

Mobile Elevated Work Platform (MEWP)

All Classes

The Safety Cat

Our Policy & Care





What is a MEWP?

A **mechanical device** used to provide temporary access for people or equipment to inaccessible areas, usually at heights or in places where scaffolding may not be practical

They are generally used for **temporary, flexible access** purposes such as Maintenance & Construction work

Capable of being set up & operated by a **single person**

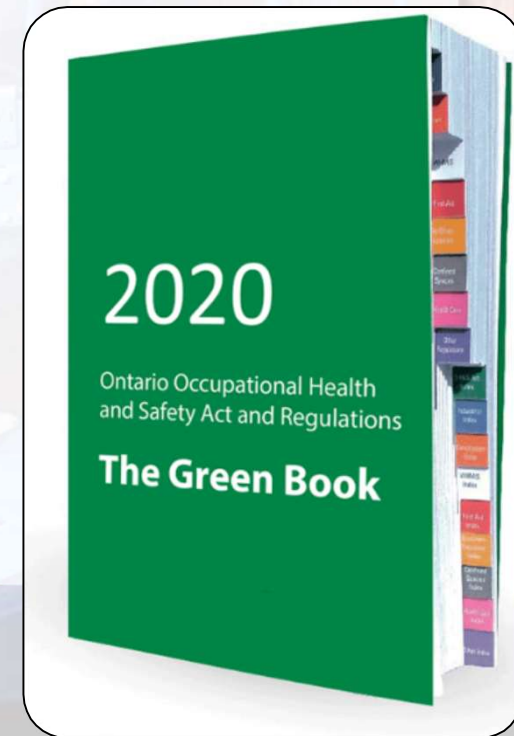


MEWP Legislation ~ Provincial



Provincial Legislation (*Ontario*) regulates the operation of “**Lifting Devices**” in various Regulations:

- **Industrial Regulations 851**
 - Sections #51, #52 & #54
- **Construction Regulations 213/91**
 - Sections #143 through #149
- **Health Care Regulations 67/93**
 - Sections #55, #76 through #79



MEWP Legislation ~ Federal & Standards

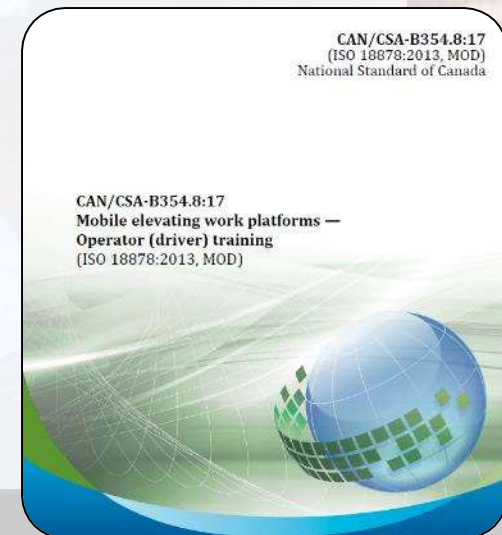


Federal Legislation regulates the operation of “**Lifting Devices**” in **Regulations SOR/86-304**

- Sections #12.09 & #14.1

CSA Standards

- **B354.7:17**, MEWP Safety Principles
- **B354.8:17**, MEWP Training
- **B354.1 – .2 – .3 – .4**
(depending on MEWP type)





MEWP Training

Who needs to be trained on MEWP's?

- Everyone who does/may **operate** a MEWP
- **Supervisors** of Operators
- **Persons** who may:
 - Write Policies & Procedures
 - Investigate Incidents
 - Evaluate Compliance...





MEWP Types

There are 6 different types of MEWPs

- **Push-Around** (*manual*)
- **Vertical-Mast Lift**
- **Scissor Lift On-Slab** (*SLOS*)
- **Off-Slab Scissor Lift** (*OSSL*)
- **Telescopic Stick Boom** (*Stick*)
- **Articulated Knuckle Boom** (*Knuckle*)



Technically there is a 7th Type: **Vehicle Mounted (Stick or Knuckle) not covered by this program*



Vertical Mast-Lift

A modified/powerful Push-Around that **does** “drive”

- **Operator** driven from the Platform
- Typically meant for **indoor use** on a smooth firm surface
- **Powered** drive & lift (*Battery*)
- Used by **one person**
- Ideal for:
 - Order-picking / Inventory / Maintenance
 - Tight-spots
 - Awkward locations: seats, stairs, etc...
 - Polished high-quality floors





Scissor Lift On-Slab

A self-propelled MEWP that **does** “drive”

- **Operator** driven from the Platform
- Typically meant for **indoor use** on a smooth firm surface
- **Powered** drive & lift (*Battery, Propane or Gasoline*)
- Used by **up-to** 3 people (*depending on model*)
- Many equipped with a **deck-extension**
- Typically equipped with **Pothole Protector**
- Ideal for:
 - Small / Narrow spaces
 - Up-to 16m (52’) lift
 - Passing through doorways





Articulated Knuckle Boom

A self-propelled boom-type MEWP that **does** “drive”

