

# Manual handling

## Manual Handling Operations Regulations 1992

### Guidance on Regulations



**L23 (Fourth edition)**  
**Published 2016**

This guidance aims to help employers comply with the Manual Handling Operations Regulations 1992, as amended by the Health and Safety (Miscellaneous Amendments) Regulations 2002.

It will help employers – and managers, safety representatives and employees – to control and reduce the risk of injury from manual handling.

The fourth edition has been simplified and restructured, with the regulations and guidance in Part 1 and more detailed guidance to assist in carrying out risk assessments and control risks in Parts 2–4. The risk filter which helps to identify those tasks that do not require a detailed assessment (formerly in Appendix 3 of the third edition) has been adapted so that HSE's assessment tools can be used as part of the risk assessment process. The full risk assessment checklists are now online.

Regulation 2 has been changed to reflect an amendment to section 3(2) of the Health and Safety at Work etc Act 1974 relating to the self-employed.

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### **Guidance**

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, 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.

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## Introduction

### About this book

1 This publication will help you, as an employer, comply with the Manual Handling Operations Regulations 1992 (the Regulations), as amended by the Health and Safety (Miscellaneous Amendments) Regulations 2002.<sup>1</sup> If you follow the guidance it will help you manage, control and reduce the risk of injury from manual handling. It will also be useful to managers, safety representatives, employees and others. For those who need less detail, HSE's leaflet *Manual handling at work: A brief guide*<sup>2</sup> provides a short guide to the Regulations and what employers need to do to comply with them.

2 The Regulations originally came into force on 1 January 1993 and were made under the Health and Safety at Work etc Act 1974 (the HSW Act).<sup>3</sup> They:

- implement into UK law European Directive 90/269/EEC<sup>4</sup> on the manual handling of loads;
- supplement the general duties placed on employers and others by the HSW Act;
- supplement the broad requirements of the Management of Health and Safety at Work Regulations 1999 (the Management Regulations).<sup>5</sup>

3 The Regulations apply to manual handling activities involving the transporting or supporting of loads, including lifting, lowering, pushing, pulling, carrying or moving loads. A load may be either inanimate, for example a box or a trolley, or animate, for example a person or an animal. The risks from manual handling can be found across all kinds of workplaces – on farms and building sites, in factories, offices, warehouses, hospitals, banks, laboratories and while making deliveries.

### Summary of changes

4 The main changes in this fourth edition are:

- The text has been simplified and brings the Regulations and brief guidance on them together in Part 1. More detailed guidance which helps you carry out risk assessments and control risks is in Parts 2–4.
- Regulation 2 has been changed to reflect an amendment to section 3(2) of the Health and Safety at Work etc Act 1974 relating to the self-employed.
- The risk filter which helps to identify those tasks that do not require a detailed assessment (formerly in Appendix 3 in the third edition) has been adapted so that the *Manual handling assessment charts (the MAC tool)*<sup>6</sup> and the *Risk assessment of pushing and pulling (RAPP) tool*<sup>7</sup> can be used as part of the risk assessment process.
- The 'Full risk assessment checklists'<sup>8</sup> (formerly in Appendix 4 in the third edition) are now online.
- The main messages about the actions employers and workers should take to eliminate or control risks have altered very little since the third edition.

5 The Regulations are set out in *italics* and the accompanying guidance is in normal type. Coloured tabs also indicate each section clearly.

- **PART 1 Manual Handling Operations Regulations 1992: Legal duties** has blue tabs and includes the text of the Regulations and accompanying guidance.
- **PART 2 Carrying out a manual handling risk assessment** has red tabs and includes general guidance on how to carry out a manual handling risk assessment.
- **PART 3 Assessing and reducing manual handling risks** has green tabs and includes extra information on what to look for when making risk assessments of manual handling activities.
- **PART 4 Mechanical assistance and good handling technique** has orange tabs and includes examples of handling aids and advice on good handling technique.
- **APPENDIX How to choose the right level of detail for your manual handling risk assessments** has purple tabs and includes ways to help you choose how detailed your manual handling assessments should be.

## Background

6 Manual handling injuries are part of a wider group of musculoskeletal disorders (MSDs). The term 'musculoskeletal disorders' covers any injury, damage or disorder of the joints or other tissues in the upper/lower limbs or the back. Some MSDs are caused by work activities but some are caused by activities outside work or may be the result of illnesses or diseases unrelated to work. How much a person is affected by MSDs varies widely. Some people are able to continue normal activities but more severely affected people may need adjustments to their workplace to help them continue to work or may need to take time off work to recover. Many episodes of MSD pain get better quite quickly. Look at HSE's web page 'Musculoskeletal disorders'<sup>9</sup> for more information.

7 The Labour Force Survey (LFS) estimates that work-related MSDs, including those caused by manual handling, account for around 40% of all work-related ill health. Find more information on HSE's web page 'Work-related MSD statistics' at [www.hse.gov.uk/statistics/causdis/musculoskeletal/](http://www.hse.gov.uk/statistics/causdis/musculoskeletal/).

8 There is evidence that, as well as manual handling, heavy manual labour, awkward postures and a recent or existing injury are all risk factors in the development of work-related MSDs. There are things you can do to prevent or minimise MSDs, however you cannot prevent them all. To help reduce the risk of manual handling injuries in your workplace:

- comply with the Regulations and guidance;
- review risk assessments when necessary;
- encourage early reporting of symptoms;
- ensure any cases of manual handling injury are managed effectively;
- consult and involve the workforce and their representatives. They know the risks and can offer solutions to control them.

## What do the Manual Handling Operations Regulations require?

9 The Regulations require employers to:

- **avoid** the need for hazardous manual handling, 'so far as is reasonably practicable';
- **assess** the risk of injury from any hazardous manual handling that can't be avoided;
- **reduce** the risk of injury from hazardous manual handling, 'so far as is reasonably practicable'.

10 'Reasonably practicable' means balancing the level of risk against the measures needed to control the real risk in terms of money, time or trouble. However, you do not need to take action if it would be grossly disproportionate to the level of risk. See paragraph 32 for information about how it relates to employers' duties and manual handling.

11 Do not consider the Regulations in isolation. Also look at regulation 3(1) of the Management Regulations which requires employers to make a suitable and sufficient assessment of the risks to the health and safety of their employees while at work. Where your general assessment indicates the possibility of risks to employees from the manual handling of loads, you should comply with the requirements of the Manual Handling Operations Regulations. HSE provides information on general risk assessments on its 'Risk management' web pages.<sup>10</sup>

12 You should regard managing risk from manual handling operations as part of your ongoing responsibilities under the HSW Act for managing health and safety risks arising from your work activities. HSE's detailed guidance *Managing for health and safety*<sup>11</sup> and the introductory leaflet *Plan, Do, Check, Act: An introduction to managing for health and safety*<sup>12</sup> both explain how to apply the 'Plan, Do, Check, Act' approach to managing health and safety. This approach treats health and safety management as an integral part of good management.

13 **The Regulations do not set specific requirements such as weight limits.** While weight is an important factor, there are many other risk factors which you need to take into account. Where hazardous manual handling cannot be avoided, the Regulations require a risk assessment to determine the risk of manual handling injury and to help identify what remedial action is required. Medical and scientific knowledge stress the importance of an ergonomic approach to manual handling, taking into account the nature of the task, the load, the working environment and individual capability, and this approach requires worker participation. It is central to the European Directive on manual handling and to the Regulations.

14 Psychosocial risk factors also need to be taken into account. These are things that may affect workers' psychological response to their work and workplace conditions. Examples are high workloads, tight deadlines and lack of control of the work and working methods. See the guidance on Schedule 1 (paragraphs 138–143 in Part 3) for more information.

## Consult employees

15 You must consult all your employees, in good time, on health and safety matters. In workplaces where a trade union is recognised, this will be through union health and safety representatives. In non-unionised workplaces, you can consult either directly or through other elected representatives. Consultation involves employers not only giving information to employees but also listening to them and

taking account of what they say before making health and safety decisions. Issues you should consult employees on include:

- risks arising from their work;
- proposals to manage and/or control these risks;
- the best ways of providing information and training.

16 Your employees will know what the manual handling risks in the workplace are and can probably offer practical solutions to controlling those risks. They can contribute by letting you know about any specific difficulties caused by, eg:

- the size, shape or weight of loads;
- how often loads are handled;
- the order in which the tasks are carried out;
- the environment in which the handling operations are carried out, eg:
  - any space constraints which make it difficult to manoeuvre the load;
  - unsuitable shelving/storage systems;
  - uneven flooring.

17 For further information on your legal duties see the HSE leaflet *Consulting employees on health and safety: A brief guide to the law*.<sup>13</sup> Also see HSE's 'Worker involvement' web pages for more information on consulting your employees at [www.hse.gov.uk/involvement](http://www.hse.gov.uk/involvement).

## Risk assessment filters

18 Where it is not possible to avoid a manual handling operation, employers have to assess any risks of injury to their employees. To enable assessment to be concentrated where it is most needed, the Appendix sets out ways to help you decide how detailed your manual handling assessments should be. These are:

- simple weight filters which assume that handling is infrequent, symmetrical and takes place in favourable working conditions;
- a more detailed assessment of the most common manual handling risk factors, carried out using tools such as HSE's MAC tool. You may choose to use other tools not published by HSE instead;
- a full risk assessment taking account of all the factors in Schedule 1 of the Regulations. This is needed when there are risk factors that the earlier stages do not address. HSE's website includes blank and example checklists<sup>8</sup> to help you do full assessments. As long as the assessment is 'suitable and sufficient' you do not need to use HSE's checklists – you can use other methods to suit your own circumstances. **If you are unsure about the level of detail required, then carry out a full risk assessment.**

19 Where a risk assessment identifies that a task may be harmful to a worker's upper limbs (hands, arms, shoulders) or neck, you may also find it helpful to look at the HSE leaflet *Managing upper limb disorders in the workplace*<sup>14</sup> and the more detailed guidance *Upper limb disorders in the workplace*.<sup>15</sup> You may also find HSE's *Assessment of repetitive tasks of the upper limbs (the ART tool)*<sup>16</sup> useful to help you assess risks to the upper limbs. For information on how to manage back pain in the workplace look at 'Back pain' on HSE's 'Musculoskeletal disorders' web pages<sup>9</sup> and *The back book*.<sup>17</sup>



## PART 1 Manual Handling Operations Regulations 1992: Legal duties

### Regulation 1 Citation and commencement

#### Regulation 1

*These Regulations may be cited as the Manual Handling Operations Regulations 1992 and shall come into force on 1st January 1993.*

### Regulation 2 Interpretation

#### Regulation 2

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

*“injury” does not include injury caused by any toxic or corrosive substance which –*

- (a) *has leaked or spilled from a load;*
- (b) *is present on the surface of a load but has not leaked or spilled from it;*  
*or*
- (c) *is a constituent part of a load;*

*and “injured” shall be construed accordingly;*

*“load” includes any person and any animal;*

*“manual handling operations” means any transporting or supporting of a load (including the lifting, putting down, pushing, pulling, carrying or moving thereof) by hand or by bodily force.*

#### Guidance 2

### Definitions of certain terms

#### **Injury**

20 The main aim of the Regulations is to prevent injury, not only to the back, but to any part of the body. They require employers to take into account the whole handling operation, including the external physical properties of loads which might either affect grip or cause direct injury, for example slipperiness, roughness, sharp edges and extremes of temperature.

21 Hazards which result from any toxic or corrosive properties of the load are not covered by these Regulations. Those which result from spillage or leakage are likely to be subject to the Control of Substances Hazardous to Health Regulations 2002 (COSHH).<sup>18</sup> For example, the presence of oil on the surface of a load is relevant to the Regulations if it makes the load slippery to handle, but the risk of dermatitis from contact with the oil is dealt with by COSHH.

#### **Load**

22 A load in this context must be a discrete movable object. This includes, for example, not only packages and boxes but also a patient being lifted, an animal being moved during veterinary treatment, and material supported on a shovel or

**Guidance 2**

fork. An implement, tool or machine, such as a chainsaw, fire hose or breathing apparatus, is not considered to be a load when in use for its intended purpose.

**Manual handling operations**

23 The Regulations apply to the manual handling of loads. That means human effort is involved rather than mechanical handling by devices such as cranes or lift trucks. Using a mechanical aid, such as a sack truck or a powered hoist, may reduce but not eliminate manual handling as human effort is still required to move the mechanical aid, or to steady or position the load on the aid.

24 Manual handling includes both transporting a load and supporting a load in a static posture. The load may be moved or supported by the hands or any other part of the body, for example the shoulder. Manual handling also includes the deliberate dropping or throwing of a load, whether into a container or from one person to another.

25 Using human effort for a purpose other than to transport or support a load is not a manual handling operation. For example, neither using a spanner to loosen a bolt nor lifting a control lever on a machine are manual handling.

**Regulation 2**

(2) *Any duty imposed by these Regulations on an employer in respect of his employees shall also be imposed on a relevant self-employed person in respect of himself.*

(3) *For the purposes of paragraph (2) "relevant self-employed person" means a self-employed person who conducts an undertaking of a prescribed description for the purposes of section 3(2) of the Health and Safety at Work etc. Act 1974.*

**Guidance 2**

**Duties of the self-employed**

26 Regulation 2(2) and (3) makes the 'relevant self-employed'\* responsible for their own safety during manual handling. They should take the same steps to safeguard themselves as employers must to protect their employees, in similar circumstances. However, employers may be responsible for the health and safety of someone who is self-employed for tax and National Insurance purposes but who works under their control and direction. Look at HSE's web page 'Self-employed – do I have duties?' for more information at [www.hse.gov.uk/self-employed/](http://www.hse.gov.uk/self-employed/).

**Those self-employed for tax/National Insurance purposes**

27 Being self-employed for tax purposes may not mean you are self-employed for health and safety law purposes. Make sure you know your status and the status of those working for you. You may need to get legal advice if there is any doubt about who is responsible for the health and safety of these workers.

\* Reflects changes introduced by the Health and Safety at Work etc Act 1974 (General Duties of Self-Employed Persons)(Prescribed Undertakings) Regulations 2015 (SI 2015/1583) and the Deregulation Act 2015 (Health and Safety at Work)(General Duties of Self-Employed Persons) (Consequential Amendments) Order 2015 (SI 2015/1637) which both came into force on 1 October 2015. See 'Further information' on viewing legislation online.

## Regulation 3 Disapplication of Regulations

### Regulation 3

*These Regulations shall not apply to or in relation to the master or crew of a sea-going ship or to the employer of such persons in respect of the normal ship-board activities of a ship's crew under the direction of the master.*

### Guidance 3

#### Seagoing ships

28 Seagoing ships are subject to separate merchant shipping legislation administered by the Maritime and Coastguard Agency. The Regulations, therefore, do not apply to the normal shipboard activities of a ship's crew under the direction of the master. However, they may apply to other manual handling operations on board a ship, for example where a shore-based contractor carries out the work, provided the ship is within territorial waters. They also apply to certain activities carried out offshore (see regulation 7).

