Environmental Health & Safety

AERIAL LIFT PROGRAM

SINCE 1963
LD DOCSA
ASSOCIATES, INC.
GENERAL CONTRACTORS
Building Sustainable Solutions

Contents

GENERAL

L.D. Docsa Associates, Inc. will ensure that aerial lift hazards are evaluated. This standard practice instruction is intended to address the issues of; evaluating and identifying aerial lift selection and use deficiencies, evaluating the associated potential hazards, communicating information concerning these hazards, and establishing appropriate procedures, and protective measures for employees.

RESPONSIBILITY

L.D. Docsa Associates, Inc. is responsible for all facets of this program and has full authority to make necessary decisions to ensure success of the program

WRITTEN PROGRAM

L.D. Docsa Associates, Inc. will review and evaluate this standard practice instruction on an annual basis, or when changes occur to the governing regulatory standards, that prompt revision of this document, or when facility operational changes occur that require a revision of this document. Effective implementation requires a written program for job safety and health, that is endorsed and advocated by the highest level of management within L.D. Docsa Associates, Inc. and that outlines our goals and plans. This written program will be communicated to all required personnel. It is designed to establish clear goals, and objectives.

GENERAL REQUIREMENTS

All facilities and equipment owned by L.D. Docsa Associates, Inc. will be maintained in a safe and healthful manner. Certain work conditions may contain a reasonable probability of injury that can be prevented by proper maintenance and supervision. L.D. Docsa Associates, Inc. will do all possible to ensure the safety of our employees. No employee will knowingly be subjected to a hazardous condition without all possible protective measures first being implemented.

MANUFACTURERS RECOMMENDATIONS FOR SAFETY

To insure safety and serviceability the following general precautions, concerning the care and use of aerial lifts will be observed.

AERIAL LIFT SAFETY POLICY

To insure safety and serviceability the following general precautions concerning the care and use of Aerial Lifts will be observed:

RESPONSIBILITIES

Only trained and authorized employees shall operate an aerial lift.

Responsibilities of the Operator: The information in this standard shall be supplemented by good judgment, safety controls, and caution in evaluating each situation. Since the operator is in direct control of the aerial platform, conformance with good safety practices in this area is the responsibility of the operator. The operator shall make decisions on the use and operation of the aerial platform with due consideration for the fact that his or her own safety as well as the safety of others is dependent on those decisions.

MACHINE MANUALS

The operator shall ensure the operating and maintenance manuals are stored in the weather resistant storage compartment on the aerial plat- form. The manual(s) is considered an integral part of the aerial platform and is vital to communicate necessary safety information to the operator. The operator shall be familiar with the manuals and reference them as required.

FIELD MODIFICATIONS

Field modifications may not be made to any aerial lift device unless written approval is obtained from the manufacturer or any other equivalent entity.

Aerial lifts may not be used for any other reason than as prescribed in the manufacturer’s operating instructions.

PRE-START INSPECTION

Before use each day or at the beginning of each shift, the aerial platform shall be given a visual inspection per the manufactures requirements and functional test including but not limited to the following:

- Operating and emergency controls including working backup alarm.
- Safety devices.
- Personal protective devices.
- Air, hydraulic, and fuel systems leaks.
- Cables and wiring harness.
- Loose or missing parts.
- Tires and wheels.
- Placards, warnings, control markings, and manual(s).
- Outriggers, stabilizers and other structures.
- Guardrail system.
- Others

Problems or Malfunctions

Any problems or malfunctions that affect the safety of operations shall be repaired prior to the use of the aerial platform. No modification to aerial lifts shall allowed without the manufacture authorization.

BEFORE OPERATION

Before operation the operator shall:

- Read and understand the manufacturer's operating instruction(s) and user's safety rules or have them explained.
- Understand all labels, warnings and instructions displayed on the aerial platform or have them explained.
- Ensure all occupants of the aerial platform wear appropriate personal safety equipment for the conditions, including the environment in which the aerial platform will be operated.

- Ladder trucks and tower trucks. Aerial ladders shall be secured in the lower traveling position by the locking device on top of the truck cab, and the manually operated device at the base of the ladder before the truck is moved for highway travel.