- **Operator** driven from the Platform
- **Indoor & Outdoor** models
- **Powered** drive & lift (*Battery, Propane or Gasoline*)
- Used by **up-to** 2 people
- **Base & Platform** controls
- Boom has a “*joint*” (*knuckle*)
- Some models equipped with “*Jib*” &/or Telescoping **extension**
- **Turret** rotates 340° ~ **Basket** rotates 270°
- Ideal for:
 - Reaching over items/materials
 - Up-to 43m (141’) height / 12m (40’) reach
 - Good on smooth surfaces – or – rough terrain



MEWP Inspections



There are 6 different types of MEWP inspections

- **Daily / Per-Use**
- **Periodic**
- **Frequent**
- **Preventative Maintenance**
- **Annual**
- **Special (Sale)**





Daily / Per-Use Inspection Items

Inspection items **include:**

- Operating & emergency controls
- Safety features
- Personal protective equipment
- Air, hydraulic & fuel system for leaks
- Cables & wiring harness
- Loose, damaged, worn, or missing guards or parts
- Tires (*pressure*), wheels & wheel fasteners
- Instructions, warnings, control markings & manual
- Structural items, extending structure & stabilizers...



MEWP Stability & Positioning



Stability & Positioning are **critical** to the safe operation

Operators must be able to **understand** stability principles & **set-up** the MEWP in a safe position for work

Stability & Positioning of MEWPs is **similar** to Forklifts

Consult the **Owners Manual** &/or equipment safety labels for the specifics of your MEWP

Specifications
Self-Propelled Electric Scissor Lifts

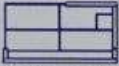
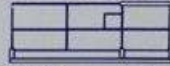
MODEL	WORKING HEIGHT INDOOR		WORKING HEIGHT OUTDOOR		WIDTH		LIFT CAPACITY		MAX PLATFORM OCCUPANCY (AVOULT)
	US	METRIC	US	METRIC	US	METRIC	US	METRIC	
Electric Scissor Lifts									
GS-1300H	18 ft 10 in	5.8 m	18 ft 8 in	5.00 m	36.3 in	0.78 m	3000 lb	227 kg	2/1
GS-1500	21 ft	6.37 m	18 ft 8 in	5.11 m	28.8 in	0.76 m	3000 lb	272 kg	2/1
GS-1000	25 ft 3 in	7.76 m	20 ft 8 in	6.47 m	28.8 in	0.76 m	3000 lb	227 kg	2/1
GS-1800	25 ft 3 in	7.86 m	20 ft 8 in	6.47 m	28.8 in	0.82 m	3000 lb	227 kg	2/1
GS-2000	28 ft 1 in	8.13 m	22 ft	6.03 m	28.8 in	0.81 m	3000 lb	302 kg	2/1
GS-2000	32 ft 1 in	8.96 m	28 ft	7.79 m	28.8 in	0.81 m	3000 lb	227 kg	2/1
GS-3000	38 ft 1 in	11.70 m	34 ft	7.40 m	28.8 in	0.81 m	3000 lb	227 kg	2/1
GS-3500	38 ft 1 in	8.12 m	22 ft 4 in	6.90 m	37 ft 10 in	1.16 m	1300 lb	544 kg	2/1
GS-2500	32 ft 1 in	6.98 m	25 ft 8 in	7.90 m	37 ft 10 in	1.16 m	1000 lb	454 kg	2/1
GS-3000	38 ft 1 in	11.70 m	28 ft	8.71 m	37 ft 10 in	1.16 m	700 lb	318 kg	2/1
GS-4047	45 ft 2 in	15.04 m	30 ft	9.30 m	37 ft 11 in	1.26 m	770 lb	360 kg	3/1
GS-4000	51 ft 9 in	15.06 m	27 ft 8 in	8.05 m	43.3 in	1.01 m	770 lb	360 kg	3/2

MEWP Capacity

Capacity on MEWPs is measured in **2-ways**:

- **Weight** (*total including tools/materials*)
- **Head-Count**

****You must respect both factors!***

PLATFORM CAPACITIES (EVENLY DISTRIBUTED)	
MAXIMUM NUMBER OF PERSONS: 3 - NOT TO EXCEED 1000 LBS./454 KG MAXIMUM WEIGHT OF PERSONS AND MATERIALS: 1000 LBS./454 KG	
RETRACTED EXTENSION PLATFORM	EXTENDED EXTENSION PLATFORM
	
1000 LBS. 454 KG.	700 LBS. 300 LBS. 318 KG. 136 KG.
WARNING! MAX. NUMBER OF PERSONS ON EXTENSION PLATFORM: 1 MAXIMUM WEIGHT OF 1 PERSON AND MATERIALS: 300 LBS./136 KG.	

