

BS 8460:2017



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Code of practice for the safe use of MEWPs

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Summary of pages

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Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 October 2017. It was prepared by Technical Committee MHE/12, *Lifting Platforms*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 8460:2005, which is withdrawn.

Information about this document

This is a full revision of the standard, and introduces the following principal changes:

- new safe use recommendations, taking into account the latest edition of BS EN 280;
- enhanced recommendations for the risk management process;
- new subclauses for loading and unloading MEWPs and for operating MEWPs near sources of electromagnetic radiation in telecommunications;
- added recommendations for identifying the implications of new safety features on machines, such as telematics, data logging, load sensors, material-handling devices and machine security;
- new recommendations for the prevention of falls while carrying out maintenance on the machine chassis/structure, the prevention of entrapment, and the operation of secondary guarding;
- changes to reflect recent changes in legislation, e.g. the Construction Design and Manufacturing (CDM) Regulations 2015, and the replacement of HSE guidance CIS 58 with GEIS6, which references BS 8460;
- references given to various guidance documents from the Strategic Forum for Construction, Plant Safety Group on ground conditions, medical fitness to operate construction plant, avoiding trapping/crushing injuries, and inspection and thorough examination;
- new definitions for "primary guarding", "secondary guarding", "user" and "deck-riding";
- new informative annexes giving guidance on symbols for MEWPs, machine modifications and CE marking, and controls in addition to the platform controls;
- new normative annex on self-familiarization; and
- new annex giving an example of a rescue plan hierarchy.

This British Standard was drawn up with the participation of HSE representatives.

This British Standard calls for the use of procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

The word “should” is used to express recommendations of this standard. The word “may” is used in the text to express permissibility, e.g. as an alternative to the primary recommendation of the clause. The word “can” is used to express possibility, e.g. a consequence of an action or an event.

Notes and commentaries are provided throughout the text of this standard. Notes give references and additional information that are important but do not form part of the recommendations. Commentaries give background information.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Particular attention is drawn to the following specific regulations:

- Health and Safety at Work etc. Act 1974 [1];
- Lifting Operations and Lifting Equipment Regulations (LOLER) 1998 [2];
- Provision and Use of Work Equipment Regulations (PUWER) 1998 [3];
- Supply of Machinery (Safety) Regulations 2008 (as amended) [4];
- Work at Height Regulations 2005 (as amended) [5];
- Construction (Design and Management Regulations) 2015 [6].

Details of the Lifting Operations and Lifting Equipment Regulations 1998 [2] and the Provision and Use of Work Equipment Regulations 1998 [3], together with an HSE Approved Code of Practice and HSE Guidance, are given in HSE publications *Safe use of lifting equipment* [7] and *Safe use of work equipment* [8].

1 Scope

This British Standard gives recommendations and guidance for the selection, hiring, positioning, maintenance and thorough examination of mobile elevating work platforms (MEWPs). It also gives recommendations for the safe use of MEWPs, including the selection and training of operators and other personnel, together with guidance to assist in the selection of competent persons.

NOTE This British standard does not give recommendations for delivering persons and materials to fixed landing levels. Equipment intended for this purpose, such as lifts or hoists, are dealt with by other standards including BS EN 12158-1, Builders' hoists for goods – Hoists with accessible platforms, BS EN 12159, Builders hoists for persons and materials with vertically guided cages, and BS EN 81 (all parts), Safety rules for the construction and installation of lifts.

This British Standard is not applicable to:

- mast climbing work platforms;
- fire-fighting and fire rescue appliances;
- non-integrated working platforms on forklift trucks of any type;
- lifting tables;
- suspended access equipment;
- building maintenance units;
- construction hoists;
- transport platforms;
- wind turbine and tower crane access lifts;
- belt and chain conveyors;
- capstan winches; or
- hoists powered by direct drive internal combustion engines.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 8437, *Code of practice for selection, use and maintenance of personal fall protection systems and equipment for use in the workplace*

BS EN ISO/IEC 17020, *Conformity assessment – Requirements for the operation of various types of bodies performing inspection*

3 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

3.1 accessory

device attached to a work platform to assist with tasks being carried out from the work platform

NOTE Accessories might include secondary guarding, cladding carriers, camera pods, sign carriers, glazing carriers, lighting frames, advertising panels and pipe racks.

