Mobile Elevating Work Platform (MEWP) Operator Training

MEWP SAFETY TOOLKIT

SUNBELT® RENTALS

MEWP Safety Toolkit: Table of Contents

Review this toolkit to help you keep yourself and others safe when working with Mobile Elevating Work Platforms (MEWPs).

Know Your Responsibilities

Use these resources to help you understand your legal obligations and responsibilities.

Employers, Supervisors, and MEWP Operators must know and comply with laws and standards for MEWP operations in their geographic region, including training and safe use requirements.

Laws and Standards

Below are some links to begin your journey to learn the laws and standards for your geographic area.

Canada

Occupational Health and Safety (OH&S)
www.ccohs.ca

- Writes basic legislation

Each Province Ministry of Labor creates its own set of laws and fines violators based on those provincial laws.

CSA Group
www.csagroup.org

- Creates standards for Canadian MEWP operations
- CSA and American National Standards Institute (ANSI) standards are very similar but have some differences
- Provincial Ministry of Labor laws enforce CSA standards

Canadian workers must follow Canadian CSA B354 standards.

International Powered Access Federation (IPAF)
www.ipaf.org/en-us/resource-library/canada-mewp-regulations-standards

- Provides technical advice and information
- Influences and interprets legislation and standards

United States

Occupational Safety & Health Administration (OSHA)
www.osha.gov

- Writes labor laws
- Fines violators

IMPORTANT: Some states and territories have their own OSHA-approved workplace safety and health programs.

American National Standards Institute (ANSI)
https://ansi.org/

- Writes the most up-to-date standards for the design, safe use, and training requirements for MEWPs
- These standards are not laws, but OSHA can fine employers who violate ANSI standards

OSHA references ANSI in several codes governing our industry:

- CFR 1910.67 for general guidance
- CFR 1926.453 for construction requirements

Scaffold and Access Industry Association (SAIA)
www.saiaonline.org/a92

- Manages the ANSI A92 standards and develops safety best practices for MEWP operations

Know Your Responsibilities

Use these resources to help you understand your legal obligations and responsibilities.

Responsibilities by Role

Everyone must work together to promote safety and compliance with laws and standards.

Employer

- Provides a work environment that meets all legal requirements and standards
- Develops MEWP Safe Use Planning (US ANSI A92.22 - 4.2) / System of Work (Canada CSA B354.7 -4.2)
- Empowers the Supervisor to enforce laws and standards

Supervisor

- Ensures the Operator meets the training, authorization, and familiarization requirements to operate each assigned MEWP
- Chooses the right MEWP for each job
- Informs the Operator of any job site requirements, including potential hazards
- Ensure the Operator follows laws and standards

Operator

- Meet the training, authorization, and familiarization criteria to operate a MEWP
- Performs daily pre-use and workplace inspections
- Operates each MEWP safely following requirements in operator's manual
- Provides instruction and ensure all platform Occupants have a basic level of knowledge to work safely on the MEWP

Training, Authorization, and Familiarization

Employers must provide Operators with the necessary training, authorization, and familiarization before they operate a MEWP. Supervisors must be qualified to supervise MEWP Operators.

What does Familiarization include? Prior to authorization to use a specific model of MEWP, the employer must ensure the operator is familiarized on the following, and as specified by the manufacturer:

- ☐ Location of the manuals
- ☐ Knowledge of any other manuals required by the manufacturer are with the MEWP
- ☐ Purpose and function of the controls specific to the model of MEWP
- ☐ Features, operating characteristics, limitations, and devices

When authorized by the employer, self-familiarization can be achieved by a properly trained operator reading, understanding and following the manufacturer's operator's manual.

The employer must ensure that after familiarization, the operator operates the MEWP for a sufficient period of time to achieve proficiency.

Operators must review the Operator's Manual and job site policies prior to operating a MEWP. Be thorough during the familiarization process. It will save you time and may save your life.

Know Your Responsibilities

Use these resources to help you understand your legal obligations and responsibilities.

Retraining

Operators must renew their MEWP training when the valid training period expires. Some provincial laws or company requirements require renewal prior to this timeframe.

Operators may also be required to go through retraining or additional training prior to the expiration if:

- You are involved in an accident or near miss
- You demonstrate a decline of required skills in MEWP operations or an extended period of time without operation
- A change in the condition of the worksite is introduced that could affect safe operation
- Significantly different MEWP technology is introduced to you on the MEWP you operate

Occupant Knowledge

Operators must provide instruction and ensure all platform Occupants have a basic level of knowledge to work safely on the MEWP. This instruction must provide the occupants with the knowledge to complete the work activity in a safe manner while on the MEWP, and the knowledge to operate the controls in an emergency.

NOTE: This instruction does not give the occupant authorization to operate the controls at any time except in an emergency.

The minimum knowledge every occupant must have includes the following:

- The requirement to use fall protection and the location of fall protection anchors
- Factors including how their actions could affect stability
- Safe use of MEWP accessories they are assigned to use
- Site-specific work procedures the occupants must follow related to the operation of the MEWP
- Hazards related to the task at hand and their avoidance, to include any applicable site risk assessment
- General knowledge of the intended purpose and function of MEWP controls and safety-related items specified by the manufacturer, including emergency shut-down and lowering procedures, to the extent required to lower the MEWP safely to the ground/stowed position
- Manufacturer's warnings, instructions and location of the operations manual(s) on the MEWP.

Choose the Right MEWP for Each Job

Use this worksheet to assess your project needs and determine the right type of MEWP for each job.

To complete each project safely and efficiently, you must choose the right MEWP for each job. To choose the right MEWP, you must:

- Determine your project needs
- Compare the capabilities of different types of MEWPs to your project needs

NOTE: You will need to consider different factors for different jobs. Never choose a MEWP just because it is easily accessible or because you have used it before.

Determine Your Project Needs

Answer these questions to determine what you need to consider when choosing a MEWP for a project.