PRE-WORKPLACE INSPECTION

Before the aerial platform is used and during use, the operator shall check the area in which the aerial platform is to be used for possible hazards such as, but not limited to:

- Drop-offs or holes.
- Slope(s).
- Bumps and floor obstructions.
- Debris.
- Overhead obstructions and electrical conductors.
- Hazardous locations.
- Inadequate surface and support to withstand all load forces imposed by the aerial platform in all operating configurations.
- Wind and weather conditions.
- Other possible unsafe conditions.

PRIOR TO EACH ELEVATION

Before each elevation of the platform, the operator shall ensure that:

- Outriggers, stabilizers, extendible axles, or other stability enhancing means are used as required by the manufacturer.
- Guardrails are installed and access gates or openings are closed per manufactures instructions.
- The load and its distribution on the platform and any platform extension(s) are in accordance with the manufacturer's rated capacity for that specific configuration.
- All personnel on the aerial platform have appropriate safety gear for the work and environment envisioned.

- Articulating boom and extensible boom platforms, primarily designed as personnel carriers, shall have both platform (upper) and lower controls.
- Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall provide for overriding the upper controls.
- Controls shall be plainly marked as to their function. Lower level controls shall not be operated unless permission has been obtained from the employee in the lift, except in case of emergency.

OPERATING REQUIREMENTS

The following safety practices shall be followed when operating aerial lift equipment. All manufactures recommendations must be followed.

- Belting off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted.
- Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.
- Fall protection shall be worn and a lanyard attached to the boom or basket when working from an aerial lift. Body belts shall not be used for fall arrest.
- If no alarm, a spotter is required.
- Boom and basket load limits specified by the manufacturer shall not be exceeded.
- The brakes shall be set and when outriggers are used, they shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline provided they can be safely installed.
- An aerial lift truck shall not be moved when the boom is elevated in a working position with men in the basket, except for equipment, which is specifically designed for this type of operation in accordance with the provisions of paragraphs (a)(1) and (2) of this section.

- The insulated portion of an aerial lift shall not be altered in any manner that might reduce its insulating value.
- Before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position except as provided in paragraph (b)(2)(viii) of this section.
- The clearance between scaffolds and power lines shall be as follows: Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines than as follows[1]:

Insulated Lines

Voltage	Minimum Distance	Alternatives
Less than 300 volts	3 feet (0.9 m)	
300 volts to 50 kv	10 feet (3.1 m)	
More than 50 kv	10 feet (3.1 m) plus 0.4 inches (1.0 cm) for each 1 kv over 50 kv	2 times the length of the line insulator, but never less than 10 feet (3.1 m)

Uninsulated Lines

Voltage	Minimum Distance	Alternatives
Less than 50 kv	10 feet (3.1 m)	
More than 50 kv	10 feet (3.1 m) plus 0.4 inches (1.0 cm) for each 1 kv over 50 kv	2 times the length of the line insulator, but never less than 10 feet (3.1 m)

[1] Exception to paragraph: Scaffolds and materials may be closer to power lines than specified above where such clearance is necessary for performance of work, and only after the utility company, or electrical system operator, has been notified of the need to work closer and the utility company, or electrical system operator, has de-energized the lines, relocated the lines, or installed protective coverings to prevent accidental contact with the lines.

Safety interlocks shall not be over-ridden or defeated in any way.

ELECTRICAL TESTS

All electrical tests shall conform to the requirements of ANSI A92.2-1969 section 5. However equivalent DC voltage tests may be used in lieu of the AC voltage specified in A92.2-1969; DC voltage tests which are approved by the equipment manufacturer or equivalent entity shall be considered an equivalent test.

BURSTING SAFETY FACTOR

The provisions of the American National Standards Institute standard ANSI A92.2-1969, section 4.9 Bursting Safety Factor shall apply to all critical hydraulic and pneumatic components. Critical components are those in which a failure would result in a free fall or free rotation of the boom. All non-critical components shall have a bursting safety factor of at least 2 to 1.

WELDING STANDARDS

All welding shall conform to the following standards as applicable;

- Standard Qualification Procedure, AWS B3.0-41.
- Recommended Practices for Automotive Welding Design, AWS D8.4-61.
- Standard Qualification of Welding Procedures and Welders for Piping and Tubing, AWS D10.9-69.
- Specifications for Welding Highway and Railway Bridges, AWS D2.0-69.

UNDERSTANDING OF HAZARDOUS LOCATIONS

It shall be the responsibility of the operator to understand the hazard classification potential presence of flammable or explosive gases or particles, of the intended location according to ANSI/NFPA.