29 Masters do have duties under the HSW Act when ships' crew work alongside shore-based personnel on the ship, or when ships' plant is used ashore. In these instances, good co-operation and co-ordination between shipside and landside employers is necessary. Further guidance on the importance of co-operation in the docks industry can be found in *Safety in docks: Approved Code of Practice and guidance*.<sup>19</sup>

## Regulation 4 Duties of employers

### Guidance 4

30 Regulation 4 is reproduced in full here and repeated in separate sections later with accompanying guidance.

### Regulation 4

- (1) *Each employer shall –*
- (a) *so far as is reasonably practicable, avoid the need for his employees to undertake any manual handling operations at work which involve a risk of their being injured; or*
  - (b) *where it is not reasonably practicable to avoid the need for his employees to undertake any manual handling operations at work which involve a risk of their being injured –*
    - (i) *make a suitable and sufficient assessment of all such manual handling operations to be undertaken by them, having regard to the factors which are specified in column 1 of Schedule 1 to these Regulations and considering the questions which are specified in the corresponding entry in column 2 of that Schedule,*
    - (ii) *take appropriate steps to reduce the risk of injury to those employees arising out of their undertaking any such manual handling operations to the lowest level reasonably practicable, and*
    - (iii) *take appropriate steps to provide any of those employees who are undertaking any such manual handling operations with general indications and, where it is reasonably practicable to do so, precise information on –*
      - (aa) *the weight of each load, and*
      - (bb) *the heaviest side of any load whose centre of gravity is not positioned centrally.*

(2) *Any assessment such as is referred to in paragraph (1)(b)(i) of this regulation shall be reviewed by the employer who made it if –*

**Regulation 4**

- (a) *there is reason to suspect that it is no longer valid; or*
- (b) *there has been a significant change in the manual handling operations to which it relates;*

*and where as a result of any such review changes to an assessment are required, the relevant employer shall make them.*

(3) *In determining for the purposes of this regulation whether manual handling operations at work involve a risk of injury and in determining the appropriate steps to reduce that risk regard shall be had in particular to –*

- (a) *the physical suitability of the employee to carry out the operations;*
- (b) *the clothing, footwear or other personal effects he is wearing;*
- (c) *his knowledge and training;*
- (d) *the results of any relevant risk assessment carried out pursuant to regulation 3 of the Management of Health and Safety at Work Regulations 1999;*
- (e) *whether the employee is within a group of employees identified by that assessment as being especially at risk; and*
- (f) *the results of any health surveillance provided pursuant to regulation 6 of the Management of Health and Safety at Work Regulations 1999.*

**Guidance 4(1)**

31 The hierarchy of measures in regulation 4(1) must be followed to reduce the risks from manual handling:

- Avoid hazardous manual handling operations ‘so far as is reasonably practicable’, by redesigning the task to avoid moving the load or by automating or mechanising the process.
- Make a suitable and sufficient assessment of the risk of injury from any hazardous manual handling operations that cannot be avoided.
- Reduce the risk of injury from those operations ‘so far as is reasonably practicable’. Where possible, provide mechanical assistance, for example a sack trolley or hoist. Where this is not reasonably practicable, explore changes to the task, the load and the working environment.

**Employer’s duties: What is ‘reasonably practicable’?**

32 The extent of the employer’s duty to avoid manual handling or to reduce the risk of injury is determined by what is ‘reasonably practicable’, as explained in paragraph 10. This means balancing the level of risk against the measures needed to control the risk in terms of money, time or trouble. However, you do not need to take action if it would be grossly disproportionate to the level of risk. For example, you may find that the most expensive option is not reasonably practicable, but that the cheaper option is a viable and safe alternative. Each manual handling task needs to be assessed separately, as a solution which may not be reasonably practicable in one part of the workplace (eg because of low throughput) may well be reasonably practicable in another, busier, part.

***Application to the emergency services***

33 The above approach is fully applicable to the work of the emergency services. Ultimately, the result of prohibiting all potentially hazardous manual handling operations would be an inability to provide the general public with an adequate rescue service and what is ‘reasonably practicable’ may not be easy to ascertain in an emergency situation. What is ‘reasonably practicable’ for a fire authority, for example, would need to take into account the wider context in which firefighters

**Guidance 4(1)**

operate, where any further preventive steps would make its emergency functions extremely difficult to perform. However, this does not mean that employees can be exposed to unacceptable risk of injury. When considering what is 'reasonably practicable', additional relevant factors may be:

- the emergency situation and the need for the lifting operation;
- a public authority's duties to the public and to the particular member of the public who needs help.

34 This approach is explored further in *Striking the balance between operational and health and safety duties in the Fire and Rescue Service*<sup>20</sup> and in paragraph 101.

**Regulation 4(1)(a)**

(1) Each employer shall –

- (a) so far as is reasonably practicable, avoid the need for his employees to undertake any manual handling operations at work which involve a risk of their being injured.

**Guidance 4(1)(a)**

**Avoiding manual handling**

35 If the general assessment carried out under regulation 3(1) of the Management Regulations indicates a possibility of injury from manual handling operations, first consider whether the manual handling operation can be avoided altogether. You may not need to assess the risk in great detail if the operations can easily be avoided or the appropriate steps to reduce any risk of injury to the lowest level reasonably practicable are obvious.

**Eliminating manual handling**

36 When trying to avoid manual handling the first questions to ask are whether the load(s) needs to be handled at all, or could the work be done in a different way? For example, can a process such as machining or wrapping be carried out without lifting the loads? Can a treatment be brought to a patient rather than taking the patient to the treatment?

**Automation or mechanisation**

37 If, 'so far as is reasonably practicable', handling the load cannot be avoided, then consider whether the operation(s) can be either automated or mechanised to eliminate the manual aspect of the handling.

38 Remember that introducing automation or mechanisation may create other risks. Automated plant will require maintenance and repair. Mechanisation, for example by the introduction of lift trucks or powered conveyors, may introduce different risks requiring extra precautions. Look at HSE's web pages 'Work equipment and machinery'<sup>21</sup> for more information.

39 The best time to make decisions on the use of mechanisation or automation is when plant or systems of work are being designed. Look at ways to handle raw materials to eliminate or reduce the need for manual handling, eg transfer powders or liquids from large containers and big bags by gravity feed or pneumatic transfer to avoid bag or container handling. Design the layout of the process to minimise the transfer of materials or the distance over which containers have to be moved. Also examine existing activities to look for ways of avoiding manual handling operations that involve a risk of injury. Improvements like these often bring additional benefits, for example greater efficiency and productivity, and reduced damage to loads. See Part 4 for examples of mechanical assistance.

### Regulation 4(1)(b)(i)

- (1) Each employer shall –
- (b) where it is not reasonably practicable to avoid the need for his employees to undertake any manual handling operations at work which involve a risk of their being injured –
- (i) make a suitable and sufficient assessment of all such manual handling operations to be undertaken by them, having regard to the factors which are specified in column 1 of Schedule 1 to these Regulations and considering the questions which are specified in the corresponding entry in column 2 of that Schedule,

### Guidance 4(1)(b)(i)

#### General advice on manual handling risk assessments

40 Your assessments are likely to be 'suitable and sufficient' as long as you have considered:

- all the types of manual handling operations your employees are required to carry out;
- relevant factors covered by regulation 4(3) and Schedule 1 to the Regulations.

41 HSE has produced several tools to help you assess the risks from manual handling: the initial risk filters in the Appendix, the MAC tool, the ART tool for assessing risks to the upper limbs, the Variable MAC tool (V-MAC)<sup>22</sup> for lifting operations where load weights or handling frequencies vary, the RAPP tool for pushing and pulling operations and online checklists<sup>8</sup> for full risk assessments.

42 For more information on assessing risks see Part 2 'Carrying out a manual handling risk assessment' and Part 3 'Assessing and reducing manual handling risks'.

### Regulation 4(1)(b)(ii)

- (ii) take appropriate steps to reduce the risk of injury to those employees arising out of their undertaking any such manual handling operations to the lowest level reasonably practicable, and

### Guidance 4(1)(b)(ii)

#### An ergonomic approach

43 You should use a structured, ergonomic approach to design the work system to eliminate hazardous manual handling or reduce the manual handling risks. While better job or workplace design may not eliminate manual handling injuries, the evidence is that they can greatly reduce them.

44 When looking at an individual operation, consider in turn the **task**, the **load**, the **working environment** and **individual capability** as well as **other factors** and the relationship between them. Try to fit the operations to the individual, rather than the other way round. See regulation 4(3) and its guidance (paragraphs 57–83) and Part 3 for more information.

45 How much emphasis you give to each of these factors may partly depend on the nature and circumstances of the manual handling operations. Manual handling operations carried out in circumstances which do not really change, eg in manufacturing processes, may mean that you could concentrate particularly on improving the task and working environment.

46 However, manual handling operations carried out in circumstances which change continually, eg certain activities carried out on construction sites or in

## Guidance 4(1)(b)(ii)

delivery jobs, may offer less scope for improvement of the working environment and perhaps the task. You could then give more attention to the load, for example can it be made lighter or easier to handle?

47 For varied work of this kind, including much of the work of the emergency services and the healthcare sector, effective training is especially important. It should enable employees to recognise potentially hazardous handling operations, give them a clear understanding of why they should avoid or modify such operations where possible, make full use of appropriate equipment and apply good handling technique.

### **Work away from the employer's premises**

48 Establish a safe system of work for employees who carry out manual handling operations away from your premises, eg delivering goods or providing personal care, in situations where you have more limited control. The Management Regulations require you to co-operate so far as is necessary with those in control of the premises where your employees are working, and to take all reasonable steps to co-ordinate and communicate with them to plan how the work can be done safely.

49 You may need to carry out joint risk assessments with the other employers and agree who will implement appropriate control measures. Even where the working environment is under the control of another employer, the task, the load and the provision of suitable handling aids and training in their use may be within your control.

50 Employers and others in charge of premises where visiting employees work also have duties towards those employees, particularly under sections 3 or 4 of the HSW Act and the Workplace (Health, Safety and Welfare) Regulations 1992.<sup>23</sup> For example, they need to make sure that the premises and plant provided are in a safe condition.

### **Temporary/agency workers**

51 If you use temporary workers, you must provide the same level of health and safety protection for them as you do for employees. See the 'Agency/temporary workers' section of 'The health and safety toolbox' web pages<sup>24</sup> on HSE's website for more information.

### **'Appropriate' steps**

52 The steps taken to reduce the risk of injury should be 'appropriate' and address the problem in a practical and effective way. It is not sufficient simply to make changes and then hope that the problem has been dealt with. Check that the changes have actually been implemented and monitor their effect to check they are having the desired result. Discuss the changes with the handlers, or regularly check accident and ill-health data and their causes. If they do not have the desired result, reassess the situation.

## Regulation 4(1)(b)(iii)

- (iii) *take appropriate steps to provide any of those employees who are undertaking any such manual handling operations with general indications and, where it is reasonably practicable to do so, precise information on –*
- (aa) *the weight of each load, and*
  - (bb) *the heaviest side of any load whose centre of gravity is not positioned centrally.*



**Guidance 4(1)(b)(iii)**

**Information on the load**

53 Regulation 4(1)(b)(iii) requires you to take appropriate steps to provide general indications and, where it is reasonably practicable to do so, precise information on the weight of each load, and the heaviest side of any load whose centre of gravity is not positioned centrally. See 'Manual handling/Labelling of loads' on HSE's MSD web pages<sup>9</sup> for more information.

54 The requirement to provide 'general indications' of the weight and nature of the loads to be handled should form part of any job induction or basic training, so that employees have sufficient information to carry out the operations they are likely to be asked to do. Training should also cover practical techniques handlers can use to assess the weight of unfamiliar loads, such as rocking the load from side to side before attempting to lift it (see paragraphs 65–71 for more information on training).

55 The Regulations impose duties on you when your employees carry out manual handling. However, if you manufacture or supply loads that are likely to be handled manually by other people at work, who are not your employees, you may also have duties to protect their health and safety under sections 3 or 6 of the HSW Act.

**Regulation 4(2)**

(2) *Any assessment such as is referred to in paragraph (1)(b)(i) of this regulation shall be reviewed by the employer who made it if –*

- (a) *there is reason to suspect that it is no longer valid; or*
- (b) *there has been a significant change in the manual handling operations to which it relates;*

*and where as a result of any such review changes to an assessment are required, the relevant employer shall make them.*

**Guidance 4(2)**

**Review the assessment**

56 The assessment should be kept up to date and reviewed if new information comes to light or if there has been a significant change in the manual handling operations. It should also be reviewed if, for example, there is an accident/incident or a case of ill health as a result of manual handling operations.

**Physical suitability of the employee**

**Regulation 4(3)**

(3) *In determining for the purposes of this regulation whether manual handling operations at work involve a risk of injury and in determining the appropriate steps to reduce that risk regard shall be had in particular to:*

- (a) *the physical suitability of the employee to carry out the operations;*

**Guidance 4(3)(a)**

**Does the task require unusual strength, height etc?**

57 The ability to carry out manual handling safely varies widely between individuals. However, these variations are less important than the nature of the handling operations in causing manual handling injuries. You should consider the design of the task and the workplace as well as individual capability – assessments which concentrate on individual capability at the expense of task or workplace design are likely to be misleading. The risk of injury should generally be regarded as unacceptable if the manual handling operations cannot be performed satisfactorily by most reasonably fit, healthy employees. You should also be aware of your duties under the Equality Act<sup>25</sup> (see paragraph 79 for more information on disabled workers).



**Guidance 4(3)(a)**

58 In general, the strength of healthy women is less than that of healthy men. This relates to their body sizes and amounts of muscle being, on average, smaller than those of men. But for both men and women the range of individual strength and ability is large and there is considerable overlap – some women can safely handle greater loads than some men.

59 Physical capability also varies with age and tends to decline as part of the ageing process. However, there is considerable variation between individuals and you should not assume that certain jobs are physically too demanding for older workers. Also see paragraph 81 for more information on young workers and paragraph 83 for more information on older workers.

60 An employee’s manual handling capability can be affected by their health. For example take care when considering placing an individual with a history of back pain, particularly recent back pain, in a job which involves heavy manual handling. Making changes to reduce the physical demands of a heavy job can allow you to employ a wider range of individuals in it. Individuals should not be excluded from a job unless there is a good medical reason for restricting their activity.

61 You have responsibilities towards new and expectant mothers under the Management Regulations. If their role involves manual handling, their capabilities may be affected by hormonal or physical changes. See paragraphs 76–78 for more information.

62 Consider the nature of the work when deciding whether the physical demands imposed by manual handling operations should be regarded as ‘unusual’ (see Schedule 1 to the Regulations paragraph 4). For example, demands that would be considered unusual for a group of employees engaged in office work might not be out of the ordinary for those normally involved in heavy physical labour. There is often an element of self-selection for jobs that are relatively demanding physically.

**Clothing, footwear or other personal effects**

**Regulation 4(3)(b)**

(3) *In determining for the purposes of this regulation whether manual handling operations at work involve a risk of injury and in determining the appropriate steps to reduce that risk regard shall be had in particular to:*

(b) *the clothing, footwear or other personal effects he is wearing;*

**Guidance 4(3)(b)**

***Is movement or posture hindered by personal protective equipment or other clothing?***

63 When designing a task, take account of any restrictions on the handler’s movement caused by wearing personal protective equipment (PPE). Also see HSE’s guidance on the Personal Protective Equipment at Work Regulations 1992<sup>26</sup> and the PPE section of ‘The health and safety toolbox’ web pages on HSE’s website.<sup>24</sup> PPE should be used only as a last resort, when engineering or other controls do not provide adequate protection against hazards that cannot be controlled. If wearing PPE cannot be avoided, consider any implications for the risk of manual handling injury. For example, gloves may make gripping difficult and the weight of gas cylinders used with breathing apparatus will increase the stresses on the body. Some clothing, such as a uniform, may restrict movement during manual handling.

64 However, where PPE is necessary, the protection it offers should not be compromised to make the manual handling operations easier. Alternative methods of handling may be necessary where the manual handling is likely to lead to risks from the contents of the load or from contamination on the outside of the load.

## Knowledge and training

### Regulation 4(3)(c)

(3) In determining for the purposes of this regulation whether manual handling operations at work involve a risk of injury and in determining the appropriate steps to reduce that risk regard shall be had in particular to:

(c) his knowledge and training;

### Guidance 4(3)(c)

#### **Is special information or training needed to enable the task to be done safely?**

65 Section 2 of the HSW Act and regulations 10 and 13 of the Management Regulations require you to provide your employees with health and safety information and training. You should supplement this, as necessary, with more specific information and training on manual handling injury risks and prevention as part of the steps to reduce risk required by regulation 4(1)(b)(ii) of the Regulations.