Define the Work	Notes
What work are you doing?	
What tools or materials do you need?	
How many workers do you need?	
Where do your hands need to be while working?	

Assess the Environment	Notes
What is your level of wind exposure? (maximum 28 mph)	
How well-ventilated is the area? ▪ Is there a working carbon monoxide detector (if needed)?	
How close can you get the MEWP to the work area?	
What type of surface will you work on? ▪ Is it flat or sloped? ▪ How much weight can it hold?	
What potential hazards could you encounter?	

Plan the Approach	Notes
How will you get the MEWP to the work area?	
How many workers need to be on the MEWP?	
What is the combined weight of workers, tools, and materials?	
What accessories will you need to complete the work?	
Any additional considerations?	

Choose the Right MEWP for Each Job

Use this worksheet to assess your project needs and determine the right type of MEWP for each job.

Compare Different Types of MEWPs

To choose the right MEWP for each job, you must understand what each type of MEWP offers. The basic types of MEWPs are:

- Manually-Propelled Lifts, also known as “push arounds” (1a)
- Scissor Lifts (3a)
- Straight Boom Lifts (3b)
- Articulating Boom Lifts (3b)
- Towable and Atrium Boom Lifts (1b)

This table shows the range of capabilities and features typically available for each MEWP type. Specifications vary depending on the model. For example, some Scissor Lifts can be used indoors and outdoors while others can only be used indoors. After you choose the type of MEWP, look at what different models offer and select the machine that meets your project needs.

	Manually- Propelled Lifts (1a)	Scissor Lifts (3a)	Straight Boom Lift (3b)	Articulating Boom Lift (3b)	Towable and Atrium Lifts (1b)
Type of Lift					
Vertical	✓	✓			
Straight			✓		
Articulating				✓	✓
Environment					
Indoor	✓	✓	✓	✓	✓
Outdoor		✓	✓	✓	✓
Maximum Height					
41 ft (12.5 m)	✓				
53 ft (16 m)		✓			✓
150 ft (46 m)				✓	
185 ft (56 m)			✓		
Maximum Weight					
500 lbs. (226 kg.)	✓				✓
500-1000 lbs. (226-454 kg.)		✓	✓	✓	

Choose the Right MEWP for Each Job

Use this worksheet to assess your project needs and determine the right type of MEWP for each job.

	 Manually- Propelled Lifts (1a)	 Scissor Lifts (3a)	 Straight Boom Lift (3b)	 Articulating Boom Lift (3b)	 Towable and Atrium Lifts (1b)
Mode of Transport					
Manually Pushed	✓				
Towed					✓
Driven		✓	✓	✓	
Power Source					
Electric	✓	✓	✓	✓	✓
Diesel		✓	✓	✓	
Propane		✓	✓	✓	
Wheels and Tires					
Wheels	✓				
Non-Marking Tires		✓			
Rough Terrain Tires		✓	✓	✓	
Common Devices					
Stabilizers/Outriggers	✓				✓
Onboard Generator			✓	✓	
Pothole Protectors		✓			
Oscillating Axle		✓	✓	✓	
Folding Guardrails		✓			
Other Considerations					
Compact for getting through small spaces	✓				✓
Spacious platform		✓			

How to Read MEWP Model Numbers

Use this job aid to determine how to read MEWP model numbers from each manufacturer.

Each MEWP's model number indicates basic capabilities of the machine, such as the maximum platform height. Model numbers can help you quickly determine if a machine has the basic capabilities needed for a specific project. Each manufacturer uses a slightly different naming convention.

MEWP Manufacturer Model Numbers

Review the details below to learn how to determine the meaning of each manufacturer's model number.

JLG Boom Lifts

- The number indicates the platform height
- The letters indicate:

S= Straight	**E**= Electric	**M**= Multi-Fuel (hybrid)
J= Jib	**N**= Narrow	
A= Articulating	**JP**= Jib Plus (jib swings)	

Example: JLG 1250AJP

- **125**= Maximum platform height of 125 ft. (38 m.)
- **0**= Series number unique to JLG
- **A**= Articulating Boom Lift
- **JP**= Jib Plus (jib swings)

JLG Scissor Lifts

- The letters indicate:

ES= Electric Slab	**RS**= Rental Series
RT= Rough Terrain	**LE**= Slab or Rough Terrain

- The number indicates the platform height and width

Example: JLG ES2030

- **ES**= Electric Scissor
- **20**= Maximum platform height of 20 ft. (6 m.)
- **30**= Platform width of 30 in. (76 cm.)

Genie Boom Lifts

- The number indicates the platform height and width
- The letters indicate:

S= Straight	**IC**= Internal Combustion Engine	**RT**= Rough Terrain
N= Narrow	**X** or **XC** = Extra Capacity	**Z**= Articulating

Example: Genie Z34/22N

- **Z**= Articulating Electric Boom Lift
- **34**= Maximum platform height of 34 ft. (10 m.)
- **22**= Maximum horizontal reach of 22 in. (55 cm.)
- **N**= Narrow

How to Read MEWP Model Numbers

Use this job aid to determine how to read MEWP model numbers from each manufacturer.

Genie Scissor Lifts

- The number indicates the platform height and platform width
- The letters indicate:
  - **GS**= Genie Electric Slab Scissor Lift
  - **RT**= Rough Terrain

Example: Genie GS3232

- **GS**= Genie Electric Slab Scissor Lift
- **32**= Maximum platform height of 32 ft. (10 m.)
- **32**= Platform width of 32 in. (81 cm.)

Skyjack Scissor Lifts

- The first two numbers indicate the platform width
- The second two numbers indicate the maximum platform height

Example: SJIII 3219

- **SJIII**= Series number unique to Skyjack
- **32**= Platform width of 32 in. (81 cm.)
- **19**= Maximum platform height of 19 ft. (5.79 m.)

Newer machines have a yellow and black diagonal striped tape along the toe board and on the counterweight on Boom Lifts. These machines have the most up-to-date design features in accordance with ANSI A92.20 standards.

