising from dry and gassing batteries and collision prevention/protection for the charging apparatus. Dry batteries get hot and can splash acidic electrolyte when being filled.
- Operators must don PPE while charging batteries. Proper PPE includes face shield, long sleeves, rubber boots, aprons and gloves.

**Rented Lifts**
NIU occasionally rents aerial lifts to facilitate department operations. It is the responsibility of the NIU aerial lift operator to inspect the lift before accepting it from the rental company. If the operator finds the renter’s lift does not pass the same standard inspection used for NIU-owned lifts the operator has the right to reject the lift and must immediately inform the supervisor.

If not trained on this make and model of aerial lift, the operator must be familiarized with the lift before using it for work. Once familiarized, the make and model of the lift and the trainer’s name shall be recorded in the training file.
Appendix A
# Aerial Lift Pre Operation Inspection Checklist

**Signature of Operator Performing the Inspection:** ________________________________  **Date:** __________

<table>
<thead>
<tr>
<th>Number</th>
<th>Inspection Area</th>
<th>PASS</th>
<th>FAIL</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td><strong>Fluids:</strong> Check fluids for proper levels: Fuel, oil, hydraulic, coolant, etc. Are there any leaks?</td>
<td></td>
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<td></td>
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<tr>
<td>2</td>
<td><strong>Battery:</strong> Is fluid level to manufacturer’s specification? (Dry batteries can explode!) Are there any sign of leaks, corrosion or grease? Is battery charged? Are the connections tight?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><strong>Tires and Wheels:</strong> Check condition. Are the treads worn? Do tires have cuts, tears, gouges or dry rot? Are they inflated to proper pressure? Do wheels show damage or corrosion?</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td><strong>Work Platform:</strong> Are the guardrails present and in good condition? Is the gate or entry chain present and in good condition? Does it open and close properly?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td><strong>Safety and Warning Devices:</strong> Are control labels, decals and warnings present and readable? Test warning devices—alarms, horns, beacons, level indicator, lights, etc. Inspect outriggers, electrical components, cables and wires.</td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td><strong>Start and check engine and lifting devices for proper operation.</strong> Raise and lower platform using ground controls. Inspect boom, wear pads &amp; electrical harnesses where present.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td><strong>Structural damage:</strong> Is there any evidence of damage such as cracked welds or structure, bends, breaks, frayed wires, corrosion or loose parts?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td><strong>For boomlifts:</strong> rotate turret, test foot switch, extend and retract outriggers. Test emergency down function.</td>
<td></td>
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<tr>
<td>9</td>
<td><strong>Board lift, start engine.</strong> Do controls function normally? Do the brakes work?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td><strong>Are any parts missing?</strong> Are fasteners and pins in place? Is fuel cap on securely?</td>
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</tbody>
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**REMARKS:** (Items needing repair or adjustments) ____________________________________________

**CAUTION:** Any time an aerial lift is found to be unsafe, contributing to unsafe conditions or in need of maintenance or repair it must be removed from service and the supervisor notified. Any checkmark in the FAIL category puts unit out of service and reportable unless the operator can safely address all deficiencies during the pre-operation inspection.
Appendix B
OUT OF SERVICE

Equipment is unsafe for use. Please contact the department owning this equipment for more information.