3.2 anchor point

designated element secured to or part of a work platform to which a fall protection system (work restraint and/or fall arrest) can be attached

3.3 articulated boom

extending structure of a boom-type MEWP which moves by articulation of one or more booms

NOTE [Figure A.1](#), [Figure A.2](#) and [Figure A.3](#) of [Annex A](#) give diagrams for different MEWP positions.

3.4 collective protection

assembly of components or equipment which provides fall protection for all persons working at height, without requiring any action on their part to be effective

3.5 competent engineer

person who has such theoretical knowledge of the design of the MEWP as enables them to assess the design of the item in order to establish appropriate criteria for any proposed modification or adaptation, or to carry out a thorough examination

3.6 competent person

person having sufficient professional or technical training, knowledge, actual practical experience and authority to enable them to:

- carry out their assigned duties at the level of responsibility allocated to them;
- understand any potential hazards related to the work (or equipment) under consideration; and
- detect any technical defects or omissions in that work (or equipment), recognize any implications for health and safety caused by those defects or omissions, and specify a remedial action to mitigate those implications

NOTE The attributes for competence which this implies are detailed in [7.2](#).

3.7 competent person (MEWP selection)

person with sufficient skills, knowledge and experience to enable them to specify a MEWP for a work at height activity for a specific site, based on information provided to them

3.8 counterweight

substantial mass incorporated into a MEWP in order to counteract the overturning moment created by the work platform and its payload

3.9 deck-riding

practice of placing a MEWP on a previously erected structure above the ground prior to structural completion, either by using a static “sled” fixed to the base of the MEWP or by placing the MEWP on a temporary MEWP support frame

3.10 demonstrator

person having such practical and theoretical knowledge and experience of MEWPs as is necessary to familiarize operators with their responsibilities and demonstrate pre-operational and safe operational procedure and the limitations of MEWPs

3.11 extending axle

axle of a MEWP which extends to increase the width of the MEWP, allowing the upper structure to raise to the full working position

3.12 fall protection

means to prevent persons falling or to mitigate the consequences of a fall which might be collective or personal measures

3.13 fall arrest system

personal fall protection system by which a fall is arrested to prevent the collision of the user with the ground or structure

3.14 familiarization

provision of machine-specific information by a competent person to a potential operator, identifying the manufacturer's instructions and warnings, control functions and operating characteristics, safety devices and emergency recovery procedures

NOTE See also [3.33](#) for definition of self-familiarization.

3.15 ground-bearing pressure

pressure exerted on the supporting surface by the stabilizers, outriggers, wheels or tracks of the MEWP

3.16 hirer

company, firm, person, corporation or public authority taking the owner's plant on hire

3.17 insulated aerial device

MEWP manufactured with specially insulated sections of boom or scissor pack for the purpose of electrical insulation

3.18 jib

small boom between the end of the main boom and the work platform which can be capable of articulation in the vertical and/or horizontal planes

NOTE [Annex A](#) gives diagrams for different MEWP positions.

3.19 knuckle

articulating junction of two booms

3.20 manual force

reaction forces applied to a MEWP by persons in the work platform when carrying out work

3.21 mobile elevating work platform, MEWP

mobile machine which consists, as a minimum, of a work platform with controls, an extending structure and a chassis, that is intended for work at height

NOTE A more detailed definition of a MEWP for the purposes of design standards is given in BS EN 280.

3.22 operator

person directly using the MEWP controls from the work platform or the base

NOTE This is not necessarily the same as the user ([3.41](#)).

3.23 oscillating axle

NOTE [Annex A](#) gives diagrams for different MEWP positions.

3.23.1 active oscillating axle

axle on the chassis of a self-propelled MEWP which moves in a controlled manner to ensure that, within the limit of oscillation, all wheels remain in contact with the ground

NOTE The controlled oscillation ensures that the MEWP remains stable during travel with the elevating structure raised from the transport position.

3.23.2 passive oscillating axle

axle on the chassis of a self-propelled MEWP which moves freely during travel with the MEWP's elevating structure in a limited and defined configuration to ensure that, within the limits of oscillation, all wheels remain in contact with the ground

NOTE Once the MEWP elevating structure moves out of the defined configuration the axle is locked and remains at that angle of oscillation until the elevating structure returns to the defined configuration.