Review the Operator's Manual for additional details.

How to Assess a Boom Lift's Working Envelope

Use this job aid to learn how to determine if a Boom Lift's Working Envelope matches your project needs.

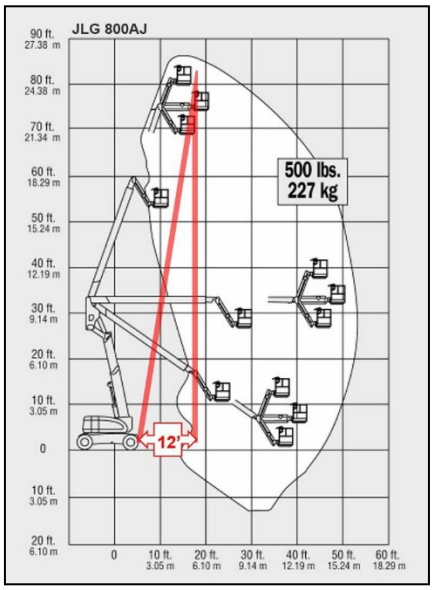
Consider a Boom Lift's Working Envelope to help determine if it will meet your project needs. The Working Envelope shows the furthest a boom can reach at any height and maintain its stability. It consists of different calculations of:

- Altitude
- Base
- Boom Length

Assess the Working Envelope prior to operating the lift to confirm the platform can reach the work area.

Getting Started

Begin with a visit to the work area to determine the **Altitude** and **Base**.



Determine Your Altitude
Ask yourself: How high do I need to go?

MEWP model numbers indicate the maximum platform height. Working height is 6ft above the platform height.

Example: The maximum height of the JLG 800AJ is 80 ft. (24 m.).

Refer to *How to Read MEWP Model Numbers* for more details.

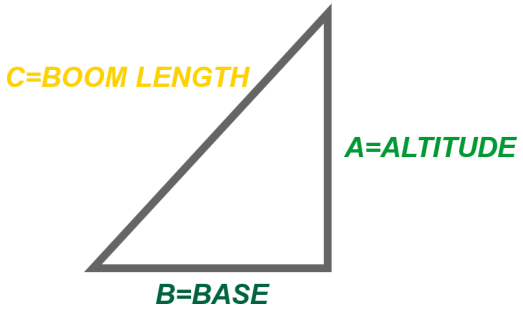
Determine Your Base
Ask yourself: How close can I get to the work area?

Find the closest distance between the MEWP's tires and the desired work area. Measure from the tires to the platform rails.

Example: The JLG 800AJ can safely elevate to 80 ft. (24 m.) if the tires are 12 ft. (3 m.) away from the work area.

Use Pythagorean's Theorem to Calculate the Required Boom Length

Once you have the **Altitude** and **Base**, use Pythagorean's Theorem to calculate how long the boom needs to be to reach the work area. Look at the example below.



$$A^2 + B^2 = C^2$$

Example:
Altitude: 80 ft. (24 m.) **Base:** 12 ft. (3 m.)

80 ft. $(24 \text{ m.})^2$ + 12 ft $(3 \text{ m.})^2$ = 81^2 ft. (or 24^2 m.)

Try it!

Use the table on the next page to check your answer.

Altitude: 50 ft. (15 m.) **Base:** 50 ft. (15 m.)

50 ft. $(15 \text{ m.})^2$ + 50 ft. $(15 \text{ m.})^2$ = _____

How to Assess a Boom Lift's Working Envelope

Use this job aid to learn how to determine if a Boom Lift's Working Envelope matches your project needs.

Recommended Boom Sizes

Boom Lifts come in a variety of sizes but may not match the exact boom length you calculated using Pythagorean's Theorem. This table shows the recommended boom size for different calculations. Read the table from left to right. Inputting the **Altitude (A)** and **Base (B)** from the first two columns into the equation will give you the required **Boom Length (C)** in the third column. The final column shows the size boom that is recommended for each calculation.

These calculations offer general guidance only and may not match your specific project needs.

