Health and Safety Executive		Operational Circular OC 314/20	
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Target Audience:
All HSE Inspectors

PREVENTING FALLS FROM MOBILE ELEVATING WORK PLATFORMS (MEWPS) AND SELECTION AND USE OF FALL PROTECTION EQUIPMENT

This OC replaces OC 314/19. It advises inspectors of the publication of new guidance (Information Sheet **MISC 614**) *Preventing falls from boom type MEWPs* and provides updated enforcement guidance to inspectors taking account of the EMM, when inspecting such access equipment. This OC should be read in conjunction with information sheet MISC 614.

BACKGROUND

1 A new information sheet on ***Preventing falls from boom type MEWPs* (MISC 614)** has been published following concerns from the access industry about the lack of clarity between work restraint and fall arrest equipment and their application in OC 314/19 (which has been withdrawn and replaced by this OC).

2 The information sheet is only intended to cover boom (articulated and telescoping) type mobile elevating work platforms (MEWPs), which includes self-propelled boom, trailer and vehicle-mounted units.

3 It does not cover scissors lifts, though the principles for preventing overturns and failures are the same but fall protection equipment is not required for normal operation other than in exceptional circumstances.

4 The product specific European C standard EN280: 2001 specifically excludes hazards arising from getting on and off the work platform at changing levels from its scope. The instruction handbook supplied with a new MEWP (after 15 June 2002) should state that getting on and off the work platform when elevated is prohibited (see clause 7.1.1.2 o). Additionally if anything happens to the MEWP the operator could be stranded. The exception would be emergency rescue situations.

THE RISKS

5 A person can either fall or be thrown from a MEWP carrier or the MEWP can overturn

leading to both the person and MEWP falling.

ACCIDENT HISTORY

6 Between 1995/96 and 2001/2 there have been 5 fatal accidents involving boom type MEWPs being struck by other vehicles, failure of a stability critical part or ground failure. Over the same time period FOD has investigated 72 incidents (including said fatalities) relating to boom type MEWPs collapsing, overturning, persons being thrown from the carrier and the carrier being trapped against fixed structures.

ACTIVITIES REQUIRING FALL PROTECTION EQUIPMENT

7 Fall protection is not an effective control measure for overturn situations, where the person and MEWP will fall. The only effective measures are elimination or prevention through control measures using the safe site, safe vehicle and safe operator approach used in the information sheet.

8 Fall protection equipment is an effective control measure for preventing a person getting into a position where they could fall (work restraint) or mitigating against the effects of a person falling (fall arrest).

9 Situations where fall protection should be considered for the residual risk of a person falling from or being thrown out of the carrier are: steel erection; working next to or in a live highway; traversing across uneven/rough ground; tree work; and where projections/obstacles are present that a MEWP could strike.

10 It is not practical to wear fall protection equipment in the carriers of all boom type MEWPs for 2 reasons:

(1) Not all MEWPs have a suitable anchorage point inside the carrier and the current European C standard (EN 280:2001) does not require their provision.

(2) When operating a MEWP close to a body of water in to which it could overturn fall protection equipment should not be used but a life jacket should be worn instead.

11 As a general principal it is recommended that the use of work restraint systems is encouraged. So that operators are trained, practiced and accustomed to working with such equipment. Fall arrest systems are not generally recommended for use in MEWPs due to the lack of suitable anchor points and the uninvestigated affects of fall arrest forces on MEWP stability.

WORKING NEAR WATER

12 The information sheet recommends that only a lifejacket should be worn when working near water if there is a foreseeable risk that the either MEWP or the occupant could end up in the water.

13 If harnesses need to be worn for other reasons (e.g. movement/work elsewhere or

to aid rescue/recovery) this is acceptable but the occupant should not be connected to the MEWP whilst activities near to or over water are taking place. As soon as the MEWP moves away from such areas the occupant should connect him/herself to the attachment point. In these circumstances the standard of instruction and supervision should be such that inappropriate work activity that might lead to a person falling from the basket or the MEWP overturning is avoided.

APPROPRIATE FALL PROTECTION EQUIPMENT

14 **Definitions**:

(1) Fall arrest – This stops a person after they have fallen

(2) Work Restraint – This stops you falling in the first place, by preventing you from getting in to a position where you can fall. Work restraint is sometimes incorrectly called fall restraint or referred to as work positioning.