66 The risk of injury from a manual handling operation will be increased where workers do not have the information or training necessary to enable them to work safely. For example, you should make sure they know about any unusual characteristics of loads and understand clearly the system of work designed to ensure their safety during manual handling. It is essential that you instruct your employees in the safe ways to use any lifting and handling aids provided. Look at *Making the best use of lifting and handling aids*<sup>27</sup> for more information.

67 Employees and their representatives should be consulted when you are developing and implementing manual handling training and monitoring its effectiveness. If in-house personnel act as trainers, you should make suitable checks to ensure they have understood the information given to them and have reached an adequate level of competence. You should also check the competence of any external trainers you may use.

68 **Providing information and training alone will not ensure safe manual handling.** The first objective in reducing the risk of injury should always be to design the manual handling operations to be as safe as reasonably practicable. This will involve improving the task, the working environment and reducing the load weight, as appropriate.

#### **Manual handling training courses**

69 HSE does not publish prescriptive guidance on what a 'good' manual handling training course should include or how long it should last. However, in general, courses should be suitable for the individual, tasks and environment involved, use relevant examples, relate to what workers actually do and last long enough to cover all the relevant information. Such information is likely to include advice on:

- manual handling risk factors and how injuries can occur;
- how to carry out safe manual handling, including good handling technique;
- appropriate systems of work for the individual's task and environment;
- safe use of lifting and handling aids;
- practical work to allow the trainer to identify and put right anything the trainee is not doing safely.

70 You should establish a planned training programme to make sure all staff identified as requiring it receive basic training, as well as updates when necessary. This should also cover new starters to ensure training takes place either before or as close to starting a new job as possible. You could also monitor sickness absence and near-miss reporting as one way to assess how effective the training

**Guidance 4(3)(d)**

has been. Keeping records to show, for example, who has been trained, when the training was carried out and what the content of the course was, will help you manage your training programme and identify when refresher training might be needed.

71 Make sure your supervisors and other more senior staff are also aware of the practices that have been taught to the workers for whom they are responsible. They should encourage the workforce to adopt appropriate techniques and ensure they continue to be used. Also see Part 4 'Mechanical assistance and good handling technique'.

**The results of any risk assessment**

**Regulation 4(3)(d)**

(3) *In determining for the purposes of this regulation whether manual handling operations at work involve a risk of injury and in determining the appropriate steps to reduce that risk regard shall be had in particular to:*

(d) *the results of any relevant risk assessment carried out pursuant to regulation 3 of the Management of Health and Safety at Work Regulations 1999;*

**Guidance 4(3)(d)**

72 When you are deciding if there is a risk of injury, you must take account of the results of any relevant risk assessments under the Management Regulations. Relevant findings might include, for example:

- increased risks to young workers, people new to the job, or new and expectant mothers;
- particular elements of workplace layout;
- work organisation.

73 You must inform employees of any relevant findings and necessary control measures identified by the risk assessment.

**Employees especially at risk**

**Regulation 4(3)(e)**

(3) *In determining for the purposes of this regulation whether manual handling operations at work involve a risk of injury and in determining the appropriate steps to reduce that risk regard shall be had in particular to:*

(e) *whether the employee is within a group of employees identified by that assessment as being especially at risk;*

**Guidance 4(3)(e)**

74 Take account of the particular requirements of employees who:

- are or have recently been pregnant;
- have a disability which may affect their manual handling capability;
- have recently had a manual handling injury or have a history of back, knee or hip trouble, hernia or other health problems which could affect their manual handling capability;
- are young workers or new to the job;
- are older workers.

75 See HSE's 'Vulnerable workers' web pages<sup>28</sup> for more information on the various groups of employees.

Guidance 4(3)(e)

***Does the task create a hazard to those who might reasonably be considered to be pregnant or have a health problem?***

***New and expectant mothers***

76 Manual handling may have implications for the health of an expectant mother and the foetus. There is some evidence linking physically demanding work to premature birth, particularly where the work includes long periods of standing and/or walking. During the last three months of pregnancy there is an increased risk of musculoskeletal symptoms when heavy or repeated lifting is undertaken, due to hormonal changes affecting the ligaments that support the joints. As pregnancy progresses it may also become more difficult to achieve and maintain good postures, which further reduces manual handling capability. A shift of the centre of gravity can increase the risk of back pain for pregnant women.

77 Under the Management Regulations, when an employee tells you in writing that she is pregnant, has given birth within the past six months, or is breastfeeding, you should immediately take into account any risks identified in your workplace risk assessment and take appropriate action. See 'New and expectant mothers' on HSE's 'Vulnerable workers' web pages<sup>28</sup> for more information.

78 A useful way to make certain that workers can continue to work safely during pregnancy is to have a well-defined plan on how to respond when pregnancy is confirmed, eg:

- reassess the handling operations (positioning of the load and feet, frequency of lifting etc) to consider what improvements might be made;
- provide training to recognise ways in which the work may be altered to help with changes in posture and physical capability, including the timing and frequency of rest periods;
- consider job-sharing, alternative work, or suspension on full pay where the risk cannot be reduced by a change to the working conditions;
- take into account any medical advice provided by the GP.

***Disabled workers***

79 Do not assume that someone who has a disability is not able to do a job involving manual handling. You will need to consider how the disability actually affects the worker's ability to carry out manual handling operations. The Equality Act 2010 requires you to make 'reasonable adjustments' for disabled workers so that, as far as is reasonable, a disabled person has the same access to everything that is involved in doing and keeping a job as a non-disabled person. This might include, for example, arranging to limit the number, size or weight of loads handled by someone with a disability that limits their manual handling ability. Also see 'Disability – the law' on HSE's 'Vulnerable workers' web pages.

***Workers with health problems***

80 You should take account of any health problem of which you could reasonably be expected to be aware and which might have a bearing on the ability to carry out manual handling operations in safety. If there is good reason to suspect that an individual's state of health might significantly increase the risk of injury from manual handling operations, seek medical advice.

***Young workers and those new to the job***

81 Young workers may be more at risk of manual handling injury as their muscle strength may not be fully developed and they may be less skilled in handling techniques or in pacing the work according to their ability. While there is no requirement for you to carry out a separate risk assessment specifically for a young person, there are specific factors you must consider for young people under health

**Guidance 4(3)(e)**

and safety law: see ‘Young people – the law’ on HSE’s ‘Vulnerable workers’ web pages for more information.

82 Also take account of the extra risks to those new to the job, because of their lack of experience or unfamiliarity with the workplace: see ‘New to the job’ on HSE’s ‘Vulnerable workers’ web pages for more information.

**Older workers**

83 You should take account of the requirements of older workers when designing tasks for them, but do not overlook the benefits of their judgement, experience and knowledge. You should design manual handling tasks to eliminate or minimise the risk: see ‘Health and safety for older workers’ on HSE’s ‘Vulnerable workers’ web pages for more information.

**Health surveillance**

**Regulation 4(3)(f)**

(3) *In determining for the purposes of this regulation whether manual handling operations at work involve a risk of injury and in determining the appropriate steps to reduce that risk regard shall be had in particular to:*

(f) *the results of any health surveillance provided pursuant to regulation 6 of the Management of Health and Safety at Work Regulations 1999.*

**Guidance 4(3)(f)**

84 Health surveillance is putting into place systematic, regular and appropriate procedures to detect early signs of work-related ill health among employees exposed to certain health risks and acting on the results.

85 Regulation 6 of the Management Regulations requires appropriate health surveillance to be carried out subject to the findings of a risk assessment. Health surveillance is required by law for employees at risk from noise or vibration, solvents, dusts, fumes, biological agents and other substances hazardous to health, asbestos, lead, ionising radiation or work in compressed air. For more information see HSE’s web page ‘Is health surveillance required in my workplace?’ at [www.hse.gov.uk/health-surveillance/requirement/](http://www.hse.gov.uk/health-surveillance/requirement/).

86 There is no duty in the Manual Handling Operations Regulations to carry out health surveillance, but valuable information can be obtained from less formal systems of reporting, monitoring and investigating symptoms, known as ‘health monitoring’. Systems that allow individuals to make early reports of manual handling injuries or back pain may be helpful. Where appropriate, these can be supplemented, for example by monitoring sickness absence records and annual health checks. For further advice see ‘Health monitoring and review’ on HSE’s MSD web pages.<sup>9</sup>

**Regulation 5 Duty of employees**

**Regulation 5**

*Each employee while at work shall make full and proper use of any system of work provided for his use by his employer in compliance with regulation 4(1)(b)(ii) of these Regulations.*

**Guidance 5**

87 Your employees have duties placed on them by section 7 of the HSW Act so they must:

- take reasonable care for their own health and safety and that of others who may be affected by their activities;

**Guidance 5**

- co-operate with you to enable you to comply with your health and safety duties.

88 In addition, the Management Regulations require employees generally to make use of appropriate equipment provided for them, in accordance with their training and the instructions you have given them. Such equipment will include machinery and other aids provided for the safe handling of loads.

89 Regulation 5 of the Manual Handling Operations Regulations supplements these general duties in the case of manual handling. It requires employees to follow appropriate systems of work established by you to promote safety during the handling of loads.

## Regulation 6 Exemption certificates

**Regulation 6**

(1) *The Secretary of State for Defence may, in the interests of national security, by a certificate in writing exempt –*

- (a) *any of the home forces, any visiting force or any headquarters from any requirement imposed by regulation 4 of these Regulations; or*
- (b) *any member of the home forces, any member of a visiting force or any member of a headquarters from the requirement imposed by regulation 5 of these Regulations;*

*and any exemption such as is specified in sub-paragraph (a) or (b) of this paragraph may be granted subject to conditions and to a limit of time and may be revoked by the said Secretary of State by a further 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;*
- (b) *“headquarters” has the same meaning as in article 3(2) of the Visiting Forces and International Headquarters (Application of Law) Order 1965;<sup>(a)</sup>*
- (c) *“member of a headquarters” has the same meaning as in paragraph 1(1) of the Schedule to the International Headquarters and Defence Organisations Act 1964; and*
- (d) *“visiting force” has the same meaning as it does for the purposes of any provision of Part I of the Visiting Forces Act 1952.*

<sup>(a)</sup> *SI 1965/1536 has now been replaced by the 1999 Order of the same name (1999/1736) and amended by SI 2009/705; the headquarters to which the Order applies are listed in Schedule 2 of that instrument.*

## Regulation 7 Extension outside Great Britain

**Regulation 7**

*These Regulations shall, subject to regulation 3 hereof, apply to and in relation to the premises and activities outside Great Britain to which sections 1 to 59 and 80 to 82 of the Health and Safety at Work etc. Act 1974 apply by virtue of the Health and Safety at Work etc. Act 1974 (Application Outside Great Britain) Order 1989 as they apply within Great Britain.*

**Guidance 7**

90 The reference to the 1989 Order is now treated as a reference to the Health and Safety at Work etc Act 1974 (Application outside Great Britain) Order 2013, which has succeeded the 1989 Order. The Regulations apply to offshore working

**Guidance 7**

activities associated with oil and gas installations. The 2013 Order has introduced new regulations and updated certain 'Interpretations'; see *Application of health and safety law offshore*.<sup>29</sup>

## Regulation 8 Repeals and revocations

**Regulation 8**

(1) *The enactments mentioned in column 1 of Part I of Schedule 2 to these Regulations are repealed to the extent specified in the corresponding entry in column 3 of that part.*

(2) *The Regulations mentioned in column 1 of Part II of Schedule 2 to these Regulations are revoked to the extent specified in the corresponding entry in column 3 of that part.*

**Guidance 8**

91 The Regulations, like the European Directive on manual handling, apply a modern ergonomic approach to the prevention of injury, taking account of a wide range of relevant factors, including the nature of the task, the load, the working environment and individual capability. They therefore replaced a number of outdated provisions which concentrated on the weight of the load being handled. These are listed in Schedule 2 to the Regulations<sup>30</sup> (not reproduced in this document).

## SCHEDULE 1 Factors to which the employer must have regard and questions he must consider when making an assessment of manual handling operations

Schedule	1	<b>Regulation 4(1)(b)(i)</b>	
<b>Column 1</b>	<b>Column 2</b>	<i>Factors</i>	<i>Questions</i>
1	The tasks		<p>Do they involve:</p> <ul style="list-style-type: none"> <li>– holding or manipulating loads at distance from trunk?</li> <li>– unsatisfactory bodily movement or posture, especially:                             <ul style="list-style-type: none"> <li>– twisting the trunk?</li> <li>– stooping?</li> <li>– reaching upwards?</li> </ul> </li> <li>– excessive movement of loads, especially:                             <ul style="list-style-type: none"> <li>– excessive lifting or lowering distances?</li> <li>– excessive carrying distances?</li> </ul> </li> <li>– excessive pushing or pulling of loads?</li> <li>– risk of sudden movement of loads?</li> <li>– frequent or prolonged physical effort?</li> <li>– insufficient rest or recovery periods?</li> <li>– a rate of work imposed by a process?</li> </ul>
2	The loads		<p>Are they:</p> <ul style="list-style-type: none"> <li>– heavy?</li> <li>– bulky or unwieldy?</li> <li>– difficult to grasp?</li> <li>– unstable, or with contents likely to shift?</li> <li>– sharp, hot or otherwise potentially damaging?</li> </ul>



<b>Schedule</b>	<b>1</b>	<b>Column 1</b> <i>Factors</i>	<b>Column 2</b> <i>Questions</i>
		3 The working environment	<p>Are there:</p> <ul style="list-style-type: none"> <li>– space constraints preventing good posture?</li> <li>– uneven, slippery or unstable floors?</li> <li>– variations in level of floors or work surfaces?</li> <li>– extremes of temperature or humidity?</li> <li>– conditions causing ventilation problems or gusts of wind?</li> <li>– poor lighting conditions?</li> </ul>
		4 Individual capability	<p>Does the job:</p> <ul style="list-style-type: none"> <li>– require unusual strength, height etc?</li> <li>– create a hazard to those who might reasonably be considered to be pregnant or to have a health problem?</li> <li>– require special information or training for its safe performance?</li> </ul>
		5 Other factors	<p>Is movement or posture hindered by personal protective equipment or by clothing?</p>

**Guidance  
Schedule** **1**

92 Guidance on the specific requirements of Schedule 1 paragraphs 1–3 (the tasks, the loads and the working environment) is in Part 3. For paragraphs 4 and 5 (individual capability and other factors such as PPE), see the guidance on regulation 4(3) in Part 1 (paragraphs 57–83).

## PART 2 Carrying out a manual handling risk assessment

### Guidance 4(1)(b)(i)

93 Regulation 4(1)(b)(i) requires employers to make a suitable and sufficient assessment of all hazardous manual handling operations that cannot be avoided. Part 2 includes general guidance on how to carry out a manual handling risk assessment.

### Do I need to do a manual handling risk assessment?

94 Where your general assessment<sup>10</sup> carried out under regulation 3(1) of the Management Regulations indicates a possibility of injury from manual handling operations, and you conclude under regulation 4(1)(a) of the Manual Handling Operations Regulations that avoidance of the operations is not reasonably practicable, you should carry out a more specific assessment as required by regulation 4(1)(b)(i). How detailed this further assessment should be will depend on the circumstances. Use the Appendix to help you decide.

95 Regulation 4(3) and Schedule 1 to the Regulations set out the factors which the assessment should take into account, including the tasks, the loads, the working environment and individual capability. First, decide how it should be done, who is going to do it and what relevant information may already be available to help.

### Who should carry out the assessment?

96 As an employer or a relevant self-employed person (see paragraph 26 for more information on the self-employed), you are responsible for health and safety in your business. You can delegate the task, but ultimately you are responsible. You will need to make sure that whoever does the risk assessment:

- is competent to do so;
- involves your workers in the process;
- understands when specialist help might be needed.

