



Safe use of lifting equipment

Lifting Operations and Lifting Equipment Regulations 1998



**APPROVED CODE OF PRACTICE
AND GUIDANCE**



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AND GUIDANCE**

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HSE BOOKS

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First published 1998

Reprinted 1999 (twice), 2000, 2001, 2002, 2007

ISBN 978 0 7176 1628 2

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Approved Code of Practice and guidance

This Code has been approved by the Health and Safety Commission, with the consent of the Secretary of State. It gives practical advice on how to comply with the law. If you follow the advice you will be doing enough to comply with the law in respect of those specific matters on which the Code gives advice. You may use alternative methods to those set out in the Code in order to comply with the law.

However, the Code has special legal status. If you are prosecuted for breach of health and safety law, and it is proved that you did not follow the relevant provisions of the Code, you will need to show that you have complied with the law in some other way or a court will find you at fault.

The Regulations and Approved Code of Practice (ACOP) are accompanied by guidance which does not form part of the ACOP. Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.

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Notice of Approval

By virtue of section 16(1) of the Health and Safety at Work etc Act 1974 (the 1974 Act), and with the consent of the Secretary of State for the Environment, Transport and the Regions pursuant to section 16(2) of the 1974 Act, the Health and Safety Commission has on 7 July 1998 approved the Code of Practice entitled *Safe use of lifting equipment*.

The Code of Practice gives practical guidance with respect to the requirements of the Lifting Operations and Lifting Equipment Regulations 1998 and with respect to section 2 of the 1974 Act, the Management of Health and Safety at Work Regulations 1992 (as amended by the Management of Health and Safety at Work (Amendment) Regulations 1994 and the Health and Safety (Young Persons) Regulations 1997) and the Provision and Use of Work Equipment Regulations 1998.

Signed

Rosemary Banner
Secretary to the Health and Safety Commission

5 October 1998

Preface

This document on the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER 98) has been prepared by the Health and Safety Executive (HSE) for the Health and Safety Commission (HSC) after consultation with industry. These Regulations, which deal with providing and using work equipment, are set out in full along with the Approved Code of Practice and guidance material.

Who needs to read this?

Anyone with responsibility directly or indirectly for work equipment and its use, for example employers, employees, the self-employed and those who hire work equipment, needs to read this publication. Throughout the document we have referred to the employer and self-employed people who have duties as 'you'. Where the guidance is addressed to some other duty holder, for example a competent person, the text makes it clear who it is intended for.

What is in the document?

This document contains:

- (a) the LOLER 98 Regulations in full;
- (b) the Approved Code of Practice (ACOP); and
- (c) guidance material that has been written to help people use these Regulations.

HSE is publishing separate guidance specific to particular industry sectors. These link the requirements of LOLER 98 to the specialised work equipment used in industry sectors such as agriculture and construction.

What is an Approved Code of Practice (ACOP)?

The formal status of ACOP material is set out on page (ii) of this document. ACOP material gives practical guidance on how to comply with the law. If you follow the advice in the ACOP you will be doing enough to ensure compliance with the law on the matters that it covers. ACOP material has special legal status. If you are prosecuted for a breach of health and safety law, and it is proved that you did not follow the relevant provisions of the ACOP, you will need to show that you have complied with the law in some other way or a court will find you at fault.

What is guidance?

Guidance material describes practical means of complying with the Regulations. It does not have special status in law, but is seen as best practice. Following the guidance is not compulsory and you are free to take other action. But if you do follow guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.

Application of Regulations to the apparently self-employed

Although only the courts can give an authoritative interpretation of the law, in considering the application of these regulations and guidance to persons working under your direction, you should consider the following:

If you have people working under your control and direction who are self-employed for tax and/or NI purposes, they are likely to be treated as your

employees for health and safety purposes. You may therefore need to take appropriate action to protect them. If you are in any doubt about who is responsible for the health and safety of a person working for you this could be clarified and included in the terms of the contract. However, remember, you cannot pass on a legal duty that falls to you under the Health and Safety at Work Act (HSW Act) by means of a contract and you will still retain duties towards others by virtue of section 3 of the HSW Act. If you intend to employ such workers on the basis that you are not responsible for their health and safety, you should seek legal advice before doing so.

Other HSC/E information

You should also take account of any relevant HSC/HSE publications giving guidance on other regulations, industries or equipment. There is a non-exhaustive reference section at the back of this document. Up-to-date information on these publications can be obtained from HSE's Infoline which deals with public telephone requests (0845 345 0055).

Introduction

Introduction

Guidance

1 The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) were made under the Health and Safety at Work etc Act 1974 (HSW Act) and came into force on 5 December 1998. These Regulations implement the lifting provisions of the Amending Directive to the Use of Work Equipment Directive (AUWED, 95/63/EC). The Regulations apply in all premises and work situations subject to the HSW Act and build on the requirements of the Provision and Use of Work Equipment Regulations 1998 (PUWER).¹

2 This document contains an Approved Code of Practice (ACOP) and guidance on the duties in LOLER and existing Regulations which are applicable to the use of lifting equipment in all sectors of industry and in all work activities. These existing Regulations are principally the Management of Health and Safety at Work Regulations 1992 (the Management Regulations) (now 1999) and PUWER. There are separate and specific HSE documents providing guidance on these Regulations.

3 Throughout this document we have referred to duty holders such as the employer and self-employed as 'you'. Where the guidance is addressed to some other duty holder such as a competent person, the text makes it clear to whom the guidance is aimed.

4 These Regulations replace most of the existing sectoral law relating to the use of lifting equipment and amend certain other Regulations. The details are given in regulations 13-17 and Schedule 2 of LOLER.

5 There are some areas, however, where the existing law is either partially revoked/amended or left unchanged: namely the Docks Regulations 1988 and the Mines (Shafts and Winding) Regulations 1993 respectively. In the case of the Docks Regulations, regulations 14, 15, 16(3), (4), (5), (7), (8) and 17 have been revoked and regulation 13(4) has been amended.

6 For equipment covered by the Mines (Shafts and Winding) Regulations the duty holder will also need to comply with LOLER. In practice, compliance with both sets of regulations will not require the duty holder to do more than they are already doing to comply with existing legislation.

7 In this document, the Lifting Operations and Lifting Equipment Regulations 1998 are shown in *ITALIC* text. The ACOP material, which has the status described on page (ii), is shown in **BOLD** text. The remaining text, in NORMAL type, is additional guidance.

8 There is also an important link with PUWER which applies to all work equipment, including lifting equipment. For example, PUWER places requirements on duty holders to provide suitable work equipment for the task (regulation 4), information and instructions (regulation 8) and training (regulation 9) to the people who use it. PUWER also requires measures to be taken concerning dangerous parts of machinery (regulation 11), controls and control systems (regulations 14 to 18), stability (regulation 20) and mobility (regulations 25 to 29).

9 It is therefore important to remember that duty holders who provide lifting equipment, in addition to complying with LOLER, will also need to comply with all relevant aspects of **PUWER** and any other applicable health and safety law.

10 Like the scope of PUWER, the potential scope of these Regulations is extremely wide. 'Lifting equipment' includes such equipment as cranes, lift trucks, goods lifts, construction site hoists, mobile elevating work platforms, vehicle inspection hoists, gin wheels, ropes, chain slings, eye bolts etc. It also includes ropes and other associated items used in rope access working.

11 LOLER applies to any item of lifting equipment but a duty holder will need to consider in relation to its requirements, the extent of the risk and the measures needed to eliminate or control the risk.

Management of Health and Safety at Work Regulations 1999 (MHSWR)

12 The Management of Health and Safety at Work Regulations 1999 (as amended) require a risk assessment to be carried out to identify the nature and level of risks associated with a lifting operation. You should take appropriate precautions to eliminate or control these risks.

13 The HSE publication *Management of health and safety at work. Management of Health and Safety at Work Regulations 1999. Approved Code of Practice*² contains further guidance on risk assessments and how to carry them out.

14 A proportionate response according to the risk is required. The higher the level of risk identified through the assessment the greater the measures that will be needed to reduce it and vice versa. Trivial risks can usually be ignored, unless the work activity adds to those risks.

15 When considering what you need to do to meet the requirements of LOLER due to the risks from using a particular piece of lifting equipment, the factors that you need to consider include:

- (a) the type of load being lifted, its weight, shape and what it consists of;
- (b) the risk of a load falling or striking a person or object and the consequences;
- (c) the risk of the lifting equipment striking a person or some other object and the consequences; and
- (d) the risk of the lifting equipment failing or falling over while in use and the consequences.

16 New lifting equipment needs to satisfy certain essential health and safety requirements as laid down in Article 100a Product Safety Directives. You are not necessarily required to ensure that existing lifting equipment meets the same level of protection as new equipment but this will depend on the degree of risk. You must assess the risk in each particular case, the nature and extent of the risk will dictate what steps you need to take to control the risk. The greater the risk the greater the measures that you need to take to reduce the risk to an acceptable level.

17 The risk assessment may well identify significant risks not addressed by LOLER. For example, the assessment may identify that personal protective equipment is required. In such circumstances, you would need to consider the requirements of the Personal Protective Equipment at Work Regulations 1992. An example where this might be necessary is the provision of safety harnesses for rope access work during window cleaning.

MHSWR as amended by the Health and Safety (Young Persons) Regulations 1997

Protection of young persons

(1) Every employer shall ensure that young persons employed by him are protected at work from any risks to their health or safety which are a consequence of their lack of experience, or absence of awareness of existing or potential risks or the fact that young persons have not yet fully matured;

(2) Subject to paragraph (3), no employer shall employ a young person for work -

- (a) which is beyond his physical or psychological capacity;
- (b) involving harmful exposure to agents which are toxic or carcinogenic, cause heritable genetic damage or harm to the unborn child or which in any other way chronically affect human health;
- (c) involving harmful exposure to radiation;
- (d) involving the risk of accidents which it may reasonably be assumed cannot be recognised or avoided by young persons owing to their insufficient attention to safety or lack of experience or training; or
- (e) in which there is a risk to health from -
 - (i) extreme cold or heat;
 - (ii) noise; or
 - (iii) vibration,

and in determining whether work will involve harm or risk for the purpose of this paragraph, regard shall be had to the results of the assessment.

(3) Nothing in paragraph (2) shall prevent the employment of a young person who is no longer a child for work -

- (a) where it is necessary for his training;
- (b) where the young person will be supervised by a competent person; and
- (c) where any risk will be reduced to the lowest level that is reasonably practicable.

Regulation 13D

MHSWR as amended by the Health and Safety (Young Persons) Regulations 1997

ACOP 13D

18 Young persons are often exposed to risks to their health and safety when using work equipment as a consequence of their immaturity, lack of experience or absence of awareness of existing or potential risks. Therefore you should not allow such people to use high risk lifting machinery unless they have the necessary maturity and competence which includes having successfully completed appropriate training. However, during the training they may use such equipment providing they are adequately supervised. Adequate supervision should also be provided after training if a young person is not sufficiently mature.

19 A young person is someone who is under 18 years of age. Examples of high risk machinery which normally should not be operated by a young person (except when trained or undergoing training under direct supervision) include cranes, construction site hoists and fork-lift trucks. There may be substantial risks associated with the use of lifting accessories, for example during 'slinging' and you should assess whether such work is appropriate for a young person.

20 It is highly unlikely that a young person would be sufficiently competent to be considered as a 'competent person' for the purposes of carrying out periodic thorough examinations or inspections of lifting equipment or the planning and supervision of lifting operations.

Regulation 1

LOLER 98 Regulation 1

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Citation and commencement

(1) *These Regulations may be cited as the Lifting Operations and Lifting Equipment Regulations 1998 and shall come into force on 5th December 1998.*

When does LOLER come into force?*

21 LOLER came into force for ALL, lifting equipment on 5 December 1998. This includes existing equipment, second-hand or leased equipment or new equipment. From this date, duty holders need to comply with all the requirements.

22 Regulation 9 requires lifting equipment to be thoroughly examined by a competent person. Any lifting equipment thoroughly examined before 5 December 1998 under the requirements of previous legislation will not require a further thorough examination until the date indicated by the competent person or until the validity of the current examination report expires. A piece of lifting equipment that has been recently thoroughly examined will not require a further thorough examination on 5 December 1998 solely because LOLER has come into force.

23 Under PUWER 98 duty holders with existing mobile work equipment may have until 2002 to comply with the requirements of Part III of PUWER 98, ie regarding providing roll over protection etc. See the Approved Code of Practice and guidance on PUWER 98 for further information.¹ 'Existing' in this context means provided for use before 5 December 1998. However, the parts of such equipment concerned with the actual lifting operation must comply with LOLER from 5 December 1998.

Application offshore

24 LOLER applies offshore as the HSW Act applies by virtue of the Health and Safety at Work etc Act 1974 (Application outside Great Britain) Order 1995 (SI 1995/263). This Order applies the Act to offshore installations, wells, pipelines and pipeline works, and to connected activities within the territorial waters of Great Britain or in designated areas of the United Kingdom Continental Shelf, plus certain other activities within territorial waters.

Trade Union Reform and Employment Rights Act 1993

25 This Act implements the employment protection requirements of the EC Health and Safety Framework Directive. It applies to all employees including those working offshore and gives rights regardless of their age, hours of work or length of service. The Act entitles employees to take their case to an Industrial Tribunal if any action is taken against them by their employer if they leave the workplace because of dangerous circumstances or take appropriate steps to protect themselves, or others, from the danger.

Guidance 1

Regulation 2

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Interpretation

(1) *In these Regulations, unless the context otherwise requires -*

"the 1974 Act" means the Health and Safety at Work etc. Act 1974;

"the 1992 Regulations" means the Supply of Machinery (Safety) Regulations 1992;^(a)

Regulation 2

(a) S.I. 1992/3073 to which there are amendments not relevant to these Regulations.

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"accessory for lifting" means work equipment for attaching loads to machinery for lifting;

"EC declaration of conformity" means a declaration which complies with -

- (a) regulation 22 of the 1992 Regulations;
- (b) Article 12.1 of Council Directive 89/686/EEC^(a) on the approximation of the laws of the Member States relating to personal protective equipment; or
- (c) regulation 8(2)(d) of the Lifts Regulations 1997;^(b)

"employer" except in regulation 3(2) and (3) includes a person to whom the requirements imposed by these Regulations apply by virtue of regulation 3(3)(a) and (b);

"essential requirements" has the same meaning as in the Provision and Use of Work Equipment Regulations 1998;^(c)

"examination scheme" means a suitable scheme drawn up by a competent person for such thorough examination of lifting equipment at such intervals as may be appropriate for the purpose described in regulation 9(3);

"the Executive" means the Health and Safety Executive;

"lifting equipment" means work equipment for lifting or lowering loads and includes its attachments used for anchoring, fixing or supporting it;

"lifting operation" has the meaning given in regulation 8(2);

"load" includes a person;

"thorough examination" in relation to a thorough examination under paragraph (1), (2) or (3) of regulation 9 -

- (a) means a thorough examination by a competent person;
- (b) where it is appropriate to carry out testing for the purpose described in the paragraph, includes such testing by a competent person as is appropriate for the purpose,

and "thoroughly examined" shall be construed accordingly;

"work equipment" means any machinery, appliance, apparatus, tool or installation for use at work (whether exclusively or not).

(2) Unless the context otherwise requires, any reference in these Regulations to -

- (a) a numbered regulation or Schedule is a reference to the regulation or Schedule in these Regulations so numbered; and
- (b) a numbered paragraph is a reference to the paragraph so numbered in the regulation or Schedule in which the reference appears.

(a) OJ No. L399, 30.12.89, p. 18; printed in the Schedule to SI 1992/3139.

(b) S.I. 1997/831.

(c) S.I. 1998/2306.

Regulation 2

26 Regulation 2(1) defines 'lifting equipment' as 'work equipment for lifting or lowering loads and includes its attachments used for anchoring, fixing or supporting it'. It includes any lifting accessories that attach the load to the machine in addition to the equipment which carries out the actual lifting function. The scope of these Regulations is therefore very wide and includes a range of equipment from an eyebolt to a tower crane.