TRAINING REQUIREMENTS

Only employees who have received general instructions/training regarding the inspection, application, and operation of aerial platforms, including recognition and avoidance of hazards associated with their operation shall operate an aerial platform.

Such items covered shall include, but not necessarily be limited to the following issues and requirements:

- The purpose and use of manuals.
- That operating manuals are an integral part of the aerial platform and must be stored properly in the weather resistant compartment when not in use.
- A pre-start inspection.
- Responsibilities associated with problems or malfunctions affecting the operation of the aerial platform.
- Factors affecting stability.
- The purpose of placards and decals.
- Workplace inspection.
- Safety rules and regulations.
- Authorization to operate.
- Operator warnings and instructions.
- Actual operation of the aerial platform. Under the direction of a qualified person, the trainee shall operate the aerial platform for a sufficient period of time to demonstrate proficiency in the actual operation of the aerial platform.

Retraining

The operator shall be retrained when so directed by the employer, based on the user's observation and evaluation of the operator.

CODE OF SAFE PRACTICES AERIAL LIFTS

1. The guardrail system of the aerial platform provides fall protection. However, when working from a boom lift, employees are required to wear a fall restraint or positioning device system. The employee shall comply with instructions provided by the aerial platform manufacturer regarding anchorage points.
2. The aerial platform shall not he operated at any time on grades, side slopes, or ramps, exceeding those for which the aerial platform is rated by the manufacturer.
3. Outriggers, stabilizers, extendible axles, oscillating axles or other stability enhancing means shall be deployed and locked into place as required by the manufacturer.
4. Guardrails shall be installed and positioned and access gates or openings shall be closed per the manufacturer's instructions.
5. The load and its distribution on the platform and any platform extension shall be in accordance with the manufacturer's rated capacity for that specific configuration.
6. The operator shall ensure adequate clearance is maintained from overhead obstructions and energized electrical conductors and parts.
7. The operator shall maintain the minimum safe approach distance from energized power lines and other power sources. Electrical equipment and lines shall be considered energized until determined to be de-energized by tests or other appropriate methods or means, and properly grounded. If energized power lines or pans are within the area in which the aerial platform is to be used, the operator shall maintain the minimum safe approach distance required.
8. The operator shall ensure all occupants of the platform wear personal protective equipment as required.
9. Employees shall maintain firm footing on the platform floor while working thereon. Climbing by occupants on the midrail or toprail of the aerial platform is prohibited. The use of planks, ladders, or any other devices on the platform for achieving additional height or reach is prohibited.
10. When other moving equipment and vehicles are present, special precautions shall be taken to comply with local ordinances or safety standards established for the workplace. Warnings such as, but not limited

to, flags, roped off areas, flashing lights, and barricades shall be used as appropriate.

11. The operator shall immediately report to a supervisor any damage or malfunctions that become evident during operation. The operator shall ensure all damage or malfunctions that affect the safety of operations are repaired prior to continued use.
12. The operator shall immediately report to a supervisor any potentially hazardous locations; one having potentially flammable or explosive gases or particles that become evident during operation.
13. Operation of aerial platforms not approved and marked for operation in a hazardous location (one having potentially flammable or explosive gasses or particles) shall be prohibited.
14. Care shall be taken to prevent rope, electric cords, and hoses, etc., from becoming entangled in the aerial platform.
15. Rated capacities shall not be exceeded when loads are transferred to the platform at any height.
16. The operator shall ensure the area surrounding the aerial platform is clear of personnel and equipment before lowering the platform.
17. The engine (if applicable) shall be shut down while fuel tanks are being filled. Fueling shall be done in a well-ventilated area free of flame, sparks. or other hazards that may cause fire or explosion.
18. Batteries shall only be charged in a well-ventilated area free of flame, sparks or other hazards that may cause fire or explosion.
19. The aerial platform shall not be positioned against another object to steady the platform.
20. The aerial platform shall not be used as a crane for hoisting.
21. The aerial platform shall not he operated from a position on trucks, trailers, railway cars- floating vessels, scaffolds, or similar equipment unless the application is approved in writing by the manufacturer or a qualified person.
22. The operator shall 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 collisions or result in potential injuries.
23. Before and during during driving while the platform is elevated, the operator shall:
24. Maintain a clear view of the support surface and route of travel,