97 Those responsible for assessment should be familiar with the requirements of the Manual Handling Operations Regulations and have the ability to:

- identify hazards (including less obvious ones) and assess risks from the type of manual handling being done;
- use additional sources of information on risks, as appropriate;
- draw valid and reliable conclusions from assessments and identify steps to reduce risks;
- make a clear record of the assessment and communicate the findings to those who need to take appropriate action, and to the worker(s) concerned;
- recognise their own limitations as to assessment so that further expertise can be called on if necessary where, for example, the manual handling operation is complex.

## Guidance 4(1)(b)(i)

98 Before in-house personnel are allowed to act as assessors, check during and after training that they have understood the information given to them and have reached an adequate level of competence. If you choose to use external assessors, also make sure they are competent.

### How should the assessment be done?

99 In carrying out assessments, you, in consultation with your employees, should use practical experience of how this type of work is being done. This will help particularly when assessing work which:

- is very varied (such as construction or maintenance);
- takes place at more than one location (such as making deliveries);
- involves dealing with emergencies (such as fire-fighting, rescue and medical emergencies).

100 There is an important difference between the employer's assessments required by regulation 4(1)(b)(i) and the everyday judgements which supervisors and others have to make in dealing with manual handling operations. Your assessment should identify in broad terms the foreseeable problems likely to arise during the operations and the measures needed to deal with them. These measures should include providing training to enable supervisors and employees to cope effectively on a daily basis with the operations they are likely to carry out.

101 The requirements for being able to successfully make judgements on issues that arise during manual handling operations are clearly illustrated in the case of emergency work. Here it will be essential to provide training to enable staff to carry out risk assessments which allow them to make the rapid judgements that will inevitably be necessary to deal satisfactorily with an emergency incident (dynamic risk assessment). The assessment may change rapidly as the emergency progresses. Clear communication is vital in such situations.

### Generic and multi-stage manual handling assessments

102 'Generic' assessments can be an efficient way of assessing risks common to a number of broadly similar operations, to individuals rotating between similar tasks or to groups of workers carrying out similar jobs. However, you should consider all the manual handling risks in these operations.

103 You may find it helpful to carry out a multi-stage assessment where you supplement generic assessments with assessments of individual tasks. You should make the findings available to all the employees to whom it applies and to the relevant safety representatives.

### Assessments for moving and handling people

104 When addressing, for example, the moving and handling of people, two types of risk assessment may be needed: a generic assessment for the setting and an individual assessment for the person who needs to be moved. This approach can also be used for other types of handling.

105 The **generic assessment** for moving and handling people should consider:

- the type and frequency of moving and handling people;
- overall staffing and equipment needs;

## Guidance 4(1)(b)(i)

- the environment;
- what moving and handling would be required in an emergency;
- the training needs of staff to meet the mobility needs of the expected patient/client group.

106 An **individual person assessment** should consider the specific moving and handling needs of the person being cared for as part of their care plan. This assessment is likely to change as the condition of the person alters, so carers should be aware of the need to adapt their moving and handling practices.

107 The individual person assessment should identify:

- the situations where moving and handling will be needed;
- who should carry out the handling;
- how that person could be moved and handled;
- specific information such as:
  - ways the person may be able to help with the manoeuvre themselves;
  - the number of staff required;
  - any handling equipment, eg hoists or slings.

108 Risk assessment for moving/handling people can be a complex task which requires consideration of the medical condition of the person, their capabilities and needs. It requires a sensible approach to balancing risks with the human rights and needs of those involved to enable them to participate as fully as possible in activities, normal daily living and rehabilitation, while managing the risks to themselves and others.

109 Look at specialist advice in *The guide to the handling of people*<sup>31</sup> and HSE's web page 'Health and social care services' for more detailed information (in particular the 'Moving and handling' topic – see [www.hse.gov.uk/healthservices](http://www.hse.gov.uk/healthservices)).

### Records of accidents and ill health

110 Well-kept records of accidents and ill health can be useful in the assessment process. They should identify and document any accidents associated with manual handling. Careful analysis may also show evidence of links between manual handling and ill health, including injuries apparently unrelated to any specific event or accident. Other possible indicators of manual handling problems may include high levels of absenteeism or staff turnover and poor productivity and morale.

### Recording the assessment

111 Make a record of your significant findings – the hazards, how people might be harmed by them and what you have in place to control the risks, as well as details of any particular groups you have identified as being especially at risk. If you have five or more employees you are required by law to record the results of your assessment. If you have fewer than five employees you do not need to write anything down, although it is useful to do this so that you can review it later, eg if something changes.

### Making a more detailed manual handling assessment

112 The Appendix sets out a framework for selecting an appropriate level of assessment, ranging from a simple filter to a full risk assessment using checklists.

**Guidance 4(1)(b)(i)**

113 **Remember** – assessment is not an end in itself, only a structured way of analysing risks. It should enable the assessor, in consultation with the workforce, to develop practical solutions.

## PART 3 Assessing and reducing manual handling risks

### Guidance 4(1)(b)(i), 4(1)(b)(ii) and Schedule 1 paragraphs 1–3

114 Part 3 gives you additional information on what to look for when making risk assessments of manual handling activities under regulation 4(1)(b)(i). It breaks these down according to various task factors, aspects of the load, and the working environment. Where appropriate, it suggests actions to reduce the risks to help you meet your duties under regulation 4(1)(b)(ii). The structure of Part 3 follows paragraphs 1 to 3 in Schedule 1: 'The tasks', 'The loads' and 'The working environment'. Paragraphs 4 and 5 of Schedule 1 ('Individual capability' and 'Other factors', such as clothing and PPE) are covered in the guidance to regulation 4(3) in Part 1.

### The task

#### Task layout

115 You may be able to reduce the risk of injury by changing the layout of the task. For example, you might be able to eliminate carrying between workstations by improving the flow of materials or products. The best position for storing heavier loads is around waist height. Reserve storage below knuckle height or above shoulder height for loads that are lighter, more easily handled, or handled infrequently.

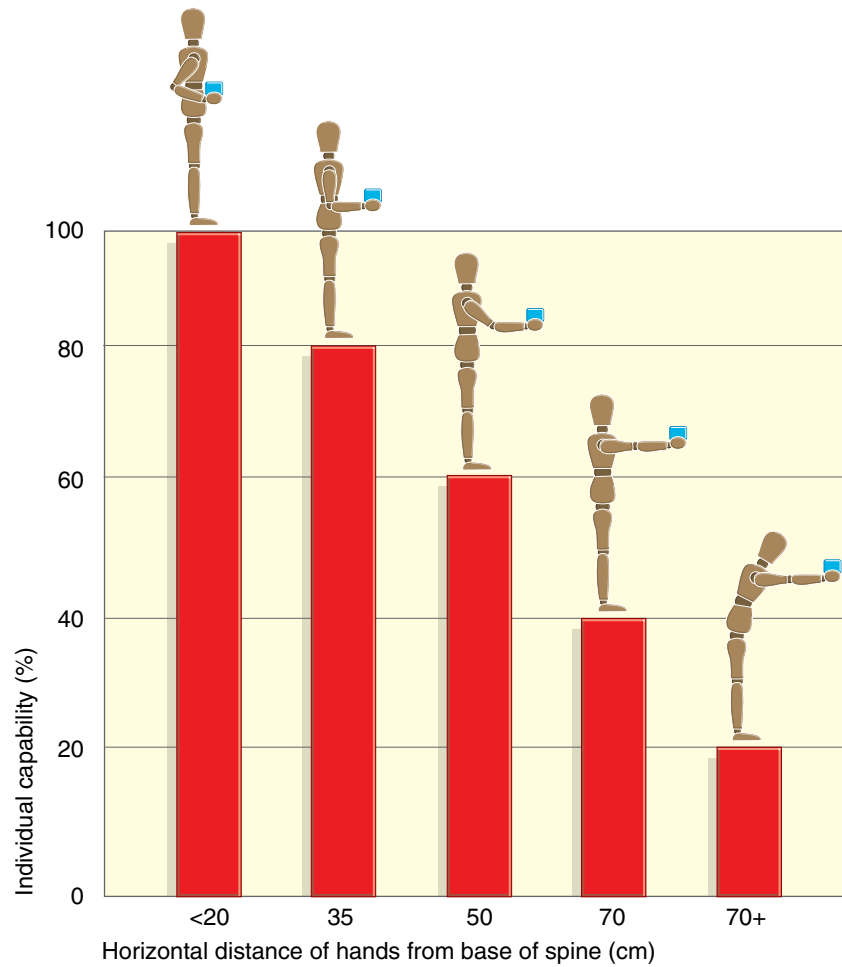
116 You may be able to reduce or remove the need for twisting, stooping and stretching by changing the task layout, the equipment used, or the sequence of operations.

#### ***Is the load held or manipulated at a distance from the trunk (torso)?***

117 As the load is moved away from the body, the level of stress on the lower back increases, regardless of the handling technique used. As a rough guide, holding a load at arm's length imposes about five times the stress experienced when holding the same load very close to the body. Figure 1 shows how individual handling capacity reduces as the hands move away from the body.

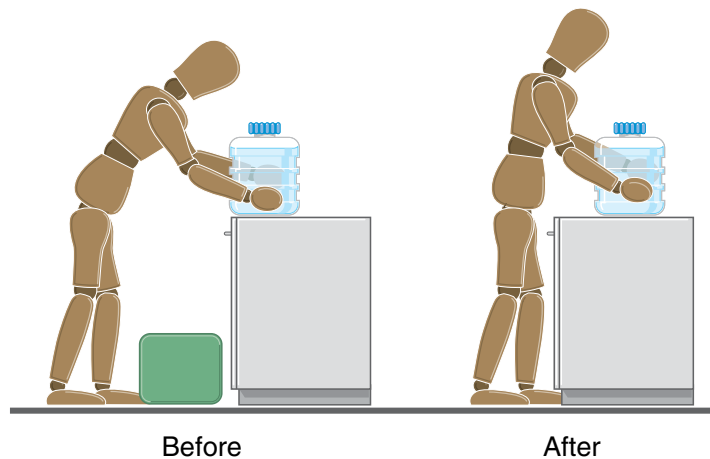
118 The handler may be able to make it easier to lift the load by pulling or sliding it closer before beginning the lift. If the load is hugged to the body, friction with the clothes will steady it and may help to support its weight. Consider the need for protective clothing.

Guidance 4(1)(b)(i), 4(1)(b)(ii) and Schedule 1 paragraphs 1–3



**Figure 1** Reduction of individual handling capability as the hands move away from the body

119 How close the load is positioned to the body is influenced by foot placement. Remove obstacles on or near the floor which need to be reached over. Try to remove the need to reach across pallets or very wide surfaces. All of these will allow the handlers to place their feet closer to the load (see Figure 2).



**Figure 2** Avoiding an obstructed lift. Organise the workplace so that the handler can get as close to the load as possible

**Guidance 4(1)(b)(i),  
4(1)(b)(ii)  
and Schedule 1  
paragraphs 1–3**

120 In general, any change that allows the load to be lifted or held closer to the body is likely to reduce the risk of injury. The level of stress in the lower back will be reduced; the weight of the load will be more easily counterbalanced by the weight of the body; the load will be more stable; and the handler is less likely to lose control of it.

***Does the task involve twisting the trunk (torso) or sideways bending?***

121 Stress on the lower back increases significantly if the torso is twisted during manual handling. This stress is made worse if twisting and bending of the spine occur at the same time. One-handed handling will tend to load the spine unevenly and may encourage twisting, but is appropriate for some loads. When loads are very light then one-handed handling will not significantly increase what is a very low risk. To avoid twisting, handlers should approach the load squarely, preferably facing in the direction they intend to move. If this is not practical, they should lift while facing the load, then change direction by moving the body with the feet rather than twisting the torso as part of the lift.

***Does the task involve stooping?***

122 Stooping increases the stress on the lower back because the back muscles have to support the weight of the upper body as well as the weight of the load, which increases the risk of injury. However, stooping slightly is preferable to adopting a deep squatting posture, which can place excessive loads on the knees and hips.

***Does the task involve reaching upwards?***

123 Reaching upwards (above shoulder level) places additional stress on the arms and back and control of the load becomes more difficult. Except when pushing upwards using the strong leg muscles or pulling downwards with the help of body weight, postures with the hands above the shoulder tend to be weak and therefore fatiguing. Lifting above shoulder height while your arms are stretched out is likely to be very difficult, eg taking something from the back of a high shelf. Avoid lifts starting or finishing above head height wherever possible as this is worse than lifting above shoulder height. Consider introducing aids to support loads or tools that need to be held above shoulder height.

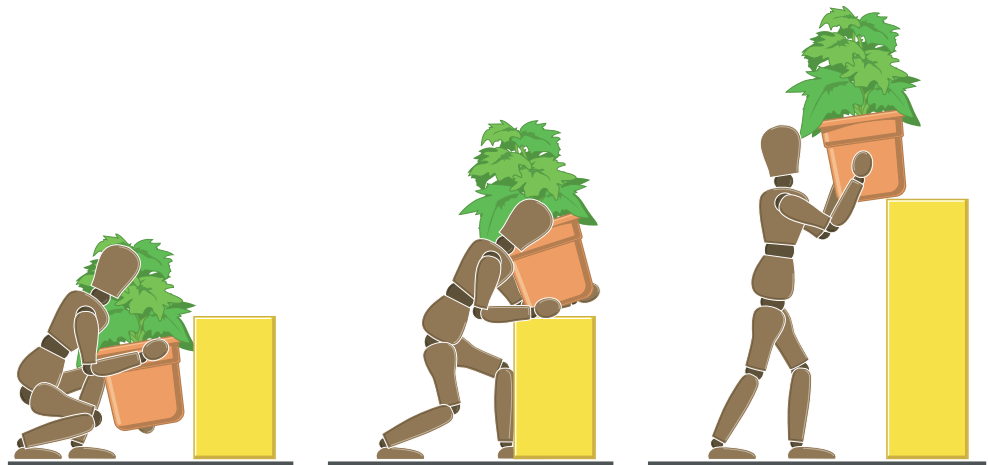
***Does the task involve considerable lifting or lowering distances?***

124 The distance through which a load is lifted or lowered can also be important – large distances are considerably more demanding physically than small ones. Also, lifting or lowering over a large distance is likely to need a change of grip at around chest height. This decreases the control the person has over the load, further increasing the risk of injury. Avoid lifts beginning below floor level where possible. Examine carefully tasks that require accurate placement of loads below floor level to see if they can be redesigned.

125 When tasks involve lifting of loads at or just above floor level, take steps to eliminate or modify the task. If that is impossible, then encourage handling techniques which allow the use of the strong leg muscles rather than the weaker ones of the back, as long as the load is small enough to be held close to the body. In addition, if the task includes lifting to shoulder height or above, using an intermediate surface which allows the handler to change handgrip (see Figure 3) will help to reduce risk.



**Guidance 4(1)(b)(i), 4(1)(b)(ii) and Schedule 1 paragraphs 1–3**



**Figure 3** Use of midway stage to change grip

***Does the task involve considerable carrying distances?***

126 In general, if a load can safely be lifted and lowered, it can also be carried without endangering the back. However, if a load is carried for an excessive distance, physical stresses are prolonged, leading to fatigue and increased risk of injury. As a rough guide, if a load is carried further than about 10 m then the demands on the heart and lungs, and muscle fatigue from carrying the load, will become the limiting factors instead of the strength needed for lifting and lowering.

***Does the task involve considerable pushing or pulling of the load?***

127 Most pushing and pulling in the workplace is introduced as a way of reducing the effort required for manual handling. Loading goods onto a conveyor, trolley or roll cage will reduce the amount of carrying needed. However, although pushing or pulling activities do usually allow larger loads to be handled safely, they can also be harmful. Pushing or pulling items that do not have wheels, eg furniture or bales of wool, is likely to be more demanding than handling wheeled items. The majority of injuries resulting from pushing and pulling activities affect the back, neck and shoulders. Injuries from trapping hands and other body parts are also common.