27 As detailed in regulation 2(1), a 'load' includes any material, people or animals (or any combination of these), that are lifted by the lifting equipment. In some circumstances, such as in the use of a mobile crane, the weight of the lifting accessories including the hook block will need to be considered as part of the load being lifted.

Equipment and operations covered by LOLER

28 The Regulations are aimed primarily at the type of equipment which was covered by previous lifting legislation, ie cranes, lifts and hoists, and components including chains, ropes, slings, hooks, shackles and eyebolts. However, LOLER now applies in whichever industry this range of equipment is used in including those, such as agriculture, which previously were not covered by specific regulations. Examples of the types of lifting equipment and operations covered include:

- (a) a passenger lift in an office block;
- (b) a rope and pulley used to raise a bucket of cement on a building site;
- (c) a dumb waiter in a restaurant or hotel;
- (d) a vacuum lifting crane;
- (e) a vehicle inspection hoist; and
- (f) a scissors lift.

29 LOLER also applies to a range of other lifting equipment which present risks which are similar to those associated with the 'traditional' equipment listed above. Some non-exhaustive examples of the types of equipment and operations that will now be covered include:

- (a) ropes used for climbing or work positioning during arboriculture, climbing telecommunication towers to work on overhead lines and structural examination of a rock face or external structure of a building;
- (b) a paper roll hoist on a printing machine;
- (c) an automated storage and retrieval system;
- (d) a front-end loader on a tractor used for raising and lowering loads such as a bale of hay;
- (e) a bath hoist lifting a resident into the bath in a nursing home;
- (f) a loader crane fitted to a lorry for delivery duties;
- (g) a refuse vehicle loading arm used for tipping;
- (h) an air cargo elevating transfer vehicle;

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- (i) vehicle recovery equipment; and
- (j) vehicle tail lifts.

30 These examples illustrate the range of equipment which can raise or lower loads and which should be assessed for the application of LOLER. The Regulations may be relevant to other equipment used for similar activities, or the above equipment used for different tasks.

Equipment and operations not covered by LOLER

31 A three-point linkage on a tractor is not considered to be lifting equipment.

32 The Regulations do not define 'lifting equipment' and may therefore appear to cover a range of work equipment which perform a function involving an element of 'lifting'. In most cases LOLER will not apply to work equipment which does not have as its principal function a use for lifting or lowering of the type associated with 'traditional' lifting equipment such as cranes, fork-lift trucks or accessories such as chains or eyebolts. The three-point linkage, for example, raises a tractor attachment, such as a plough, in order to clear the ground. This type of motion is not lifting for the purposes of these Regulations.

33 Other examples of equipment and operations not covered by LOLER include a conveyor belt moving articles on a horizontal level and winching a load on level ground. LOLER does not apply to this second situation because the load does not leave the ground. However, a similar level of safety will be required by PUWER which will apply because the winch is work equipment (although not lifting equipment). In addition, unassisted manual movement of loads, such as carrying a parcel, does not involve work equipment and is not covered by LOLER (the Manual Handling Operations Regulations 1992 apply).

34 LOLER does not apply to escalators. This equipment is covered by more specific legislation, namely regulation 19 of the Workplace (Health, Safety and Welfare) Regulations 1992.

Regulation 3**Application****LOLER 98****Regulation 3**

- (1) *These Regulations shall apply -*
 - (a) *in Great Britain; and*
 - (b) *outside Great Britain as sections 1 to 59 and 80 to 82 of the 1974 Act apply by virtue of the Health and Safety at Work etc. Act 1974 (Application outside Great Britain) Order 1995^(a) ("the 1995 Order").*

(2) *The requirements imposed by these Regulations on an employer in respect of lifting equipment shall apply in relation to lifting equipment provided for use or used by an employee of his at work.*

(3) *The requirements imposed by these Regulations on an employer shall also apply -*

- (a) *to a self-employed person, in respect of lifting equipment he uses at work;*

(a) *S.I. 1995/1263.*

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(b) subject to paragraph (5), to a person who has control to any extent of -

- (i) lifting equipment;
- (ii) a person at work who uses or supervises or manages the use of lifting equipment; or
- (ii) the way in which lifting equipment is used,

and to the extent of his control.

(4) Any reference in paragraph (3)(b) to a person having control is a reference to a person having control in connection with the carrying on by him of a trade, business or other undertaking (whether for profit or not).

(5) The requirements imposed by these Regulations on an employer shall not apply to a person in respect of lifting equipment supplied by him by way of sale, agreement for sale or hire-purchase agreement.

(6) Subject to paragraphs (7) to (10), these Regulations shall not impose any obligation in relation to a ship's work equipment (whether that equipment is used on or off the ship).

(7) Where merchant shipping requirements are applicable to a ship's work equipment, paragraph (6) shall relieve the shore employer of his obligations under these Regulations in respect of that equipment only where he has taken all reasonable steps to satisfy himself that the merchant shipping requirements are being complied with in respect of that equipment.

(8) In a case where the merchant shipping requirements are not applicable to the ship's work equipment by reason only that for the time being there is no master, crew or watchman on the ship, those requirements shall nevertheless be treated for the purpose of paragraph (7) as if they were applicable.

(9) Where the ship's work equipment is used in a specified operation paragraph (6) shall not apply to regulations 6 and 8 (each as applied by regulation 3).

(10) Paragraph (6) does not apply to a ship's work equipment provided for use or used in an activity (whether carried on in or outside Great Britain) specified in the 1995 Order save that it does apply to -

- (a) the loading, unloading, fuelling or provisioning of the ship; or
- (b) the construction, reconstruction, finishing, refitting, repair, maintenance, cleaning or breaking up of the ship.

(11) In this regulation -

"master" has the meaning assigned to it by section 313(1) of the Merchant Shipping Act 1995;^(a)

"merchant shipping requirements" means the requirements of regulations 3 and 4 of the Merchant Shipping (Guarding of Machinery and Safety of Electrical Equipment) Regulations 1988^(b) and regulations 5 to 10 of the Merchant Shipping (Hatches and Lifting Plant) Regulations 1988.^(c)

"ship" has the meaning assigned to it by section 313(1) of the Merchant Shipping Act 1995 save that it does not include an offshore installation;

- (a) 1995 c.21.
- (b) S.I. 1988/1636 amended by S.I. 1988/2274.
- (c) S.I. 1988/1639 amended by S.I. 1988/2274.

Regulation 3

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"shore employer" means an employer of persons (other than the master and crew of any ship) who are engaged in a specified operation;

"specified operation" means an operation in which the ship's work equipment is used -

- (a) *by persons other than the master and crew; or*
- (b) *where persons other than the master and crew are liable to be exposed to a risk to their health or safety from its use.*

Regulation 3**LOLER 98**

35 These Regulations have general application and apply wherever the HSW Act applies. They build on the requirements of PUWER 98. They therefore apply to all sectors, not only factories, offices and shops but also schools, hospitals, hotels, places of entertainment, offshore oil and gas installations, agriculture and forestry. The HSW Act applies throughout Great Britain and has effect wherever work is done by the employed or self-employed except for domestic work in a private household.

Marine activities

36 Ships are subject to merchant shipping legislation which is dealt with by the Maritime and Coastguard Agency. Apart from certain regulations and in certain circumstances, LOLER does not apply to lifting equipment which is a part of ships' equipment, no matter where it is used. Regulations 6 and 8 of LOLER will apply in what are called 'specified operations'. Specified operations are where the ship's lifting equipment is used by persons other than the master and crew of the vessel or where only the master and crew are involved in the work, but other persons are put at risk by the work being carried out.

37 Where shore-based workers are to use ships' lifting equipment, and their employers wish to take advantage of this disapplication from LOLER, then they are required by the Regulations to take reasonable steps to satisfy themselves that the appropriate merchant shipping requirements have been met. The ship's records should normally contain sufficient information to satisfy reasonable enquiries.

Examples of how LOLER applies

38 LOLER reflects the way that lifting equipment is used in industry where there may not be a direct 'employment' relationship between the user and the persons who control the use of the lifting equipment. It will apply, for example, where a subcontractor carries out work on another person's premises with lifting equipment provided by that person or a third party.

39 Under the requirements of LOLER:

- (a) employers (whether individuals, partnerships or companies) have a duty to ensure that lifting equipment provided for their employees and the self-employed working for them comply with these Regulations;
- (b) the self-employed must comply with the same duties in respect of lifting equipment they use at work;
- (c) the Regulations also apply to employers who choose to allow their employees to provide their own lifting equipment;
- (d) employers who have control of lifting equipment or its management or the way it is used also have duties as far as their control permits. For instance, those hiring out cranes may, in practice, have some control over

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the way the crane is used or maintained by their customers. Alternatively, employers may provide their lifting equipment to others working on their premises and they clearly have some control over the equipment provided.

40 LOLER only applies to work activities. It does not apply, for example, to persons who provide lifting equipment principally for use by members of the public such as lifts provided for use by the public in a shopping centre. In such circumstances employers will have to satisfy the requirements of the HSW Act, principally sections 3 and 4, but if they use the requirements of LOLER as a guide they will probably satisfy these legal duties. The following paragraphs give examples of how LOLER applies in particular circumstances.

Crane on hire to a construction site

41 The crane hire company has a duty under LOLER to ensure that when a mobile crane is hired out, physical evidence accompanies it (eg a copy of the last examination report) and the user should ensure that this evidence is available. After installation of a tower crane the user should ensure that the crane is thoroughly examined by a competent person before it is put into use to make sure it is safe to operate. Normally this will be done by the hire company, particularly if they erect the crane.

42 The user has the duty to manage the subsequent lifting operations in a safe manner. The user (as an employer or a self-employed person) also has the duty to ensure that the periodic thorough examinations are undertaken at the frequencies laid down in LOLER or the examination scheme if there is one. The user may well come to an arrangement with the hirer under which the hirer carries out the thorough examinations but that does not alter the user's duty to make sure they are done. Further information is available in British Standard BS 7121.³

Crane for hire for contract lifting operations

43 This refers to the situation where an organisation enters into a contract with a third party who will undertake the lifting operation on their behalf, ie the third party provides the crane and the operator. In these circumstances the crane owner has the duty to ensure that the crane is properly maintained, examined and safe to use and that the lifting operation is carried out safely. Further advice on contract lifting operations is given in BS 7121.

Passenger lift in an office block

44 Persons in control of non-domestic premises who provide items of lifting equipment which are used by other people at work must comply with their duties under LOLER. This applies where the owner of the office block provides a lift for use by employee(s) of the organisation working in it. The owner of the office block has a duty under LOLER to ensure that the passenger lift is safe to use and that it receives periodic thorough examinations and, where appropriate, inspections.

Passenger lift in a block of flats

45 Such a lift is not work equipment because it is primarily for the use of members of the public who live in the block of flats. It is not therefore subject to the requirements of LOLER. The owner of the block of flats still has to satisfy the requirements of the HSW Act but if they use the requirements of LOLER (and PUWER) as a guide they will probably satisfy these legal duties.

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Refuse collection vehicle

46 The mechanism on the rear of a refuse collection vehicle for raising the bins to empty the rubbish into the compactor is lifting equipment and it is covered by the requirements of LOLER.

Patient hoists

47 As hoists used to lift patients, eg from beds and baths, in hospitals and residential homes are provided for use at work and are lifting equipment to which LOLER applies, the duty holder, eg the NHS Trust running the hospital or the owner of the residential home must satisfy their duties under LOLER.

Long term hire of a fork-lift truck

48 Users have a duty to ensure that the truck is safe for their employees to use and that it is thoroughly examined at appropriate intervals. Such thorough examinations may be arranged by the user or hire company through agreement. You should note that these thorough examinations do not remove the need for the user to ensure that necessary inspections and pre-use checks are carried out and defects reported and remedied as necessary. Further guidance on the maintenance and inspection of lift trucks is given in the HSE publication *Safety in working with lift trucks*.⁴

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Suitability of lifting equipment

The Provision and Use of Work Equipment Regulations 1998, regulation 4(1)-(2)

(1) *Every employer shall ensure that work equipment is so constructed or adapted as to be suitable for the purpose for which it is used or provided.*

(2) *In selecting work equipment, every employer shall have regard to the working conditions and to the risks to the health and safety of persons which exist in the premises or undertaking in which that work equipment is to be used and any additional risk posed by the use of that work equipment.*

Regulation 4(1)-(2)

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49 When selecting lifting equipment you should take account of ergonomic risks.

50 Ergonomic design takes account of the size and shape of the human body and should ensure that the design is compatible with human dimensions. Operating positions, working heights, reach distances etc can be adapted to accommodate the intended operator. Operation of the equipment should not place undue strain on the user. Operators should not be expected to exert undue force or stretch or reach beyond their normal strength or physical reach limitations to carry out tasks.

51 This regulation deals with the safety of work equipment from three aspects:

- (a) its initial integrity;
- (b) the place where it will be used; and
- (c) the purpose for which it will be used.

52 The risk assessment carried out under regulation 3(1) of the Management Regulations will help you select lifting equipment and assess its suitability for particular tasks.

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53 Because of the general risk assessment requirements in the Management Regulations, there is no specific regulation requiring a risk assessment in LOLER. HSE has produced guidance in a booklet called *Five steps to risk assessment*.⁵

54 Most duty holders will be capable of making the risk assessment themselves using expertise within their own organisations to identify the measures which need to be taken regarding their lifting equipment. In a few cases, for example where there are complex hazards or equipment, it may need to be done in conjunction with the help of external health and safety advisors, appointed under regulation 7 of the Management Regulations.

55 For many items of lifting equipment, particularly machinery, you will know from experience what measures need to be taken to comply with previous legal requirements. Generally these measures will ensure compliance with PUWER 98. Where this is not the case there is usually a straightforward method of identifying the measures that need to be taken, because these are described in either general guidance or guidance specific to a particular industry or piece of equipment. However, you will need to decide whether these are appropriate.

56 Where guidance does not exist, or is not appropriate, the main factors you need to take into account are the severity of any injury or ill health likely to result from any hazard present, the likelihood of that happening and the numbers exposed. This will help you to identify the measures that need to be taken to eliminate or reduce the risks to an acceptable level.

57 The selection of suitable lifting equipment for particular tasks and processes makes it possible to eliminate or reduce many risks to the health and safety of people at the workplace. This applies both to the normal use of the equipment as well as to other operations such as maintenance. For example:

- (a) selection of a mobile elevating work platform (MEWP). It should have a platform of sufficient size and capacity to accommodate the number of people who need to be present on it as well as any work equipment or loads that it will need to carry;
- (b) use of a barrel clamp attachment when using a fork-lift truck to lift barrels onto a pallet; and
- (c) ensuring that dynamo eyebolts and collar eyebolts are used in appropriate circumstances.

Material of manufacture

58 You should only select lifting equipment if it is made of materials which are suitable for the conditions under which it will be used.

59 All materials have unique physical properties and will behave in different ways depending on the conditions to which they are exposed. For example:

- (a) some materials are more likely to suffer the effects of exposure to high temperature but can operate safely at low temperatures. For others the reverse is true; and
- (b) some materials are not suitable for use in acidic or alkaline atmospheres, eg grade T or 8 alloy steel is not suitable for use in acidic conditions because it is susceptible to a phenomenon known as 'hydrogen embrittlement'. (Further guidance on this phenomenon and the precautions that should be taken are contained in HSE Guidance Note *Hydrogen cracking of grade T(8) chain and components*).⁶

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- 60 The risk assessment will need to include:
- (a) how often the lifting equipment will be used;
 - (b) where the lifting equipment will be used;
 - (c) the nature and characteristics of the load that the lifting equipment will lift; and
 - (d) any limitations on use specified by the manufacturer or supplier.

61 Some materials may need to be specially treated by the manufacturer to make them suitable for use in a particular conditions, for example to prevent chemical attack. These special treatments need to be periodically repeated to ensure that the lifting equipment can continue to be used safely. If this is necessary then the supplier should provide this information with the lifting equipment and you should follow their recommendations.

Means of access

62 Where access to or egress from any part of the lifting equipment is required you should provide a safe means of doing so.