3.24 outreach

horizontal distance between the point at which the centre of rotation meets the ground and the vertical centreline passing through a point 0.5 m outside the rail of the work platform furthest from the centre of rotation

3.25 outriggers

devices at the base of the chassis that increase the stability of the equipment and that are capable of lifting and levelling the equipment

[SOURCE: ANSI A92.20 NYP:2017]

3.26 owner

company, firm or person owning the MEWP, including those hiring it out to a user

3.27 personal fall protection system

assembly of components for protection against falls from a height at work when the risk of a fall exists, including at least a body-holding device connected to a reliable anchor point

3.28 primary guarding

function enable device which requires activation prior to any lift or drive movement control being activated

NOTE Examples include a foot pedal, a recessed hold-to-run button or trigger.

3.29 rated load

maximum load that can be safely handled by a MEWP at a specified position and under specified conditions

NOTE The rated load can also be known as "safe working load (SWL)" or "working load limit".

3.30 rescue system

system by which a person can carry out a rescue, including self-rescue, or be rescued from a height or depth by pulling, lifting or lowering

3.31 scissor lift

self-propelled X/scissor action and sigma (I) type vertical lifting platform

NOTE A scissor lift can have limited outreach by use of one or more deck extensions.

3.32 secondary guarding

device fitted to a MEWP in addition to the primary guarding systems, to further reduce the risk of entrapment and/or provide an alert that an entrapment situation has occurred

NOTE Shrouds placed over the controls are not considered as secondary guarding.

3.33 self-familiarization

process by which an operator familiarizes themselves with the machine they are to operate

NOTE Information for self-familiarization can be obtained from manufacturer's operator manual, online familiarization videos, etc. See also 3.14 for a definition of familiarization.

3.34 self-propelled MEWP

MEWP with an integral powered chassis, capable of self-travel controlled from the platform

NOTE A self-propelled MEWP can have outriggers or stabilizers.

3.35 site

place where work is being carried out or to which the workers have access

3.36 site assessment for MEWP selection

assessment carried out by a competent person(s) (see 3.6 and 3.7) to identify and recommend a suitable MEWP for the intended task

NOTE 1 The site assessment follows the identification that a MEWP is a suitable machine for carrying out the task(s).

NOTE 2 This was previously known in the industry as a site survey.

3.37 spreader pad

pad used to increase the area under a stabilizer, outrigger, wheel or track of a MEWP in order to reduce the ground-bearing pressure to an acceptable value

3.38 stabilizer

device or system used to stabilize a MEWP without lifting the MEWP chassis from the ground

NOTE Examples of stabilizers are jacks, suspension locking devices and extending axles.

3.39 suspension trauma

orthostatic shock caused by vertical suspension for a period of time, interfering with the human body's blood circulatory system, which could lead to faintness, shock and, ultimately, death

3.40 telescopic boom

extending structure of a boom-type MEWP which moves by the extension or retraction of one or more booms

3.41 user

person or organization that has control of the planning, management and use of the MEWP on site and is responsible for ensuring the MEWP is kept in a safe working condition

NOTE 1 This can include the person responsible for the site, principal contractor or subcontractor.

NOTE 2 This is not necessarily the same as the operator (see 3.22).

3.42 vehicle-mounted MEWP

MEWP which is driven from, and mounted onto, a vehicle chassis

3.43 vertical lift

MEWP with a telescopic extending structure moving in the vertical plane

3.44 working height

vertical distance from the ground to a point generally 2 m above the floor of the work platform

3.45 work platform

moveable component of the MEWP, other than the chassis, intended for carrying personnel with or without material

[SOURCE: ISO 16368:2010, 3.40]

NOTE This is also known as a "cage", "bucket", "basket" or "carrier".

3.46 work restraint system

personal protective system which uses a body holding device connected to a designated anchor to prevent a person from reaching zones where the risk of a fall exists

4 Hazards associated with the use of MEWPs

When undertaking risk assessments of the transport, delivery, positioning, use and maintenance of MEWPs the hazards associated with the use of MEWPs should be assessed.

NOTE Some of the typical hazards associated with these activities are given in [Table 1](#). This is not a comprehensive list and it is important that each situation is assessed on its own merits. Many hazards are caused by failure to follow the manufacturer's instruction.