Altitude	Base	Boom Length	Recommended Boom Size
30 ft. (9 m.)	10 ft. (3 m.)	32 ft. (10 m.)	45 ft. (13 m.) / 46 ft. (14 m.)
30 ft. (9 m.)	20 ft. (6 m.)	36 ft. (11 m.)	45 ft. (13 m.) / 46 ft. (14 m.)
30 ft. (9 m.)	30 ft. (9 m.)	42 ft. (13 m.)	45 ft. (13 m.) / 46 ft. (14 m.)
30 ft. (9 m.)	40 ft. (12 m.)	50 ft. (15 m.)	60 ft. (18 m.)
30 ft. (9 m.)	50 ft. (15 m.)	58 ft. (17 m.)	60 ft. (18 m.)
40 ft. (12 m.)	10 ft. (3 m.)	41 ft. (12 m.)	45 ft. (13 m.) / 46 ft. (14 m.)
40 ft. (12 m.)	20 ft. (6 m.)	45 ft. (13 m.)	45 ft. (13 m.) / 46 ft. (14 m.)
40 ft. (12 m.)	30 ft. (9 m.)	50 ft. (15 m.)	60 ft. (18 m.)
40 ft. (12 m.)	40 ft. (12 m.)	57 ft. (17 m.)	60 ft. (18 m.)
40 ft. (12 m.)	50 ft. (15 m.)	64 ft. (19 m.)	65 ft. (19 m.) / 66 ft. (20 m.)
50 ft. (15 m.)	10 ft. (3 m.)	51 ft. (15 m.)	60 ft. (18 m.)
50 ft. (15 m.)	20 ft. (6 m.)	54 ft. (16 m.)	60 ft. (18 m.)
50 ft. (15 m.)	30 ft. (9 m.)	58 ft. (17 m.)	60 ft. (18 m.)
50 ft. (15 m.)	40 ft. (12 m.)	64 ft. (19 m.)	65 ft. (19 m.) / 66 ft. (20 m.)
50 ft. (15 m.)	50 ft. (15 m.)	71 ft. (21 m.)	80 ft. (24 m.)
60 ft. (18 m.)	10 ft. (3 m.)	61 ft. (18 m.)	65 ft. (19 m.) / 66 ft. (20 m.)
60 ft. (18 m.)	20 ft. (6 m.)	63 ft. (19 m.)	65 ft. (19 m.) / 66 ft. (20 m.)
60 ft. (18 m.)	30 ft. (9 m.)	67 ft. (20 m.)	80 ft. (24 m.)
60 ft. (18 m.)	40 ft. (12 m.)	72 ft. (22 m.)	80 ft. (24 m.)
60 ft. (18 m.)	50 ft. (15 m.)	78 ft. (23 m.)	80 ft. (24 m.)
70 ft. (21 m.)	10 ft. (3 m.)	71 ft. (21 m.)	80 ft. (24 m.)
70 ft. (21 m.)	20 ft. (6 m.)	73 ft. (22 m.)	80 ft. (24 m.)
70 ft. (21 m.)	30 ft. (9 m.)	76 ft. (23 m.)	80 ft. (24 m.)
70 ft. (21 m.)	40 ft. (12 m.)	81 ft. (24 m.)	85 ft. (25 m.) / 86 ft. (26 m.)
70 ft. (21 m.)	50 ft. (15 m.)	86 ft. (26 m.)	86 ft. (26 m.)
70 ft. (21 m.)	60 ft. (18 m.)	92 ft. (28 m.)	120 ft. (27 m.)
80 ft. (24 m.)	10 ft. (3 m.)	81 ft. (24 m.)	85 ft. (25 m.) / 86 ft. (26 m.)
80 ft. (24 m.)	20 ft. (6 m.)	82 ft. (25 m.)	85 ft. (25 m.) / 86 ft. (26 m.)
80 ft. (24 m.)	30 ft. (9 m.)	85 ft. (26 m.)	85 ft. (25 m.) / 86 ft. (26 m.)
80 ft. (24 m.)	40 ft. (12 m.)	89 ft. (27 m.)	120 ft. (27 m.)
80 ft. (24 m.)	50 ft. (15 m.)	94 ft. (28 m.)	120 ft. (27 m.)
80 ft. (24 m.)	60 ft. (18 m.)	100 ft. (30 m.)	120 ft. (27 m.)
80 ft. (24 m.)	70 ft. (21 m.)	106 ft. (32 m.)	120 ft. (27 m.)
90 ft. (27 m.)	10 ft. (3 m.)	91 ft. (28 m.)	120 ft. (27 m.)
120 ft. (27 m.)	10 ft. (3 m.)	120 ft. (36 m.)	120 ft. (27 m.)
120 ft. (27 m.)	20 ft. (6 m.)	122 ft. (37 m.)	125 ft. (38 m.) / 150 ft. (46 m.)
120 ft. (27 m.)	30 ft. (9 m.)	124 ft. (37 m.)	125 ft. (38 m.) / 150 ft. (46 m.)

How to Assess a Boom Lift's Working Envelope

Use this job aid to learn how to determine if a Boom Lift's Working Envelope matches your project needs.

Recommended Boom Sizes

Altitude	Base	Boom Length	Recommended Boom Size
120 ft. (27 m.)	40 ft. (12 m.)	126 ft. (38 m.)	150 ft. (46 m.)
120 ft. (27 m.)	50 ft. (15 m.)	130 ft. (40 m.)	150 ft. (46 m.)
120 ft. (27 m.)	60 ft. (18 m.)	134 ft. (40 m.)	150 ft. (46 m.)
120 ft. (27 m.)	70 ft. (21 m.)	139 ft. (42 m.)	150 ft. (46 m.)
130 ft. (39 m.)	10 ft. (3 m.)	130 ft. (39 m.)	150 ft. (46 m.)
130 ft. (39 m.)	20 ft. (6 m.)	132 ft. (40 m.)	150 ft. (46 m.)
130 ft. (39 m.)	30 ft. (9 m.)	133 ft. (40 m.)	150 ft. (46 m.)
130 ft. (39 m.)	40 ft. (12 m.)	136 ft. (41 m.)	150 ft. (46 m.)
130 ft. (39 m.)	50 ft. (15 m.)	139 ft. (42 m.)	150 ft. (46 m.)
130 ft. (39 m.)	60 ft. (18 m.)	143 ft. (43 m.)	150 ft. (46 m.)
130 ft. (39 m.)	70 ft. (21 m.)	148 ft. (45 m.)	150 ft. (46 m.)
130 ft. (39 m.)	80 ft. (24 m.)	153 ft. (46 m.)	160 ft. (49 m.)/ 180 ft. (55 m.) / 185 ft. (56 m.)
140 ft. (43 m.)	10 ft. (3 m.)	140 ft. (42 m.)	150 ft. (46 m.)
140 ft. (43 m.)	60 ft. (18 m.)	152 ft. (46 m.)	160 ft. (49 m.)/ 180 ft. (55 m.) / 185 ft. (56 m.)
150 ft. (46 m.)	60 ft. (18 m.)	162 ft. (49 m.)	180 ft. (55 m.) /185 ft. (56 m.)
160 ft. (49 m.)	20 ft. (6 m.)	161 ft. (49 m.)	180 ft. (55 m.) /185 ft. (56 m.)
160 ft. (49 m.)	70 ft. (21 m.)	175 ft. (53 m.)	180 ft. (55 m.) /185 ft. (56 m.)
170 ft. (52 m.)	50 ft. (15 m.)	177 ft. (54 m.)	180 ft. (55 m.) /185 ft. (56 m.)
170 ft. (52 m.)	60 ft. (18 m.)	180 ft. (57 m.)	180 ft. (55 m.) /185 ft. (56 m.)

