Mechanical Equipment, Including Aerial Manlift Equipment

Revised January 2024

WAC 296-45-375

A daily visual inspection and operating tests must be made in accordance with the manufacturer's recommendation by the assigned operator.

Aerial lift equipment must be of the type designed and maintained in accordance with the applicable ANSI A92 series standards as constructed.

Employees must not move any such equipment in the direction of an obstructed view. (An obstructed view exists even though the operator can see to the rear by reason of a system of mirrors or a mirror.)

Vehicles can be backed up only when an observer signals it is safe to do so or the driver performs a "circle of safety" walk around inspection prior to backing up, or the vehicle has a reverse signal alarm audible above the surrounding noise level.

Any type of equipment utilizing booms or ladders to raise baskets or platforms in or from which employees work, will be classified as aerial lift equipment. For purposes of this section, the device used to elevate employees will be termed "boom," the portion upon which the employee stands will be termed "basket."

Only Transportation department authorized employees are permitted to perform mechanical maintenance or repair work on aerial equipment.

Only authorized persons who are properly trained and qualified may use or operate this equipment.

Operating and maintenance instruction manuals issued by the manufacturer must be followed.

Load limits of the boom and basket must not be exceeded. Shock loading (sudden stops or starts) of the equipment must be avoided.

Aerial lifts must not be field modified unless such modification is certified by the manufacturer and approved by the District's Transportation and Safety departments.

The critical safety components of mechanical elevating and rotating equipment must receive a thorough visual inspection and operational test before use on each shift. (See Daily Pre-Flight Visual Inspection.)

Note: Critical safety components of mechanical elevating and rotating equipment are components whose failure would result in a free fall or free rotation of the boom.

No vehicular equipment having an obstructed view to the rear may be operated on off-highway job sites where any employee is exposed to the hazards created by the moving vehicle, unless:

- The vehicle has a reverse signal alarm audible above the surrounding noise level; or
- The vehicle is backed up only when a designated employee signals it is safe to do so.

The operator of an electric line truck may not leave their position at the controls while a load is suspended unless the District can demonstrate no employee (including the operator) might be endangered.

Rubber-tired, self-propelled scrapers, rubber-tired front-end loaders, rubber-tired dozers, wheel-type agricultural and industrial tractors, crawler-type tractors, crawler-type loaders, and motor graders, with or without

attachments, must have rollover protective structures meeting the requirements of WAC 296-155 Safety Standards for Construction Work

Outriggers

Vehicular equipment, if provided with outriggers, must be operated with the outriggers extended and firmly set as necessary for the stability of the specific configuration of the equipment. Outriggers may not be extended or retracted outside of clear view of the operator unless all employees are outside the range of possible equipment motion.

Applied loads. Mechanical equipment used to lift or move lines or other material must be used within its maximum load rating and other design limitations for the conditions under which the work is being performed.

Hydraulic fluids. All hydraulic fluids used for the insulated section of derrick trucks, aerial lifts, and hydraulic tools, which are used on, or around energized lines or equipment must be of the insulating type.

Mechanical adjustment or repairs must not be attempted or performed in the field except by a person qualified to perform such work.

Malfunction or needed repairs of aerial equipment must be reported to the employee responsible for such repairs as soon as reasonably possible. Use of equipment known to need repairs or is malfunctioning is prohibited when such deficiency creates an unsafe operating condition.

When any aerial equipment is parked for operation at the job site, the brakes must be set. Wheel chocks must be used to prevent accidental movement while parked on an incline.

Employees must not sit or stand on the basket edge, stand on materials placed in or across the basket, or work from a ladder set inside the basket.

The basket must not be rested on a fixed object(s) so that the weight of the boom is either totally or partially supported by the basket.

While performing construction work, only certified crane operators may operate cranes with a lifting capacity of more than two (2) tons except for an electrical-rated crane with a fiberglass boom section. State certification is not required when operating a crane to perform maintenance work. In all cases, the operator must have the necessary training to safely operate the crane. (See APM Section Cranes, Derricks, and Hoisting Equipment)

Operations Near Energized Lines and Equipment

Mechanical equipment must be operated so that the minimum approach distances of WAC 296-45-325 Working on or near exposed energized parts Table 2, are maintained from exposed energized lines and equipment. However, the insulated upper portion excluding the basket/bucket of an aerial lift operated by a qualified electrical employee in the lift is exempt from this requirement.

A designated employee other than the equipment operator must observe the approach distance to exposed lines and equipment and give timely warnings before the minimum approach distance required by WAC 296-45-375 Mechanical equipment, including aerial manlift equipment (10)(b) unless the lead worker can demonstrate the operator can accurately determine the minimum approach distance is being maintained.