25. 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.
26. Maintain a safe distance from obstacles, debris, drop-offs. Holes, depressions, ramps, and other hazards to ensure safe travel.
27. Maintain a safe distance from overhead obstacles.
28. Stunt driving and horseplay are prohibited.
29. The operator shall implement means provided protection against use by an unauthorized person.
30. Interlocks or other safety devices shall not be altered or disabled.
31. If the platform/basket or supporting 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/basket before attempts are made to free the platform using lower controls.
32. If permitted by the manufacturer, personnel shall only exit or enter a raised aerial platform by following the guidelines and instructions provided by the manufacturer.
33. Modification or alteration of an aerial platform or the fabrication and attaching of frameworks, or the mounting of attachments for holding tools or materials onto the platform or the guardrail system, shall only be accomplished with the prior written permission of the manufacturer.
34. If an operator encounters any suspected malfunction of the aerial platform, or any hazard or potentially unsafe condition relating to capacity, intended use or safe operation of the aerial platform, the operator shall cease operation of the aerial platform and request further information from a supervisor.
35. Any problems or malfunctions that affect the safety of operations shall be repaired prior to the use of the aerial platform.
36. The operator shall ensure only tools and materials, which are evenly distributed and can be safely handled by an employees working from the platform, shall be transported.
37. The operator shall not permit personnel on the platform to exceed the manufacturer's horizontal force.
38. When an aerial platform is to operate within the area of travel of a bridge crane or similar equipment, steps shall be taken to prevent a collision with the aerial platform.

39. The operator shall insure the support surface is adequate for the aerial platform and the load carried.
40. Outriggers and leveling devices supplied by the manufacturer shall be utilized to level the aerial platform when provided.

SPECIFIC SAFETY TRAINING AND INSTRUCTION

TOPIC: USE OF AERIAL LIFTS AND MAN BASKETS

SOURCE: OSHA - 29 CFR 1926.453 Subpart L and ANSI A92.6 1999

Aerial lifts include the following types of vehicle-mounted aerial devices used to elevate personnel to work areas above ground: Extensible boom platforms; scissor lifts, aerial ladders; articulating boom platforms; vertical towers; and a combination of any of the above.

1. The platform deck shall be equipped with a guardrail or other structure around the upper periphery that shall be 42 inches high, +/- 3 inches, with a midrail. (Chains or the equivalent may be substituted where they give equivalent protection.) Toe boards at sides and ends shall be not less than 36 inches high.
2. Lift controls shall be tested daily prior to use to determine that such controls are in safe working condition.
3. Only trained and authorized persons shall operate an aerial lift.
4. Tie- off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted.
5. Employees shall stand firmly on the floor of the basket, and shall not sit or climb on the rail of the basket or use planks, ladders, or other devices for a work position.
6. A body harness or positioning device shall be worn in an articulating boom lift and attached to the boom or tie-off points inside the basket.
7. Boom and basket load limits specified by the manufacturer shall not be exceeded.

8. The brakes shall be set, and when outriggers are used, they shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline provided they can be safely installed.
9. An aerial lift shall not be moved when the boom is elevated in a working position with persons in the basket.
10. Articulating boom and extensible boom platforms, primarily designed as personnel carriers, shall have both platform (upper) and (lower) controls.
11. Upper controls shall be in or beside the platform within easy reach of the operator. An emergency stopping device shall be provided at the upper controls of elevating work platforms. Lower controls shall provide for overriding the upper controls. Controls shall be plainly marked as to their function.
12. Lower level controls shall not be operated unless permission has been obtained from the employee in the lift, except in an emergency.
13. The insulated portion of an aerial lift shall not be altered in any manner that might reduce its insulating value.

INSPECTION FORM EXAMPLE

L.D. Docsa Associates, Inc. Scissor & Boom Aerial Lift			DAILY INSPECTION CHECKLIST				
PROJECT	LIFT #		FOR THE WEEK OF – 2004				
	MON.	TUE.	WED.	THU.	FRI.	SAT.	SUN.
VISUAL CHECK							
ENGINE							
Crankcase Oil							
Belts							
Wires							
Fuel Line							
COMPONENTS							
Fuel Tank							
LPG Tank Straps							
Gauges							
Battery							
Brake Fluid							
Hydraulic Fluid							
Hydraulic Lines							
Tires, Wheels, Rims							
Extending Axles							
BODY							