63 Any means of access or egress which forms part of the lifting equipment should be suitable for the purpose.

64 You need to consider the consequences of falling from heights or into dangerous substances while gaining access to or egress from the lifting equipment. Typical examples where a proper and safe means of access will be necessary include gaining access to the cab of a tower crane and the operating position of a mobile elevating work platform (MEWP).

65 The need for proper and safe access for the operator to reach the operating position is generally recognised but safe access to other parts of the lifting equipment may also be necessary for the purpose of erecting, dismantling, inspecting, maintenance and repair. You therefore need to consider all those parts of the lifting equipment to which access may be required, regularly or irregularly, and to the people who need this access.

66 Where practicable, you should provide a permanent means of access rather than relying upon temporary means. Where appropriate, this should be a permanent feature fitted to the lifting equipment or some other structure.

67 If modifications are considered necessary in order to provide a permanent means of access to the lifting equipment, then these may affect the strength and stability of the equipment. You may therefore need to seek advice from the manufacturer or supplier before any modifications are made.

Protection against slips, trips and falls

68 Where a person is required to be present on any part of the lifting equipment, eg for operational, maintenance or inspection purposes, the working place, particularly if a platform, for that activity should be such as to minimise the risks of accidents arising from slips, trips and falls.

69 The working place where people need to be present should be of adequate size and strength for them and any items that need to be on it.

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70 Where there is an opening in the floor area it should be either adequately covered or fenced. Where the cover or any part of the fencing has to be removed it should be replaced as soon as possible.

71 Where there is a risk of a person at that working place falling more than 2 m, you should provide suitable edge protection comprising a guard rail, toe board, and mid-rail, or other similar means of equivalent protection.

72 You should also provide the working place with edge protection where a person might fall less than 2 m where there are factors that would increase the likelihood of a fall or the risk of serious injury.

73 Any edge protection should be suitable for the purpose and be securely fixed to the lifting equipment.

74 Any gate or barrier or other device in the edge protection should open inwards or in such another way that is safe.

75 Where access to a working place on the lifting equipment necessarily results in removal of edge protection and exposure of an unguarded edge, as little edge protection as possible should be removed, and should be replaced as soon as possible.

76 Where there is a risk of an object falling from a working place on the lifting equipment such that it may injure a person below, suitable edge protection should be provided.

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77 These requirements apply to those parts of the lifting equipment where people may need to be present in order to operate, maintain, inspect and/or carry out repairs.

78 Any floor area on which persons may need to be present should be slip-resistant. Steel plate with a slightly raised, roughened surface can provide a suitable surface. Slip-resistance can also be achieved by the use of special surface coatings but these may need to be reapplied at suitable intervals to maintain effectiveness.

79 Where you are using lifting equipment in situations where the accumulation of liquids or dust may pose a risk of slipping, adequate drainage is needed. Routine maintenance measures will need to be taken to ensure that any drainage holes do not become blocked and that dust is safely disposed of.

80 Where there is a risk of falling 2 m or more, any edge protection should be sufficiently high, and sufficiently filled in, to prevent falls (of people or objects) over or through it. The edge protection and its mounting points should be of adequate strength to withstand any person or object liable to fall against it. One of the most common means of providing edge protection is to use two guard rails and a toe board.

81 There are other situations where a potential fall of less than 2 m may also require edge protection to be provided, for example:

- (a) where a traffic route passes close to the edge of the lifting equipment;
- (b) where large numbers of people are present;
- (c) where a person might fall onto a sharp or dangerous surface or material/substance; or

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- (d) where a person might fall into fast flowing or deep water.

82 You may need to consider the use of removal edge protection in order for people, work equipment or materials to gain access to the working area. Where this is required you should ensure that only the minimum of edge protection necessary is removed and that it is repositioned as soon as possible after access has been gained. Where people need to approach the edge, for example to help manoeuvre a load onto the working area, and the edge protection needs to be removed, any person on the working area may need to wear a safety harness.

Operator protection

83 Where operators may be adversely affected by the environment in which they are using the lifting equipment you should provide them with adequate protection.

84 When selecting lifting machinery you need to consider the environment in which it will be used. In certain circumstances, particularly where the operator needs to be positioned at the operating station for long periods, then some form of protection should to be provided. Typically, this would be provided as a cab or cabin to protect the worker.

85 Situations where protection would be necessary include where the operator of the lifting machinery is exposed to:

- (a) extremes of temperature, for example in a steel foundry or cold store;
- (b) the weather;
- (c) air contaminants at high nuisance or discomfort levels, for example at a waste disposal operation; or
- (d) levels of noise that could damage their hearing, for example in a glass factory, saw mill or in demolition work.

86 The exact nature of any operator protection will depend upon the nature of the hazards to which the operator is exposed and the risks these hazards present. Any operator protection will need to:

- (a) give the operator adequate visibility of the task they have to perform;
- (b) protect them from harmful substances;
- (c) be ventilated and/or heated, as necessary; and
- (d) be ergonomically suited to the operator.

87 The Control of Substances Hazardous to Health Regulations 2002 contain requirements where employees are exposed to substances hazardous to health. Further information on these Regulations is contained in *Control of substances hazardous to health (Fifth edition). The Control of Substances Hazardous to Health Regulations 2002 (as amended). Approved Code of Practice and guidance.¹*

88 The Control of Noise at Work Regulations 2005 contain requirements where employees are exposed to excessive noise levels at work. Further information on these Regulations is set out in the HSE publication *Noise at work: Guidance for employers on the Control of Noise at Work Regulations 2005.⁸*

Effects of high wind

89 Where lifting equipment, and/or its load, may be affected by high wind the equipment should be fitted with appropriate devices so as to detect dangerous situations and allow measures to be taken to cease using the equipment.

90 Some lifting equipment used in the open air - such as tower cranes, container cranes, mobile elevating work platforms - can become unstable if used in high wind conditions. Where lifting equipment may be used in areas exposed to high winds it is advisable to refer to 'wind maps'. These will give an indication of the wind speeds that can be expected in that area and will aid your selection of suitably designed lifting equipment capable of withstanding the normal expected wind conditions.

91 Where appropriate, the maximum wind speed in which the lifting equipment can be used should be provided. Measures therefore need to be in place to determine the wind speed and also reduce its effect.

92 The weather forecasting services will provide a general idea of the expected wind conditions on a day-to-day basis for a particular area. However, they cannot provide an accurate indication of the prevailing wind conditions at a particular moment in time for a particular area. Some means of providing a reliable measure of the wind speed, including gusts, may therefore be necessary.

93 The most common way of providing an instantaneous indication of the wind speed is to fix an anemometer to the lifting equipment. If used, it should be fixed in the most exposed position, usually on the top of the lifting equipment. Where this is not possible then other alternatives could be used, for example a hand-held anemometer or, more usually, estimates using the Beaufort Scale. However, these alternative methods may not give an accurate indication of the wind speed in the most exposed position.

94 The shape of the load, and the way it is lifted, may also increase the effects of the wind and consequently may affect the stability of the lifting equipment. The larger the surface area of the load presented to the wind then the greater the effect a gust of wind will have on the load and consequently to the stability of the lifting equipment, as well as on the safety of nearby workers. This will also need to be taken into account when selecting lifting equipment for use.

95 To reduce wind effects on the lifting equipment and/or the load it may be necessary to set 'wind action levels', ie the wind speed(s) that require additional measures to be taken to ensure that the lifting equipment remains stable. The manufacturer will be able to provide this information.

96 The measures will vary depending upon the lifting equipment but could include ceasing to use the lifting equipment until the wind dies down but ensuring the lifting equipment is left in a safe condition. This could apply to suspended access systems or to rope access work.

97 There may be some instances where the wind could also affect the stability of lifting equipment used indoors. This could be the case where doors are opened allowing the wind to 'funnel' through a building. You therefore need to take the stability of lifting equipment into account if such situations could arise.

Regulation 4

Strength and stability

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Regulation 4

Every employer shall ensure that -

- (a) *lifting equipment is of adequate strength and stability for each load, having regard in particular to the stress induced at its mounting or fixing point;*
- (b) *every part of a load and anything attached to it and used in lifting it is of adequate strength.*

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98 You should assess whether the lifting equipment has adequate strength for the proposed use. Account should be taken of the combination of forces to which the lifting equipment will be subjected as well as the weight of any associated accessories used in the lifting operation.

99 The lifting equipment selected should not be unduly susceptible to any of the foreseeable failure modes likely to arise in service, for example fracture, wear or fatigue.

100 The lifting equipment used should provide an appropriate factor of safety against failure under foreseeable failure modes.

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101 The lifting equipment should have adequate strength but you should pay particular attention to the mounting or fixing points. The mounting or fixing points not only include where the lifting equipment is secured to another surface but also where parts of the lifting equipment are fixed together, eg two jib sections of a crane. In addition to the downward force of the weight of the load, you should consider additional forces, eg any wind loading since this may place extra stresses on the lifting equipment. Furthermore, any modifications to lifting equipment may also affect the wind loading. For example, fitting Christmas decorations and messages or advertising hoardings etc to a tower crane should only be carried out after a careful consideration of the risks that may arise from such changes to the wind loading and the potential effect on the stability of the lifting equipment.

102 A competent person should ensure that the strength and stability of the lifting equipment continues to be adequate for the tasks that the equipment is intended to be used for.

103 For difficult or unusual lifts you may need to contact the supplier or manufacturer of the lifting equipment to ensure that it is strong enough for the use you propose.

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Adequate stability

104 You should ensure the lifting equipment has adequate stability for its proposed use. You should take account of any combination of destabilising forces that may adversely affect the stability of the lifting equipment.

105 Where appropriate, you should take suitable effective measures to provide sufficient resistance to overturning in order to ensure the adequate stability of the lifting equipment.

106 Where the safe use of the lifting equipment depends on the use or positioning of stabilising arrangements, the equipment should not be used unless these are in place and operating effectively.

107 A number of factors can affect the stability of the lifting equipment. These include:

- (a) the strength of the ground or surface on which the lifting equipment is positioned or located, eg spreader plates may be needed so they can safely support the weight of the equipment and the maximum load to be lifted;
- (b) stability of the surface under load conditions, eg if the lifting equipment is too close to an excavation the ground may slowly subside or collapse suddenly;
- (c) whether the surface on which the lifting equipment operates is on a slope and the angle of any slope - this imposes horizontal as well as vertical forces;
- (d) the size and nature of the load (eg whether the load itself is unstable);
- (e) how the load is intended to be lifted; and
- (f) the maximum wind loading that may occur.

108 You can use various methods or combinations of methods to improve the stability of lifting equipment. These include:

- (a) designing a suitable base on which to position the lifting equipment;
- (b) using an anchorage system;
- (c) using counterbalancing weights; and
- (d) using ballast, outriggers or stabilisers.

109 Where lifting equipment is anchored to other work equipment or structures you should ensure that this equipment or structure can withstand the forces that the lifting equipment and its use will impose on them.

110 Where you are lifting a load from water you will need to take account of additional factors. The load will appear to be lighter while it is in the water because of the water's supporting action and the lifting equipment may be subject to 'shock loading' when the load is lifted out of the water.

111 If the lifting equipment is situated on a floating vessel it will be effectively operating on a variable out-of-level base and thus subject to significantly different loading conditions than is the case on firm level ground. In addition, the distance between the water level and the deck (and therefore the stability margins) of the floating vessel will vary as the lifting operation is carried out. Such lifting equipment will be subject to greater dynamic loading than when used on land. For example, for a crane there will be increased side loading on the jib and greater forces in the slewing mechanisms, brakes and clutches due to changes in inclination of the vessel. The crane must therefore be derated from its normal land-based duties. The extent of such derating should be determined by a competent person based on the manufacturer of the lifting equipment's recommendations for floating duties. Further guidance on derating can be found in BS 7121.

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112 You should ensure that lifting equipment which is mobile or which is dismantled and reassembled at different locations is used in such a way as to ensure its stability during its use under all foreseeable conditions. Particular account should be taken of the nature of the ground and other surfaces on which the equipment might be used.*

113 Examples of mobile lifting equipment include:

- (a) mobile cranes;
- (b) fork-lift trucks; and
- (c) forwarders and cable cranes in forestry.

114 Examples of lifting equipment which can be dismantled and reassembled include:

- (a) tower cranes;
- (b) construction site hoists; and
- (c) mast climbing work platforms.

115 You should note that fixed equipment, as well as mobile equipment, needs to be of adequate stability while performing lifting operations.

116 The requirement to ensure that the lifting equipment has adequate strength and stability for the task links with your duty under regulation 8(l)(c) of LOLER to ensure that all lifting operations involving lifting equipment are carried out in a safe manner.

117 Where lifting equipment is used on rails it should be fitted with suitable devices, for example to remove loose material from the rails, to minimise the risks of the equipment being derailed.

118 The surface on which rail-mounted lifting equipment runs (with or without its load) should be sufficiently firm to support the rails. The rails should have an even running surface; be properly joined; laid so that the lifting equipment and its load can move freely and without danger of derailment.

119 Ground settlement can cause rails to become misaligned and the running surface to become uneven. You should not allow such settlement to develop to the extent that the lifting equipment can become unstable or derailed in use.

120 Mobile lifting equipment fitted with pneumatic tyres should not be used to lift loads unless the tyres are inflated to the correct pressure. You should provide suitable means to check this.

121 You should ensure that tyre pressures are checked on a regular basis using an appropriate pressure gauge to confirm that they are at the pressures recommended by the manufacturer. This is an important part of the lifting regime for lifting equipment. Guidance on the servicing of tyres on commercial wheels or divided wheels, which are sometimes encountered on cranes or fork-lift trucks, is provided in *Health and safety in tyre and exhaust fitting premises*.⁹

* Note: paragraph 112 implements point 3.1.1 of Annex II of AUWED

Work equipment which is mobile or can be dismantled and which is designed for lifting loads should be used in such a way as to ensure the stability of the work equipment during use under all foreseeable conditions, taking into account the nature of the ground.

Regulation 5**Preventing overload**

122 Where there is a significant risk of overturning and/or overloading arising from the use of the equipment it should be provided where appropriate with equipment or devices such as rated capacity indicators and rated capacity limiters. Such devices provide audible and/or visual warning when the safe lifting limits are being approached. See further guidance under regulation 7(b).

Regulation 4(b)

123 Timber pallets are examples of items which may be part of a load (if, for example, they are banded together). These must be of adequate strength for the particular load and lifting operation. Further information on the safe use of timber pallets is included in HSE Guidance Note *Safety in the use of pallets*.¹⁰

124 Any points provided on the load to assist in lifting it are part of the load and not part of the lifting equipment, though there are exceptions such as the use of eyebolts which screw into the load. However, you should take steps to ensure that any such lifting points are of adequate strength for the task based on an assessment of the risks associated with a particular lifting operation. Examples of lifting points include lugs that are welded on to a steel beam before it is lifted and removed afterwards and permanent fittings such as those on a skip which may be lifted frequently.

125 In some circumstances where the risks justify it, you will need to arrange to test the strength of the lifting points to ensure that they are suitable for a lifting operation. This is particularly important in circumstances where lifting points are produced by welding lugs onto a load to allow a lifting operation to be carried out.

126 You should not normally lift loads by banding, straps or wrappings which have been provided primarily to keep the load intact unless they are designed for this purpose. Examples include boxes and cartons secured together. Such items are rarely strong enough to provide lifting points. Even if such loads are supported as they are lifted, eg on the forks of a fork-lift truck or in a net attached to crane hook, you should check that the banding etc will withstand expected stresses arising from hoisting and swinging the load. When using eyebolts you should not use them if they are distorted or have damaged threads and when using flexible bulk containers you should not use them if the suspension loops are damaged.

Lifting equipment used for lifting persons

(1) Every employer shall ensure that lifting equipment for lifting persons -

- (a) subject to sub-paragraph (b), is such as to prevent a person using it being crushed, trapped or struck or falling from the carrier;
- (b) is such as to prevent so far as is reasonably practicable a person using it, while carrying out activities from the carrier, being crushed trapped or struck or falling from the carrier;
- (c) subject to paragraph (2), has suitable devices to prevent the risk of a carrier falling;
- (d) is such that a person trapped in any carrier is not thereby exposed to danger and can be freed.