Work Restraint Systems

15 Work restraint will be the typical system used in the carrier because most anchor points in carriers are only rated for work restraint and the effectiveness of these systems is not height dependant. A typical work restraint system normally consists of a full body harness and lanyard with no shock absorber because the person will not get into a fall arrest situation. The lanyard length should be set or adjusted such that the user cannot get into a situation where fall arrest is required, this applies to fixed length, adjustable length and retractable (inertia reel) type lanyards. A waist belt should not be accepted as a full body harness will distribute any impact forces better.

16 Aboriculturalists / tree surgeons who use arboricultural sit harnesses can use these as part of a work restraint system instead of a full body harness (**see Aboriculture & Forestry Advisory Group (AFAG) Guide 403 for further information on this type of work**).

Fall Arrest Systems

17 A typical fall arrest system normally consists of a full body harness and a lanyard with some form of inline shock absorption capability. Use of this type of system should not occur that frequently as most anchor points are not rated for fall arrest and therefore could fail. Where this type of equipment is found in use confirmation of the MEWP's anchorage compatibility should be sought. The user should always confirm with the MEWP manufacturer that an anchor point is suitable for fall arrest. Anchorage points should be designed and tested as being suitable for fall arrest

18 Additional concerns have been raised that the forces generated during fall arrest could cause an overturn, currently a European standard does not exist for testing the effects of dynamic loading from fall arrest on MEWP stability (HSL research is planned) and the effectiveness of fall arrest systems is height dependant.

19 **Sit harnesses must not be used for fall arrest**; in these circumstances a sit

harness must be supplemented with an additional chest harness, and the two should be connected together. The manufacturer of the harness should be contacted to establish this can be done in practise with the equipment being used.

20 Retractable (Inertia Reel) Equipment. The use of retractable fall protection equipment needs very careful consideration. Although often marketed for such situations the Standard (BS EN 360) to which they are usually manufactured and tested does not cover this type of use. Inertia reels should only be used where the manufacturer can produce documentary evidence that the equipment has been specifically tested in the manner in which it is actually being used. This is particularly important where the equipment can allow the user to reach a position from where a fall could occur (fall arrest situation). If there is any doubt the localSG Civil Engineering Specialist Inspector should be consulted.

21 Inspection of fall protection equipment made of rope or webbing is required and **OC282/30** gives further guidance.

Rescue After Fall Arrest

22 Where fall arrest equipment and anchorage points are compatible there needs to be a rescue procedure that can be affected quickly.

23 The major problem is if post fall the person is upright and motionless (e.g. unconscious), this can lead to suspension trauma where the blood becomes pooled in the limbs (venous pooling) starving blood to the brain. This can develop quickly and have potentially fatal consequences.

24 Rescue, especially of an unconsciousness person, would need to be initiated rapidly (for example, within 15 minutes) to reduce the riskof suspension trauma. This is before any individual medical factors or fitness issues are taken in to account. Further information is available in the HSE **Contract Research Report 451/2002 *Harness suspension: Review and evaluation of existing information***

25 Due to the need for rapid recovery reliance must not be placed on the emergency services to affect a rescue, unless this has been agreed with the emergency services and incorporated into the planning for a safe system of work.

26 Rescue procedures could include use of a second MEWP to recover the person or procedures to safely lower the MEWP and person to the ground, though the latter may be limited in its application.

ACTION BY INSPECTORS

27 Copies of the information sheet have been distributed to relevant dutyholders via employer associations, trade associations and other intermediaries. However, inspectors are asked to bring the leaflet to the attention of relevantdutyholders during inspections and where relevant to require risks assessments to be undertaken.

ENFORCEMENT MANAGEMENT MODEL GUIDANCE

28 The following guidance is based on intranet version of **EMM** current at December 2003. The final decision on enforcement action should be made on the basis of the actual risks on site and after considering dutyholder and strategic factors, which will influence enforcement outcomes. **Table 1** sets out some risks of serious personal injury that require immediate action. After taking any immediate action further action may be necessary to secure compliance, in these cases the benchmark is negligible risk of serious personal injury. **Table 2** sets out some common scenarios that inspectors may encounter with the suggested Initial Enforcement Expectations.

29 Construction Division Technology Unit (CDTU) have indicated that they are likely to offer support to the scenarios in table 1 and the Construction Sector has indicated that they are likely to offer support to all the scenarios in **tables 1** and **2**. Any final decision on technical support will be based upon the facts of each individual situation.

30 Though CDTU has indicated their support any initial technical support should be sort from local SGs in the first instance.