General Stability



Push-Around, Vertical-Mast & Scissor Lifts

- Generally these equipment types are **very stable** because the platform **is not larger** than the wheel-base (*unless the deck-extension is out*)
- Driving elevated **is allowed**, speed should automatically be reduced (*speed limit switch*)(*Vertical Mast & Scissor*)
- Weight vs Capacity ratio = **3:1 to 4:1**



MEWP Operating Techniques



Maneuvering & correctly (*safely*) positioning the MEWP is the **direct responsibility** of the **Operator** although in some cases, a Spotter/Watcher may assist

Each MEWP type maneuvers **differently**

Some Operating Techniques are **universal** to all MEWP types in all environments





Universal Operating Techniques

- **Inspect** the MEWP & Fall Protection equipment
- Always look in the **direction of travel**
- Generally, always **drive forwards**
- Always **look up** before **lifting**
- Always look **all around** you before **lowering**
- **Stand** in a stable position
- Operate the controls “**smoothly**” (*feathering*)
- Sound the **horn** at blind-corners / intersections
- When possible, **walk-the-path** before you drive-the-path
- **Avoid** slopes/grades/ramps when possible





Slopes/Grades

Slopes/Grades will **affect** stability

- Indoor MEWPs are generally meant to be used on slopes of **5° or less**:
 - A **tilt-alarm** will sound if 5° is exceeded
 - Lift functions should be **disabled** (*some won't drive*)
 - Lower functions should **always** work
- Outdoor MEWPs may work on **steeper** slopes
- Elevating on slopes/grades should be avoided
- Driving on slopes/grades should be avoided: **particularly** “*across*” a slope/grade





Knuckle Boom Lifting Sequence

Raise the different sections of a Knuckle Boom in the **following order:**

- **Jib** first *(if equipped)*
- **Upper-Boom**
- **Telescopic Extension** *(if equipped)*
- **Lower-Boom**

*Following this sequence will help keep the **weight** of the boom **low/close to the base** to maintain **stability***





Emergency Lowering Device

All MEWPs are equipped with an Emergency Lowering Device for the **primary purpose of rescue**, however, may also be used for Mechanical **trouble/failure**

Each Manufacturers device is **different**, but perform the same function: **lower the platform** without power

Some require “*releasing*” a knurled-valve **before** “*pulling*” the lowering-valve: possibly 2

***Note:** some *Dual-Fuel Boom MEWPs* have a *Battery back-up*





Operating Don'ts

Do not:

- Use the MEWP as a **Welding Ground**
- **Hang** materials under the platform like a mobile crane
- **Push** materials out of the way like a Bulldozer
- **Climb** the Scissor/Boom
- Operate a MEWP **on-top** of another structure: truck, etc...
- Extend height with a **ladder/standing** on guardrails
- **Support** structures with the MEWP, etc...



MEWP Fuel Sources



MEWPs are powered by 3 **different** fuel sources

Each source has it's **benefits & risks**

- **Battery**, most common for indoor equipment
- **Propane**
- **Gasoline**
- **Dual-Fuel**, Gas & Propane
(often with a Battery back-up)





Battery Care & Hazards

Batteries **should be** kept clean & Electrolyte (*Acid*) levels checked often

During the **charging-cycle**, at approx. **80% charge**, is the “*gassing phase*”, this is where **Oxygen & Hydrogen** gasses are released from the battery through the ventilation-holes in the Cell Caps

Proper **ventilation** must be in the charging area if **2-or-more** MEWPs are charging





Propane Cylinder Care

Propane cylinders are **pressurized** & must be **handled with care**

- Transported **upright**
- **Secured** on the MEWP (*Strap/s*)
- **Rotated** so Pressure Relief Valve is at 12 O'Clock
- Stored in a **secure location** (*cage*)
- Checked for:
 - **Age**: good for 10yrs
 - Can be **Extended** (re-certified)
 - **“O” Ring** in Service Valve



***Note:** appropriate PPE must be worn



Gasoline Hazards

Using gas presents **several hazards:**

- **Leak/Spill** during fuelling: must have spill-kit
- **Flammable** burns between 1.4% ⇔ 7.6% concentration
- **Explosive** Gas tank may explode & un-ignited vapours may flash-back
- **Exhaust** Carbon Monoxide



MEWP Fall Protection



Push-Around, Vertical-Mast & Scissor Lift

A MEWP **shall not** be “*moved*” unless all Workers on it are **protected** from ejection by being attached to an adequate anchorage point by a method of fall protection

Boom-Type

Shall not be “*used*” unless all Workers on it are **attached** to an adequate anchorage point on the MEWP by a method of fall protection



Types of Fall Protection for MEWPs

There are **2 types** of Fall Protection that can be used on various types of MEWPs:

- **Travel Restraint**, the Worker is “*restrained*” from even getting over the rail of the Platform by a **very-short Lanyard** (*connecting device*)
- **Fall Arrest**, if the Worker falls over the Platform Guardrail, the fall is “*arrested*” **before** the Worker strikes the ground by a Deceleration Device (*shock-absorbing lanyard*)



5-Point Harness ~ Fall Arrest

A device that can **arrest** an **accidental** vertical or near-vertical fall that can **distribute** the impact forces of the fall by means of leg/shoulder straps & an upper **Dorsal D-Ring** (*between Shoulders*)

A harness must be the **correct size** for the Worker: particularly **not too-big** as this will result in the harness potentially being **too-loose** &/or extra webbing loose around the Workers hips/chest

The Worker must be **properly trained** on the use & fitting of the harness

