

Aerial lift platforms such as boom lifts, scissor lifts and stock pickers, are called Mobile Elevating Work Platforms or MEWPs. MEWPs can be found in a variety of work settings. They are often used in place of ladders and scaffolds as they allow easier and safer access to places on the worksite especially when working at higher elevations. Unfortunately, injuries and even deaths occur with their use. It is vital for all entities associated with MEWPs to receive comprehensive training to ensure their safety and the safety of those around them.

1. Terminology and classifications

MEWPs are classified into “groups” and sub-divided into three “types.”

- a. Group classification is determined by whether the lift stays within the tipping lines or moves beyond the tipping lines.
 - i. “Group A” MEWPs move vertically but stay within the chassis or tipping lines. Scissor lifts are an example of this group.
 - ii. “Group B” MEWPs can move beyond the machine’s chassis or tipping lines (wheels or outriggers). Group B generally refers to boom lifts.
- b. Type is determined by whether the lift can travel when stowed or elevated and the location of the controls which allow such travel.
 - i. Type 1 MEWPs can only travel with the platform in a stowed position.
 - ii. Type 2 MEWPs can travel elevated and is controlled from the chassis.
 - iii. Type 3 MEWPs can travel elevated and is controlled from the platform.

Note: Type 2 and type 3 MEWPs can be combined.

2. Equipment changes

Additional safety design features are now required on all new MEWPs. New safety features include load and tilt sensing, stability test for pneumatic tires, wind force requirements for outdoor use, toe-boards on all platform areas, non-flexible entrance gates, taller platform railings, and sustained involuntary operation controls. Operators must be familiarized with the MEWPs being used and trained on the new safety features prior to operating. Existing equipment is not required to be retrofitted to meet the new design requirements. Therefore, it is important for all employees to know the differences between the company’s various MEWPs and are properly trained on both as needed.

3. Safe Use Plan

A Safe Use Plan must be developed and must include but not be limited to the following:

- a. Worksite risk assessment to identify hazards, evaluate risk, create control measures, and communicate results with all affected employees.
- b. Selection, provision and use of appropriate MEWP and associated equipment;
- c. An assessment of the support surface and its ability to support the MEWP;
- d. Maintenance of the MEWP including inspections and repairs;
- e. Familiarization of the specific MEWP to be used by the authorized operator(s);

- f. Local site requirements and the means to protect against identified hazards in the operation area;
- g. Monitoring of the work performance of the operator, by trained and qualified supervisor;
- h. Prevention of unauthorized use of the MEWP;
- i. Safety of all personnel not involved in the operation of the MEWP; and
- j. Requirements for documentation of records.

4. Manuals and safety-related bulletins

Operation manuals provided by the manufacturer must be stored in a weather-proof compartment on the MEWP. Employers must ensure operators read and understand the manual or has it explained to them. MEWPs must be registered with the manufacturer to ensure safety-related bulletins are received.

5. Retention of records

The following records must be retained for at least four years:

- a. Transfer of ownership;
- b. Frequent and annual inspections;
- c. Service and repairs; and
- d. Training and familiarization.

6. Maintenance, inspections and repairs

A preventive maintenance program based on manufacturer's recommendations must be established. It must be performed on a timely basis and take into account the workplace environment and severity of use of the MEWP. Any malfunction or problem identified which affects safe operation must be corrected by a qualified person and authorized by the owner before the MEWP is returned to service.

7. Frequent inspection

Prior to placing a MEWP into service or if a MEWP has been out of service for longer than three months, a frequent inspection is required. A qualified person must perform the inspection which must include all items specified by the manufacturer, manufacturer's bulletins, as well as but not limited to, the following:

- a. All functions and their controls including emergency devices and operations, alarms, and communication systems;
- b. Ground-level controls and the provisions for overriding of upper controls;
- c. All chain and cable mechanisms for adjustment and worn or damaged parts;
- d. Lubrication of all moving parts, inspection of filter elements, hydraulic oil, engine oil and coolant;
- e. Visual inspection of structural components and other critical components like fasteners, pins, shafts, and locking devices;
- f. Instructions, warnings, and control markings; and
- g. Safety devices.

8. Annual inspection

Annual inspections must be performed by a qualified person no later than 13 months from the date of the prior annual inspection. The inspection must include all items checked on the frequent inspection and items specified by the manufacturer for an annual inspection including manufacturer's bulletins. The MEWP should not be put into service until all malfunctions and/or problems found during the inspection have been corrected.

Documentation, including the date and inspection intervals, must be maintained on the MEWP.

9. Pre-start inspection

A pre-start inspection must be performed every day or at the beginning of each shift by the operator which includes but is not limited to the following:

- a. Operating and emergency controls;
- b. Audible and visual alarms;
- c. PPE worn while operating or occupying the MEWP;
- d. Leaks to the air, hydraulic and fuel systems;
- e. Electric cables and wiring harness;
- f. Loose, damaged, worn or missing parts;
- g. Tires, wheels and wheel fasteners;
- h. Instructions, warnings, control markings and operator's manual;
- i. Structural items and stabilizers;
- j. Work platform, guardrail system, floor, anchorage and mounting;
- k. Brakes;
- l. Fluid levels;
- m. Pins and pin securing devices;
- n. Operation of stabilizers/outriggers; and
- o. Other items as specified by the manufacturer.