Other Considerations

When selecting a Boom Lift, keep in mind:

- ✓ Different aspects of a project may require different boom lengths. Consider all of your project needs before selecting the size Boom Lift you want. Keep in mind costs vary when renting a MEWP.
- ✓ Every job site is different. Always look for trees, bushes, balconies, lower roofs or other obstructions positioned between where the MEWP will be and the work area. You may need to get a machine with a longer boom length to clear obstructions.
- ✓ Boom Lifts will automatically operate in a Restricted Operating Envelope once they elevate over 86ft (26m) to keep them from tipping over. Refer to each machine's Operator's Manual for guidance.

Conduct a Pre-Start Inspection

Use this job aid to review basic guidelines for a conducting a Pre-Start Inspection.

Always complete a Pre-Start Inspection prior to operating a MEWP. Use the SAIA Pre-Start Safety Inspection Checklist to document each inspection. This job aid outlines basic steps of the inspection process. Refer to each MEWP's Operator's Manual for additional guidance.

Conduct a MEWP "Walk Around" Inspection

Key Inspection Items for a "Walk Around"	
☐	Review the MEWP's Operator's Manual ▪ Basic operations ▪ Inspection and maintenance tasks ▪ Emergency procedures ▪ Any special requirements from the manufacturer
☐	Check the last annual inspection date on the chassis decal
☐	Ensure all manuals are stored on the lift
☐	Inspect and wear the PPE required for the job
☐	Inspect the condition of placards and hazard labels
☐	Inspect the condition of the tires, including their lug nuts
☐	Locate the maximum ground pressure allowed (label over the tire)
☐	Inspect the engine: ▪ Oil ▪ Fan belts ▪ Generator ▪ Battery ▪ Radiator
☐	Inspect Hydraulic, Propane, and Fuel Systems *See Inspect Hydraulic, Propane, and Fuel Systems for details.*
☐	Tighten any loose nuts and bolts
☐	Inspect hoses, cables, and wiring for leaks and frays
☐	Test horns and alarms
☐	Inspect the guardrail system's latch and attachment points
☐	Look for any loose or missing parts and remove any debris
☐	On a Scissor Lift: ▪ Inspect the scissor arms for damage ▪ Make sure extended decks lock in place (if applicable)
☐	On a Boom Lift, inspect the boom system, including: ▪ Connectors ▪ Hoses ▪ Cylinders ▪ Pins
☐	Inspect any additional parts required by the manufacturer *See the Operator's Manual for details.*

Only operate MEWPs inspected in the last 13 months.

Don't forget to look under the machine.

Conduct a Pre-Start Inspection

Use this job aid to review basic guidelines for a conducting a Pre-Start Inspection.

Inspect Hydraulic, Propane, and Fuel Systems

Follow the guidelines below and any instructions in the Operator's Manual to inspect Hydraulic, Propane, and Fuel Systems safely. Always wear the required PPE.

System Type	General Guidance
Hydraulic Systems	Use the sight glass while the MEWP is in its stowed position to check your oil levels. Never add hydraulic oil to a MEWP. If the hydraulic level is low, call for service. **Important:** Relieve stored energy and pressure before you begin maintenance. Do not put your hands around hydraulic lines or connections.
Propane Systems	To change a propane tank: 1. Wear the right PPE (gloves, safety glasses/goggles). 2. Close the propane tank valve. 3. Start and run the MEWP until the engine stops. 4. Turn the key switch off. 5. Disconnect the propane tank hose. 6. Inspect the connections, hose, and valve. 7. Reconnect the new tank hose and latches. 8. Open the valve slowly and look for any leaks. **Note:** A leak is indicated by frost. If you observe a leak, close the valve.  Propane is **40 degrees BELOW ZERO**. Do NOT put your hands near hoses or couplings. Do not use damaged tanks, hoses, or couplings.
Fuel Systems	Check the type of fuel and the amount of fuel the MEWP has. To refuel safely: • Shut the engine off • Do not smoke and keep away from sparks and flames *(Ex. welding stations)* • Do not overfill the tank

Inspect Ground and Platform Controls

To inspect the Ground and Platform Controls:

1. Study the controls to understand how they function.
2. Check each control with the engine running.
3. Check the functionality of safety devices, such as Outriggers and Tilt Sensors.
4. Turn off the engine and check the *Emergency Descent Controls*.

Report Issues and Defects

Operators are required to report any issues they find during an inspection. When an issue occurs:

1. Place a red tag on the machine.
2. Remove the key to the machine.
3. Notify your Supervisor.

Supervisors: Call a technician to make any repairs. Do NOT use the machine until the repairs are made.

Risk Assessment and Conducting Workplace Inspections

Use this job aid to review basic guidelines for understanding a Risk Assessment and conducting Workplace Inspections.

Hazards in the work environment can cause different types of accidents, including but not limited to:

- Tip Overs
- Entrapment
- Electrocution
- Falling Objects
- Collisions

Each work environment is different. Risk Assessments help identify potential hazards and determine how to manage the risk. Operators must:

- Understand the Risk Assessment performed by a qualified person designated by the employer/supervisor prior to operating a MEWP
- Conduct a workplace inspection prior to operating a MEWP
- Report any identified additional potential hazards to the Site Supervisor

NOTE: Supervisors must inform Operators of any known potential hazards at a job site and provide guidance on how to manage identified risk.

Identify Potential Hazards

To identify potential hazards:

1. Walk the job site and look for anything that could cause harm.
   Examples:
   - *Inadequate ground support*
   - *Other moving equipment in the work area*
   - *Overhead obstacles, including power lines*
2. Ask other workers or your Supervisor for their observations and feedback.
3. Use these resources for guidance:
   - Any job site safety evaluations in use by the general contractor
   - Government and regulatory sites, such as CSA Group and ANSI
   - Operator's Manual for the MEWP
   - Safety Data Sheets (SDS) for hazardous chemicals
   - Past accident records or documentation on current control measures

Manage Risk

Use control measures to manage any identified risks. For example, use a barricade to keep pedestrians from accessing the MEWP and the work area.