If during operation of the mechanical equipment, the equipment could become energized, the operation must also comply with at least one of the following:

- The energized lines exposed to contact must be covered with insulating protective material that will withstand the type of contact that might be made during the operation or,
- The equipment must be insulated for the voltage involved. The equipment must be positioned so that uninsulated portions cannot approach the lines or equipment any closer than the minimum approach distances specified in WAC 296-45-325 Working on or near exposed energized parts Table 2 or,
- Each employee must be protected from hazards that might arise from equipment contact with the energized lines. The measures used must ensure employees will not be exposed to hazardous differences in potential. Unless the District can demonstrate the methods in use protect each employee from the hazards that might arise if the equipment contacts the energized line, the measures used must include ALL the following techniques:
    - Using the best available ground to minimize the time the lines remain energized; See Vehicle Grounding.
    - Bonding mechanical equipment together to minimize potential differences,
    - Providing ground mats to extend areas of equipotential; and
    - Employing insulating protective equipment or barricades to guard against any remaining hazardous potential differences.

While working in aerial equipment, employees must wear a full body harness and a lanyard attached to an approved anchorage.

No component of aerial devices must be operated from the ground without permission from the employee in the basket except in case of emergency.

Operating levers or controls must be kept clear of tools, materials, or obstructions.

Employees must not climb into or out of the basket or platform while it is elevated or change from one basket to another on dual basket equipment, except in case of emergency or when the employees involved agree this is the safest way to perform the work. This exception must not be used to circumvent safety rules.

The truck must not be moved unless the boom is lowered, the basket cradled is secured, and the outriggers fully retracted.

Employees must not ride in the basket when moving the equipment. Exceptions: employees may ride in the basket for short moves at the work location if the basket is returned to the cradled position, the outriggers fully retracted for each move, and the employees face the direction of travel.

Existing safety rules governing the use of hot line tools, rubber and other protective equipment and safe work practices while performing work from poles or structures must also apply to work done from aerial manlift equipment.

The basket must be kept clean and all tools not in use must be secured or removed.

An approved warning light must be operating when the boom leaves the cradle. This light must be visible to approaching traffic when the boom is in position over any traveled area.

All aerial manlift equipment must have both upper and lower controls (except ladder trucks need not have upper controls). The upper controls must not be capable of rendering the lower controls inoperative. The lower controls should be located at or near the base of the aerial structure. If the lower controls are used, the operator must have a view of the elevated employee(s) or there must be communication between the operator

and the employee in the elevated aerial structure. No employee must be raised, lowered, or moved into or from the elevated position in any aerial manlift equipment unless there is another employee, not in the elevated aerial structure, available at the site to operate the lower controls, except as follows:

- Where there is a fixed method permanently attached to or part of the equipment permitting an employee to descend from the elevated position without lowering the elevated structure; or
- Where there is a system that will provide operation from the elevated position in the event of failure or malfunction of the primary system.

Controls in aerial manlift equipment must be protected from accidental operation. Controls of the outriggers must also be protected from accidental operation. Such protection may be by guarding or equivalent means.

The manufacturer's recommended maximum load limit must be posted at a conspicuous place near each set of controls and kept in legible condition.

Pre-flight

The manufacturer's operator's instructional manual must be kept in the vehicle.

Operating instructions, proper sequence and maintenance procedures prescribed by the manufacturer must be followed. A daily preflight visual inspection must be completed and logged in the provided logbook for each truck.

This daily inspection is intended to assist the crews in complying with the applicable OSHA (Occupational Safety and Health Administration) requirements found in the federal register.

Section 1926.453 Aerial Lifts

Section 1926.959 Mechanical Equipment

Tests must be made at the beginning of each shift during which the equipment is to be used to determine the brakes and operating systems are in proper working condition.

Procedure for the use of the upper insulated section of personnel lift equipment while working around energized distribution lines or equipment without truck grounds and barricades:

- Truck must have the dielectric certification tag near the lower control station. The bucket trucks will be tested on an annual basis and a new tag installed each year.
- Prior to the first use of the boom each day and any time the boom has gotten dirty, the upper and lower insulated section of the boom must be cleaned using only the provided boom cleaning material. This is included in the daily pre-flight visual inspection checklist.
- For added protection, employees working on the ground must not touch the truck when standing on the ground or getting on/off the truck when it is being used around energized lines or equipment. Employee (s) on the ground must communicate to the employees in the bucket when they need to get on/off the truck. The bucket must not be moved during this time. This must be reviewed during the job briefing.
- All other equipment not meeting these requirements must be grounded and barricaded as outlined in this Accident Prevention Manual.