Table 1 — Typical hazards associated with the use of MEWPs

Stage	Activity	Hazard	Cause	Relevant clause(s)
Transport and delivery	Lifting of MEWP	Crushing, trapping, overturning of lifting equipment, impact	Unsafe lifting operation	6.14.1
	Loading, unloading and securing of load	Overturning/crushing	Machine slipping off truck deck and ramps	9.2.5
			Crushing between MEWP and truck headboard and adjacent MEWPs on truck bed	9.2.5
			Unsuitable vehicle	10
			Site conditions (public highway, ground conditions, gradients, cranes, services, environment, traffic, pedestrians)	6.11 , 6.12
			Inappropriate ramps	9.2.5
			Attempting to drive down one ramp	10
			Overhead objects	9.2.5
			Travelling the MEWP with the operator not on the platform	12.3 , 12.4
		Musculoskeletal injuries	Lifting, carrying, pulling, pushing	7.2
		Winching	Snapping cable, crushing, slipping, run away	-
		Slip, trip and falls	Fall hazard (tripping over chains)	9.2.5
			Slipping	9.2.5
			Tripping	9.2.5
			Fall from vehicle deck	12.1.2h
			Environmental conditions (wind, rain, ice, snow and poor visibility)	6.2 , 6.11.7
	Transport on the highway	Lack of assistance in event of injury	Unsuitable vehicle/access to vehicle	10
			Lone working	6.18
			Insecure load (both machines, components and items left on the work platform)	6.8 , 11.2
			Overhead structures (striking with high machines)	6.3 , 9.2.5
			Incorrectly stowed or secured MEWP	10
	Collision	Collision	Stationary and moving vehicles and traffic	10
			Pedestrians (including the interface with public)	6.8 , 6.12
			Adjacent structures and objects	6.8 , 6.12
			Overhead objects	6.3 , 6.8

Table 1 (continued)

Stage	Activity	Hazard	Cause	Relevant clause(s)
Transport and delivery (continued)	Transport on the highway (continued)	Environment	Wind, rain, ice, snow and poor visibility, lighting levels, noise levels	6.2 , 6.11.7
		Electrocution	Overhead power lines	6.3
	Travel on site	Impact with bystanders	Limited operator visibility (particularly reversing) Constricted areas, crossings, pedestrian areas Site signage and identified vehicle route ways Open yards and loading/unloading areas	10.11 10.11 10.11 10.11
		Impact with operator and bystander	Travelling the MEWP with the operator not on the platform	12.3
		Overturning	General and localized features such as poor ground, excavations, basements and cellars Driving on cross gradients	6.11 12.2
		Electrocution and fire	Services (above and below ground)	6.3 , 6.11.6
	Collisions		Travel orientation (unexpected response to controls) Overhead hazards Inability to hear warnings due to high noise levels Lack of segregation from vehicles, traffic routes and management arrangements	11.3.4 , 12.2 11.3 , 6.12 12.2 6.12
			Unexpected movement, e.g. ground failure Striking adjacent object/structure Being struck by an external object	12.2 6.12 -
		Hazardous substances	Fuel and exhaust fumes in confined areas, liquids	6.17
		Fire and explosion	Unprotected combustion engines and electric motors in hazardous areas	6.17
	Trapping and crushing		Bystander coming too close to the MEWP Travelling too close to overhead obstructions	11.2.1 , 6.12 6.3 , 11.2
			Lack of awareness of surroundings	6.20
	Lack of assistance in event of injury		Lone working	6.18

Table 1 (continued)

Stage	Activity	Hazard	Cause	Relevant clause(s)
Transport and delivery (continued)	Parking	Collisions	Moving vehicles	6.12 , 11.2
			Obstructing vehicle routes or loading/unloading areas	12.8
			Run away	11.2 , 11.3.4
Positioning prior to carrying out work	Ground conditions	Overturning	Inadequate ground-bearing capacity, e.g. uncompacted fill	6.11 , 11.4
			Paved areas (unknown bearing capacity)	6.11 , 11.4
			Cellars and basements, service ducts (unknown bearing capacity)	6.11 , 11.4
			Excavations (collapse of adjacent ground)	6.11 , 11.4
			Waterlogged areas (poor ground-bearing)	6.11 , 11.4
			Frozen ground (reduction in bearing capacity as ground thaws)	6.11 , 11.4
Services	Overturn, electrocution, fire and damage to services		Above ground: collision with power lines, telephone lines, projections, pipe bridges	6.3
			Below ground: collapse due to sewers, manhole covers, cable ducts, water mains, gas mains	6.11 , 11.4
Adjacent structures and objects	Impact and crushing		Contact with adjacent structures and mezzanine floors	12.2
			Between counterweight and adjacent object or structure while slewing	12.2
			Walls and roofs of tunnels and corridors	12.2
			Falling objects	12.2 5)
			Radio and telecommunication masts, microwave dishes, radar installations	6.7
Weather conditions	Exposure to electromagnetic radiation		Above ground: collision with power lines, telephone lines, projections, pipe bridges	6.3
			Wind speed: local effects (shielding, vortex effect, aircraft exhaust)	6.13
	Overturning		Using zero wind rated machines out of doors	6.2.1
			Wind chill, sunburn, sun glare, rain, snow, ice, lightning strike and poor visibility	6.2.2 , 6.19
	Personnel hazards			