Different risks require different control measures. When selecting control measures, ask yourself:

- Can I eliminate the risk altogether?
- If not, how can I reduce the risk?

NOTE: You may need to change your control measures throughout your project to adjust to changes in the work environment.

Risk Assessment and Conducting Workplace Inspections

Use this job aid to review basic guidelines for understanding a Risk Assessment and conducting Workplace Inspections.

Conduct a Workplace Inspection

This section provides basic guidance for conducting a Workplace Inspection. Use the SAIA MEWP Job Site Checklist to document each Workplace Inspection.

IMPORTANT: The control measures stated below are examples. Different controls may be needed.

Workplace Hazards Basics	
☐	Do you meet the requirements to operate a MEWP? ▪ Have you received proper training and authorization? ▪ Have you read the Operator's Manual and familiarized yourself with the machine?
☐	Have you informed any Occupants of the MEWP of all laws and standards?
☐	Is the work area located in a hazardous environment? *Example: contains explosive chemicals*
☐	Will the MEWP platform reach the work area? Use the Ground Controls to lift the platform to ensure it reaches the work area.
☐	Does the work area provide adequate ground support? See the Operator's Manual for guidance.
☐	Are there any ramps or slopes that could impact stability?
☐	Is the work area near a drop-off or hole, including any concealed by water, ice, or mud?
☐	Have you walked your travel route? ▪ Remove any debris ▪ Cone off bumps or obstructions that can't be eliminated
☐	Will you operate in narrow aisles or other restricted places?
☐	Is there other moving equipment near the work area? If so, use barricades and a spotter.
☐	Are there any pedestrians near the work area? If so, use barricades and a spotter.
☐	Is there a public roadway nearby? If so, use traffic control and a spotter with reflective clothing.
☐	Are there any overhead obstructions or crushing hazards?
☐	Are there electrocution hazards, such as overhead power lines? ▪ Follow minimum distance requirements for the job site or ask the power company to Lock Out the power ▪ Refer to Operator's Manual for additional guidance
☐	Are there weather conditions to consider? ▪ Wind: See the Operator's Manual for guidance ▪ Lightning
☐	Is the area well-ventilated? If not, is there a working Carbon Monoxide Detector?
☐	Any additional unsafe conditions?

Risk Assessment and Conducting Workplace Inspections

Use this job aid to review basic guidelines for understanding a Risk Assessment and conducting Workplace Inspections.

Plan for an Emergency

Planning for an emergency is part of conducting a Risk Assessment. Review and prepare to apply the rescue plan. When you set the MEWP up for work, make sure it is positioned in a way that will allow you to carry out your plan. For example, make sure Emergency Descent Controls are easily accessible to the qualified person on site who knows how to use them.

When an emergency occurs, follow these steps:

1. Asks questions to assess the situation.
   - How did this happen?
   - Does the Operator need immediate medical attention?
   - Is the Operator secure?
   - Does the Operator need to be lowered urgently? (Example: extreme weather, injuries, etc.)

   NOTE: If you suspect contact with overhead power lines DO NOT approach the MEWP. Call 911 and the power company.

2. Determine how to safely lower the Occupant(s) and communicate the plan to others involved.

   NOTE: Sunbelt teammates should always use a Take 10 card to properly assess the risk and formulate a rescue plan.

3. Confirm the qualified ground person is familiar with the ground controls.
4. Execute the rescue plan.

This table shows potential solutions for different types of emergency situations.

Emergency Situation	Potential Solution
Platform Controls fail while the Operator is elevated	The Operator can use the Emergency Descent Platform Controls to lower the platform
Operator is unable to operate the Platform Controls while elevated Examples: • Operator is incapacitated • Normal and Emergency Descent Platform Controls will not function	Have an individual familiarized with the MEWP's Ground Controls lower the platform using the normal Ground Controls
Normal Ground Controls fail while the Operator is elevated	Have an individual familiarized with the MEWP's Emergency Descent Ground Controls lower the platform using the Emergency Descent Ground Controls
All normal and Emergency Descent Controls fail while the Operator is elevated	Have the Service Leader or an authorized individual contact the manufacturer for assistance **or** Use another MEWP to rescue the occupants if they are in danger

Mid-Air Rescues

A mid-air, platform-to-platform rescue should only be considered in exceptional circumstances and only after:

- All normal and Emergency Descent lowering procedures have been attempted
- A technician is unable to restore normal and Emergency Descent lowering procedures

NOTE: Sunbelt teammates must contact Safety Management for permission to carry out a mid-air rescue.

Follow these steps to complete a Mid-Air Rescue:

1. Assess the situation and document details of the risk.

NOTE: Sunbelt teammates should use a Take 10 card.

2. Position the rescue machine beside the MEWP so the rescue plan can be carried out without compromising the safety of those involved.

NOTE: The platform on both machines must be adjacent to each other with a minimal gap between them unless exceptional circumstances prevent this.

3. Attach a double lanyard to the individual being rescued and the rescue points on both machines before the rescue takes place.
4. Execute the mid-air rescue. Do NOT exceed the maximum allowable weight of the rescue machine. Make multiple trips if required.

Operate a MEWP Safely

Use this job aid to review basic steps you need to take to operate a MEWP safely.

To operate a MEWP safely, you must:

- Read the Operator's Manual
- Follow safe practices for MEWP operations

Read the Operator's Manual

Always read the Operator's Manual before you operate a MEWP. Each make and model is different, so it's important to become familiar with a machine before you operate it. You'll find details on:

- Basic operations
- Specifications, features, and limitations of the machine
- Inspection and maintenance tasks
- Potential hazards and risks
- Emergency procedures
- Accessories

All Operator's Manuals use the same format to make it easy to find what you need. Store the manual in a weather-resistant compartment on the MEWP. Do not operate a MEWP without it.

