

1.0 PURPOSE and APPLICABILITY

- 1.1 It is the policy of the University of Pennsylvania in coordination with the Office of Environmental Health and Radiation Safety to provide the University community with a safe and healthful environment. This program defines practices and procedures to be implemented for the safe operation of Penn-owned or leased boom-supported elevating work platforms.
- 1.2 This program applies to the operation of Penn-owned or leased boom-supported elevating work platforms and to Penn-employed operators of boom-supported elevating work platforms owned by others. *This program does not apply to vehicle-mounted boom lifts or elevated work platforms that travel strictly in a vertical direction such as scissor lifts.*
- 1.3 Typical examples of equipment covered:



2.0 DEFINITIONS

- 2.1 **Aerial platform** – A mobile device that has an adjustable position platform, supported from ground level by a structure.
- 2.2 **Anchorage(s)** – A secure point of attachment to be used with personal fall protection equipment (PFPE)
- 2.3 **Authorized personnel (authorized person)** – Personnel approved or assigned to perform a specific type of duty or duties at a specific location or locations at a work site.
- 2.4 **Base** – The relevant contact points of the aerial platform that form the stability fulcrum (e.g., wheels, casters, outriggers, stabilizers)
- 2.5 **Boom** – A cantilever beam which supports the platform.

- 2.6 **Operator** – A qualified person who controls the movement of an aerial platform.
- 2.7 **Owner** – A person or entity that has possession of an aerial platform by virtue of proof of purchase.
- 2.8 **Qualified person** – One who, by possession of a recognized degree, certificate, or professional standing, or by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

3.0 ROLES and RESPONSIBILITIES

3.1 Owner/Management:

- 3.1.1 Responsibilities upon purchase - Upon purchase of the boom-supported elevating work platform the purchaser:
 - 3.1.1.1 Shall ensure the operating and maintenance manuals have been received.
 - 3.1.1.2 Shall within sixty days (60) of acquisition provide the manufacturer with the full name and address of the buyer along with the model and serial number of the boom-supported elevating work platform acquired. The purpose of notification is to ensure that any important safety bulletins and recall information is effectively communicated and that any warranty is effectuated.
- 3.1.2 Maintenance, inspection and repair:
 - 3.1.2.1 Maintenance - Maintenance specified in the equipment's operation and service manual shall be performed on a timely basis by an individual who is qualified to perform the task. This maintenance and service record shall be documented through the use of a log book or electronically. Aside from minor routine tasks identified in the operator's manual, it is expected that most maintenance tasks shall be completed by the authorized service or repair vendor. A preventative maintenance program developed in accordance with the manufacturer's recommendations and taking into account the environment and severity of use shall be implemented.
 - 3.1.2.2 Inspection - Routine and annual inspections shall be performed in accordance with the manufacturer's recommendations. All malfunctions and problems identified shall be corrected before the aerial platform is returned to service.
 - 3.1.2.3 Repairs - When the aerial platform is damaged or in need of repair, all malfunctions and problems identified shall be corrected before

it is returned to service. The unit shall be conspicuously tagged (and locked if feasible) out of service.

- 3.1.3 Operator training - Ensure individuals who use/operate the boom-supported elevating work platform have been trained and familiarized with the particular work platform they will be operating. The content of the training should be specified in the operator's manual. If it is not, contact EHRS and a training program will be created. Typically, initial training should be provided by the work platform dealer upon delivery. Notify EHRS of training to be provided by third parties during the time of scheduling so that EHRS can integrate any Penn-specific requirements into the training. Additionally, all personnel who use boom-supported elevating work platforms must complete EHRS training that covers the proper use of the assigned personal fall protection equipment.
- 3.1.4 Record retention - The following records shall be maintained for the duration of ownership of the elevating work platform:
- 3.1.4.1 Purchase information including receipts and serial number.
 - 3.1.4.2 Inspections, maintenance and repair documentation.
 - 3.1.4.3 Training records of all individuals receiving operator training. Records must include name of individual who is trained, name of trainer, summary of training content (ie. based on the content of the particular operator's manual of the machine to be operated) and training date. Submit copies of training records to [EHRS](#) to enable updating of Penn's learning management system training database.
 - 3.1.4.4 Records shall be kept in the office of the party responsible for coordinating inspections, maintenance and training for the platform.
- 3.1.5 Modifications – Only authorized service or repair providers shall make modifications to Penn-owned or leased boom-supported elevated work platforms.
- 3.1.6 Resale – A bill of sale that includes a release from liability for Penn must be completed with the purchaser. [Contact Penn's Office of General Counsel](#) to obtain the appropriate bill of sale.

3.2 **Operators:**

- 3.2.1 Manuals – Operators shall be familiar with the operator's manual for the particular elevating work platform that will be used. The manuals must be kept with the equipment.

3.2.2 Inspections:

3.2.2.1 Pre-use inspection of the boom-supported elevating work platform:

The operator shall verify that all required scheduled inspections and maintenance are current. The operator shall perform pre-use inspection in strict accordance with the operator's manual.

3.2.2.2 Inspection of use area – The area where the platform will be used must be inspected for the following issues:

3.2.2.2.1 Use area must meet the requirements listed in the operator's manual. There must not be any holes, drop offs, etc.

3.2.2.2.2 Overhead obstructions.

3.2.2.2.3 Maintain at least ten feet of clearance from electrical conductors.

3.2.2.2.4 Surface is capable of properly supporting the work platform and the load that is on it. Pay particular attention to avoiding lightweight manhole/vault covers.

3.2.2.2.5 Wind and weather conditions.

3.2.3 Maintenance – Operators may only perform maintenance that they have been qualified to perform through the appropriate training.

3.2.4 Operator training – Only individuals who have been trained in accordance with section 3.1.3 of this document may operate, inspect or maintain boom-supported elevating work platforms.