10. Risk assessment

A risk assessment must be performed to identify the risks associated with the specific MEWP operations. The risks could be due to the task being performed, the type of MEWP used, or the location of the work. Risk assessment must include the following:

- a. Identifying the work to be done;
- b. Selecting the appropriate MEWP;
- c. Identifying the risks involved with the work to be performed;
- d. Identifying control measures to eliminate or mitigate the risks involved; and
- e. Establishing safe work procedures.
- f. Rescue planning to ensure the safe and timely rescue of workers from heights in the event of a MEWP breakdown, platform entanglement or a fall from the platform. A written rescue plan must be created and incorporated into the company's training procedures which addresses falls from the platform. The plan should limit the time

anyone on the work platform, known as an occupant, is suspended after an arrested fall. The rescue plan can include the following:

- i. Self-rescue – by person involved
 - ii. Assisted rescue – by others at the work site
 - iii. Technical rescue – by emergency services
- g. Communicate the results of the risk assessment to all entities involved.

11. Qualifications and training

MEWP-specific training must be provided to operators and their supervisors by a qualified person and must be presented in a both a language and vocabulary the trainee can understand.

- a. Operators - Can only operate MEWPs on which they have been trained, familiarized, and authorized to operate. Operators must be physically and mentally capable of operating the MEWP safely.
- b. Occupant - MEWP operators must provide instructions and/or make sure all occupants have a basic level of knowledge to work safely on the MEWP. At least one occupant must be taught how to operate the MEWP controls in case of an emergency where the operator becomes incapacitated. This does not give the occupant the authority to operate the MEWP except in an emergency.
- c. Familiarization – Employers must ensure the trained operator is familiarized with the specific MEWP to be used before authorizing the operator to use it. Familiarization includes:
 - i. Location of the manufacturer’s operation manuals and confirmation they are present;
 - ii. Purpose and function of all controls, features and devices; and
 - iii. Limitations and operating characteristics.

12. Worksite inspection

Before and during the use of the MEWP, the operator must perform a worksite inspection and check for possible hazards including but not limited to:

- a. Drop-offs, holes or slopes;
- b. Bumps, floor obstructions and electrical cables;
- c. Inability of surface to safely bear the pressure imposed by the MEWP in all operating configurations;
- d. Overhead obstructions;
- e. Electrical conductors;
- f. Hazardous locations, atmospheres or weather;
- g. Presence of personnel and other equipment; and
- h. Traffic hazards.

13. Pre-operations

All occupants of the MEWP must receive instructions from the operator and, if necessary, personal fall protection equipment must be utilized. Stabilizing devices should be in place as required by the manufacturer. Distribution of the platform load must meet manufacturer’s

rated load guidelines and guardrails and access gates must be closed or in appropriate positions.

14. Operating requirements

a. Fall protection

The primary means of fall protection on all MEWPs is provided by the guardrail system but there are situations which require additional fall protection. There are two types of secondary fall protection, fall restraint and fall arrest.

- i. Fall restraint systems prevent workers from being exposed to a fall hazard.
- ii. Fall arrest systems are designed to stop a fall in progress. It must not allow the employee to strike any surface below the work area and a rescue plan must be in place that limits the amount of time an employee is suspended after falling.
- iii. Group A Type 1 and Type 2 MEWPs, such as scissor lifts and manually propelled elevating work platforms, generally do not require the use of secondary fall protection.
- iv. Group B MEWPs always require the use of either a personal fall arrest or a personal fall restraint system for the operator and occupants.

b. Safety Procedures

There are many safety rules concerning MEWPs. It is important for employers and operators to know and follow them all. Some of the rules include:

- i. Platform occupants must always maintain firm footing on the MEWP flooring;
- ii. Immediately stopping operations if any problem or malfunction occurs during operations or the operator becomes aware of a hazardous location or atmosphere;
- iii. Avoiding entanglement of the MEWP or adjacent structures with rope, electric cables and hoses;
- iv. Ensuring proper ventilation is provided in enclosed areas;
- v. Refueling and/or recharging batteries in well-ventilated areas free of flames, sparks or other igniting hazards;
- vi. Never climb on the MEWP extending structure; and
- vii. Never drive reckless or engage in any type of horseplay.
- viii. Use warning cones, road signs and flaggers to ensure the safety of personnel when loading or unloading a MEWP on a public road.
- ix. At the end of the workday, MEWPs should be parked in a secure area or in a supervised area inaccessible to unauthorized persons and the keys removed.

c. Weather conditions

The potential risk associated with weather conditions must be addressed and controlled. MEWPs must not be used outdoors in thunderstorms or when the wind

speed exceeds the maximum allowed by the manufacturer. Be cautious of equipment and supplies on the work platform which can act as sails in windy conditions.

d. Ground conditions

Poor ground conditions, such as sub-surface voids and inadequate outrigger foundations, can cause instability issues which are very dangerous. Potential hazards must be identified and addressed.

e. MEWP traveling

Operators must comply with manufacturer's requirements for traveling. They must visually inspect the area around the platform for obstructions, check the direction of platform movement regarding the indicators on the chassis, and the controls before operating. Persons in the work site area must be made aware of the movement as well. The operator must:

- i. Continuously maintain a clear view in the direction of movement, including above and below the work platform;
- ii. Travel with the platform positioned at the lowest safe position; and
- iii. Move at safe and appropriate speeds.

f. Electrical hazards

When working near energized conductors, the operator must stay at least 10 feet away from power lines with any part of the body, conductive object or any part of the MEWP. A qualified person must be consulted in all other situations concerning electrical hazards.

g. Exiting or entering a MEWP at height

MEWPS are not specifically designed to transfer personnel from one level to another. Workers should only enter or exit a MEWP according to the manufacturer's procedures. Some risks which must be addressed include:

- i. Fall protection procedures;
- ii. Sudden movement of the MEWP;
- iii. Impact of load changes on stability; and
- iv. Distance between transfer surfaces.