128 Uncontrolled sliding or rolling, particularly of large or heavy loads, may introduce other risks of injury. Look at the RAPP tool and paragraphs 182–83 for more information on pushing and pulling.

129 The initial push or pull forces used to start moving an object or to change its direction are usually noticeably higher than the forces used to keep the object moving, so keep them to a minimum (see Table 1). Avoid frequent starting, stopping and manoeuvring, as well as jerky movements and high sustained forces. Make sure the hands are not applied to the load much below waist height or above shoulder height (see Figure 4). Being able to adopt a comfortable, stable posture is important, as is avoiding twisted or bent postures.

**Table 1** Guidelines for safe pushing and pulling

	<b>Men</b>	<b>Women</b>
Guideline figure for stopping or starting a load	20 kg (ie about 200 newtons)	15 kg (ie about 150 newtons)
Guideline figure for keeping the load in motion	10 kg (ie about 100 newtons)	7 kg (ie about 70 newtons)

**Guidance 4(1)(b)(i),  
4(1)(b)(ii)  
and Schedule 1  
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130 When reducing the risks from pushing and pulling, consider:

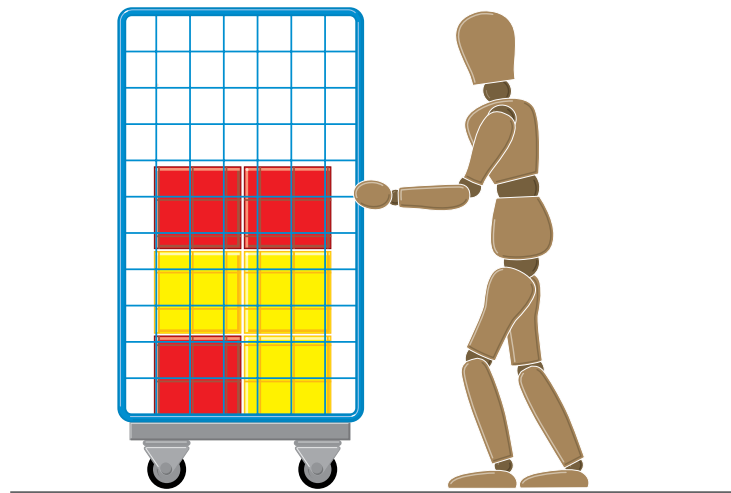
- Is the length of the route as short as possible?
- Would it be safer to make repeated journeys rather than a few demanding ones?
- How demanding is the work?
- Is the route clear of obstacles, including doorways?
- Is the floor surface well maintained?
- Is there good grip between the foot and the floor to prevent slipping? If the floor slopes or can be wet or contaminated, make sure the footwear is suitable for the conditions.
- Can kerbs, steps or slopes be avoided? Make full use of ramps and lifts.

131 It is important to ensure the equipment being used is:

- the correct type for the load involved;
- well maintained, particularly any wheels and braking system;
- fitted with brakes (if needed) that are easy to apply and release;
- fitted with the correct type of wheels, so that they run easily over the surfaces involved;
- provided with a handle at a suitable height. Vertical handles allow users to choose the heights they push at.

132 Make sure the load is:

- stable and, if necessary, secured to the equipment being used to move it;
- not too bulky for the route or equipment being used;
- stacked, so that heavier items are at the bottom and it is possible to see over the load.



**Figure 4** Hand position when pushing

***Does the task involve positioning the load precisely?***

133 If it is important for the worker to position the load precisely (eg in a fitting task or when palletising) this may add to the risk of injury, especially if the load must be controlled into a final position that is not close to the body. You could use a tool or device to guide the load into its exact position or put the load down in about the right place and then position it exactly so that the worker is not supporting the load for longer than necessary. The need to position a load precisely will increase the effort and time required to complete the manual handling operation and can involve more awkward postures.

**Guidance 4(1)(b)(i),  
4(1)(b)(ii)  
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paragraphs 1–3**

***Does the task involve a risk of sudden movement of the load?***

134 If a load can be moved suddenly by machinery or another person handling it in a team, and the handler is unprepared or is not able to keep complete control of it, unpredictable stresses can be imposed on the body, creating a risk of injury. For example, freeing something that is jammed in a machine can easily cause injury. There may also be problems when handling people, or animals that may behave unpredictably. The risk is made worse if the handler is in a weak or unstable posture.

***Does the task involve several risk factors?***

135 Often several risk factors will be present in a manual handling operation. They interact in complex ways to affect individual capability and the risk of injury. Avoid combining twisting with stooping or stretching wherever possible.

**Work routine**

***Does the task involve frequent or prolonged physical effort?***

136 With frequent handling, the weights that people are comfortable handling decrease as the frequency of handling increases. This will be worsened by jerky or hurried movements that can fatigue the body quickly. Look at the frequency of handling loads, especially those that are heavy or awkward. Where possible, tasks should be self-paced and employees trained to adjust their rate of working to optimise safety and productivity. Look at the MAC tool to help you assess the effects of regular frequent lifting. The V-MAC tool will help you assess handling where the pattern is variable or irregular. If workers have to handle light loads at high frequencies then the ART tool will help assess the risks to their upper limbs.

137 If physical stresses are prolonged then fatigue will occur, increasing the risk of injuries. Work done in fixed postures reduces blood flow to the muscles, leading rapidly to fatigue, pain and reduced muscular efficiency. Look carefully at the work routine and minimise the need for fixed postures due to prolonged holding or supporting of a load. Consider whether a handling aid to support the load would be helpful.

***Does the task involve insufficient rest or recovery periods?***

138 Taking steps to reduce fatigue during physically demanding work decreases ill health and maintains output. Make sure there are adequate opportunities for rest (by taking breaks from work) or recovery (by changing to another task which uses a different set of muscles).

139 As there are large differences in how quickly individuals become fatigued, an inflexible approach to rest breaks may not be an efficient way of reducing the risk of injury. Mandatory, fixed breaks are generally less effective than those taken voluntarily within the constraints of what is possible in terms of work organisation. You should consider the overall demands of the working shift, especially where there are productivity targets to be met.

140 You may be able to use job rotation to allow some muscle groups of the individuals involved to rest while others are being used, for example intersperse periods of heavy work with lighter activities such as paperwork or monitoring instruments. Job rotation can also make the work more interesting, reduce monotony and increase attentiveness. Avoid rotating to tasks which repeat the use of the same group of muscles, even if working on a different task, as this is unlikely to reduce the risk of manual handling injury.

**Guidance 4(1)(b)(i),  
4(1)(b)(ii)  
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***Does the task involve a rate of work imposed by a process?***

141 There may be increased risk where the worker cannot change the rate of work. Mild fatigue, which might quickly be relieved by a short break or a brief spell doing another operation using different muscles, can soon become more pronounced and lead to an increased risk of injury.

142 Psychosocial risk factors can also contribute to the onset of musculoskeletal disorders. For example, stress-related changes in the body (such as increased muscle tension) can make people more susceptible to musculoskeletal problems; or individuals may change their behaviour, for example doing without rest breaks to try and cope with deadlines.

143 These issues are best addressed with the full consultation and involvement of the workforce. Consider the following control measures to improve the working environment in your workplace:

- Reduce the monotony of tasks where appropriate.
- Make sure there are reasonable workloads with realistic deadlines.
- Ensure good communication and reporting of problems.
- Encourage teamwork.
- Monitor and control shift work or overtime working.
- Reduce or monitor payment systems which work on a piece rate.
- Provide appropriate training.

***Does the task involve handling while seated?***

144 Handling loads while seated imposes significant constraints as the relatively powerful leg muscles cannot be used, nor can the weight of the handler's body be used as a counterbalance. Most of the work has to be done by the weaker muscles of the arms and upper body so the loads that can be handled are much lighter. Also, being seated restricts how far the handler can move the load.

145 The handler will have to reach and/or lean forward to grasp loads that are not presented close to the body, which will put the body under additional stress. Castors may be inadvisable if the handler pushes or pulls any loads while seated, especially on hard floors. Twisting when seated can be awkward, especially when reaching below seat height or above shoulder height, so consider providing a seat that swivels. This will help you design tasks so that loads are handled in front of the body and not from the side. To reduce the load on the spine when lifting, and to reduce the number of undesirable movements, seats should be provided with an appropriate backrest. Consider carefully whether armrests are appropriate as they may restrict movement.

146 Make sure you select suitable seats, and work surfaces at an appropriate height, to allow the user to safely and comfortably carry out their work. Further advice is in the HSE booklet *Seating at work*.<sup>32</sup>

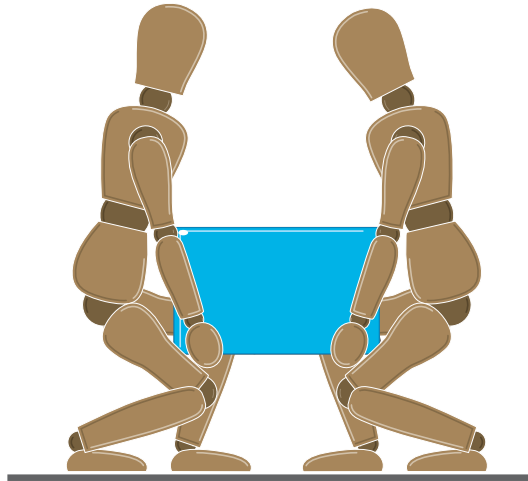
***Does the task involve team handling?***

147 Handling by two or more people (see Figure 5) may make possible an operation that is beyond the capability of one person, or reduce the risk of injury to a single handler. It can be an effective way of handling large items that need to be carried over relatively short distances. However, it may introduce additional problems which you should consider in your assessment. All team members need to know their own roles within the team and planning and co-ordination become more important as the team size grows. Teams of more than four members are unlikely to work successfully unless managed very carefully. During the handling operation the proportion of the load that is supported by each member of the team will inevitably vary to some extent. This is likely to be more pronounced on steps or

**Guidance 4(1)(b)(i),  
4(1)(b)(ii)  
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sloping or uneven ground where handlers at the lower end may find themselves supporting most of the weight.

148 The capability of the weakest person acts as a limiting factor, especially for two-person teams. This means that the load a team can handle safely can be less than the sum of the loads that the individual team members could cope with when working alone. As an approximate guide, using 85% of the total of individual capabilities will allow a safety margin and can be applied to teams of different sizes.



**Figure 5** Team handling

149 There may be additional difficulties if:

- the task is infrequent or a one-off and the team members are the people who just happen to be available at the time;
- team members get in the way of each other's sight or movement;
- the load does not have enough good handholds. This can happen particularly with compact loads which force the handlers to work close together or where the space available for movement is limited;
- the load needs to be handled through the chest region. The handlers may find that they need to change grip to complete the movement. This may be particularly difficult for two-person teams;
- team members have difficulty communicating when carrying out the lift, eg because of background noise or language barriers.

150 One person should plan and take charge of the actual operation. Consider whether:

- there is enough space for the handlers to manoeuvre as a group;
- all the team members can get to the load;
- the weight is evenly distributed. If not, the stronger members of the team should lift the heavier end of the load;
- the load has sufficient handholds;
- a handling aid should be used, especially if the load is particularly small or difficult to grasp;
- movements can be co-ordinated easily and if anything will make it difficult for team members to communicate with each other before and during the lift.

151 When team handling is being carried out to handle a person, include the person being handled in the communication where possible. A clear protocol

**Guidance 4(1)(b)(i),  
4(1)(b)(ii)  
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should be agreed between the team members about timing for the lift. This is particularly important when the team contains employees from different agencies, eg fire service and ambulance staff who may have their own preferred instructions.

## The load

### Size and weight

#### *Is the load heavy?*

152 The weight of a load is important when assessing the risk from manual handling but, as discussed in paragraph 13, it is well established that the weight of the load is only one – and sometimes not the main – consideration affecting the risk of injury. Other features of the load must also be considered, such as:

- resistance to movement, such as frictional forces when pushing and pulling;
- size;
- shape;
- rigidity.

153 When your risk assessment identifies the weight of the load as an important factor, consider ways of reducing its weight. For example, materials like liquids and powders may be packaged in smaller containers. Where loads are bought in, it may be possible to specify lower package weights. However, the breaking down of loads will not always be the safest course of action as this will increase the handling frequency. When the frequency of handling is low and the weights are relatively high, it is preferable to reduce the weight and increase the frequency of handling. However, increasing the frequency too much will cause fatigue. Another option is to make the load so big that it cannot be handled manually.

#### *Is the load bulky or unwieldy?*

154 The size and shape of a load affect the way it can be held. For example, the risk of injury will be increased if a load to be lifted from the ground or close to the ground is not small enough to pass between the knees. In these circumstances, its size will prevent the worker getting close enough to pick it up safely. It is also harder to get a good grip if the bottom front corners of a load are not within reach when carrying at waist height. If handlers have to lean away from a load to keep it off the ground when carrying it at their side, they will be forced into unfavourable postures.

155 In general, if any dimension of the load exceeds about 75 cm, handling it is likely to pose an increased risk of injury, especially if this size is exceeded in more than one dimension. The risk will be further increased if the load does not provide convenient handholds. For loads of these dimensions, consider appropriate handling aids.

156 A bulky load can also restrict a worker's vision, which is particularly important when carrying or pushing a load. Where it is not possible to avoid this, then take into account the increased risk of slipping, tripping, falling or colliding with obstructions. Team handling may help with this, as if the load blocks one person's view someone else at the other end may have a clear view.

157 The risk of injury will also increase if the load is unwieldy or difficult to control, even if it is light. Well-balanced lifting may be difficult to achieve, the load may hit obstructions, or it may be affected by gusts of wind or other sudden air movements. Again, a team may be able to control the lift much more easily than a single person.

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4(1)(b)(ii)  
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***Is the weight of the load concentrated on one side?***

158 If the centre of gravity of the load is not positioned centrally, this can increase the risk of injury. Lifting with the heavy side away from the handler’s body will put extra stress on the body. A handler who knows or can see that one side is heavier than the other should approach it from the heavy side. This may mean turning it around before lifting it.

159 Sometimes, for example with a sealed and unmarked package, it may not be immediately apparent that the centre of gravity is offset. This increases the risk of injury since the handler may hold the load with its centre of gravity further from the body than is necessary.

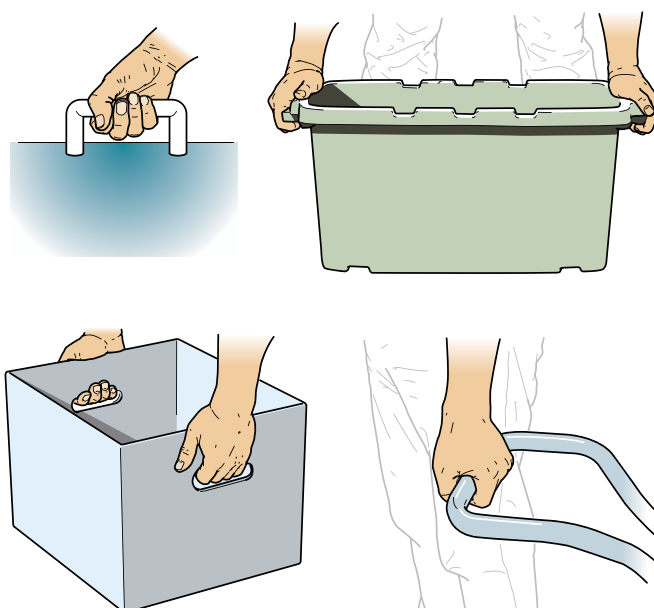
***Is the load difficult to grasp?***

160 Loads can be difficult to grasp if they are large, rounded, smooth, wet or greasy and don’t have handles or handholds. This means that the handler will have to use more strength to grip it, which is tiring, and they will have to change grip at some point. There is therefore a greater risk of dropping it, handling will be less easy and the risk of injury will increase. Unless they are carefully selected to suit the items being handled, using gloves may also make a load more difficult to hold.