127 Whenever lifting equipment is used for lifting persons the requirements of regulation 5(1) apply over and above requirements detailed in regulation 4

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(suitability), regulation 6 (positioning and installation), regulation 7 (marking) and the requirements of the other regulations in LOLER.

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128 The raising and lowering of people by work equipment which is not specifically designed for the purposes should only be undertaken in exceptional circumstances, when it is not practicable to gain access by less hazardous means. Where it is necessary to use such work equipment then you should ensure that all necessary precautions are taken to ensure safety, including appropriate supervision.*

129 Examples of lifting machinery which is not specifically designed for lifting people but which could be used if the necessary precautions are taken include a fork-lift truck, a telescopic handler and a crane (fixed or mobile).

130 Although equipment such as fork-lift trucks, telescopic handlers and cranes are primarily designed for the purpose of handling materials, when fitted with a suitably designed carrier or working platform they can provide a safer alternative to other means of access (such as a ladder). You should recognise, however, that such an arrangement will not provide the same level of safety as purpose-built equipment such as a mobile elevated work platform (MEWP). Where it is reasonably practicable to obtain and use purpose-built equipment for lifting people, particularly for regular and/or routine operations, then you should use such equipment.

131 If equipment such as a fork-lift truck, telescopic handler or crane is used for lifting people then you must take adequate precautions.

Lift truck

132 People should never be lifted on the fork arms or a pallet balanced on the fork arms of a lift truck because they can easily fall off. You should use a properly maintained purpose-built working platform with suitable edge protection and toe boards. When loaded with people, tools and materials it should be compatible with the lift truck on which it is fitted to ensure security and stability in use. It should be effectively secured to the truck's elevating carriage or fork to prevent it being displaced or tipping unduly. Persons carried on a platform should be prevented from reaching any dangerous parts (eg the chains of truck) by effective screens or guards. They should also be protected against any overhead hazards that might exist (eg from coming into contact with rafters in the ceiling).

Telescopic handler

133 Telescopic handlers are a specific type of fork-lift truck. They should never be used to lift people unless a suitable working platform is used. You should use a working platform of safe design, made of sound and suitable material, of adequate strength and ensure that it is properly maintained. It should be effectively secured to the forks. In order to prevent inadvertent operation, the operator should scotch or lock out the tilt mechanism when the equipment is to be used with a working platform. Suitable means of communication between the operator and platform should be provided (manual signals may be sufficient in many circumstances).

* Note: paragraph 128 implements point 3.1.2 of Annex II of AUWED

Persons may be lifted by only means of work equipment and accessories provided for this purpose.

Without prejudice to Article 5 of Directive 89/391/EEC, exceptionally, work equipment which is not specifically designed for the purpose of lifting persons may be used to this effect, provided appropriate action has been taken to ensure safety in accordance with national legislation and/or practice laying down appropriate supervision.

Cranes

134 The crane used should be adequate and suitable for the task, have a free-fall capability lock-out and should be used equipped with appropriate devices such as a hoisting limiter, lowering limiter, rated capacity indicator and rated capacity limiter. The carrier should be adequately attached to the crane (eg by a shackle or a hook with a latch). The crane and carrier should be inspected every day by a competent person. The crane and associated equipment should be suitably derated and the crane should be operated in accordance with the recommendations in BS 7121.

135 If lifting equipment is not marked to indicate that it can be used to lift people it should only be used if a risk assessment has confirmed it can be used safely and adequate precautions are taken. It should then be appropriately marked to indicate that it is for lifting people and the number of people it can lift safely.

136 The term 'carrier' is a generic term used to describe the device which supports people while being lifted or lowered. It includes the following:

- (a) the car of a passenger lift;
- (b) the cage of a construction site hoist;
- (c) a platform on a mobile elevating work platform (MEWP);
- (d) a cradle suspended from the hook block of a crane;
- (e) a bosun's chair; and
- (f) the harness used by an arborist.

Guidance 5(1)**Regulation 5(1)(a)**

137 Regulation 5(l)(a) applies to carriers such as a lift car.

138 Any person in such a car should be suitably protected from being injured by something outside of it. To achieve this the car should normally be fully enclosed when in use.

139 You should take appropriate precautions to prevent someone entering or leaving the car being struck by it. There should be a suitable enclosure around the car and, where necessary, appropriate protective devices to prevent access to the danger zone.

140 Any door or gate which is necessary in order to gain access or egress to/from the car should open so as to prevent any person falling accidentally from the car.

ACOP 5(1)**Guidance 5(1)**

141 Any motorised doors fitted to a lift car should be fitted with a suitable device to prevent the user being crushed by them when entering or leaving. Lift cars should be fitted with full-length doors so designed and installed that the car cannot move unless the doors are closed and comes to a halt if the doors are opened. The doors of the car must remain closed and interlocked if the lift stops between two levels.

142 The doors of the hoistway should also be of solid construction with smooth interior surfaces. In addition, the doors and the hoistway opposite the open side of a carrier without internal doors should, throughout its height of travel, be smooth and flush with each other.

LOLER 98**Regulation 5(l)(b)**

143 Regulation 5(l)(b) deals with persons working from carriers which are not fully enclosed.

144 Where a person in such a carrier might fall 2 m or more, the carrier should be fitted with suitable edge protection. This should also be provided where a person might fall less than 2 m where there are factors that would increase the likelihood of a fall or the risk of serious injury.

145 Any edge protection on the carrier should be suitable for the purposes for which it is to be used and it should be securely fixed to the carrier.

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146 The floor area of any carrier on which persons need to be present should be slip-resistant.

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147 As part of the risk assessment carried out to satisfy your duties under the Management Regulations, you should assess the risks arising from other work equipment, structures or objects which the persons being lifted may strike. Fully enclosed carriers and falling object protection on carriers can reduce the risks in such circumstances. They should be used wherever there is a need provided that it is reasonably practicable to do so, taking into account the nature of the work involved.

148 Where this is not practical, eg when working from a MEWP, suitable alternative precautions are needed. Depending on the type of lifting equipment that is used, the risk assessment will identify the precautions that are needed. Examples include a 2 m high enclosure around a construction site hoist and hold-to-run controls.

149 The carrier (such as a cage or basket) should be of a safe design, made of sound and suitable material and of adequate strength. If access doors are fitted to the carrier they should not open outwards and should be fitted with a device to prevent inadvertent opening.

150 Some of the measures required to prevent people being crushed or struck by the lifting equipment, eg high fencing, may also help prevent the user falling from the carrier and therefore achieve compliance with this regulation. However, where the risk cannot be adequately controlled by these measures further steps may be necessary, for example you may need to use safety harnesses with lanyards attached to designated anchor points.

Regulation 5(l)(c)

151 Lift cars must have devices to prevent free-fall which should be independent of the means of suspension of the car.

152 Where practicable, other carriers should be fitted with suitable devices or other effective measures taken, to prevent the carrier falling in the event of failure of the primary means of support. For example:

- (a) multiple ropes (with independent anchorages);
- (b) multiple cylinders;
- (c) ropes, chains or hydraulic pipes with a high factor of safety;
- (d) safety gear; and

Guidance 5(1)

LOLER 98**Guidance 5(1)****LOLER 98****ACOP 5(1)****LOLER 98****Guidance 5(1)****LOLER 98****Regulation 5(2)****LOLER 98****Guidance 5(2)**

- (e) check valves (for hydraulically powered systems).

153 In addition to the suitable devices mentioned above, further measures may be necessary to ensure safety with certain equipment such as a cradle lifted by a crane. These include:

- (a) derating the equipment;
- (b) daily inspections of the equipment by a competent person; and
- (c) providing adequate instruction and training for all persons involved in the lifting operation (persons being lifted, operator of the lifting equipment, supervisor etc).

154 You should position or install the lifting equipment to minimise the effects of a failure of the primary means of lifting (see regulation 6 for more details on position and installation).

155 The references to 'site', 'height differences' and 'enhanced coefficient suspension rope' in regulation 5(2) refer solely to winding gear in mines (see paragraph 160).

Regulation 5(l)(d)

156 You should ensure that in the event of malfunction of the lifting equipment that persons being lifted are not exposed to danger and a reliable means of rescue is available.

157 If a person becomes trapped in a carrier they should be able to summon other people to their assistance. If other people are working nearby then a shout for help may be sufficient. In some circumstances a telephone or radio link within the carrier, or the fitting of an alarm bell or klaxon which can be used to summon help, might be needed. These devices should be regularly inspected by a competent person to ensure they continue to function properly.

158 An emergency means of lowering the carrier to a safe position may be appropriate to deal with a user who has become trapped or, where this is not possible, self-rescue equipment such as a rope ladder or an inertia reel system could be provided. There is a need to ensure that the use of such equipment does not make the carrier unstable thereby increasing the risk to the user. The use of emergency lowering and self-rescue equipment may only be appropriate where potential users have received training in its use and are competent to use it.

(2) *Every employer shall ensure that if the risk described in paragraph (1) (c) cannot be prevented for reasons inherent in the site and height differences -*

- (a) *the carrier has an enhanced safety coefficient suspension rope or chain; and*
- (b) *the rope or chain is inspected by a competent person every working day.*

159 Equipment used for the lifting of people should have a safety coefficient relating to its strength of at least twice that required for general lifting operations. This is the arithmetic ratio between the highest load guaranteed by the manufacturer that the lifting equipment or accessory is able to lift and the maximum working load marked on the equipment.

160 Suspension ropes and chains with an enhanced safety coefficient refer to

LOLER 98
Guidance 5(2)

mine winding gear. Further information is available in the Mines (Shafts and Winding) Regulations 1993 and its Approved Code of Practice. Compliance with these Regulations should also satisfy the requirements of LOLER.

Regulation 6

Positioning and installation

LOLER 98

(1) Every employer shall ensure that lifting equipment is positioned or installed in such a way as to reduce as low as is reasonably practicable the risk -

- (a) of the equipment or a load striking a person; or
- (b) from a load -
 - (i) drifting;
 - (ii) falling freely; or
 - (iii) being released unintentionally;

Regulation 6(1)

and it is otherwise safe.

LOLER 98

Guidance 6(1)

161 Regulation 6 applies to both permanently installed and mobile lifting equipment although different measures will need to be taken in each case to control the risks. 'Installed' refers only to lifting equipment which is assembled at a particular location and not to mobile lifting equipment which is 'positioned' in a particular location to carry out lifting operations.

LOLER 98

Regulation 6(1)(a)

162 Lifting equipment should be positioned or installed to minimise the need to lift loads over people.

163 In particular, lifting equipment should be positioned and installed to prevent crushing when it is in its extreme positions.

164 A load moving along a fixed path, such as a conventional lift or hoist, should be efficiently protected by a suitable and substantial enclosure, or some other equally effective measure, to minimise the risk of a person being struck by the equipment or the load.

165 In the case of lifting equipment which follows a fixed path, but whose maximum height of travel above ground or floor level is no more than 2 m, you should provide an enclosure where practicable. Where this is not practicable, you should provide a barrier or gate or other equally effective means, to prevent any person being endangered by the underside of the lifting equipment or by any fitting attached to it.

166 You should position or install lifting equipment with a travelling or slewing motion to prevent trapping points. Where this is not possible you should take effective measures to prevent access of persons to such trapping points.

ACOP 6(1)

LOLER 98

Guidance 6(1)

167 As part of the planning required by regulation 8 of LOLER (which deals with the organisation of lifting operations) you will need to address, among other things, whether the equipment has been (or will be) installed or positioned to ensure that the risks of the equipment, or its load, injuring people is minimised. The measures that you need to take to control the risks

LOLER 98**Guidance 6(1)**

will depend upon the type of equipment and where and how it is used.

168 It may be necessary to ensure the dimensions of any passage ways or paths that are provided for access are sufficient that any persons using them will not be put at risk from any lifting operation. Any gap into which persons may enter, which may be reduced, for example, by a slewing motion, should be at least 0.5 m and preferably never less than 0.6 m.

169 You may need to cover such a passage way to help protect persons should a load drop unexpectedly.

LOLER 98**ACOP 6(1)**

170 Appropriate measures should be taken to prevent a freely suspended load from moving in an uncontrolled manner where the risks justify it.

171 Runway beams supporting lifting equipment should be level and of sufficient stiffness to prevent equipment drifting or running away.

Regulation 6(l)(b)(i)

172 Where appropriate, lifting equipment should be fitted with suitable devices to minimise any risk of the load falling freely.

LOLER 98**Guidance 6(1)**

173 This regulation aims to ensure that loads are under control at all times to minimise risks to persons in the vicinity of the lifting operation. The aim is to prevent uncontrolled free fall. It is not, however, intended to prohibit gravity discharge of loads (such as grain filling a silo from a feed-pipe) or operations which involve a controlled free fall, for example piling where risks to people from such operations can be almost eliminated.

174 Various methods can be used to minimise the risk from the load falling out of control. These include:

- (a) multiple ropes/chains;
- (b) lifting mechanisms with a high factor of safety or strength;
- (c) safety gear;
- (d) check valves (for hydraulic systems); and
- (e) safety nets for palletised loads.

Regulation 6(l)(b)(iii)**ACOP 6(1)**

175 You should ensure that where, in the event of a power failure, the lifting equipment will not be able to maintain its hold on the load, appropriate measures are in place to prevent persons being exposed to any consequential risks.*

LOLER 98**Guidance 6(1)**

176 The requirement is to prevent a load being released unintentionally. Pneumatic, hydraulic, vacuum or magnetic equipment may need to be adapted or have a back-up power supply that take over in the event of a power failure. You may need to warn people working on the equipment or in its vicinity of the potential danger should a power failure occur. In some circumstances where hardware precautions are not practical you may need to exclude people from the danger zone.

* Note: paragraph 175 implements point 3.2.6 of Annex II of AUWED

If work equipment designed for lifting non-guided loads cannot maintain its hold on the load in the event of a complete or partial power failure, appropriate measures should be taken to avoid exposing workers to any resultant risks.

LOLER 98

ACOP 6(1)

177 Hooks and other similar devices provided for lifting should be of a type that reduces the risk of the load becoming displaced from the hook or other devices.

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Guidance 6(1)

178 Wherever possible, hooks should be used that have safety catches fitted or are shaped to prevent the accidental displacement of the sling etc. Where this is not possible, an alternative acceptable method is to secure the throat of the hook by mousing. If vertical plate clamps are used it is important that they do not open if the load strikes a surface.

LOLER 98

ACOP 6(1)

179 Where two or more items of lifting machinery are used they should be installed or positioned so as to prevent the loads and/or parts of the equipment coming into contact with one another.*

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Guidance 6(1)

180 The best way to avoid a collision between items of lifting equipment or their loads is to position or install the lifting equipment so that their operating paths do not overlap. Equipment that may be affected by this requirement include:

- (a) tower cranes;
- (b) overhead travelling cranes;
- (c) telescopic reach trucks; and
- (d) forestry equipment moving and processing trees at the landing area of a cable crane.

181 Appropriate precautions should be taken to prevent the lifting equipment or load striking another structure or vehicle during the lifting operation, which could result in risks to people from the loads being displaced or the equipment or structure being damaged.

182 Devices can be fitted onto a tower crane, for example, such as a motion limiting device that prevents the boom from moving into a potentially dangerous position. The crane paths should be clearly defined and you should consider marking out demarcation lines on the ground which mark the boundary of the path the load will be lifted. Even if motion limiting devices are fitted, a safe system of work should always be followed. Further guidance can be found in the various parts of BS 7121.

Guidance 6(1)

LOLER 98

Regulation 6(2)

(2) Every employer shall ensure that there are suitable devices to prevent a person from falling down a shaft or hoistway.

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ACOP 6(2)

183 Suitable and substantial gates, or other equally effective means, should be provided at any access and/or egress points to any hoistway or shaft enclosure.

184 Any such gate, or other equally effective means, should be fitted with efficient interlocking or other devices, such that (a) the gate cannot be opened except when the lifting equipment is at the landing and (b) the lifting equipment cannot be moved away from the landing until the gate

* Note: paragraph 179 implements point 3.2.1 of AUWED

When two or more items of work equipment used for lifting non-guided loads are installed or erected on a site in such a way that their working radii overlap, appropriate measures should be taken to avoid collision between loads and/or the work equipment parts themselves.