3.2.5 Specific Procedures:

3.2.5.1 Operation – There must be at least two individuals present whenever a boom-supported elevating work platform is being used. One individual will operate the platform and the other person will be on hand to serve as a spotter to keep individuals away from the platform while it is in motion, alert the operator of any identified hazards and to summon aid if needed.

3.2.5.2 Fall protection – The guardrails of the boom-supported elevating work platform provide principal fall protection. The guardrails must be properly positioned and free of damage. If the platform has an access door, ensure that it latches or secures properly after use. Users of boom-supported elevating work platforms must also wear a full-body harness and tie off to the anchorage point provided on the platform. The full-body harness shall be connected to the approved anchorage point by either a 4-foot non-shock absorbing lanyard or a self-retracting lanyard. All fall protection

- equipment must be approved by EHRIS and inspected and used according to the manufacturer's specifications.
- 3.2.5.3 Terrain – Operators shall transport and operate the work platform within the defined parameters of the operator's manual.
- 3.2.5.4 Stabilization – Ensure that stabilizers (outriggers or screw jacks), if equipped, are used in accordance with the operator's manual.
- 3.2.5.5 Precautions prior to operation – Prior to driving a powered platform or raising or lowering the platform, the operator must make sure that there are no individuals in the pathway of travel. Individuals must be kept clear of the platform while it being raised or lowered. It is imperative to ensure that no one is located under the lift platform (sitting on the base while the platform is raised) prior to lowering the platform.
- 3.2.5.6 Distribution of load – Load on the work platform must be distributed according the manufacturer's specifications.
- 3.2.5.7 Footing on the work platform – Individuals shall maintain footing on the floor of the platform. Ladders or other means of increasing height on the platform is prohibited. Climbing on the platform rails is prohibited.
- 3.2.5.8 Electrical hazards – Boom-supported elevating work platform operators must be particularly aware of any electrical hazards that may be encountered during operation or transportation. Ensure that a clearance of at least ten feet is provided from overhead lines or other sources of electricity. Clearance of tools and equipment to be used from the work platform while it is elevated must also be taken into account.
- 3.2.5.9 Capacity limitations – Rated capacities and rated number of occupants shall not be exceeded when loads are transferred to the platform at any height.
- 3.2.5.10 Fueling – The engine shall be shut down while fuel tanks are being filled. Fueling shall be completed in a well-ventilated area free of flame, sparks, or other hazards that may cause fire or explosions.
- 3.2.5.11 Battery charging – Charging of batteries shall be completed in well ventilated areas. Proper personal protective equipment including eye/face protection shall be worn during battery maintenance. There shall be an eyewash station present in the battery charging area.
- 3.2.5.12 Improper platform stabilization – The aerial platform shall not be positioned against another object to steady the platform or improve stability.

- 3.2.5.13 Misuse as a crane – The aerial platform shall not be used as a crane.
- 3.2.5.14 Travel speeds – The spotter shall direct the operator to limit travel speed according to conditions, including the condition of the support surface, congestion, visibility, slope, location of personnel, and other factors leading to hazards which may cause collision(s) or result in potential injury (ies) to personnel.
- 3.2.5.15 Driving requirements – Before and during driving while the platform is elevated, the spotter shall direct the operator to:
- 3.2.5.15.1 Maintain a clear view of the support surface and route of travel.
- 3.2.5.15.2 Ensure personnel in the worksite area that may be affected are aware of the movement, communicating and maneuvering the aerial platform as required to protect against personal injury.
- 3.2.5.15.3 Maintain a safe distance from obstacles, debris, drop-offs, holes, depressions, lightweight manhole/vault covers, ramps, and other hazards to ensure safe travel.
- 3.2.5.15.4 Maintain a safe distance from overhead obstructions and energized electrical conductors.
- 3.2.5.16 Altering safety devices – Interlocks or other safety devices shall not be altered or disabled.
- 3.2.5.17 Snagged platform – If the platform or elevating assembly becomes caught, snagged, or otherwise prevented from normal motion by adjacent structures or other obstacles such that control reversal does not free the platform, all personnel shall be removed from the platform before attempts are made to free the platform using the lower controls.
- 3.2.5.18 Vacating (or entering) an elevated aerial platform – If permitted by the manufacturer, personnel shall only vacate or enter a raised aerial platform by following the guidelines and instructions provided by the manufacturer.
- 3.2.5.19 Problems or malfunctions – Any problem(s) or malfunction(s) that affect the safety of operations shall be repaired prior to the use of the aerial platform.
- 3.2.5.20 Security – The elevating work platform must be secured to prevent unauthorized operation. Typically, elevating work platforms are configured to allow installation of a padlock on the battery switch or some other component of the control system.
- 3.2.5.21 Weather – Elevating work platforms used outdoors must not be used when there is a threat of an electrical storm or in winds exceeding the limits defined in the operations manual. If no

maximum wind speed is published, consider 25 miles per hour to be the maximum gust that a work platform may be operated in. A calibrated handheld anemometer shall be used to monitor wind speeds in the location where the platform will be used. Local conditions including terrain and buildings may cause wind speeds to be greater than reported by weather services.

4.0 REFERENCES and RESOURCES

- 4.1 American National Standards Institute/Scaffold Industry Association A92.5-2006 Boom-Supported Elevating Work Platforms
- 4.2 American National Standards Institute/Scaffold Industry Association A92.3-2006 Manually-Propelled Elevating Aerial Platforms
- 4.3 Occupational Safety and Health Administration (OSHA) [1926-453 Construction – Aerial Lifts](#)
- 4.4 Occupational Safety and Health Administration (OSHA) [1926-452\(W\) – Mobile Lifts & Scaffold Standard Interpretations.](#)