Table 1 (continued)

Stage	Activity	Hazard	Cause	Relevant clause(s)	
Positioning prior to carrying out work (continued)	Other plant and vehicles	Collision, ejection from platform and crushing	Cranes (tower, mobile and EOT)	6.12	
			Road vehicles	6.12	
			Site vehicles	6.12	
	Travelling	Impact with operator and bystander	Travelling the MEWP with the operator not on the platform	11.2.1	
		Musculoskeletal injuries	Lifting, carrying, pulling, pushing	-	
		Run away	Transitioning from road to rail	12.6	
	Setting up	Outrigger/stabilizer deployment	Crushing	Feet under outrigger/stabilizer pad	6.11.2
			Impact, trapping and crushing	Extending outrigger beams into adjacent personnel, vehicles or structures	6.12
			Unexpected movement	Hand brake on rear wheels only (chassis moves when rear wheels leave ground)	11.3.4
			Overturning	Incorrect set up	11.4
			Levelling (slope limit) plus max packing height	11.4	
			Ground-bearing capacity	6.11	
Attachment of work platform, interchangeable equipment and accessories		Musculo skeletal injuries	Incorrect manual handling	7.2	
During use	Folding and unfolding guardrails	Falling and falling object	Not attached securely (lack of competence)	11.6	
			Incorrect selection and non CE-marked interchangeable equipment	11.5, 11.6	
		Trapping and crushing	Lack of familiarization	8, 12.1	
	Loading of the work platform	Falling	Working at height with insufficient fall protection	6.9, 12.1	
		Overload, overturning and structural failure	Inadequate planning of the operation	9, 11.4, 11.5	
		Exceeding number of persons	11.4, 11.5		
		Exceeding rated load	11.4, 11.5		

Table 1 (continued)

Stage	Activity	Hazard	Cause	Relevant clause(s)
During use (continued)	Loading of the work platform (continued)		Exceeding manual persons force	11.4
			Uneven distribution of load	11.5 , 11.7
			Taking an unknown load into the platform whilst elevated	11.4
			Wind loading on the platform and objects handled and placed in or attached to the work platform, increasing wind area	6.2 , 11.7
			Shock loading	11.7
			Using the MEWP as a crane	12.1
			Using the work platform to nudge components into position/nudging steel work	11.7
			Trailing cables hanging from the work platform	11.7 , 12.1.2i
			Long loads, ducting, large panels/pipes, posters or signs (increased wind area)	11.7
			Loads carried on the rails of the work platform (damage to rails, endangering persons in the work platform)	11.7 , 12.1.2f
	Use at height	Lack of assistance in event of injury Fall from height	Loads carried outside the work platform (increased loads on levelling and load-sensing systems, risk of entanglement)	11.5
			Lone working	6.18
			Using "hop-ups" on floor of work platform (stools, boxes, ladders work platform mid-rail, etc.)	12.1.2f
			Exiting the work platform at height	6.15 , Annex B
			Work platform levelling system failure	6.9
			Faulty or inappropriate personal fall protection system	6.9
			Fall from vehicle-mounted decks	12.1.2k
			Ejection by collisions (sideswipe)	6.12
			Unauthorized means of egress	12.1.2b
			Work platform access point sliding mid-rail secured or jammed in raised position, self-closing gate secured or jammed in open position	12.1.2b
	Falling objects		On to work platform (lack of head protection)	9.2.5 , 12.1.2f
			From work platform (particularly loose materials carried on guardrails)	11.6

Table 1 (continued)