LOLER 98**ACOP 6(2)****LOLER 98****Guidance 6(2)**

is closed. If it is not reasonably practicable to fit such devices, you should provide alternative arrangements to ensure that the gate is kept closed and fastened except when the lifting equipment is at rest at the landing. Any gate needs to be of suitable height to prevent people toppling over or reaching over it and be of adequate strength.

185 You should adequately fence the shaft or hoistway at places where people may fall down them, eg landings. Such places will be indicated by the results of the risk assessment. The base of the hoistway should be protected by a cage. Gates or doors should be provided at all landings and kept closed at all times except when loading or unloading. They should be fitted with interlocks which prevent the lift moving until the gates are closed. The type of gate needed will depend on the results of the risk assessment. One factor that you should consider is who might have access to the shaft or hoistway. For example, a lift in a place where children could have access requires imperforate doors (ie without openings that could become trapping points). However, in older buildings space constraints could mean that lattice doors are still being used. This creates trapping and shearing hazards, particularly for the young and elderly. Where practicable, such doors should be replaced by imperforate types. However, if this not possible you should provide suitably located protective plates at the leading edge to prevent access of fingers and toe pickets on the lower section of the gate to prevent foot access through the gates. Any enclosure and gate should normally be at least 2 m high.

Regulation 7**LOLER 98****Regulation 7****Marking of lifting equipment**

Every employer shall ensure that -

- (a) *subject to sub-paragraph (b), machinery and accessories for lifting loads are clearly marked to indicate their safe working loads;*
- (b) *where the safe working load of machinery for lifting loads depends on its configuration -*
 - (i) *the machinery is clearly marked to indicate its safe working load for each configuration; or*
 - (ii) *information which clearly indicates its safe working load for each configuration is kept with the machinery;*
- (c) *accessories for lifting are also marked in such a way that it is possible to identify the characteristics necessary for their safe use;*
- (d) *lifting equipment which is designed for lifting persons is appropriately and clearly marked to this effect; and*
- (e) *lifting equipment which is not designed for lifting persons but which might be so used in error is appropriately and clearly marked to the effect that it is not designed for lifting persons.*

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Guidance 7**

186 Regulation 7 of LOLER builds upon the requirements of regulation 23 of PUWER which states:

Every employer shall ensure that work equipment is marked in a clearly visible manner with any markings appropriate for reasons of health and safety.

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Guidance 7

Regulation 7(a)

187 A 'safe working load' (SWL) is a value or set of values based on the strength and/or stability of the equipment when lifting. A range of safe working loads can be specified for the same equipment when used in different configurations. The SWL is usually expressed in terms of the maximum load that the equipment may safely lift, as for cranes and lifting attachments, or the actual capacity of the equipment in the case of fork-lift trucks.

188 Regulation 7(a) refers to lifting equipment with one fixed safe working load (SWL) such as an overhead crane, some fork-lift trucks or an accessory such as a shackle or sling. Sometimes other phrases are used to mean the SWL such as 'rated-capacity' or 'working load limit'. Where possible, the actual value of the SWL should be marked on the equipment but where this is not possible a coding system should be used which easily provides the user with the SWL. Examples of such systems may include colour coding or attaching some form of label.

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Regulation 7(b)

189 You should ensure that where lifting machinery has a safe working load which varies with its operating radius or is dependent upon how it is configured, it is either clearly marked or adequate information is provided to indicate to the user the corresponding safe working load. Any marking should be clearly visible or the information be readily available to the operator or user.

190 Where there is a significant hazard arising from the use of the machinery it should be provided with appropriate equipment or devices such as rated capacity indicators and rated capacity limiters.

191 Rated capacity indicators were previously known as automatic safe load indicators (ASLIs) and/or moment load indicators.

192 Examples of the types of lifting machinery where the SWL can vary within its operating radius include:

- (a) any crane having a jib which can be raised or lowered;
- (b) a mobile crane or fork-lift truck with telescopic jib; and
- (c) a MEWP on a cantilevered arm.

193 Where changing the operating radius leads to corresponding variations in the SWL your risk assessment may indicate the need for a load-limiting device to stop the operation if the SWL is in danger of being exceeded and/or an indicating device which clearly shows the operator the radius and the corresponding SWL and provides visual and/or audible warning if the SWL for any radius is in danger of being exceeded. Such devices are necessary for high risk activities such as construction and dock work and where people are being lifted.

194 Examples of the type of lifting machinery where its configuration can affect the SWL include:

- (a) a fork-lift truck fitted with attachment (such as a drum clamp or crane jib);

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- (b) fitting a fly jib to a crane;
- (c) using a mobile crane with outriggers in position or 'free on wheels';
- (d) a telescopic reach truck;
- (e) an excavator used as a crane;
- (f) a jib of a tower crane that can lift loads at various operating radii; and
- (g) a lifting beam with multiple lifting points.

195 The lifting machinery should be clearly marked with information about how the configuration affects the SWL. This can be in the form of an indicator, plate, chart or certificate which is readily available to the operator.

196 If it is not possible to provide a value for the SWL for all configurations, the capacity of the equipment should be reduced to allow for a factor of safety (this is known as derating). Where this is necessary it should only be carried out by a competent person. You should contact the manufacturer or supplier of the equipment for information before any derating is carried out.

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197 Any structural element of any lifting equipment which is occasionally dismantled or partially dismantled, and which is, or may become, separated from the lifting equipment, should be marked to indicate the equipment of which it is a part.

198 You may need to mark certain accessories with details of the particular piece of lifting equipment with which they should be used.

199 Where a number of lifting accessories are assembled to form one lifting assembly which is not dismantled after use, the assembly should be marked to indicate its safety characteristics to users.*

200 Where the weight of an accessory is significant in relation to the safe working load of the machine with which it is intended to be used, the accessory should be clearly marked with its weight.

201 Where there are other characteristics which might make the use of an accessory for lifting unsuitable in a particular application then this information should be marked or otherwise be available to the user.

202 Accessories for lifting include a single item (such as a shackle) or an assembly of items (such as lifting beam and slings) which may be used to secure the load to the piece of lifting equipment. Accessories include:

- (a) slings;
- (b) shackles;
- (c) swivel or eye bolts;

* Note: paragraph 199 implements part of point 3.1.4 of Annex II of AUWED

Lifting accessory tackle should be clearly marked so that users are aware of its characteristics where such tackle is not dismantled after use.

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- (d) clamps;
- (e) lifting magnets;
- (f) vacuum lifters; and
- (g) lifting beams.

203 For lifting accessories with one SWL the value of the SWL should be marked on the accessory. Where this is not possible, a coding system should be used which allows the user to determine the SWL. Examples of such systems include colour coding or attaching some form of label.

204 If the configuration of an accessory can affect the SWL, eg two chains joined by a ring each with a hook, it should be clearly marked by a tag or a plate, or a chart should be readily available providing the user with information on the SWL for each configuration.

205 You may need to mark such accessories with their own weight and any other characteristics that may be appropriate in particular circumstances, eg whether the accessory should only be used with one identified piece of lifting equipment or where its use can be affected by other factors such as heat or corrosive atmospheres. Furthermore, an accessory such as a plate clamp may need to be marked with the plate thickness range over which it can be safely used.

LOLER 98**Regulation 7(d)****ACOP 7**

206 Any carrier should clearly display the maximum number of persons to be carried.

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207 Lifting equipment which is designed for lifting persons must be appropriately and clearly marked that it is for lifting persons. In addition, any carrier (eg a suspended personnel basket or car of a passenger lift) should clearly display the maximum number of persons to be carried.

208 The SWL should also be clearly indicated on the carrier.

Regulation 7(e)**Guidance 7**

209 Lifting equipment which may be inadvertently used for lifting people but which has not been designed for this purpose should be clearly marked that it should not be used for lifting people.

Regulation 8**Organisation of lifting operations****LOLER 98**

(1) *Every employer shall ensure that every lifting operation involving lifting equipment is -*

- (a) *properly planned by a competent person;*
- (b) *appropriately supervised; and*
- (c) *carried out in a safe manner.*

(2) *In this regulation "lifting operation" means an operation concerned with the lifting or lowering of a load.*

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Regulation 8(1)(a)*

210 The person planning the operation should have adequate practical and theoretical knowledge and experience of planning lifting operations.

211 The plan will need to address the risks identified by the risk assessment and identify the resources required, the procedures and the responsibilities so that any lifting operation is carried out safely.

212 The plan should ensure that the lifting equipment remains safe for the range of lifting operations for which the equipment might be used.

213 Where two or more items of lifting equipment are used simultaneously to lift a load, where appropriate a written plan should be drawn up and applied to ensure safety. †

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214 Regulation 8(1)(a) lies at the heart of these regulations. The risk assessment required by regulation 3(1) of the Management Regulations will identify the hazards and corresponding risks. The requirement for proper planning under these regulations should therefore address how risks identified by this assessment will be eliminated or adequately controlled. Proper planning of lifting operations should ensure that not only is suitable equipment provided by duty holders but also that it can be used safely.

215 The degree of planning will vary considerably. It will depend upon the type of lifting equipment to be used and the complexity of the lifting operation for which it will be used. Proper planning of lifting operations is a combination of two parts:

- (a) initial planning to ensure that lifting equipment is provided which is suitable for the range of tasks that it will have to carry out; and
- (b) planning of individual lifting operations so that they can be carried out safely with the lifting equipment provided.

216 The balance between the two parts of the planning process will also vary depending upon the lifting equipment and the particular lifting operation.

Initial planning

217 Regulation 4 of PUWER 98 requires suitable work equipment to be provided for the task. There is therefore a close link between regulation 4 and this requirement for planning. Factors you should consider when selecting lifting equipment so that it is suitable for the proposed task include:

- (a) the load to be lifted;
- (b) its weight, shape, centre of gravity, availability of lifting points;

* Note: Regulation 8(1) implements point 3.2.5 of Annex II of AUWED

All lifting operations should be properly planned, appropriately supervised and carried out to protect the safety of workers.

† Note: paragraph 213 implements point 3.2.5 of Annex II of AUWED

In particular if a load has to be lifted by two or more pieces of work equipment for lifting non-guided loads simultaneously, a procedure should be established and applied to ensure good co-ordination on the part of the operators.

- (c) where the load is presently positioned and where it will be positioned after the lifting operation;
- (d) how often the lifting equipment will be used to carry out the task;
- (e) the environment in which the lifting equipment will be used; and
- (f) the personnel available and their knowledge, training and experience.

The person carrying out this part of the planning exercise will need to have appropriate knowledge and expertise.

218 You may need to use appropriate equipment for lifting particular types of loads, eg spreader beams for unbalanced loads or you may need to use specialist handling equipment in conjunction with fork-lift trucks, eg reel-handling attachments if you are handling paper reels or similar loads.

Competent person

219 The competent person required to carry out the planning is unlikely to be the same competent person referred to in regulation 9 (Thorough examination and inspection) and would not normally need to be from an external organisation.

Planning of individual lifting operations

220 For routine lifting operations the planning of each individual lifting operation will usually be a matter for the people using the lifting equipment, such as a slinger, the fork-lift truck operator etc. The person carrying out this part of the planning exercise should have appropriate knowledge and expertise.

221 An example of a simple plan for routine use of an overhead travelling crane would be:

- (a) assess the weight of the load;
- (b) choose the right accessory for lifting, eg depending upon the nature and weight of the load and the environment in which it is to be used;
- (c) check the anticipated path of the load to make sure that it is not obstructed;
- (d) prepare a suitable place to set down the load;
- (e) fit the sling to the load (using an appropriate method of slinging);
- (f) make the lift (a trial lift may be necessary to confirm the centre of gravity of the load; tag lines may be necessary to stop the load swinging);
- (g) release the slings (boards or similar may be necessary to prevent trapping of the sling); and
- (h) clear up.

222 The same principles could be applied to other routine lifting operations involving other types of lifting equipment, eg fork-lift truck, use of an electric winch etc.

223 For routine lifting operations an initial plan may only be required once but you may need to review it occasionally to make sure that nothing has changed and the 'plan' remains valid. Examples of lifting equipment generally provided for routine lifting operations include:

- (a) fork-lift trucks in a warehouse;

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- (b) a construction site hoist;
- (c) a mobile elevated work platform (MEWP) used for general maintenance;
- (d) a suspended cradle used for window-cleaning;
- (e) a vehicle tail lift; and
- (f) a patient hoist.

224 For complex lifting operations you may need to plan the task each time it is carried out.

225 The lifting equipment referred to in paragraph 213 means, for example, two cranes lifting the same load. It does not mean the use of lifting accessories (eg two slings attached to the hook block of a single crane) used with a lifting machine.

226 BS 7121 contains recommendations for the safe use of cranes, including planning of lifting operations. The principles contained in this standard can be applied to the use of other types of lifting equipment.

Regulation 8(1) (b)

227 The Health and Safety at Work etc Act 1974 (HSW Act) (section 2(2)(c)) places a duty on employers to their employees for '... the provision of such, information, instruction, training and supervision as is necessary to ensure, so far as is reasonably practicable, the health and safety at work of his employees'. These Regulations extend the duties on employers to other duty holders listed in regulation 3(3).

228 Both LOLER and the HSW Act require appropriate supervision and as long as you provide this you will comply with both the requirements of the HSW Act and these Regulations.

229 'Appropriate supervision' means that it should be proportionate to the risk and take into account the personnel involved in the particular lifting operation such as those with disabilities and the inexperienced. Levels of supervision are determined by the nature of the work, and the competence of those involved in using the equipment and assisting with the lifting operation. It does not mean, for example, that an experienced fork-lift truck driver will have to be under direct supervision every time they carry out a routine lift but they may need to be supervised if they are required to lift an unusual load, or lift in potentially hazardous conditions, for example across a public road. It does not mean that an occupier of an office block has to provide a person to supervise the operation of a passenger lift.

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Regulation 8(1)(c) - working under suspended loads

230 Where practicable, loads should not be carried or suspended over areas occupied by persons.*

231 Where this is not practicable you should establish a safe system of work which minimises the risks to persons who may need to be below the load.

* Note: paragraphs 230-232 implement part 3.2.6 of Annex II of AUWED

Unless required for the effective operation of the work, measures must be taken to ensure that workers are not present under suspended loads.

Loads may not be moved above unprotected workplaces usually occupied by workers.

Where that is the case, if work cannot be carried out properly any other way, appropriate measures must be laid down and applied.

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232 Where it is necessary to leave loads suspended you should ensure that access to the danger zone is prevented, ensuring that the load has been secured properly.

233 Regulation 8(l)(c) places a duty on you to ensure that lifting equipment is used safely. This can only be achieved if you have complied with the other regulations where they are relevant.

234 Regulation 6 of LOLER requires you to use lifting equipment only if it is positioned or installed so that risks arising from the equipment or load are minimised. Where possible, you should organise the layout of the workplace so that no person will have to work under a suspended load. In some cases this is not possible, eg mechanics working under a car on a raised vehicle inspection lift. In such circumstances you should ensure that the workers are aware of the risks and that the equipment is thoroughly examined to ensure that it is safe to use.

235 Where the risks cannot be controlled by organising the layout of the workplace, other measures will need to be taken to protect people below the load to minimise the consequences if it falls. This may be a combination of reliance on equipment, for example by using lifting equipment with additional safety features (see guidance on regulation 6), ensuring a secondary means to contain the load should it begin to disintegrate or the provision of some form of overhead protection.

236 Where these measures might not be fully effective then you need to provide a safe system of work to exclude people from the danger zone. This may involve provision of barriers to prevent people inadvertently walking below the load and/or warning signs advising people of the danger.

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Visibility

237 If the operator of lifting equipment cannot observe the full path of the load, either directly or by means of auxiliary devices, the employer should ensure that a responsible person has appropriate means of communication to guide the operator. Measures should be taken to prevent the load striking anything or any person.*

238 There are different types of auxiliary devices that can be used to indicate the position of the load to the operator of the lifting equipment. These include closed circuit television systems and visual markers (either on the lifting equipment or on the ground) indicating the position of the load accurately. The type of device that you choose will depend on the lifting equipment with which it will be used, where it will be used and the particular lifting operation.