161 Consider providing, where reasonably practicable, handles, hand grips, indents or any other feature designed to improve the handler’s grasp. If the load has to be carried rather than moved on something such as a trolley, consider if carrying devices such as slings are practical. Alternatively, it may be possible to place the load securely in a container which is easier to grasp. Where a load is bulky rather than heavy, consider whether team handling would help, or whether it would be easier to carry it at the side of the body.

162 Well-positioned handholds can help reduce the risk of injury. Using totes or crates with handles or cartons with handholds near the top will reduce the need to stoop when lifting from a low level. However, the size of the load might mean carrying the load with bent arms, which could increase fatigue.

163 Design handholds suitable for the size and weight of the load. The best ones allow a ‘power grip’ where the fingers and thumb can wrap round a cylindrical handle. Any spaces for the hand need to be wide enough for a large hand wearing gloves. Avoid handholds which are only large enough for fingertip contact.



**Figure 6** Examples of grasping and handholds



**Guidance 4(1)(b)(i),  
4(1)(b)(ii)  
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paragraphs 1–3**

***Is the load unstable or with contents likely to shift?***

164 Some loads are unstable, such as stacks or bundles of loose items, while others are not rigid, or have contents that can move, increasing the risk of injury. The stresses arising during the manual handling of such loads are less predictable and the handler needs to be prepared for sudden additional stresses because of their instability. This is particularly true if the handler is unfamiliar with a particular load and there is no cautionary marking on it.

165 Where possible, make sure that any loose items are held together securely for the actual lift and that any packaging is designed to prevent the load from shifting unexpectedly while it is being handled. Keep containers of liquids or free-moving powders upright if possible, and well filled to increase stability, leaving only a small amount of free space, as long as this does not increase the risk by increasing the weight significantly. Where this is not possible, consider alternative means of handling. The shape, the weight and the nature of the contents are all important.

***Is the load sharp, hot or does it have the potential to cause damage?***

166 There may be a risk of injury from contact with the load. It may have sharp edges or rough surfaces, or be too hot or too cold to handle safely without protective clothing. These features may also make the load harder to grip, and force the handler to hold it away from the body.

167 Check to see that loads are not contaminated by, for example, oil or corrosive deposits. Consider putting hot or cold materials into insulated containers to protect the person doing the handling and avoid sharp corners, jagged edges, rough surfaces etc where possible. Where this cannot be achieved, provide suitable handling aids or PPE.

168 Animals may react in an unpredictable way when handled, which can increase the risk of injury. Consider using restraints such as cattle crushes or lifting equipment such as sheep turnover crates.

**Designing equipment so it can be handled easily**

169 The Supply of Machinery (Safety) Regulations 2008<sup>33</sup> cover the essential health and safety requirements in the design of machinery and its component parts. These regulations require machinery to be capable of being handled safely. If manual handling is involved, the machinery and component parts must be easily movable or equipped for picking up, for example with hand grips. Machinery and component parts not suitable for manual handling must be fitted with attachments for lifting gear or designed so that standard lifting gear can be easily attached.

170 The Provision and Use of Work Equipment Regulations 1998<sup>34</sup> place duties on employers. You will need to check, for example, that adequate operating instructions have been provided for any work equipment you expect your employees to use and that there is information about residual risks such as manual handling. For more information see 'Are you a purchaser of work equipment?' on HSE's 'Work equipment and machinery' web pages.<sup>21</sup>

171 The HSW Act also includes requirements for designers and manufacturers to ensure the safety, 'so far as is reasonably practicable', of any article for use at work and to provide adequate information about the conditions necessary to make sure that when put to use, such articles will be safe and without risk to health (also see paragraphs 53–55).



**Guidance 4(1)(b)(i),  
4(1)(b)(ii)  
and Schedule 1  
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## **The working environment**

### **Space constraints, floors, temperature, ventilation and lighting**

172 The issues dealt with in this section are also subject to the requirements of the Workplace (Health, Safety and Welfare) Regulations 1992.

#### ***Are there space constraints preventing good posture?***

173 If the working environment prevents working at a safe height or adopting a good posture, the risk of injury from manual handling will be increased. For example:

- low work surfaces or restricted headroom will result in a stooping posture;
- furniture, fixtures or other obstructions may increase the need for twisting or leaning;
- constricted working areas and narrow gangways will make it more difficult to manoeuvre bulky loads.

174 Make sure there is enough clear, well-maintained floor space in the areas where handling takes place around machines, fixtures and pallets. Make sure there is enough headroom in gangways and other working areas and avoid workers having to carry or push/pull loads through narrow doorways. Allow enough room for all the manoeuvres necessary during manual handling operations. In many cases, simply improving the standard of organisation and housekeeping can achieve a lot, eg by keeping workspaces clean and tidy.

175 Consider an automatic opening and closing mechanism for doors that are normally kept shut but used frequently when moving loads. It may be helpful to hold some doors in the open position in normal operations. This can make carrying easier and will avoid the need to stop and start (which requires extra force) when pushing or pulling a load.

#### ***Are there uneven, slippery or unstable floors?***

176 Uneven surfaces can dramatically increase the forces required to start and keep loads moving, and increase the risk of injury. On permanent sites, both indoors and out, make sure surfaces are firm, well-maintained and properly drained. Slip-resistant surfaces and suitable slip-resistant footwear may reduce the risk of slips due to manual handling. Clear away promptly any spillages of water, oil, soap, food scraps and other substances likely to make the floor slippery.

177 In construction, agriculture and other activities where manual handling may take place on unmade ground or temporary surfaces, preparing the ground and keeping it even and firm – with suitable coverings where appropriate – will help to control the risks of injury. Temporary work platforms should be firm and stable.

178 As well as increasing the likelihood of slips, trips and falls, uneven or slippery floors interfere with smooth movement and create additional unpredictability. Floors that move, eg on a boat, a moving train, or a mobile work platform, increase the risk of injury through sudden, unpredictable stresses, meaning the ability to handle loads in safety may be reduced significantly.

179 See HSE's web pages 'Slips and trips' for further advice at [www.hse.gov.uk/slips](http://www.hse.gov.uk/slips).

#### ***Are there variations in floor level or work surfaces?***

180 Because steps and slopes can increase the risk of injury by making movement more difficult when handling loads, try to arrange manual handling activities on a

**Guidance 4(1)(b)(i),  
4(1)(b)(ii)  
and Schedule 1  
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single level. Carrying loads on stairs, especially two-handed carrying, can increase the risk of a fall by limiting the handler’s view of the stairs, compromising balance and preventing the use of handrails. If you cannot eliminate carrying loads on stairs, consider whether the handler can keep the hands free by using a bag or backpack carried on one or both shoulders. Where more than one level is involved and a lift, hoist or other mechanical device is not reasonably practicable, try to make the transition with a gentle slope or ramp or, failing that, by well-positioned and properly maintained steps.

181 If you need to transfer loads between floors or work levels plan to move them using mechanical equipment such as a lift, hoist, or high-reach forklift truck. Do not plan transfers of loads up or down ladders. When using a ladder to carry out a task only carry light materials and tools – read the manufacturer’s labels on the ladder and assess the risks. For more information on ladders and working safely at height see HSE’s web pages ‘Work at height’ at [www.hse.gov.uk/work-at-height](http://www.hse.gov.uk/work-at-height).

182 Pushing and pulling activities are safest when floor or ground surfaces are level, clean, dry and unbroken. If there are slopes, they should not be so steep as to make keeping control of the load difficult.

183 More force is needed to push a load up a slope because of gravity. For example, the extra force required to push a load of 400 kg up a 1 in 12 (4.8°) slope is 33 kg (330 newtons). This increase is above the threshold in Table 1 (see paragraph 129) for males and well in excess of the threshold for females. Table 2 shows the approximate increase in push forces that can be expected per 100 kg of load, on different slope angles. See paragraphs 127–132 and the RAPP tool for further advice on pushing and pulling.

**Table 2** Effect of slope angle on push force

Slope gradient (degrees)	Push force (kg) increase per 100 kg of laden trolley weight
1	2
3	5
5	9
7	12
10	17

184 Too much variation between the heights of working surfaces, storage shelving etc will increase the range of movement and therefore the risk of injury, particularly if the variation is large and requires, for example, moving the load from near floor level to shoulder height or higher. Therefore provide either:

- working surfaces, such as benches, that are at a uniform height to reduce the need for raising or lowering loads; or
- height-adjustable equipment, eg a scissor lift.

***Are there extremes of temperature or high humidity?***

185 Manual handling work in hot conditions may increase the risk of injury. Sweating can make manual handling more hazardous by obstructing vision or by reducing the ability of the hands to grip loads securely. Handling in extremely hot environments may lead to heat stress, where the body temperature increases,

**Guidance 4(1)(b)(i),  
4(1)(b)(ii)  
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paragraphs 1–3**

especially when levels of humidity are high and air velocity is low. This can be fatal, even in acclimatised workers. More detailed advice on working in a hot environment and managing the risk from heat stress is in the leaflet *Heat stress in the workplace: A brief guide*<sup>35</sup> and on HSE's 'Temperature' web pages at [www.hse.gov.uk/temperature](http://www.hse.gov.uk/temperature).

186 Low temperatures can impair dexterity as blood flow to the skin and the extremities of the body, such as the fingers, will be reduced. Air movement also reduces the effective working temperature (the wind chill factor). Appropriate levels of clothing will provide insulation to counteract this but may restrict movement, impair dexterity and reduce grip. If the body temperature drops too far, there is a risk of hypothermia. Guidance on working in chilled units and freezers is at [www.hse.gov.uk/food/chilled.htm](http://www.hse.gov.uk/food/chilled.htm) and links to British Standards on cold stress can be found on HSE's 'Temperature' web pages.

187 Where possible, provide comfortable workplaces for manual handling by improving environmental control or relocating the work to avoid extremes of temperature and excessive humidity. Where these conditions cannot be changed, eg when manual handling has to be done outside in extreme weather, or close to a very hot process, or in a refrigerated storage area, the use of PPE will be necessary. For your particular circumstances, the risk assessment process will allow you to determine whether or not your work conditions should be considered as 'extreme'. There is advice from HSE on managing workplace temperatures and thermal comfort on HSE's 'Temperature' web pages.

***Are there ventilation problems or gusts of wind?***

188 Poor ventilation in enclosed spaces is likely to lead to reduced levels of oxygen in the atmosphere. This will affect the ability of handlers to make decisions and they will experience fatigue more quickly. Advice on general workplace ventilation is in *Workplace health, safety and welfare*<sup>23</sup> and in the 'Ventilation' section of 'The health and safety toolbox' web pages.<sup>24</sup> Sudden or localised strong air movements, whether caused by a ventilation system or the wind, can make it harder to handle large loads such as sheet materials safely.

***Are there poor lighting conditions?***

189 Poor lighting conditions can increase the risk of injury. Dimness or glare may prevent the handler from seeing loads or equipment properly and may cause poor posture, for example by encouraging stooping. Poor lighting on stairs and contrast between areas of bright light and deep shadow can aggravate tripping hazards and make it more difficult to judge height and distance.

190 There should be well-directed light to enable handlers to see clearly what they are doing, where they are going, the layout of the workplace, and to make accurate judgements of the size, nature, distance and position of the loads they are handling. The introduction of temporary or portable lighting when loading or unloading unlit trailers and storage containers will reduce the risks. See the Workplace (Health, Safety and Welfare) Regulations for more information on lighting. CIBSE produces a number of lighting guides for specific applications.<sup>36</sup>

## PART 4 Mechanical assistance and good handling technique

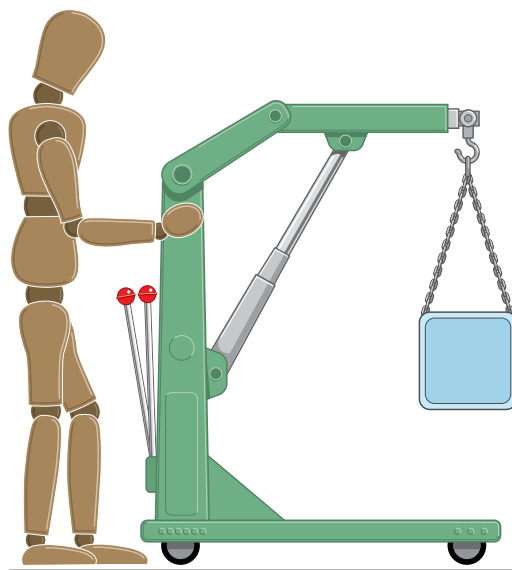
### Guidance 4(1)(b)(i) and 4(1)(b)(ii)

### Mechanical assistance

191 Mechanical assistance involves the use of handling aids – some manual handling is retained but bodily forces are applied more efficiently, reducing the risk of injury. There are many examples:

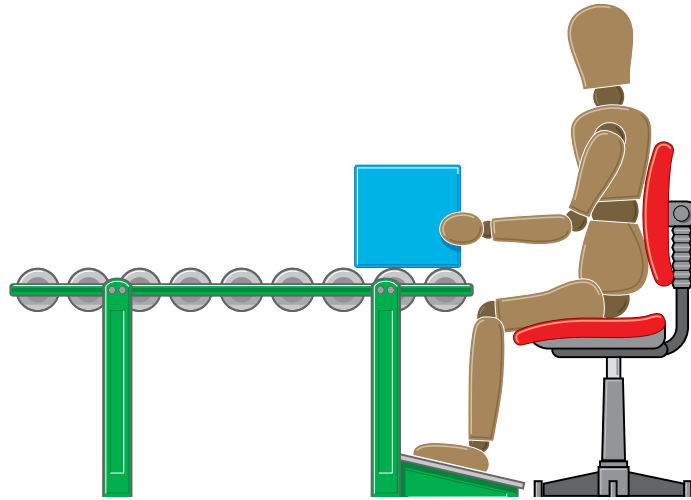
- A simple lever can reduce the risk of injury by decreasing the bodily force required to move a load, or by removing fingers from a potentially damaging trap.
- A hoist, either powered or hand-operated, can support the weight of a load and leave the handler free to control its position.
- A trolley, sack truck or roller conveyor can greatly reduce the effort required to move a load horizontally.
- Chutes and flow racking are convenient ways of using gravity to move loads from one place to another.
- Handling devices such as hand-held hooks or suction pads can simplify the problem of handling a load that is difficult to grasp.
- Hand pallet trucks and roll cages are ways of moving bulky loads manually.
- Turntables, inverters and drum rotators can be used to manipulate bulky loads.
- Powered lift trucks can be used to move items such as pallets into position for manual handling of individual items on the pallet.

192 See *Making the best use of lifting and handling aids* for more information about handling aids. Examples of some common handling aids are illustrated in Figures 7–16.