Stage	Activity	Hazard	Cause	Relevant clause(s)
During use (continued)	Use at height (continued)	Entanglement	Proximity to trees	-
			Long and/or inappropriately attached materials	11.5 , 11.7f
		Impact with structures	Failure to retract boom or extending decks before lowering	12.1.2n
			Machine failure	13.1
		Stranding at height	Entanglement or blocking of the work platform at height	11.7e
			Incorrect selection and use of emergency egress equipment/rescue system	6.10
		Suspension trauma	Prolonged suspension in fall protection systems (particularly, but not exclusively, fall arrest systems)	6.10
			Lack of rescue procedures, lone working, etc.	6.10 , 6.18
		Trapping and crushing	Against, between and underneath structures and services	6.20 , 12.1.2s
			Personnel under descending extending structure	12.1.2g
	Travelling on site	Structural failure	Unguarded machinery in the overhead work area	6.12.2
			Corrosive environment	6.17 , 13.2.4
			Poor maintenance	13
			Unauthorized modifications	6.2.1 , 6.16
			Ineffective thorough examination	14
			Defective component	-
			Impact damage	-
			Excess paint overspray (covers decals, jams up switches/mechanisms), poor maintenance	13
			Shot blasting (insufficient protection)	12.1.2
			Slow ground failure, erosion	6.11
			Lightning strikes, overhead power lines	6.19
			Contact with hazardous substances, exposure to UVA	6.17
			Lone working	6.18
			Poor work place ventilation, no hazardous substances/vapour risk assessment	6.5 , 6.14
			Limited operator visibility (particularly reversing)	12.2 , 12.3

Table 1 (continued)

Stage	Activity	Hazard	Cause	Relevant clause(s)
During use (continued)	Travelling on site (continued)	Impact with bystanders/obstacles (continued)	Constricted areas, crossings, pedestrian areas	12.2 , 12.3
			Site signage and identified vehicle route ways	12.2 , 12.3
			Open yards and loading/unloading areas	12.2 , 12.3
		Overturning	Uneven rough ground (potholes, kerbs, etc.)	11.3
			Unprotected edges	11.3
			Housekeeping (debris, objects projecting into or obstructing route ways, etc.)	11.3
		Overturning and ejection of cage occupants	Acceleration during turning and stopping and over uneven ground	12.2
			Magnification of distance and acceleration at the work platform on boom-type MEWPs when travelling over uneven ground (particularly with the boom extended)	12.2
			Sudden movement of the work platform on tracked-type MEWPs when travelling over uneven ground	12.2
			Sudden movement of the work platform if oscillating axles are locked when travelling over uneven ground	12.2
			Being towed	11.2
			Ground failure, including manholes and temporary covers to slab openings	6.11
		Impact, trapping, crushing and structural damage	Towing another machine	11.2
			Lone working	6.18
			Collision with aircraft and other traffic	6.13
	Airports (additional issues)	Impact, trapping and crushing	Aircraft exhaust	6.2.4 , 6.13
		Overturning	Radar interference from moving MEWP airspace	6.13
		Air traffic control confusion	High noise levels	6.13
	Railways (additional issues)	Auditory damage	Collision with rail traffic	12.6
		Impact, trapping and crushing	Proximity to overhead line equipment (OLE) and "third rail" systems	6.3 , 12.6
		Electrocution		
	MEWP security	Unauthorized use	Failure to secure and isolate the MEWP and control access	6.21

Table 1 (continued)

Stage	Activity	Hazard	Cause	Relevant clause(s)
Maintenance	Common activities (pre-use checks, inspections, breakdowns, routine servicing, cleaning, pre-hire inspections)	Fall from height	Low-level falls whilst carrying out maintenance on machine	7.2 , 8 , 13
			Incorrect set-up or operating technique	7.2 , 8 , 13
			Machine failure	7.2 , 8 , 13
			Failure to select suitable access equipment for work at height	5.2 , 9.2.3
		Lack of assistance in event of injury	Lone working	6.18
		Injury	Slips and trips from poor housekeeping	7.2 , 8 , 13
		Musculoskeletal injuries	Insufficient manual handling assessment and techniques	7.2 , 8 , 13
		Trapping and crushing	Operation whilst guards are removed	7.2 , 8 , 13
			Movement through the release of stored energy	7.2 , 8 , 13
			Non-use of safety support prop	7.2 , 8 , 13
		Injuries from hazardous substances	Battery acid splashes and spills during battery maintenance and filling	7.2 , 8 , 13 , 13.2.4
			Insufficient COSHH [9] assessment and correct use of PPE [10]	7.2 , 8 , 13
			Contamination of machine on site	7.2 , 8 , 13.1
Thorough examination (including testing)	Thorough examination and testing	Hydraulic fluid injection	Insufficient experience and competence	7.2 , 8 , 13
		Environmental contamination	Insufficient environmental assessment and waste disposal arrangements	7.2 , 8 , 13.3
		Machine failure	Insufficient experience and competence	7.2 , 8 , 13.3
			Use of incorrect spare parts	7.2 , 8 , 13.3
		Explosion and fire	Shorting of battery terminals, non-isolation of power source	7.2 , 8 , 13.1
		Fall from height	Low-level falls whilst carrying out thorough examination on machine chassis/structure	7.2 , 8 , 14
			Incorrect set-up or operating technique	7.2 , 8 , 14
			Machine failure	7.2 , 8 , 14
		Lack of assistance in event of injury	Lone working	6.18
		Injury	Slips and trips from poor housekeeping	7.2 , 8 , 14