239 Where these auxiliary devices will be insufficient you will need a system of work which provides the operator with information on the position of the load. This will usually involve the appointment of a responsible person to give clear instructions to the operator. This responsible person may be referred to as a signaller or a banksman. The responsible person needs to have a clear view of the path of the load. They should be in a safe position and be in view or able to communicate effectively with the operator of the lifting equipment.

* Note: paragraph 237 implements point 3.2.3 of Annex II of AUWED (95/63/EC)

If the operator of work equipment designed for lifting non-guided loads cannot observe the full path of the load either directly or by means of auxiliary equipment providing the necessary information, a competent person should be in communication with the operator to guide him and organisational measures should be taken to prevent collisions of the load which could endanger workers.

LOLER 98**Guidance 8****ACOP 8****LOLER 98****Guidance 8**

240 If the responsible person is unable to maintain a clear view of the path of the load then they will need assistants. These assistants also need to be in a safe position and either be in view of the responsible person or able to communicate effectively with them.

241 The lifting equipment operator, responsible person and, where applicable, any assistants to the responsible person need to use the same reliable means of effective communication. This could be by using hand signals, radios or telephones etc.

242 Where hand signals are used they should be consistent with the code of signals in Schedule 1 of the Health and Safety (Safety Signs and Signals) Regulations 1996 or meet the requirements of BS 6736 *Code of practice for hand signalling for use in agricultural operations*¹¹ or BS 7121 *Code of practice for safe use of cranes*³ which are referred to in Schedule 2 of the same Regulations.

243 Where the method of communication is by verbal means then the minimum requirements for verbal communication are contained in Schedule 1, Part VIII of the Health and Safety (Safety Signs and Signals) Regulations 1996.

Attaching/detaching and securing loads

244 You should ensure that any lifting accessories used for securing the load are compatible with the load, taking into account any attachment points on the load, the environmental conditions in which the accessories will be used and their configuration of use.*

245 You should ensure that appropriate measures are taken to prevent the load, or part of the load disintegrating while being lifted.

246 Ropes, chains or slings should only be shortened in a safe manner.

247 You should ensure that the lifting operation is organised so that the lifting equipment is not operated unless the person attaching or detaching the load has given their authorisation to do so or it has been given by some other authorised person. †

248 For the purpose of this guidance we have used the term 'load handler' to describe the person with responsibility for attaching/detaching and securing the loads to the lifting equipment. This could be the operator of the lifting equipment or a slinger who would normally attach loads to cranes.

249 The load handler should have the necessary competence to select suitable lifting accessories (see also the guidance for regulation 4). You need to ensure that they receive adequate information, instruction and practical experience on the principles of selection, use, care and maintenance of lifting accessories including any limitations on use. This may include, for example,

* Note: paragraph 244 implements point 3.1.4. of Annex II of AUWED (95/63/EC)

Lifting accessories should be selected as a function of the loads to be handled, gripping points, attachment tackle and the atmospheric conditions having regard to the mode and configuration of slinging.

† Note: paragraph 247 implements point 3.2.4. of Annex II of AUWED (95/63/EC)

Work should be organised in such a way that when a worker is attaching or detaching a load by hand, it can be done safely, in particular through the worker retaining direct or indirect control of the work equipment.

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the methods of slinging loads, the methods for rating multi-legged slings, interpretation of markings on lifting accessories and derating of lifting accessories for particular adverse conditions of use such as when lifting in adverse weather conditions.

250 The lifting operation should not commence until the load handler has indicated that it is safe to do so or some other person in control of the lifting operation has given the authority to do so. The load handler should normally only obey the instructions of the identified person in charge of the lifting operation. In either case, a system of work needs to be in place which ensures that the load handler is in a safe position before the lifting operation begins.

251 Where there is a risk of the load breaking up and this could result in injury to persons below then it will be necessary to take additional measures to ensure that the load remains intact and in a safe condition. Examples when this might be necessary include lifting pallets of bricks which should be secured by metal strapping or plastic sheeting. Guidance is provided in HSE Guidance Note *Safety in the use of pallets*.¹⁰

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252 You may need to ensure that suitable precautions are taken, eg using packing material, to prevent the load or lifting equipment from being damaged by sharp edges or due to the loads shifting while they are lifted.

LOLER 98**Environment****ACOP 8**

253 The use of lifting equipment in the open air should be halted where meteorological conditions deteriorate to the point that it could affect the integrity of the lifting equipment or expose persons to danger. You should also ensure that appropriate measures are in place to minimise the risks to exposed persons.*

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254 Various weather conditions could have an effect on the integrity of the equipment or expose persons to danger which may mean that lifting operations have to be stopped, eg excessive wind speed, poor visibility due to mist or fog, lightning, heavy rain, sea state etc. Other factors may produce unsafe conditions after the particular weather condition has finished, eg waterlogged and unstable ground following a period of heavy rain. You therefore need a system of work in place which sets out what measures or action needs to be taken for particular weather conditions. Such systems of work need to recognise that additional measures may be needed to reinforce the stability of the lifting equipment or to reduce the safe working load so that the lifting operations can be continued safely. See paragraph 217 on initial planning of a lifting operation.

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255 You may need to have the lifting equipment thoroughly examined - see regulation 9(3) - where the weather conditions may have jeopardised the safety of the lifting equipment.

LOLER 98**Location****ACOP 8**

256 Lifting equipment should only be used where there is sufficient headroom.

* Note: paragraph 253 implements point 3.2.7. of Annex II of AUWED

Open-air use of work equipment designed for lifting non-guided loads should be halted when meteorological conditions deteriorate to the point of jeopardising the safe use of the equipment and exposing workers to risks. Adequate protection measures, in particular, to avoid work equipment turning over should be taken to avoid any risks to workers.

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257 You also need to ensure that you have adequate site access and egress for the lifting equipment. You should also consider whether there will be sufficient space to safely position and install the equipment, for example to put out any outriggers.

Overturning

258 Lifting equipment should not be used in a manner likely to cause it to overturn.

259 You should ensure that appropriate measures are in place to prevent lifting equipment from tilting, overturning and, where appropriate, moving or slipping. The employer should ensure that suitable checks are made to achieve this.*

260 Lifting equipment should not be used to drag loads if such operations are liable to cause damage or overload the lifting equipment.

261 Regulation 4 requires you not to use lifting equipment unless it is of adequate strength and stability for the load. This means that you need to ensure that those people who use the lifting equipment have sufficient knowledge to judge whether or not the equipment is likely to be over-stressed or made unstable while they are using it. This could arise, for example:

- (a) when turning a lift truck with a raised load;
- (b) during excessive and uneven loading of a mast climbing work platform;
- (c) when using a crane to lift an unknown (and excessive) load; and
- (d) when using a mobile elevating work platform (MEWP) in excessively high winds or in locations where traffic could collide with it.

262 You need to ensure that operators of lifting equipment know or can judge the weight of the load they are required to lift. This does not mean that the operator needs to calculate the exact weight of each and every load. For routine lifting operations the weight will usually be known. In other instances it will be possible for the weight of the load to be estimated. Rules of thumb often used are that an adult person weighs 80 kg and a 1 m³ of sand can weigh up to 2 tonnes. There will, however, be some situations where you will need to make calculations to find out the weight of the load if you are to avoid overloading the equipment.

263 As a general rule you should not use lifting equipment to drag loads as this may result in uneven loading on the lifting equipment. In circumstances where lifting equipment is used to drag loads there is a risk that the load could become snagged with an obstacle on the ground. This could lead to the destabilising of the lifting equipment or it exceeding its safe working load. If loads have to be dragged this needs to be done where there are no snagging hazards and the load's movement can be closely observed or by limiting the pulling capacity of the lifting equipment to safe limits through the use of appropriate devices such as pressure-limiting valves on hydraulic equipment.

* Note: paragraph 259 implements point 3.2.2. of Annex II of AUWED

When using mobile work equipment for lifting non-guided loads, measures should be taken to prevent the equipment from tilting, overturning or, if necessary, moving or slipping. Checks should be made to ensure that these measures are executed properly.

264 For lifting equipment which travels with the load raised you will need to consider the layout and ground conditions of the workplace to ensure that the possibility of it overturning is minimised.

Proximity hazards

265 You should take suitable measures to minimise the risks from lifting equipment due to its proximity to other objects.

266 Where anyone is working near the wheel tracks of an overhead crane, the crane should not be allowed to approach within 6 m of them if they would be liable to be struck by it.

267 You need measures in place which address the risks arising from proximity hazards. These measures need to take into account the lifting equipment in use and the particular proximity hazard.

268 Proximity hazards that you will need to consider include:

- (a) coming into contact with overhead power lines;
- (b) coming into contact with other work equipment or structures;
- (c) trench work and excavations;
- (d) other lifting operations in the vicinity;
- (e) low bridges;
- (f) speed retarders;
- (g) warehouse racking; and
- (h) underground services such as drains or sewers.

269 Some of these hazards are associated with fixed lifting equipment, others with mobile lifting equipment and others with both kinds of equipment. The measures you need to take will depend upon the particular kind of lifting equipment and hazards.

270 As a general rule, no lifting equipment should be brought closer than 15 m to overhead power lines suspended from steel towers or 9 m to overhead lines supported on wooden poles. In cases where closer approach is likely it may be necessary to have the lines made dead or to erect barriers to prevent approach to them. Further guidance is contained in HSE Guidance Note *Avoidance of danger from overhead electric powerlines*.¹²

271 The best way to prevent items of mobile equipment from falling into excavations is to keep them out of the area. Not only can they be inadvertently driven into the excavations but if they drive too close they can cause the sides to collapse, tipping the equipment over. Where necessary, use balks or barriers to separate mobile lifting equipment from excavated edges. Balks or barriers need to be painted or marked to make sure that they are visible to drivers. They should be positioned at a suitable distance which reflects the weight of the lifting equipment, likely loads, the space available for operations, the nature of the ground and the depth of excavations etc.

272 Some of the proximity hazards may be addressed by having an appropriate traffic management system in place which identifies the hazards

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and keeps the lifting equipment out of the danger zone.

273 Collision of lifting equipment with other objects may lead to damage to the lifting equipment or to the other object. Both have the potential to put people's safety at risk. In a warehouse, for example, damaged racking may lead to its collapse. Where necessary, barriers are required to prevent mobile lifting equipment contacting other work equipment or structures which might then collapse. General precautions for mobile work equipment are described in Part III of PUWER.

Derating

274 Where appropriate, the safe working load of the lifting equipment should be reduced to take into account the environment and mode in which it is being used.

275 Although a safe working load may be marked on a piece of lifting equipment, it may be necessary to reduce this value to take into account where and how the equipment is being used. This is often referred to as 'derating'. You therefore need to ensure that those involved in lifting operations know when this may be necessary and that those undertaking the derating have sufficient competence. Examples include:

- (a) using a carpet boom on a fork-lift truck with a safe working load determined for 'normal' lift truck use;
- (b) the way a sling is attached to a load, eg the angle of its legs;
- (c) using a multi-leg sling with less than the full number of legs in use;
- (d) lifting of people; and
- (e) where the load is being lifted in adverse weather conditions.

Lifting of persons

276 You should ensure that where persons are lifted by lifting equipment primarily designed for lifting loads other than persons, the control position of the lifting equipment is manned at all times.*

277 You should ensure that persons being lifted on such equipment have a reliable means of communication with the equipment operator or some other responsible person.

278 Ideally you should provide lifting equipment designed specifically for the purpose to lift people. If this is not possible then adequate precautions should be taken. The safe working load for the equipment and accessories should be reduced (derated) by a suitable amount (such as 50%) to provide an appropriate factor of safety. Your competent person should be able to provide advice. The guidance to regulation 5 contains advice on the precautions to take when using such lifting equipment as lift trucks, telescopic handlers or cranes to lift people.

* Note: paragraphs 276, 277 and 280 implement part of point 3.1.2. of Annex II of AUWED

While workers are on work equipment designed for lifting loads the control position must be manned at all times. Persons being lifted must have reliable means of communication. In the event of danger, there must be reliable means of evacuating them.

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279 You will need to ensure that the person in control of the lifting operation and the person being lifted are able to communicate effectively with each other. Where the distances between the person being lifted and the person controlling the lifting operation are short then verbal communication may be adequate. However, where the distances involved mean that the people involved cannot hear each other then you will need to provide the people being lifted with control of the lifting operation or some reliable means of communication. This could be based on a system of hand signals but more usually a radio or telephone would be used.

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280 You should ensure that in the event of failure of the lifting equipment that the persons being lifted are not exposed to danger and a reliable means of rescue is available.

Overload

281 A load greater than the safe working load should not be lifted except where, for the purposes of a test, the competent person requires it.

282 Where the safe working load (SWL) of a piece of lifting equipment is not known then you should ensure that this equipment is not used until this value is determined. This may mean that you need to contact the manufacturer or supplier or alternatively arrange for the equipment to be thoroughly examined by a competent person.

283 Where the weight of the load is not known and it is believed that it may be approaching the maximum weight that the equipment can safely lift, then you should ensure that it is not lifted until steps are taken to determine its weight. Only if the weight is equal to or less than the SWL should it be lifted.

284 If for the purpose of a test, a competent person requires the lifting equipment to be loaded beyond its SWL then this should only be done with certain precautions in place. These include:

- (a) ensuring that the area around the lifting equipment is cleared;
- (b) making sure that only essential workers are retained to lift the load;
- (c) completing the test as efficiently as possible; and
- (d) ensuring that the test is carried out in an area where the consequences of failure are minimised, eg make sure that mobile lifting equipment is positioned well away from buildings.

Further information on the overload testing of cranes is contained in BS 7121.³

Guidance 8**LOLER 98****ACOP 8****LOLER 98****Guidance 8****Pre-use check**

285 You should ensure that their employees have appropriate training and instructions so that they are able to ensure that the lifting equipment is safe to use.

286 You need to ensure that people who use lifting equipment have received appropriate training, information and instruction so that they can carry out pre-use checks on the lifting equipment. The user or operator are the best placed to identify faults or damage to equipment.

287 The purpose of these pre-use checks is to identify faulty equipment. The

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operators of the equipment should act as the first line of defence in identifying any faults or damage. Such checks should be carried out before the lifting equipment is used by an operator during each working day or at the beginning of each shift. The aim of such checks is to pick up faults due to day-to-day wear and tear and malfunction of safety-related equipment. If any defects are found the operator may need to report the defect or, if competent to do so, take appropriate action to rectify it.

288 A trained operator or other person carrying out the checks should be able to identify damage to lifting ropes and accessories, distortions to shackles and other obvious faults which could affect the safe operation of the lifting equipment or accessories.

Continuing integrity: regulation 5 of PUWER

289 You should ensure that lifting accessories are stored in conditions that do not lead to damage or deterioration.*

290 Regulation 5 of PUWER requires you to maintain work equipment in an efficient state, in efficient working order and good repair. Further advice on maintenance is provided in the guidance supporting PUWER.

291 You need to ensure that lifting accessories are suitably stored away after use so that they are not damaged. This requires the provision of suitable storage facilities such as a storage rack or container.

292 Lifting accessories also need to be stored in a suitable environment to prevent rusting, rotting or deterioration. The particular environment will depend on the type of lifting accessory such as:

- (a) the need for a dry atmosphere to prevent rusting;
- (b) the separation from chemicals that could have a corrosive effect on them;
- (c) storage of artificial fibre lifting slings out of direct sunlight and away from heat sources; and
- (d) protection from attack by rodents.

293 The manufacturer or supplier of the accessory should be able to provide further information.

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Thorough examination and inspection

(1) Every employer shall ensure that before lifting equipment is put into service for the first time by him it is thoroughly examined for any defect unless either -

- (a) the lifting equipment has not been used before; and*
- (b) in the case of lifting equipment for which an EC declaration of conformity could or (in the case of a declaration under the Lifts Regulations 1997) should have been drawn up, the employer has received such declaration made not more than 12 months before the lifting equipment is put into service;*

* Note: paragraph 289 implements point 3.1.5. of Annex II of AUWED

Lifting accessories should be stored in a way that ensures that they will not be damaged or degraded.

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or if it is obtained from the undertaking of another person, it is accompanied by physical evidence referred to in paragraph (4).