Follow Safe Practices

Build good habits to operate a MEWP safely. Always follow these safe practices:

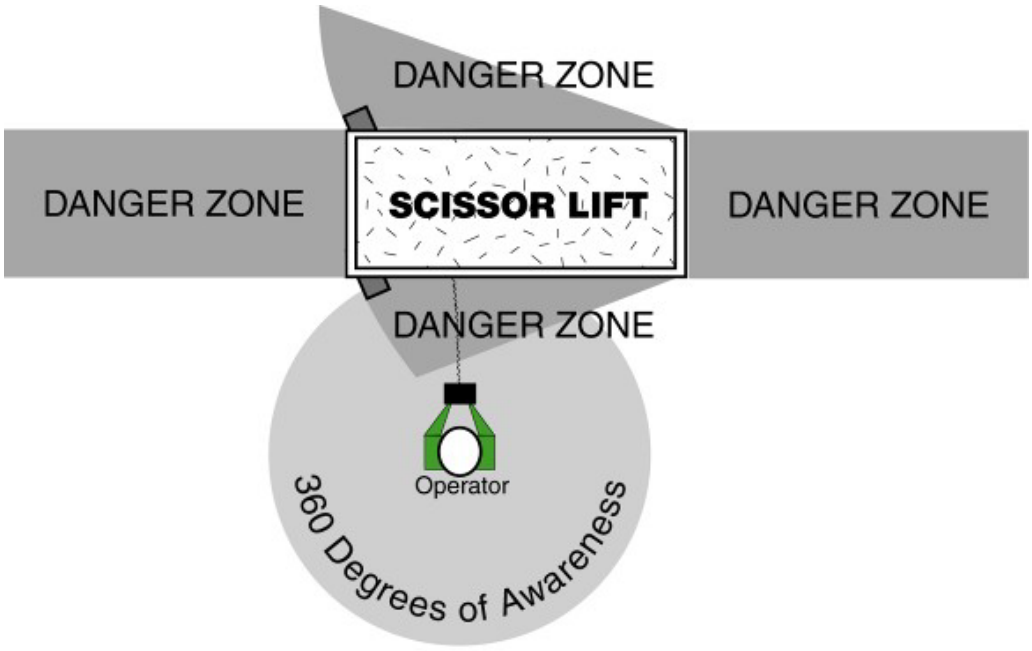
☐	Use 3-point contact when entering and exiting the platform
☐	Monitor your speed. The more you move the joystick, the faster the MEWP will go.
☐	Park the MEWP in the best position to perform the work  **NOTE**: Make sure you can access the Ground Controls and Emergency Descent Controls.
☐	Elevate only on flat, firm, level ground
☐	Use planned, slow, and deliberate movements to lift and lower the MEWP
☐	Look up to identify any overhead hazards before lifting
☐	Look down to identify any hazards beneath you before lowering
☐	Use the chassis arrows to determine your direction of travel
☐	Keep the counterweight uphill when traveling up or down a slope
☐	Maintain safe clearance from all other obstacles, holes, and drop-offs
☐	Park on a level surface or chock tires if that isn't possible
☐	Do not leave a key in an unattended MEWP

Operate a MEWP Safely

Use this job aid to review basic steps you need to take to operate a MEWP safely.

Follow these safe practices when operating a Scissor Lift from the ground:

☐	Operate the Scissor from the ground controls if the surface is not firm, flat, or level	
☐	Make sure the deck extension is retracted and locked	
☐	Hold the control box in your hands as you travel	**NOTE**: Extend the control box tether cord away from the lift and out of the drive path or potential fall path of the lift.
☐	Test movement speed and stopping of unit from a safe distance if operating from ground	
☐	Become aware of your 360-degree surroundings	**NOTE**: Watch not only where the lift is going, but also where you are walking
☐	Maintain safe clearances from all other obstacles, holes and drop-offs	
☐	Watch the direction arrows. Be sure which direction the machine will move before operating.	
☐	Never get between the lift and another object, even if you are sure of the direction of travel	
☐	Never put yourself in the drive path of a MEWP, even if you are sure of the direction of travel	
☐	Be aware that the steer tires unexpectantly steer almost 90 degrees and can run over you	



Watch where you are walking!

Exit a MEWP Safely at Height

Use this job aid to review basic steps you need to exit a MEWP at height safely.

MEWPs are not specifically designed to transfer personnel from one level to another or for leaving the work platform.

NOTE: Some manufacturers do not permit Operators to exit at height. Be sure to consult the Operator's Manual or the manufacturer's website when planning your approach.

If you must exit at height and allowed by the manufacturer:

Make sure others are aware of your plan:

- Communicate what you are doing with workers on the ground
- Place a sign or ground person at the ground controls

Follow Safe Practices

Exiting (or entering) a MEWP at height shall only be permitted through a procedure provided by the manufacturer or qualified person that addresses the following:

- Fall prevention of persons during transfer from the work platform to the structure
- Fall prevention of tools and materials during transfer from the work platform to the structure
- Sudden movement of the MEWP or work platform
- Additional loads or changing of loads imposed on the MEWP for which it was not designed which could affect stability or overload the machine
- Dynamic and impact loads from personal fall protection equipment
- Damage to the MEWP or structure by an unintentional movement of the MEWP
- Stranding of people
- Use of extending decks and gates
- Use of single or double lanyards
- Access and maintenance of required fall protection for persons while they are on the structure
- Distance between transfer surfaces, both horizontally and vertically
- Potential for movement of the MEWP platform due to changing loads
- Compliance with the local authority having jurisdiction.

External Anchor Devices allow one person to exit the platform hooked to an external anchor point for fall arrest protection. These devices are available for an additional rental cost.

Prepare for the Hands-On Evaluation

Use this job aid to prepare for the Hands-On Evaluation portion of the MEWP Training process.

To complete the MEWP training process, you must complete all of the online courses and pass a Hands-On Evaluation. As a last step in the online curriculum, you will be prompted to update your contact information and click *Notify Observer*. A qualified Evaluator will then contact you to set up the evaluation.