Table 1 (continued)

Stage	Activity	Hazard	Cause	Relevant clause(s)
Thorough examination (including testing) (continued)		Musculoskeletal injuries	Insufficient manual handling assessment and techniques	7.2 , 8 , 14
		Trapping and crushing	Operation whilst guards are removed	7.2 , 8 , 14
		Injuries from hazardous substances	Insufficient COSHH [9] assessment and correct use of PPE [10]	7.2 , 8 , 14
			Contamination of machine on site	7.2 , 8 , 14
		Hydraulic fluid injection	Insufficient experience and competence	7.2 , 8 , 14
		Environmental contamination	Insufficient environmental assessment and waste disposal arrangements	7.2 , 8 , 14
Collection (see Transport and delivery)	Exposure to harmful substances or materials	Machine failure	Insufficient experience and competence	7.2 , 8 , 14
			Insufficient product knowledge	7.2 , 8 , 14
		Injuries to bystanders and the public	Unsuitable location without exclusion zone	7.2 , 8 , 14
		Respiratory disease	Exposure to harmful substances (asbestos containing materials)	6.17
		Machine faults	MEWP defects not detected and notified	-
			Lone working	6.18
	Travelling on public highway	Crushing, impact, road traffic accidents	Struck by flying objects due to failure to remove loose objects	6.12 , 12.1.2f)

5 Management

5.1 General

COMMENTARY ON 5.1

It is essential that the safe use of a MEWP is properly planned, appropriately supervised and carried out in a safe manner.

Having identified the hazards associated with the management of MEWPs, including provision and use (see [Clause 4](#)), the user should assess the risks associated with their use and put appropriate control measures in place as identified by that risk assessment.

NOTE For the definition of user, see [3.41](#).

5.2 Organizational arrangements

COMMENTARY ON 5.2

MEWPs are used in many industries and work situations for a wide variety of tasks. The provision of MEWPs generally fall into two categories:

- a) MEWPs hired by the user from a hire company; and*
- b) MEWPs owned by the user.*

In both cases the major responsibility for the management of the use of the MEWP lies with the user.

Before the MEWP is used, a safe system of work should be implemented and all relevant personnel instructed to follow it. The system of work should include the following:

- 1) planning of the operation, including:
 - i) identification of tasks;
 - ii) selection, provision and use of a suitable MEWP and work equipment associated with it, including secondary guarding if appropriate (see [6.20](#));
 - iii) emergency procedures, including recovery of persons and/or the MEWP in the event of an emergency (see [6.10](#));
 - iv) any necessary preparation of a site for the positioning of the MEWP;
 - v) pre-use checks, inspections, maintenance and thorough examination requirements (see [Clause 13](#) and [Clause 14](#));
 - vi) the provision of properly trained and competent personnel who have been made aware of their relevant responsibilities under the Health and Safety at Work etc. Act 1974 [\[1\]](#);
 - vii) familiarization of the MEWP operator and rescue personnel with the specific MEWP they are required to operate, local site rules and information on any hazards to be aware of in the areas where the MEWP is required to work and travel;
 - viii) adequate supervision of the operation by competent personnel with the necessary authority, who should be provided by either the user or the person in control of the site, provided that this has been agreed by all parties and made known to the persons carrying out the work;
 - ix) availability of all relevant documentation, including current report of thorough examination and operating manual;
 - x) preventing unauthorized movement or use at all times; and
 - xi) the safety of persons not involved in the operation;

- 2) implementation of the plan; and
- 3) supervision and monitoring of the plan.

The system of work and its implementation should be effectively communicated to and between all parties concerned, taking account of any language/cultural differences.