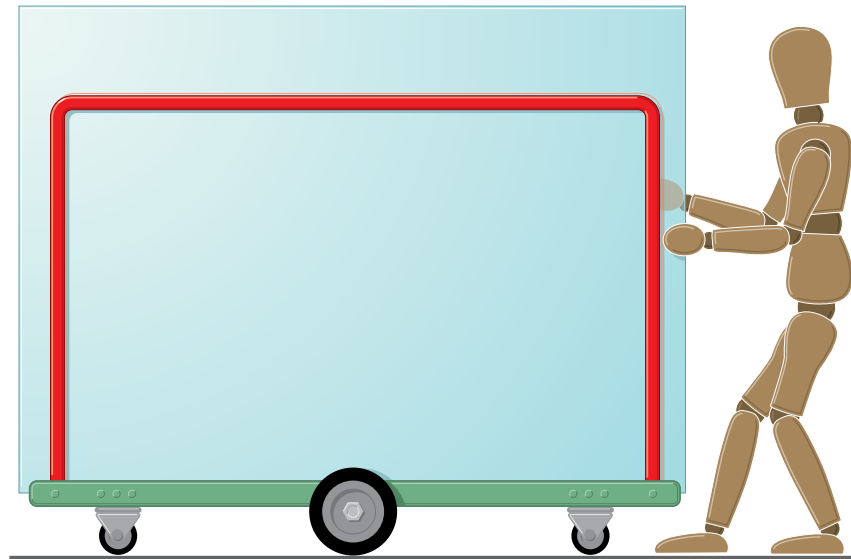


**Figure 7** Small hand-powered hydraulic hoist

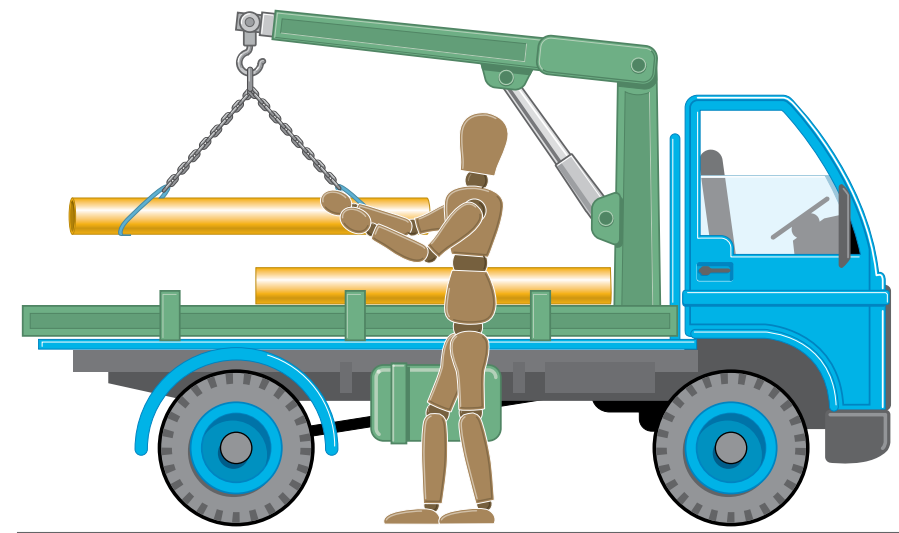
Guidance 4(1)(b)(i)  
and 4(1)(b)(ii)



**Figure 8** Roller conveyors

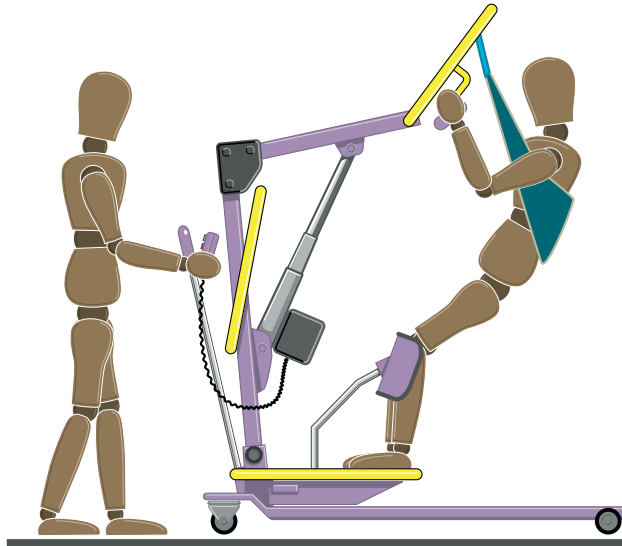


**Figure 9** Moving large sheet material



**Figure 10** Small hydraulic lorry loading crane

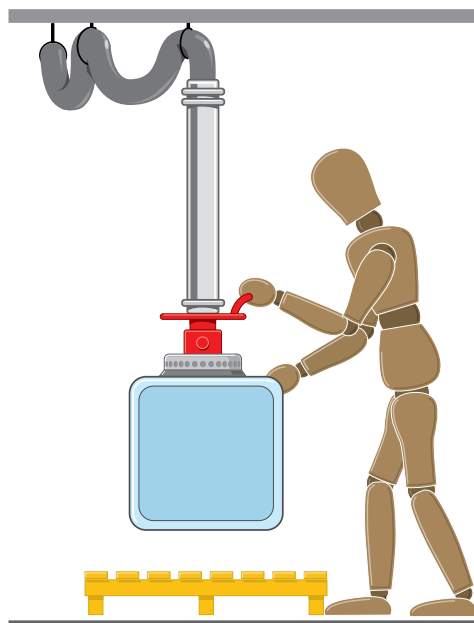
Guidance 4(1)(b)(i)  
and 4(1)(b)(ii)



**Figure 11** Patient standing hoist

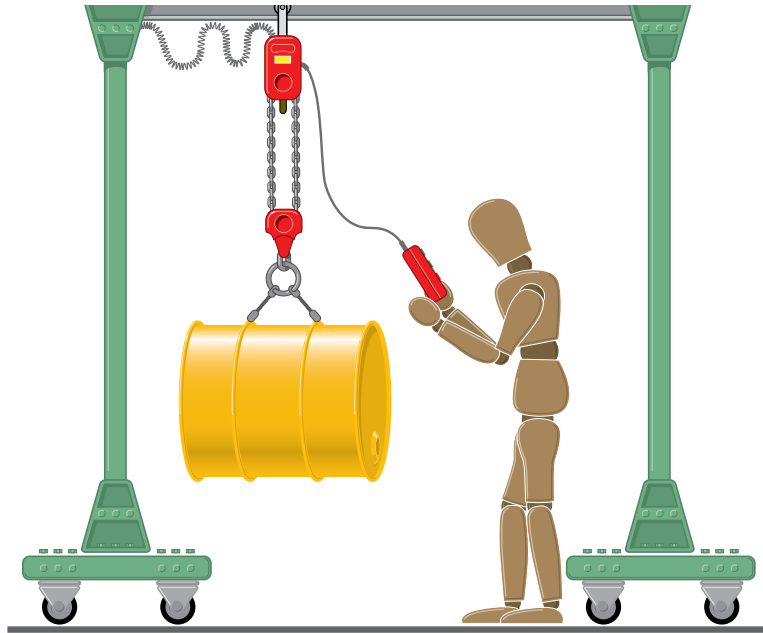


**Figure 12** The simple, low-tech sack trolley

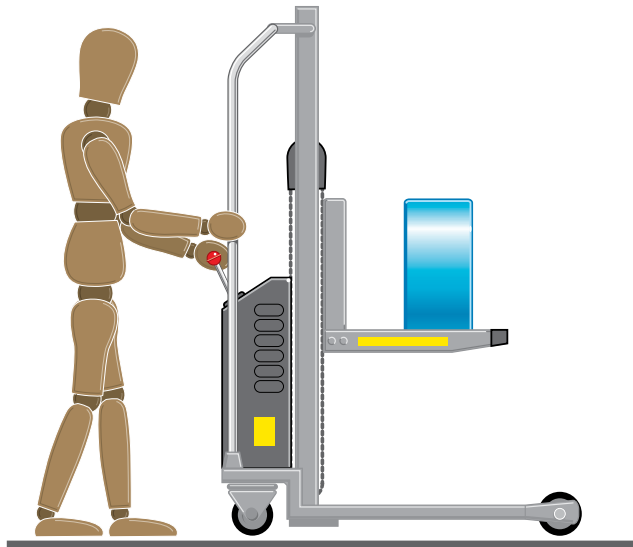


**Figure 13** Powered vacuum lifter

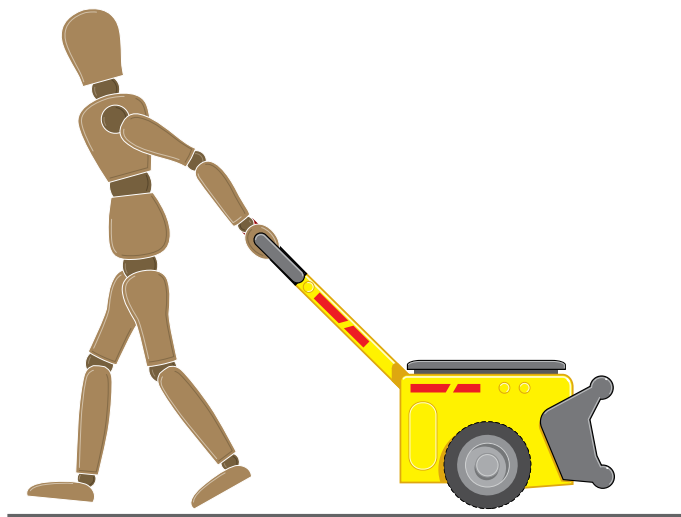
Guidance 4(1)(b)(i)  
and 4(1)(b)(ii)



**Figure 14** Electric hoist on mobile gantry



**Figure 15** Truck with powered lifting mechanism



**Figure 16** Mobile welding set

**Guidance 4(1)(b)(i)  
and 4(1)(b)(ii)****Maintenance of equipment**

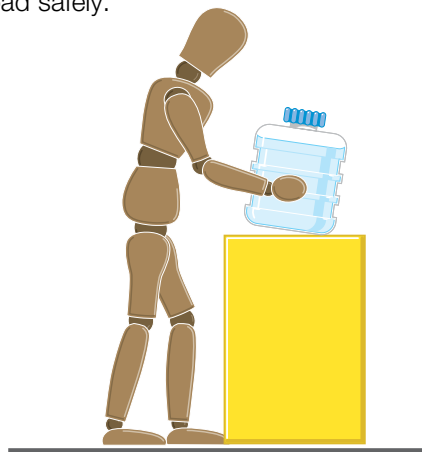
193 All equipment provided for use during manual handling, including handling aids and PPE, should be included in a planned preventive maintenance programme which should include a defect reporting and correction system. For equipment used for pushing and pulling, this should include any wheels. A system for tagging defective equipment is one way to indicate that it should be taken out of use and sent for repair or disposal. Make sure users have easy access to the equipment they need. The Provision and Use of Work Equipment Regulations 1998 and the Lifting Operations and Lifting Equipment Regulations 1998<sup>37</sup> may also apply.

**Good handling technique**

194 **A good handling technique is no substitute for other risk-reduction steps**, such as providing lifting aids, or improvements to the **task, load** or **working environment**. Moving the load by rocking, pivoting, rolling or sliding is preferable to lifting it in situations where there is limited scope for risk reduction. However, good handling technique forms a very valuable addition to other risk-control measures. To be successful, good handling technique needs both training and practice. The training should be carried out in conditions that are as realistic as possible, emphasising its relevance to everyday handling operations in the workplace (also see paragraphs 65–71).

195 There is no single correct way to lift and there are many different approaches, each with merits and advantages in particular situations or individual circumstances. The content of training in good handling technique should be tailored to the particular handling operations likely to be carried out, beginning with relatively simple examples and progressing to more specialised handling operations as appropriate. For example:

- Employees should be able to identify loads that might cause injury when handled. Increases in size often indicate an increase in weight and difficulty of handling.
- Where the size of the item is less important than how full it is, eg in the case of a dustbin containing refuse, they should assess the load by looking inside it or use techniques such as rocking the load from side to side before attempting to lift it (see Figure 17).
- They should also treat unfamiliar loads with caution. Drums which appear to be empty or other closed containers should be tested, eg by trying to raise one end.
- They should apply force gradually when testing loads. If employees feel too much strain, they should be encouraged to look for another way of handling the load safely.



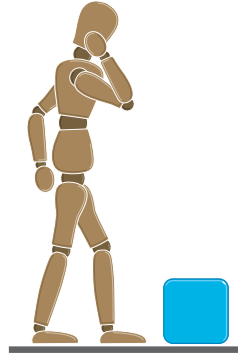
**Figure 17** Rocking a load to assess its ease of handling



**Guidance 4(1)(b)(i)  
and 4(1)(b)(ii)**

196 The following list illustrates some important points which are relevant to a basic two-handed symmetrical lift – a lift using both hands that takes place in front of and close to the body, without any twisting.

**Figure 18** Basic lifting operations



- **Think before handling/lifting.** Plan the lift/handling activity. Where is the load going to be placed? Use appropriate handling aids where possible. Will help be needed with the load? Remove obstructions, such as discarded wrapping materials. For long lifts, such as from floor to shoulder height, consider resting the load mid-way on a table or bench to change grip.



- **Keep the load close to the waist.** Keep the load close to the waist for as long as possible while lifting. The distance of the load from the spine at waist height is an important factor in the overall load on the spine and back muscles. Keep the heaviest side of the load next to the body. If a close approach to the load is not possible, try to slide it towards the body before attempting to lift it.



- **Adopt a stable position.** The feet should be apart with one leg in front of the other (alongside the load if it is on the ground) to increase the stability of the worker's posture. The worker should be prepared to move their feet during the lift to maintain a stable posture. Wearing over-tight clothing or unsuitable footwear may make this difficult.

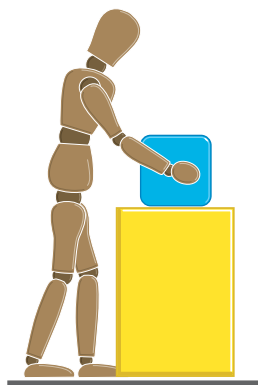
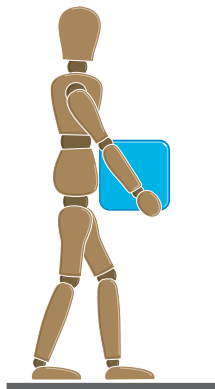
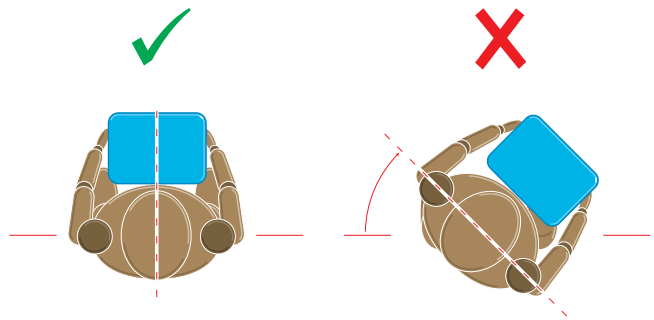


- **Ensure a good hold on the load.** Where possible, hug the load as close as possible to the body. This may be better than gripping it tightly only with the hands.
- **Moderate flexion (slight bending) of the back, hips and knees at the start of the lift** is preferable to either fully flexing the back (stooping) or fully flexing the hips and knees (full/deep squatting).

- **Don't flex the back any further while lifting.** This can happen if the legs begin to straighten before starting to raise the load. The worker should start the movement with the strong leg muscles while keeping the back posture constant.

**Guidance 4(1)(b)(i) and 4(1)(b)(ii)**

**Figure 18** Basic lifting operations (continued)



- **Avoid twisting the back or leaning sideways especially while the back is bent.** Keep shoulders level and facing in the same direction as the hips. Turning by moving the feet is better than twisting and lifting at the same time.
- **Keep the head up when handling.** Look ahead not down at the load once it has been held securely.
- **Move smoothly.** Do not jerk or snatch the load as this can make it harder to keep control and can increase the risk of injury.
- **Don't lift or handle more than can be easily managed.** There is a difference between what people can lift and what they can safely lift. If in doubt, seek advice or get help.
- **Put down, then adjust.** If precise positioning of the load is necessary, put it down first, then slide it into the desired position.

197 Involve employees and their representatives in any redesign of the system of work and in the development of handling techniques.

## APPENDIX How to choose the right level of detail for your manual handling risk assessments

### Introduction

1 Your primary duty under the Regulations is to avoid operations which involve a risk of injury or, where this is not reasonably practicable, to assess those operations and reduce the risk of injury to the lowest level reasonably practicable. Look closely at the highest risk operations and do not use your resources on detailed assessments of low-risk tasks. Make sure your workforce is fully involved in the risk assessment process. For information about HSE's risk assessment tools and links to other non-HSE tools look at [www.hse.gov.uk/msd/risk.htm](http://www.hse.gov.uk/msd/risk.htm).