What to Expect

To pass the Hands-On Evaluation, you must demonstrate your ability to:

- Familiarize yourself with different makes and models
- Conduct a Pre-Start Inspection
- Conduct Workplace Inspection
- Perform basic operations

You will be asked to safety navigate each MEWP you intend to use through an obstacle course to demonstrate your ability to:

- Drive the MEWP forward through a series of turns
- Stop and raise the MEWP to a desired target point on a building or structure
- Lower the MEWP from the target point
- Drive the MEWP in reverse through the same series of turns
- Park the MEWP

The types of MEWPs used in the evaluation may include:

- Boom lifts up to 86 ft. (26 m.)
- Boom lifts over 86 ft. (26 m.) with extendible axles
- Scissor Lifts Slab
- Scissor Lift Rough Terrain

Each MEWP is different. Always read the Operator's Manual prior to operating a machine and take your time learning the controls. Focus on building good habits to keep yourself and other safe.

Review out the *MEWP Hands-On Evaluation Prep* at the end of this toolkit. Your Evaluator will look for those same details during your evaluation.

Avoid Common Mistakes

Pay special attention to these areas to avoid common mistakes during your evaluation.

Maintain 3-point contact getting on and off

Close and secure the platform gate and chain

Look back before backing up

Look up before elevating and down before lowering

Keep your foot on the foot pedal while operating

MEWP Hands-On Evaluation Checklist

Complete this checklist to conduct and document the MEWP Hands-On Evaluation

Check that each item is successfully completed by the trainee. For customer trainees, mark unsuccessful items with an X on this document and load it to Safety Training. For Sunbelt teammates, document unsuccessful items in the SBU system.

Evaluator Name: _____ Evaluator Signature: _____

Trainee Name: _____ Trainee Signature: _____

Date: _____

Scoring Reference Guide Per Category

Evaluation Type	Tasks Performed	Allowed Missteps	Minimum Successful Checks
MEWP Only	54	11	43
MEWP + Loading and Unloading	62	12	50

MEWP MAKE / MODEL

3b: Boom

3a: Scissor

1a: Manually Propelled

1b: Towable/Atrium

IMPORTANT: At any point during the evaluation, the trainee must avoid all 3 unsafe practices:

- Stunt driving/horseplay
- General unsafe operation (collision; near-collision)
- Not yielding to pedestrians

OVERALL COMMENTS

	Observe the Pre-Start Inspection	3b	3a	1a	1b
Visual Checks	Inspects the machine for visible defects, damage, and debris				
	Confirm Operator's Manual is present and legible				
	Confirm information placard is present and legible				
	Confirm hazard labels are present and legible				
	Confirm decals are present and legible				
	Wears proper PPE				
	Inspects the engine/motor compartment and components				
	Inspects hydraulic and fuel/charging systems				
	Inspects nuts and bolts				
	Inspects hoses, cables, and wiring				
	Inspects connectors, cylinders, and pins				
	Inspects wheels and tires				
	Inspects under carriage and static strap *(if applicable)*				
	Inspects for leaks				
	Inspects guardrail system				
	Inspects attachment points *(Anchorage Point)*				
	Inspects loose or missing parts				
	Inspects other items in the manual				
	Inspects: • Horn • Alarm • Secondary guarding *(if applicable)* • Pothole protection *(if applicable)*				
	Confirms extended decks lock in place *(if applicable)*				
Operational Checks	Starts the engine properly *(Ground Control Panel)*				
	Checks the function of each ground control switch *(Including emergency decent control)*				
	Uses 3 points of contact when getting on/off the machine				
	Closes the gate or chain				
	Connects the lanyard to an anchor point				
	Starts the engine properly *(Platform Control Panel)*				
	Checks the function of each platform control switch				
	Tests the emergency descent controls				
	Tests safety devices *(e.g.- outriggers, pothole protection, extendable axles)*				

MEWP Hands-On Evaluation Checklist

Complete this checklist to conduct and document the MEWP Hands-On Evaluation

Trainee Name:

Date:

IMPORTANT: At any point during the evaluation, the trainee must avoid all 3 unsafe practices:

- Stunt driving/horseplay
- General unsafe operation (collision; near-collision)
- Not yielding to pedestrians

OVERALL COMMENTS

	Observe Safe MEWP Operation	3b	3a	1a	1b
General Safety	Continuously checks the work environment for hazards				
	Operates controls competently and smoothly				
	Uses horn when required				
	Demonstrates proper speed controls				
	Demonstrates use of direction of travel arrows				
	Uses all safety devices				
Driving	Starts smoothly				
	Looks in the direction of travel				
	Travels with platform at proper height				
	Looks behind before reversing				
	Stops smoothly				
Turning	Slows before turns				
	Starts in proper position				
	Stays within lines/cones				
	Is aware of turn radius				
	Allows for tail swing				
Lift/Lower	Looks up before raising				
	Makes sure lift is level before raising platform				
	Reaches target without relocating base				
	Looks down before lowering				

	Observe Loading and Unloading ☐ N/A	3b	3a	1a	1b
If applicable	Aligns the machine with the truck/trailer				
	Drives in climbing hill mode				
	Ascends straight and slowly				
	Stows jib on large booms				
	Ties down the machine properly				
	Uses winch for electric lifts				
	Checks load height				
	Unloads properly				

	Observe Parking and Shutting Down	3b	3a	1a	1b
	Parks on level surface				
	Lowers and stows the platform				
	Depresses E-stop				
	Dismounts properly				
	Removes key				
	Refuels/charges properly *(verbalized and not demonstrated)*				

Final Category Score	3b	3a	1a	1b
How many missteps has the trainee made per category?				
Were the overall minimum number of checks successfully completed? *(Yes; No; N/A)* **NOTE**: See Scoring Reference Guide on Page 1.				
Has the trainee avoided all 3 unsafe practices? *(Yes; No, N/A)*				
Document if the trainee has passed or failed *(P=Pass; F=Fail; N/A= Not Applicable)*				