31 OC 314/19 – **cancel** and **destroy**

Date first issued: 14 January 2004
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Table 1: Risks of serious injury requiring immediate action

	Scenario	Initial Action
	Safe site issues	
A	SEGREGATION - MEWP or parts of it seen entering a live highway during work at height (E.g. street lighting work, bridge repair work)	Risk of vehicle impact with MEWP. Standards of segregation are established in Chapter 8, Safety at street works and road works– a code of practice. There is also non- HSE legislation – New Roads and Street Works Act 1991. Segregation or other effective measures should be provided. **Legal standards**: Health and Safety at Work etc Act 1974, Sections 2 and 3
B	SEGREGATION - Failure to segregate MEWPs working at height from other site/workplace traffic and unsafe practices seen (e.g. driving at speed in the vicinity of the MEWPs)	Generally this would be a lower risk situation to (a) as site traffic will generally be operating at low speed and is under the control of whoever is in charge of the workplace. However due to the unsafe practices seen near to the MEWPs a risk of impact exists. Segregation or other effective measures should be provided. **Legal standards**: Construction (Health, Safety

		and Welfare) Regulations 1996 (CHSWR) Reg 15(1) and Workplace (Health, safety and Welfare) Regulations 1992 (WHSWR), Reg 13(1), 17 (1) & (3).
C	GROUND CONDITIONS - Failure to establish strength of localised features (e.g. ducts, manhole covers, etc.) or load bearing capacity of supporting structures (e.g. suspended floors, jetty's, etc) used by self-propelled boom or lorry mounted MEWPs.	Risk of an overturn or collapse incident. Should be established through calculation or assessment by a competent person (e.g. structural engineer) that the feature or structure is strong enough to support the MEWP or: an alternative safe system of work is adopted using a suitable lighter MEWP; stronger covers; a different suitable means of access; or other equally effective measures. **Legal standards**: CHSWR Reg 5(1) or (2) and WHSWR Reg 13(1) and 17(2).
D	GROUND CONDITIONS - MEWP wheels or outriggers sinking into the ground	Risk of an overturn incident. Ground bearing capacity should be established in order to either select a suitable MEWP for the ground conditions, or use suitable packing for outriggers, or improve the ground, or equally effective measures are used. **Legal standards**: as C above
	Fall Protection Equipment issues	
E	EQUIPMENT - No fall protection equipment provided and unsafe practices seen (e.g. climbing on to mid-rail and/or leaning over the guard-rail to the extent that the operator could fall).	Unsafe practices seen – risk of a fall is present. It should be established that this is the right type of access equipment for the task and it is being operated correctly. If it is the most suitable equipment and leaning over the guard rail is required suitable fall protection should be provided that is compatible with the MEWP. **Legal standard**: Personal Protective Equipment at Work Regulations 1992, Reg 4.
F	EQUIPMENT - incompatible/inappropriate use of fall protection equipment or using fall protection equipment in a MEWP with inadequate anchorage arrangements and unsafe practices seen (e.g. climbing on to mid-rail, leaning over the guard-rails).	Unsafe practices seen and inadequate fall protection equipment being used – risk of a fall is present. It should be established that this is the right type of access equipment for the task and the MEWP is being operated correctly. If it is the most suitable equipment and leaning over the guard rail is required suitable fall protection and an anchor point should be provided. **Legal standard**: PPE, Reg 4.

Table 2: Initial enforcement expectation

	Scenario	Benchmark Risk	Actual Risk	Risk Gap	Action (including initial enforcement expectation (IEE))
	Safe Site Issues				
A	SEGREGATION - Failure to segregate MEWPs working at height from other site/workplace traffic	Remote risk of serious personal injury	Possible risk of serious personal injury	Moderate	Defined legal standard Construction (Health, Safety and Welfare) Regulations 1996 (CHSWR) Reg 15(1) and Workplace (Health, safety and Welfare) Regulations 1992 (WHSWR) , Reg 13(1), 17(1) &(3)). IEE is an IN. This is a lower risk situation to (table 1, scenario A) as site traffic will generally be operating at low speed and is under the control of whoever is in charge of the workplace.
	Safe Plant Issues				
B	THOROUGH EXAMINATION - No evidence of MEWP being examined in last 6 months. No defects visible	Negligible risk of serious personal injury	Possible risk of serious personal injury	Extreme	Defined legal standard (LOLER Reg 9). IEE is an IN.