The user is responsible for ensuring that there is a safe system of work, which should be provided to the operator to follow. In the case of a hired MEWP (with or without operator), the user may be assisted in this task by a competent person employed by the MEWP owner, who has sufficient knowledge and experience to give specialist advice in the selection and use of the MEWP for the specific application.

NOTE Such assistance does not relieve the user of their overall responsibility for the safe management of the operation.

5.3 Conditions for MEWP hire

Contract lifting as defined in BS 7121 is not suitable for lifting persons with MEWPs and should not be used.

6 Safety at sites

6.1 Accidents, dangerous occurrences and near misses

COMMENTARY ON 6.1

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) [11] require employers, and other people in control of work premises, to report and keep records of:

- *work-related accidents which cause death;*
- *work-related accidents which cause certain injuries (reportable injuries);*
- *diagnosed cases of certain industrial diseases; and*
- *certain “dangerous occurrences” (incidents with the potential to cause harm).*

RIDDOR [11] lists a number of dangerous occurrences which are relevant for safety at worksites, including the collapse, overturning or failure of any load-bearing part. Other dangerous occurrences listed in the Regulations to be borne in mind in relation to safety at worksites are the collapse of scaffolding or buildings (which could be connected with the operation of MEWPs in some instances) and contact with overhead power cables.

RIDDOR [11] requires that a dangerous occurrence is reported to the Health and Safety Executive. They might require that nothing is moved or disturbed until they have visited the site.

Further guidance on RIDDOR is given in HSE publication, INDG 453 Reporting accidents and incidents at work [12].

In the event of an accident, dangerous occurrence or near miss:

- a) all accidents, dangerous occurrences or near misses should be reported to the person in charge of the worksite immediately;
- b) following an accident or dangerous occurrence, nothing should be moved, especially any MEWP, unless this is required to prevent further injury or damage to property;
- c) the employer or person in control of the site should report any reportable accident or dangerous occurrence to the enforcing authority, which is often the HSE (see Commentary on 6.1);

- d) all incidents should be reported to the user, with issues relating to damage or machine failure also reported to the machine owner; and
- e) the user should arrange for the machine owner to carry out an inspection or thorough examination of the machine before it is returned to service (see [Clause 13](#) and [Clause 14](#)).

NOTE Users can refer to the MEWP Safety Alert Protocol [[13](#)].

6.2 Wind

6.2.1 Effect of wind forces

MEWPs should not be used in winds where their stability could be compromised. Modifications or additions to a MEWP that could affect its wind loading, and consequently its stability, should only be made with the MEWP manufacturer's approval.

NOTE 1 For example, modifications to or addition of banners, debris netting, panels, lighting rigs or material handling attachments. If this approval cannot be obtained, see [Annex D](#).

All MEWPs, except those designed specifically for indoor use, are designed to operate in maximum wind speed conditions marked by the manufacturer on the machine. The user should ensure the information is clearly marked and legible. Operation in wind speeds above this maximum can cause instability and should not be permitted.

NOTE 2 BS EN 280 specifies a minimum design wind speed of 12.5 m/s (28 mph).

NOTE 3 Some MEWPs are specifically designed to work in wind speeds in excess of 12.5 m/s. In such cases the manufacturer might impose specific restrictions on use.

NOTE 4 MEWPs which are designed for indoor use only are permanently and clearly marked in an easily visible place to that effect.

Wind speed should either be measured from the MEWP platform with an anemometer or assessed against the Beaufort scale.

NOTE 5 Wind speed can vary at different heights and could be significantly stronger than at ground level.

MEWPs that are designed specifically for indoor use at zero wind speed should not be used outdoors or in situations where they are inside a building but are still subjected to wind forces.

NOTE 6 Examples of this are indoor rated (0 m/s) MEWPs inside a hanger with the doors open at both ends or on a floor of an unclad building.

6.2.2 Wind chill factor

Persons using the MEWP should take account of the effect of wind chill prior to starting work on site each day, and dress accordingly.

NOTE On a calm day an ambient temperature of 10 °C can be considered to be cool but not unpleasant. At this temperature in a wind of 9 m/s (20 mph) the face and hands can experience a wind chill temperature of 0 °C and if the ambient temperature drops to freezing, the wind chill temperature can be -15 °C.

6.2.3 Effect of wind on equipment in the work platform

Care should be taken when handling building cladding, sheet materials, panels and other such materials which can act as sails and affect their ability to be handled safely or the stability of a MEWP.