



# Code of Practice for Use and Loading of MEWPs

# M&EE Networking Group

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## Document revision history

Issue	Date	Reason for change
1	July 09	First issue (now withdrawn)
2	July 10	New requirements for use of MEWPs added (requirements for use of anchor points transferred from COP0020 which is now withdrawn). Issue 2 now withdrawn
3	Jul 11	Greater clarity given in section 1.1.4 concerning the role of machine controller with MEWP in road mode. New section on use of MEWP in wind added. Changes are shown with a black line in the right hand margin.

## Background

A sub-group of the M&EE Networking Group have looked at legislation, published guidance and current industry practices for the use and loading of a MEWP and recommend the following as good practice for the industry.

The M&EE Networking Group makes no warranties, express or implied, that compliance with this document is sufficient on its own to ensure safe systems of work or operation. Users are reminded of their own duties under health and safety legislation.

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## Sign off

The M&EE Networking Group agreed and signed off this Code of Practice on 13 July 2011 and published on 3 September 2011

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## Purpose

This Code of Practice details the use of MEWPs, particularly:

- Processes for type and amount of loads (that is personnel and materials) that should safely be permitted in the work platform of a MEWP
- The use of work restraint anchor points
- Getting in and out of the work platform at height.

## Scope

This Code of Practice concerns rail mounted MEWPs and also road MEWPs used in the railway environment.

## Definitions

<b>Travelling mode</b>	A vehicle is considered to be in travelling mode when it is on rail, with its suspension allowing movement along the track, and all parts stowed in a manner which prevents inadvertent or unintended movement out of the applicable gauge.
<b>Working mode</b>	A vehicle is in working mode as soon as any part of the vehicle or equipment is unstowed from its travelling mode, or not within the applicable gauge.

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## **1 Use of MEWPs.**

### **1.1 Operation of controls**

1.1.1 Except for emergency rescue all movements of the MEWP should be by the operator utilising the controls in the work platform when the work platform is occupied.

1.1.2 The work platform should be unoccupied if the movement of the MEWP along the track in travelling mode is controlled from a separate position.

1.1.3 Whilst the work platform is away from the stowed position (working mode) there should always be a person on the ground close to the MEWP fully conversant with the emergency controls.

1.1.4 All operations including:

- a) movements along the track when the MEWP is in rail mode
- b) all travel movements in road mode (where any part of the equipment can come within 3m of the running line),
- c) working mode in rail, and road where any part of the equipment can come within 3m of the running line

should be under the control of a machine controller. The machine controller should be at ground level in a position of safety that allows for direct communication with the operator depending on the type of communication system being used..

### **1.2 Work restraint anchor points on MEWPs.**

1.2.1 Anchor points marked for work restraint should never be used for fall arrest.

NOTE In the majority of railway MEWP applications there is a limited height of work and hence fall arrest equipment is not recommended, and most MEWPs are not designed for fall arrest equipment use. A risk assessment will need to be carried out if fall arrest is considered necessary which includes the use of MEWPs specifically designed for this application.

1.2.2 Staff should wear a harness attached to the anchor points at all times when in the work platform.

1.2.3 The number of staff attached to the anchor point should not exceed the number that it is rated for.

1.2.4 The operator should visually check the anchor point(s) and fixings prior to use. This should include checking for any obvious signs of damage or excessive wear.

### **1.3 Getting in and out of MEWPs away from stowed position.**

1.3.1 Where practical personnel should never get out of a MEWP with the work platform away from the stowed position. If the use of MEWP for persons leaving the work platform at height is unavoidable a risk assessment as set out in BS8460:2005 section 6.12 should be undertaken and include an assessment for the rescue of personnel who may have become stranded.

### **1.4 Use of MEWPs in wind.**

1.4.1 MEWPs must not be used when the wind speed exceeds that specified by the manufacturer. A guide for estimating the speed of the wind is given in Appendix B.

1.4.2 Care should be taken about the positioning of MEWPs, to avoid where possible the additional effects of wind caused by:

- a) funnelling effects of wind between buildings, where wind speed can double that observed in open area
- b) eddy currents created from the corners of large slab sided buildings
- c) working at height, wind speed can be 50% greater at 20m height than at ground level
- d) passing trains, the slipstream effect depends on the speed of the train and also the train type.

1.4.3 Consideration should be given to the wind chill when working in a work platform. On a calm day 10°C is cool but not unpleasant, but with a wind speed of 20 mph the temperature experienced on the face and hands is 0°C. If the day is very cold, about at freezing, the temperature experienced on the skin could be down to -15°C. Therefore adequate warm clothing should always be provided and worn.

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- 1.4.4 Consideration should be given to materials being handled when at height. Sheet material such as sign boards and cladding can act as sails in even moderate winds and can seriously affect the stability of the MEWP.

## **2 Loading issues to be considered during planning and use of MEWPs.**

### **2.1 Principles**

- 2.1.1 Materials are permitted to be carried in the work platform of a MEWP. The most important consideration is that the total weight of personnel, tools and material being carried in the work platform at any stage during the work should not exceed the maximum SWL of the MEWP.