(2) *Every employer shall ensure that, where the safety of lifting equipment depends on the installation conditions, it is thoroughly examined*

- (a) *after installation and before being put into service for the first time; and*
- (b) *after assembly and before being put into service at a new site or in a new location,*

to ensure that it has been installed correctly and is safe to operate.

(3) *Subject to paragraph (6), every employer shall ensure that lifting equipment which is exposed to conditions causing deterioration which is liable to result in dangerous situations is -*

- (a) *thoroughly examined -*
 - (i) *in the case of lifting equipment for lifting persons or an accessory for lifting, at least every 6 months;*
 - (ii) *in the case of other lifting equipment, at least every 12 months; or*
 - (iii) *in either case, in accordance with an examination scheme; and*
 - (iv) *each time that exceptional circumstances which are liable to jeopardise the safety of the lifting equipment have occurred; and,*
- (b) *if appropriate for the purpose, is inspected by a competent person at suitable intervals between thorough examinations,*

to ensure that health and safety conditions are maintained and that any deterioration can be detected and remedied in good time.

(4) *Every employer shall ensure that no lifting equipment -*

- (a) *leaves his undertaking; or*
- (b) *if obtained from the undertaking of another person, is used in his undertaking,*

unless it is accompanied by physical evidence that the last thorough examination required to be carried out under this regulation has been carried out.

(5) *This regulation does not apply to winding apparatus to which the Mines (Shafts and Winding) Regulations 1993^(a) apply.*

(6) *Where lifting equipment was before the coming into force of these Regulations required to be thoroughly examined by a provision specified in paragraph (7), the first thorough examination under paragraph (3) shall be made before the date by which a thorough examination would have been required by that provision had it remained in force.*

(7) *The provisions referred to in paragraph (6) are -*

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- (a) section 22(2), 25(2), 26(1) (d) and 27(2) of the Factories Act 1961;^(a)
 - (b) regulations 34(2) and 37(1) of the Shipbuilding and Ship-repairing Regulations 1960;^(b)
 - (c) regulations 28(3), 40 and 46(1) of the Construction (Lifting Operations) Regulations 1961;^(c)
 - (d) regulations 3(1) and (2) and 6(1) of the Offices, Shops and Railway Premises (Hoists and Lifts) Regulations 1968;^(d)
 - (e) regulation 6(1)(c) of and Part III of Schedule 1 to the Offshore Installations (Operational Safety, Health and Welfare) Regulations 1976;^(e)
 - (f) regulation 15 of the Docks Regulations 1988.^(f)
- (a) 1961 c. 34; sections 22(2) and 27(2) were amended by SI 1992/195.
 - (b) 1960/1932; amended by S.I. 1992/195.
 - (c) 1961/1581; amended by S.I. 1992/195.
 - (d) 1968/849; amended by S.I. 1992/195.
 - (e) S.I. 1976/1019.
 - (f) S.I. 1988/1655; amended by S.I. 1992/195.

Regulation 9**LOLER 98****Competent person**

294 You should ensure that the person carrying out a thorough examination has such appropriate practical and theoretical knowledge and experience of the lifting equipment to be thoroughly examined as will enable them to detect defects or weaknesses and to assess their importance in relation to the safety and continued use of the lifting equipment.

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295 It is essential that the competent person is sufficiently independent and impartial to allow objective decisions to be made. This does not mean that competent persons must necessarily be employed from an external company. If employers and others within their own organisations have the necessary competence then they can use it. However, if they do, they must ensure that their 'in-house' examiners have the genuine authority and independence to ensure that examinations are properly carried out and that the necessary recommendations arising from them are made without fear or favour.

Guidance 9**LOLER 98****Thorough examination**

296 You should identify equipment which requires a thorough examination and ensure that it is thoroughly examined. The risks which could arise from the failure of the lifting equipment will determine how thorough the examination needs to be.

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297 Thorough examination may be needed at several points during the life of lifting equipment: on initial use or following installation; periodically during its life; and following certain exceptional circumstances. Before you use any item of lifting equipment for the first time, unless you have received physical evidence that a thorough examination has been carried out which shows that it is safe to use, it should be thoroughly examined by a competent person. The extent of the thorough examination will depend on an assessment of the risks based on the type of lifting equipment, where it is installed and how it is to be used. Where a piece of lifting equipment's safety depends on the installation

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conditions, it needs to be thoroughly examined initially to ensure that it is installed and safe to operate before it is put into service for the first time. If lifting equipment, such as a tower crane, is subsequently moved to a new site it should be thoroughly examined again at the new site after it has been installed but before it is put into service.

298 All lifting equipment deteriorates in use and should be thoroughly examined so that deterioration can be detected in sufficient time to allow remedial action to be taken. Deterioration can occur more quickly in certain conditions such as wet, abrasive or corrosive environments and this equipment may need to be thoroughly examined more frequently. The competent person will determine the level of thorough examination required based on an assessment of the risks.

299 A thorough examination is also required following any significant change which may affect the safe operation of the lifting equipment. These include:

- (a) its involvement in an accident or dangerous occurrence;
- (b) after a significant change in conditions of use; and
- (c) long periods out of use.

300 For certain types of thorough examination, access to inner workings of the equipment may be required.

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301 The competent person should decide whether a test is necessary. The nature of the test method will also be a matter for a competent person: they should determine the most appropriate method of carrying it out.

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302 The design of certain lifting equipment is such that damage may be caused by conventional overload tests. It is important therefore that the competent person carrying out the thorough examination or testing takes account of the instructions and other relevant information provided by the manufacturer.

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303 This applies to accessories for lifting as well as to significant and large items of plant such as mobile elevated work platforms (MEWPs) or cranes. The extent of the initial thorough examination may depend upon the extent of the information available to the competent person on which to base a judgement. In the case of new equipment the 'thorough examination' is considered to have been carried out by the manufacturer or supplier and confirmed in the Declaration of Conformity. In such a case no further thorough examination is required. Used equipment which is supplied with a current report of thorough examination does not require a further thorough examination before first use at the new premises. However, if equipment has to be 'installed' then the requirements of regulation 9(2) need to be considered.

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304 A thorough examination is required after substantial or significant modification or repair.

Regulation 9(2) - installation and reconfiguration

305 You should ensure that where lifting equipment is installed in a new location or reconfigured it is thoroughly examined by a competent person to ensure that it has the adequate strength and stability for its intended use.

306 When the integrity of the lifting equipment is dependent on its installation, the lifting equipment should normally be thoroughly examined each time that it is reinstalled. The complexity of the installation requirements will largely determine the extent and depth of the thorough examination required and should be based on the results of a risk assessment.

307 Installation is not defined but is considered to apply to lifting equipment erected or built on site, such as tower cranes, construction site hoists or gantry cranes, ie lifting equipment which is intended to be there for a period of time and is normally fixed in position. It would not apply to mobile lifting equipment which could move from one location to another to carry out a lifting operation within the scope of the current report of thorough examination.

308 The safety of lifting equipment often depends on the way it is assembled, positioned or secured before use, eg rope access equipment. This is not 'installation' as covered by this regulation.

309 If the configuration of the lifting equipment is changed while it is still at its new location, eg a tower crane being increased in height, the equipment may need to be thoroughly examined further before it is put back into use. This will be decided by a suitably knowledgeable person trained for the purpose based on an assessment of the risks. Such thorough examinations will not be required if the existing report of thorough examination for the lifting equipment covers the new configuration.

310 The expression 'put into service' means when the lifting equipment is put into normal use for the first time. Any 'trying out' of the equipment or components is part of the installation examination and should be carried out by the competent person examining the equipment before it is handed over to production personnel for 'in service' operation.

Regulation 9(3)(a) - in service thorough examinations

311 You should make necessary arrangements for a competent person to thoroughly examine the lifting equipment.

312 You should either have the lifting equipment thoroughly examined at intervals no longer than those specified in the regulation or shorter intervals if the competent person considers this appropriate, or in accordance with the intervals specified in the examination scheme for the equipment.

313 The competent person should thoroughly examine those items and parts of the lifting equipment specified in the examination scheme or those items and parts of the lifting equipment which could through deterioration lead to dangerous situations.

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314 Lifting equipment deteriorates through normal wear and tear when used within its design limits and in the ways specified by the manufacturer/supplier. Unacceptable deterioration occurs when the equipment has deteriorated to the extent that safety is compromised or could be compromised before the next thorough examination takes place.

315 Exceptional circumstances can affect the safe use of the equipment by causing damage or premature deterioration. For example, exceptionally high winds may cause overload, failed safe load indicators may allow overload to go undetected and environmental influences may cause equipment to deteriorate when equipment is not in use.

316 You have a choice. You can follow a specified period approach to the thorough examination of lifting equipment (ie make arrangements to have the equipment examined at the intervals specified in this regulation unless the competent person specifies shorter periods based on how and where the equipment is being used). Alternatively, you can have an examination scheme drawn up for the lifting equipment in use and have it thoroughly examined in accordance with this scheme. Certain pieces of equipment can be subject to periodic thorough examination while others, or groups of others, may be subject to an examination scheme approach.

317 If you, as the user or owner of the equipment, are unable to produce a written examination scheme when requested by an inspector from the relevant enforcing authority it will be assumed that you are following the specified period approach as laid down by these Regulations and that the equipment is being thoroughly examined at those prescribed intervals. You should then ensure that you can produce a current examination report when requested by an enforcing officer.

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318 The examination scheme may be drawn up by the user, owner, manufacturer or some other independent party provided they have the necessary competence.

319 The examination scheme drawn up by the competent person should identify and specify those parts of the lifting equipment that should be thoroughly examined.

320 The examination scheme should specify the intervals at which the lifting equipment (or individual parts thereof) should be thoroughly examined and, where appropriate, those parts that need to be tested.

321 Any examination scheme for lifting equipment should take account of:

- (a) its condition;
- (b) the environment in which it is to be used; and
- (c) the number of lifting operations and the loads lifted.

322 The examination scheme need not necessarily be preserved in the form of a document. It should however be capable of being reproduced as a written copy when required; it should be secure from loss or unauthorised modification and it should be authenticated by the competent person preparing the scheme.

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323 You should inform the competent person of any changes in use of the lifting equipment which may affect the examination scheme either:

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- (a) where these changes have occurred since the last thorough examination was carried out; or
- (b) are expected to occur before the next thorough examination is due.

324 The competent person should decide what changes may need to be made to the examination scheme.

325 Different items or parts of the lifting equipment may be thoroughly examined at different intervals, taking into account the degree of risk associated with each item or part.

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326 You will need to identify all equipment to which LOLER applies and will need the assistance of a competent person to devise an examination scheme in terms of scope and frequency of examination for each item of equipment.

327 Examples of equipment that is likely to require a thorough examination includes cranes, fork-lift trucks, MEWPS, lifts, patient hoists and vehicle inspection hoists.

328 The examination scheme could refer to one particular piece of lifting equipment or alternatively it could apply to many similar items of equipment. For example, all the lifting accessories in a factory may be sufficiently similar in age and subjected to similar amounts of use to enable them to be thoroughly examined at the same frequency. This decision would need to be made by the competent person drawing up the examination scheme.

329 The competent person who draws up the examination scheme for a duty holder could also carry out the thorough examinations of the lifting equipment. However, the thorough examinations could be carried out by another person or persons provided that they are suitably knowledgeable and trained for the purpose.

330 The competent person will need to review periodically the time between thorough examinations taking into account the information provided by the employer (eg significant changes in the environment or type of lifting operation performed) as well as information arising from the results of the thorough examinations. Periods may need to be shortened in some circumstances.

331 In certain circumstances the competent person may decide to extend the periods between thorough examination that are specified in the examination scheme. This could happen where a history of thorough examinations at the original frequency specified in the scheme have revealed that defects or potential problems are highly unlikely to occur. Provided that the equipment continues to be used in the same way, the low level of risk may justify a longer period between thorough examinations. The examination scheme then needs to be revised accordingly.

Guidance 9**LOLER 98****Regulation 9(3) (b)**

332 Where your risk assessment under regulation 3 of the Management of Health and Safety at Work Regulations 1992* has identified a significant risk to the operator or other workers from the use of the lifting equipment, a suitable inspection should be carried out.

333 The frequency and extent of the inspections required will depend on the potential risk from the lifting equipment. The inspection should include, where appropriate, visual checks and functional tests.

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*Now the Management of Health and Safety at Work Regulations 1999.

334 You should ensure that the persons who determine the nature of the inspections required and who carry out the inspections are competent to do so.

335 You should carry out an inspection of lifting equipment where your risk assessment has identified risks to the operator or other workers which would be addressed by regularly inspecting it.

336 You should arrange for suitable inspections to be carried out where the lifting equipment is of a type where its safe operation is dependent on its condition in use and deterioration would lead to significant risks to the operator or other persons. In determining the suitability and scope of the inspection you should refer to available information such as the manufacturer's instructions. Examples of conditions which can be detected by inspection of the lifting equipment include:

- (a) rapid wear arising from use in an arduous environment, eg construction;
- (b) failure through repeated operation, eg of a hoist interlock;
- (c) malfunction, eg of a rated capacity indicator; and
- (d) tampering with safety devices, eg defeating an interlock.

337 Potential faults in many items are often easy to detect by inspection, particularly where are defects which can commonly occur during use of the equipment. An operator will often be able to identify faults and these should be reported so that repairs can be carried out.

338 Weekly inspections of lifting machinery will depend on the equipment and where and how it is used but could include, for a crane as an example, the correct operation of limiters and indicators, checking tyre pressures (if mobile equipment), checking that no components are missing, eg bolts, and that the controls work properly. Further recommendations on weekly inspections and daily checks for cranes are given in BS 7121. Other examples of lifting machinery which may require regular inspection are fork-lift trucks, hoists and automated stacking equipment. Lifting accessories such as chains or slings will not normally require an inspection as long as they receive a thorough examination at the appropriate interval and a proper pre-use check.

339 Further information on the purpose and extent of inspections and the qualities required of the competent person can be found in the guidance on PUWER.

Regulation 9(4)

340 Anyone using lifting equipment should be able to ascertain that it has been thoroughly examined and is likely to be safe to use. Thus it is important that when used outside its normal place of work the equipment is accompanied by appropriate evidence that this thorough examination has been carried out.

341 An 'undertaking' is the employer's business. If you transfer lifting equipment, either temporarily or permanently to another employer, you should ensure adequate evidence is transferred with it that the last thorough examination has been carried out. This would normally be a paper copy of the last examination report but may be, if it is more convenient, a copy of the report on computer disk or other electronic format.

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342 If you receive lifting equipment from another organisation you should obtain evidence of the last thorough examination carried out. Such evidence is not required by these regulations if you transfer equipment between different parts of your business, eg from site A to site B provided that the evidence is held centrally and available on request.

343 If you take your lifting equipment with you for use in another person's business, eg if you are a contractor carrying a sling or chain in your van, then you should have available with you evidence that it has been thoroughly examined as required by LOLER.

344 The information accompanying the equipment needs to include:

- (a) the name and address of the duty holder for whom the thorough examination was made;
- (b) the address of the premises at which the thorough examination was made;
- (c) sufficient information to identify the equipment;
- (d) the date of the last thorough examination;
- (e) the date when the next thorough examination is due; and
- (f) the safe working load of the equipment or (where its safe working load depends on the configuration of the equipment) its safe working load for each configuration of equipment.

Regulation 10

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Regulation 10

Reports and defects

(1) *A person making a thorough examination for an employer under regulation 9 shall -*

- (a) *notify the employer forthwith of any defect in the lifting equipment which in his opinion is or could become a danger to persons;*
 - (b) *as soon as is practicable make a report of the thorough examination in writing authenticated by him or on his behalf by signature or equally secure means and containing the information specified in Schedule 1 to -*
 - (i) *the employer; and*
 - (ii) *any person from whom the equipment has been hired or leased;*
 - (c) *where there is in his opinion a defect in the lifting equipment involving an existing or imminent risk of serious personal injury, send a copy of the report as soon as is practicable to the relevant enforcing authority.*
- (2) *A person making an inspection for an employer under regulation 9 shall -*
- (a) *notify the employer forthwith of any defect in the lifting equipment which in his opinion is or could become a danger to persons;*
 - (b) *as soon as is practicable make a record of the inspection in writing.*

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(3) Every employer who has been notified under paragraph (1) shall ensure that the lifting equipment is not used -

- (a) before the defect is rectified; or
- (b) in a case to which sub-paragraph (c) of paragraph 8 of Schedule 1 applies, after a time specified under that sub-paragraph and before the defect is rectified.