### **2.2 Planning**

- 2.2.1 If MEWPs are to be used directly to install materials, it is essential to know the weight and dimensions of those materials and to correctly consider any manual handling and load distribution issues.
- 2.2.2 Boom-type MEWPs generally have smaller work platforms and lower lift capacities than scissor-type MEWPs and their platforms can 'bounce' at height due to the boom structure flexing. This usually makes them unsuitable to use for installing heavy materials, or bulky materials that may obstruct the function controls. In these cases, consider using a scissor lift, or a crane/telehandler in conjunction with the MEWP. This combination reduces the risk of overturning.
- 2.2.3 The MEWP should have the work platform's rated load in kgs; and also the rated load given as the allowable number of persons and mass of equipment in kgs. This information should be available in the technical data and also displayed on the side of the work platform. It should be noted that the number of persons assumes a mass of 80 kgs per person – therefore if persons intended to be in the work platform are greater than 80 kgs each, the difference in mass will need to be subtracted from the permitted mass of material. If fewer people are used than allowed it is permissible to have additional material providing this does not exceed the work platform's total rated load. See Appendix A for sample calculation of intended load.
- 2.2.4 An allowance should be made for the additional loads that might need to be carried by the work platform during the work or rescue operation (eg material removed before refitting new). Taking loads into the work platform at height should be undertaken with extreme caution. If the weight of the load is not known accurately it can lead to overloading of the work platform and overturning of the MEWP. Load sensing systems do not provide protection in these situations.

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The transfer of loads into the work platform at height should be taken into account as part of the planning process.

- 2.2.5 Some MEWPs may have a variable capacity depending on the configuration of the work platform, for example platforms with side shift. The manufacturers' handbook and load charts need to be consulted for machine specific details in the planning process.
- 2.2.6 MEWPs are designed to be used with the material completely within the work platform, therefore long and wide materials that do not fit in the work platform should only be carried with the MEWP manufacturer's written permission using approved carrying attachments. Materials should not be carried using the guardrails because this could reduce the stability of the MEWP. The guardrails, or work platform, should not be used for attaching other lifting devices such as pulleys etc.
- 2.2.7 Careful consideration should be given to the manual forces that could be exerted onto the work platform. The work to be carried out from the work platform, especially where this involves drilling or use of spanners where bolts could be resistant to movement, should be defined.

## **2.3 Use**

- 2.3.1 Before starting work the SWL of the MEWP should be checked to determine whether it is sufficient for the maximum combined weight of persons and equipment (tools and materials) to be carried in the work platform.
- 2.3.2 It is essential that equipment carried in the work platform which has cables or hoses attached is not left hanging free but is properly supported. Particular care should be taken to prevent objects or equipment striking or interfering with the controls of the MEWP.
- 2.3.3 Persons on the work platform should not apply any manual forces that exceed those permitted by the manufacturer. This includes sideways forces.
- 2.3.4 Unless specifically permitted by the manufacturer the work platform should never be used to exert a horizontal force, nor should the work platform be used as a prop or jack.

## **Appendix A Example calculation of intended load on work platform.**

### **A.1 Rated load of work platform**

Machine rated at 300 kg or 3 persons and 60 kg

#### **A.2.1 Calculated load on work platform (example 1)**

Operator A	105	kg
Operator B	110	kg
Operator C	95	kg
TOTAL	310	kg

Therefore load unacceptable for work platform, even though the platform is rated for "three" persons. The options are either to have one less operator or to obtain a MEWP with a higher load capacity.

#### **A.2.2 Calculated load on work platform (example 2)**

Planned material	150	kg
Tools	5	kg
Operator A	65	kg
Operator B	95	kg
TOTAL	315	kg

Therefore load unacceptable for work platform. The options are either to use one operator instead of two on the work platform, or reduce the material lifted, or to obtain a MEWP with a higher load capacity.

#### **A.2.3 Calculated load on work platform (example 3)**

Operator A	65	kg
Operator B	95	kg
Tools	5	kg
Planned material going up	75	kg
Material added to at height	75	kg
TOTAL	315	kg

In this case the load is unacceptable for the work platform because the material is being added to whilst the platform is raised. A typical example of this is where new components are to be fitted to the OLE and the old ones are removed before fitting new ones.

## Appendix B Guidance for estimation of wind speed.

By observation of the effects of the wind, as described in Table 1, it is possible to estimate the wind speed.

Description of wind	Effect of wind on the environment	Wind speed	Wind speed	B'fort Scale
		(mph)	(m/s)	
Calm	Calm, smoke rises vertically	0 - 1	0 – 0.2	0
Light Air	Direction of wind shown by smoke	1 - 3	0.3 – 1.5	1
Light Breeze	Wind felt on face; leaves rustle; ordinary vanes moved by wind	4 - 7	1.6 – 3.3	2
Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag	8 - 12	3.4 – 5.4	3
Moderate Breeze	Raises dust and loose paper; small branches are moved	13 - 18	5.5 – 7.9	4
Fresh Breeze	Small trees in leaf begin to sway; crested wavelets form on inland waterways	19 – 24	8.0 – 10.7	5
Strong Breeze	Large branches in motion; whistling heard in telephone wires	25 – 31	10.8 – 13.8	6
Near Gale	Whole trees in motion; inconvenience felt when walking against wind	32 – 38	13.9 – 17.1	7
Gale	Breaks twigs off trees; generally impedes progress	39 – 46	17.2 – 20.7	8
Strong Gale	Slight structural damage occurs (chimney pots and slates removed)	47 – 54	20.8 – 24.4	9

**Table 1 Estimation of wind speed from observation of effects**

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## References

Document	Title
BS 8460:2005	Safe use of MEWPs. Code of practice
EN280:2001	Mobile elevating work platforms - Design calculations - Stability criteria - Construction - Safety - Examinations and tests
GE/RT8000	Rule Book