(4) In this regulation "relevant enforcing authority" means -

- (a) where the defective equipment has been hired or leased by the employer, the Executive; and
- (b) otherwise, the enforcing authority for the premises in which the defective equipment was thoroughly examined.

Regulation 10

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345 Where the competent person identifies defects which need to be made good within a specified timescale, they should submit the report promptly to allow the employer to take the necessary action within the required period.

ACOP 10

346 In normal circumstances the competent person should complete the report and forward it within 28 days of the thorough examination.

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347 Defects which are commonly noted as being potentially hazardous include cracks and permanent deformation, corrosion of vital parts, excessive wear or failure of moving parts (eg interlocks) and significant misalignment. Example of defects which should be identified in common items of lifting accessories include:

- (a) textile slings - damaged, cut, abraded or stretched;
- (b) chains - deformed or stretched links, cracks; and
- (c) wire ropes - broken wires, kinks.

348 The competent person should make a report of the state of the equipment at the time of the thorough examination. Defects should be notified even if there is no intention to use the equipment again (such as when it is immediately scrapped) or not immediately to do so (eg equipment taken out of use until repairs can be carried out). The duty applies even where repairs are carried out immediately. In all cases the competent person should make a report on the condition of the equipment which necessitates the repairs.

Guidance 10

349 Competent persons' reports are a vital diagnostic aid to the safe management of lifting equipment. Defects which are habitually not detected or rectified until the competent person's thorough examination are indicative of inadequacies in management systems. A competent person who fails to report a defect, simply because it has been remedied on the spot, is disguising a potentially dangerous situation.

350 The employer should be notified as soon as possible of those serious and significant defects which the competent person considers are, or could soon become, dangerous to any person operating the equipment or working in the vicinity of it. The word 'forthwith' is intended to ensure that the competent person notifies the employer and/or the person in control of the lifting operation immediately so that appropriate action can be taken to repair or

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Guidance 10

Regulation 11

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Regulation 11

replace the equipment or otherwise ensure that potentially dangerous equipment is withdrawn from use as soon as possible.

351 In certain situations the competent person is required to send a report of the examination to the relevant enforcing authority. This applies where there is in his or her opinion a defect in the lifting equipment involving an existing or imminent risk of serious personal injury. This requirement is limited to those cases where there would be a risk of SERIOUS personal injury arising from failure of the equipment should anyone attempt to use it. Furthermore, such a failure is likely to be imminent, meaning that it may happen at any moment within a reasonably short time of the equipment being used again. An example of such a defect would be a structurally damaged jib on a crane.

352 The competent person should report a defect of this sort by sending a copy of the report to the relevant enforcing authority, ie the Health and Safety Executive or the Environmental Health Department of the Local Authority. Such reports would normally be restricted to the actual lifting machine. However, a severely damaged chain which is close to failure and is still being used should also be reported. Lesser defects in lifting accessories should be reported to the employer controlling their use.

353 After completing the thorough examination the competent person should formally report his findings in writing to the employer controlling the use of the equipment and also, where appropriate, the person from whom the equipment has been hired or leased.

354 The words 'as soon as practicable' are intended to ensure that there is no unnecessary delay between the thorough examination being carried out and the receipt by the employer of the thorough examination report. It would not be reasonable to expect all reports to be completed within the same time period, this depends on the complexity of the lifting equipment being thoroughly examined.

355 The report should contain the information detailed in Schedule 1 of LOLER and can be provided in writing, electronically or on computer disk but it must be in a form which is usable to the employer in fulfilling his or her duties to act on the information it contains.

Keeping of information

(1) *Where, after the coming into force of these Regulations, an employer obtaining lifting equipment to which these Regulations apply receives an EC declaration of conformity relating to it, he shall keep the declaration for so long as he operates the lifting equipment.*

- (2) *The employer shall ensure that the information contained in -*
- (a) every report made to him under regulation 10(1) (b) is kept available for inspection -*
 - (i) in the case of a thorough examination under paragraph (1) of regulation 9 of lifting equipment other than an accessory for lifting, until he ceases to use the lifting equipment;*
 - (ii) in the case of a thorough examination under paragraph (1) of regulation 9 of an accessory for lifting, for two years after the report is made;*

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Regulation 11

(iii) in the case of a thorough examination under paragraph (2) of regulation 9, until he ceases to use the lifting equipment at the place it was installed or assembled;

(iv) in the case of a thorough examination under paragraph (3) of regulation 9, until the next report is made under that paragraph or the expiration of two years, whichever is later;

(b) every record made under regulation 10(2) is kept available until the next such report is made.

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Guidance 11

356 Reports of thorough examinations and other documents (such as a Declaration of Conformity and the current record of inspection) should be readily available to inspectors from the relevant enforcing authority should they request to see them.

357 This information may be kept in hard copy form, stored electronically or on computer disk. If a computer system is used to keep this information then it needs to be protected from unauthorised alteration. The system should be able to provide a written copy when necessary.

358 The information, or copies, should normally be stored at the premises where the lifting equipment is being used. However, in circumstances where this is not possible, due to space constraints or for security reasons, then it can be stored elsewhere provided that it is readily accessible.

359 Reports and records may be kept for longer periods if the information they contain assists in identifying repeated defects or indicating trends, eg of wear or damage. Periodic review of this information should be part of the management arrangements for controlling the lifting equipment.

Regulation 12

Exemptions for the armed forces

LOLER 98

Regulation 12

(1) The Secretary of State for Defence may, in the interests of national security, by a certificate in writing exempt any of the home forces, any visiting force or any headquarters from any of the requirements of these Regulations and any such exemption may be granted subject to conditions and to a limit of time and may be revoked by the said Secretary of State by a certificate in writing at any time.

(2) In this regulation -

(a) "the home forces" has the same meaning as in section 12(1) of the Visiting Forces Act 1952;^(a)

(b) "headquarters" has the same meaning as in article 3(2) of the Visiting Forces and International Headquarters (Application of Law) Order 1965;^(b)

(c) "visiting force" has the same meaning as it does for the purposes of any provision of Part I of the Visiting Forces Act 1952.

(a) 1952 c. 67.

(b) S.I. 1965/1536, to which there are amendments not relevant to these Regulations.

Regulation 13

Amendment of the Shipbuilding and Ship-repairing Regulations 1960

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Regulation 13

Regulation 2 (application) of the Shipbuilding and Ship-repairing Regulations 1960 is amended -

- (a) *in paragraph (2) by substituting for the word "31" wherever occurring the word "48"; and*
- (b) *in paragraph (4) by omitting the word "32".*

Regulation 14

Amendment of the Docks Regulations 1988

LOLER 98

Regulation 14

The Docks Regulations 1988^(a) are amended -

- (a) *in regulation 13(4) by substituting the words "thorough examination under regulation 9 of the Lifting Operations and Lifting Equipment Regulations 1998" for the words "test under regulation 14";*
- (b) *by revoking regulations 14 and 15;*
- (c) *by revoking paragraphs (3), (4), (5), (7) and (8) of regulation 16; and*
- (d) *by revoking regulation 17.*

(a) *S.I. 1988/1655, amended by S.I. 1992/3073, 1992/195.*

Regulation 15

Repeal of Provisions of the Factories Act 1961

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Regulation 15

Sections 22, 23 and 25 to 27 of the Factories Act 1961^(a) are repealed.

(a) *1961 c.34.*

Regulation 16

Repeal of Section 85 of the Mines and Quarries Act 1954

LOLER 98

Regulation 16

Section 85 of the Mines and Quarries Act 1954^(a) is repealed.

(a) *(b) 1954 c. 70.*

Regulation 17

Revocations of instruments

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Regulation 17

The instruments specified in column 1 of Schedule 2 are hereby revoked to the extent specified in column 3 of that Schedule.

Schedule 1

Information to be contained in a report of a thorough examination

Schedule

Regulation 10(1)

1. *The name and address of the employer for whom the thorough examination was made.*
2. *The address of the premises at which the thorough examination was made.*
3. *Particulars sufficient to identify the equipment including where known its date of manufacture.*
4. *The date of the last thorough examination.*
5. *The safe working load of the lifting equipment or (where its safe working load depends on the configuration of the lifting equipment) its safe working load for the last configuration in which it was thoroughly examined.*
6. *In relation to the first thorough examination of lifting equipment after installation or after assembly at a new site or in a new location -*
 - (a) *that it is such thorough examination;*
 - (b) *(if such be the case) that it has been installed correctly and would be safe to operate.*
7. *In relation to a thorough examination of lifting equipment other than a thorough examination to which paragraph 6 relates -*
 - (a) *whether it is a thorough examination -*
 - (i) *within an interval of 6 months under regulation 9(3) (a) (i);*
 - (ii) *within an interval of 12 months under regulation 9(3) (a) (ii);*
 - (iii) *in accordance with an examination scheme under regulation 9(3) (a) (iii); or*
 - (iv) *after the occurrence of exceptional circumstances under regulation 9(3)(a)(iv);*
 - (b) *(if such be the case) that the lifting equipment would be safe to operate.*
8. *In relation to every thorough examination of lifting equipment -*
 - (a) *identification of any part found to have a defect which is or could become a danger to persons, and a description of the defect;*
 - (b) *particulars of any repair, renewal or alteration required to remedy a defect found to be a danger to persons;*
 - (c) *in the case of a defect which is not yet but could become a danger to persons -*
 - (i) *the time by which it could become such a danger;*
 - (ii) *particulars of any repair, renewal or alteration required to remedy it;*

Schedule

1

(d) *the latest date by which the next thorough examination must be carried out;*

(e) *where the thorough examination included testing, particulars of any test;*

(f) *the date of the thorough examination.*

9. *The name, address and qualifications of the person making the report; that he is self-employed or, if employed, the name and address of his employer.*

10. *The name and address of a person signing or authenticating the report on behalf of its author.*

11. *The date of the report.*

Schedule 2

Revocation of instruments

Schedule	Regulation 17		
	<i>(1) Title</i>	<i>(2) Reference</i>	<i>(3) Extent of revocation</i>
	The Quarries (General) Regulations 1956	SI 1956/1780	Regulations 13 and 14.
	The Quarries (Ropeways and Vehicles) Regulations 1958	SI 1958/2110	The whole Regulations.
	The Shipbuilding and Ship-repairing Regulations 1960	SI 1960/1932	In regulation 3 the definitions of "lifting appliance" and "lifting gear"; regulations 21 and 31 to 47.
	The Shipbuilding (Particulars of Annealing) Order 1961	SI 1961/117	The whole order.
	The Shipbuilding (Lifting Appliances, etc, Forms) Order 1961	SI 1961/431	The whole order.
	The Construction (Lifting Operations) Regulations 1961	SI 1961/1581	The whole Regulations.
	The Construction (Lifting Operations) Reports Order 1962	SI 1962/225	The whole order.
	The Construction (Lifting Operations) Prescribed Particulars Order 1962	SI 1962/226	The whole order.
	The Hoists Exemption Order 1962	SI 1962/715	The whole order.
	The Hoists Exemption (Amendment) Order 1967	SI 1967/759	The whole order.
	The Offices, Shops and Railway Premises (Hoists and Lifts) Regulations 1968	SI 1968/849	The whole Regulations.
	The Offshore Installations (Operational Safety, Health and Welfare) Regulations 1976	SI 1976/1019	The whole Regulations.
	The Hoists and Lifts (Metrication) Regulations 1983	SI 1983/1579	The whole Regulations.
2	The Construction (Metrication) Regulations 1984	SI 1984/1593	The whole Regulations.

Schedule	<i>(1) Title</i>	<i>(2) Reference</i>	<i>(3) Extent of revocation</i>
	The Health and Safety (Miscellaneous Modifications) Regulations 1989	SI 1989/1141	The whole Regulations.
	The Lifting Plant and Equipment (Records of Test and Examination etc) Regulations 1992	SI 1992/195	The whole Regulations.
2	The Construction (Health, Safety and Welfare) Regulations 1996	SI 1996/1592	Paragraph 3 of Schedule 9.

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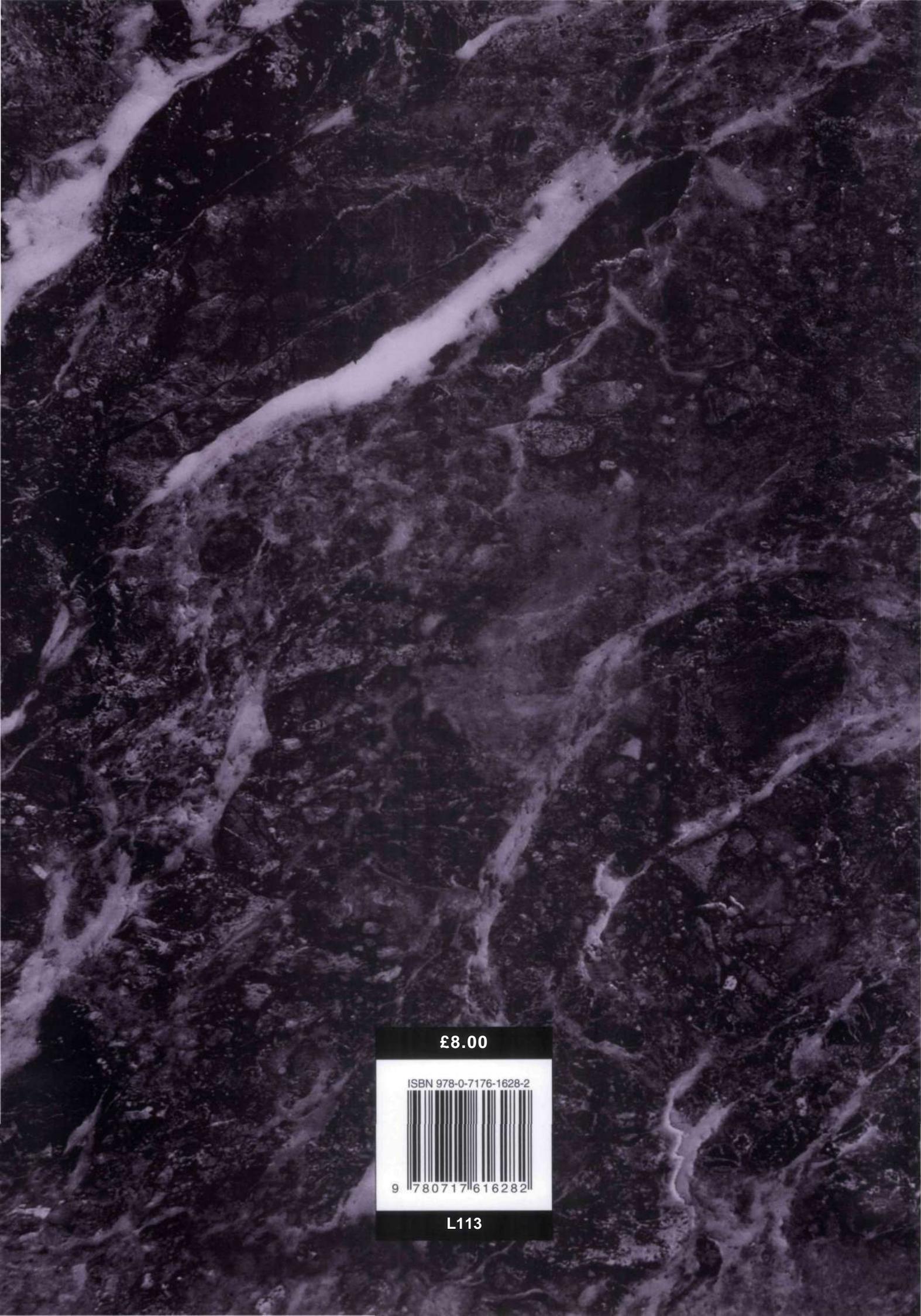


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