2 This appendix can help you decide how detailed your manual handling risk assessments should be. If you choose to use HSE's approach, there are three levels of detail:

- **simple filters** to distinguish low-risk tasks from the tasks which need a more detailed assessment (see paragraphs 4–22 of this appendix);
- the *Manual handling assessment charts (the MAC tool)*<sup>6</sup> or the *Risk assessment of pushing and pulling (RAPP) tool*,<sup>7</sup> which are **HSE's tools** for assessing the most common manual handling risk factors of these tasks. They will help you prioritise action to control the risks (see paragraphs 23–29 of this appendix);
- a **full risk assessment**. If you have already done an assessment with the HSE tools (MAC or RAPP) then you can add any necessary information to ensure adequate coverage of the factors required by the Regulations (see paragraphs 32–33 of this appendix). Otherwise you can carry out a standalone full risk assessment (see paragraphs 34–36 of this appendix and the online checklists<sup>8</sup>).

3 This is set out in a flow chart in Figure 19. Depending on the type of manual handling operations in your workplace, you may not need to complete all three levels. For high-risk tasks you can go straight to a detailed full risk assessment. Guidance relevant to your particular industry may also be available to help you.

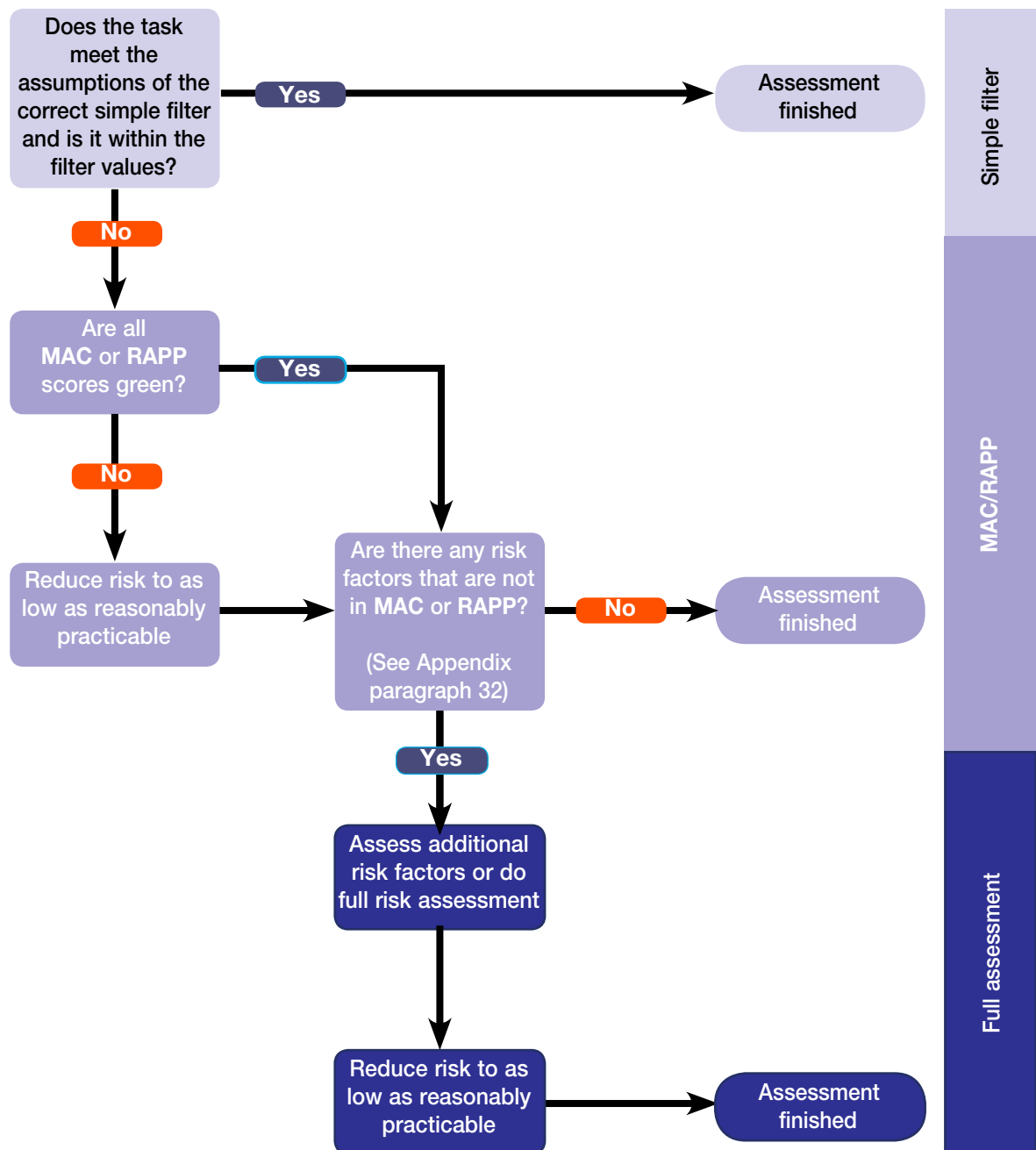


Figure 19 How detailed should the risk assessment be?

## The filters

4 Use the filters to identify tasks that are low risk. If the task is within the filter values you do not normally need to do any other form of risk assessment unless you have individual employees who may be at significant risk, eg pregnant workers, young workers, those new to the job, or those with a significant health problem or a recent injury. If you are not sure that a task is low risk, you should do a more detailed risk assessment.

5 The filters are based partly on data in published scientific literature and partly on practical experience of assessing risks from manual handling. They are pragmatic, tried and tested and set out approximate boundaries that will provide a reasonable level of protection to around 95% of working men and women.

However, you must **not** regard them as safe weight limits for lifting. Because there are very many factors that influence risk, there is no weight threshold where manual handling operations change from 'safe' to 'unsafe'. Even operations lying within the boundaries of the filters should be avoided or made less demanding wherever it is reasonably practicable to do so.

6 Even for a minority of fit, well-trained individuals working under favourable conditions, operations which exceed the filter values by more than a factor of about two may represent a serious risk of injury. Always make these operations high priority for carrying out full risk assessments and implementing appropriate risk-reduction measures.

## When to do a more detailed assessment

7 You will need to carry out either a MAC/RAPP (or equivalent) or full risk assessment when any of the following conditions apply:

- Lifting or lowering takes place outside the box zones in Figure 20, such as with very large forward reaches, lifting below floor level or lifting above head height.
- The handling is more frequent than one lift every two minutes (see paragraphs 136–143 in the main guidance).
- The handling involves torso twisting (paragraph 121 in the main guidance).
- Team handling occurs (paragraphs 147–151 in the main guidance).
- The activities are complex (paragraph 135 in the main guidance).
- The load is difficult to grasp or handle (paragraphs 160–163 in the main guidance).
- Aspects of the working conditions are not favourable (paragraphs 172–190 in the main guidance).
- Carrying happens with the load not held against the body (paragraphs 117–120 in the main guidance).

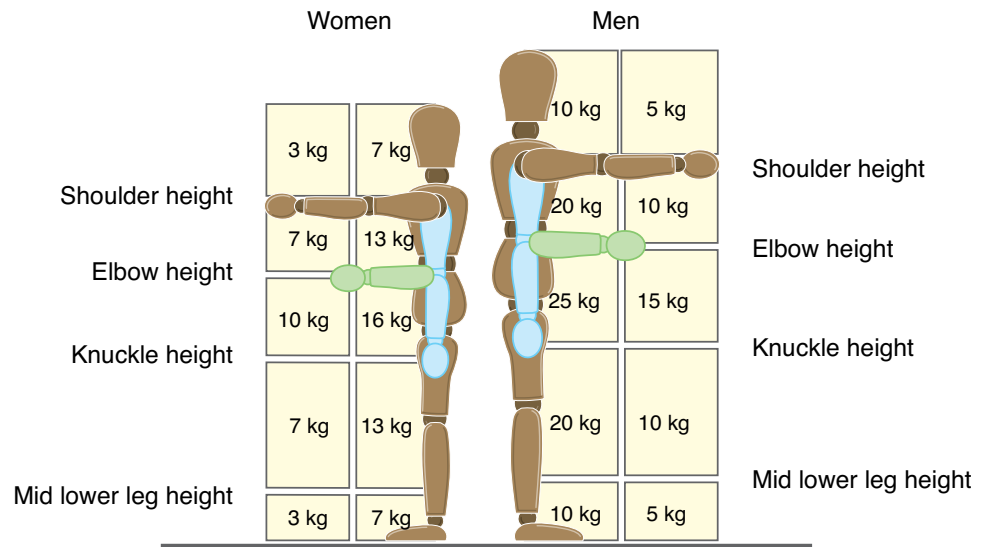
## The filters in detail

8 There are different filters for four types of manual handling operations. These are:

- lifting and lowering;
- carrying for up to 10 m;
- pushing and pulling for up to 20 m;
- handling while seated.

9 The filters do not take account of the full range of factors required by Schedule 1 of the Regulations.

## Lifting and lowering risk filter



**Figure 20** Lifting and lowering risk filter

10 Each box in Figure 20 contains a filter value for lifting and lowering in that zone. The filter values are reduced if handling is done with arms extended, or at high or low levels, as that is where injuries are most likely to happen.

11 Observe the work activity you are assessing and compare it to the diagram. First decide which zone or zones the lifter's hands pass through when moving the load. Then assess the maximum weight being handled. If it is less than the value given in the matching box, the operation is within the guidelines.

12 If the lifter's hands enter more than one zone during the operation, use the smallest weight. If either the start or end positions of the hands are close to a boundary between two boxes you should use the average of the weights for the two boxes.

13 The filter for lifting and lowering assumes:

- the load is easy to grasp with both hands;
- the operation takes place in reasonable working conditions;
- the handler is in a stable body position.

14 If the weight lifted exceeds the filter weight or these assumptions are not met, then you can use the MAC tool to do a more detailed assessment, or carry out a full risk assessment as in paragraphs 30–37 of this appendix and the online checklists.

## Carrying risk filter

15 The filter weights for lifting and lowering in Figure 20 apply to carrying operations where the load:

- is held against the body;
- is carried no further than about 10 m without resting;
- does not prevent the person from walking normally;
- does not obstruct the view of the person carrying it;
- does not require the hands to be held below knuckle height or much above elbow height (owing to static loading on the arm muscles).

16 Where the load can be carried securely on the shoulder without first having to be lifted (as, for example, when unloading sacks from a lorry) you can apply the filter values to carrying distances up to 20 m.

17 If the weight lifted exceeds the filter weight or these assumptions are not met, then you can use the MAC tool to do a more detailed assessment, or carry out a full risk assessment as in paragraphs 30–37 of this appendix and the online checklists.

### Pushing and pulling risk filter



**Figure 21** Acceptable push/pull postures

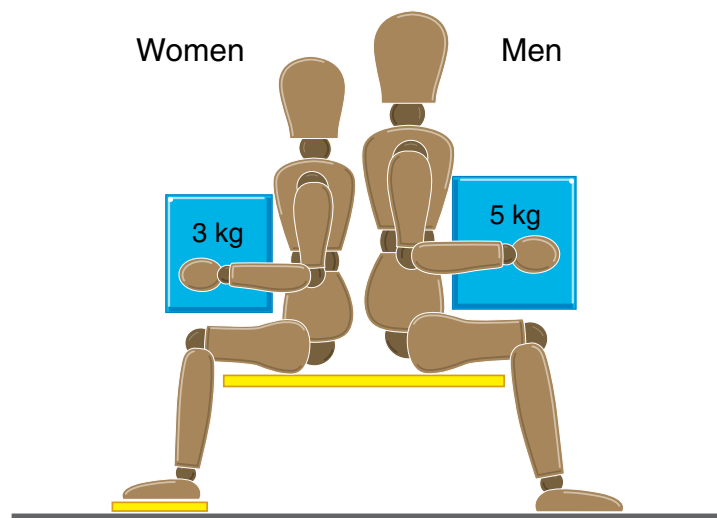
18 In pushing and pulling operations the load might be slid, rolled or moved on wheels. Observe the general posture being used while the pushing or pulling operation is being carried out. The task is likely to be low risk if:

- the force is applied with the hands; and
- the torso is largely upright and not twisted; and
- the hands are between hip and shoulder level; and
- the distance involved is no more than about 20 m.

19 An additional indicator that the task is low risk is if the load can be moved and controlled easily with only one hand.

20 If the task requires significant forces for pushing and pulling, as indicated by the posture while the operation is being carried out, then you can use the RAPP tool to do a more detailed assessment, or carry out a full risk assessment as in paragraphs 30–37 of this appendix and the online checklists. Even where the task is within the filter, a more detailed risk assessment will be necessary if there are risk factors such as slopes, uneven floors, confined spaces or trapping hazards. Also see paragraphs 127–132 for more information.

### Handling while seated risk filter



**Figure 22** Handling while seated

21 The filter values for handling operations carried out while seated, shown in Figure 22, are:

Men	Women
5 kg	3 kg

22 These values only apply when the hands are within the zone shown. If handling beyond this box zone is unavoidable, you should make a full assessment (paragraphs 30–37 of this appendix and the online checklists).



## Using HSE's tools to carry out a more detailed risk assessment

23 The filters only assess risks from the weight and position(s) of the load or the force and postures needed to push or pull it. HSE's manual handling assessment tools (MAC and RAPP) help you assess more of the risk factors.

### The MAC and RAPP tools

24 The *Manual handling assessment charts (MAC)* and *Risk assessment of pushing and pulling (RAPP) tool* are part of HSE's MSD toolkit, along with the *Assessment of repetitive tasks of the upper limbs* (the ART tool) and the *Variable MAC tool (V-MAC)*. The tools were developed to guide users through logical processes to identify high-risk manual handling operations for which urgent further action is necessary to reduce risk.

- Using the MAC tool will help you assess the most common risk factors in lifting (and lowering), carrying and team handling operations.
- You can use the V-MAC with the MAC tool for lifting operations where load weights or handling frequencies vary, such as when loading a lorry with a range of items of different weights.
- The RAPP tool will help you assess pushing and pulling operations.

25 The MAC and RAPP tools can be downloaded free from the MSD toolkit web page, where you will also find guidance on using the MAC and the V-MAC and background information on pushing and pulling ([www.hse.gov.uk/msd/toolkit.htm](http://www.hse.gov.uk/msd/toolkit.htm)).

26 The tools in HSE's MSD toolkit use a 'traffic light' approach to indicate levels of risk – an example is in Figure 23. Numerical values are also provided for each level of risk for each risk factor. The risk levels are based on published data in the ergonomics literature. You are not required by law to use any of HSE's tools. There are other available methods of assessing the risk of work-related MSDs that you may choose to use instead. Your assessment is required to be 'suitable and sufficient' and does not need to be in a particular format.



**Figure 23** The MAC colour bands showing the 'traffic light' approach

27 The MAC leaflet has a single score sheet that covers lifting, carrying and team handling tasks and you can download an interactive version from [www.hse.gov.uk/msd/mac/scoresheet.htm](http://www.hse.gov.uk/msd/mac/scoresheet.htm). The RAPP leaflet has different score sheets for wheeled equipment and items without wheels.

28 To complete a MAC or RAPP assessment:

- Spend some time observing the task (videoing may help) to make sure what you are seeing is representative of normal working procedures. Always consider the 'worst case scenario'. Involve your employees and safety representatives during the assessment process. Where several people do the same task, make sure you have some insight into the demands of the job from the perspective of all employees.
- Select the appropriate type of assessment (ie lifting, carrying or team handling, pushing or pulling loads with or without wheels). If a task involves lifting and carrying, consider both.
- Follow the appropriate assessment guide and flow chart to determine the level of risk for each risk factor.
- For each factor, enter the colour band and corresponding numerical score on the correct score sheet. The colour bands help determine which elements of the task require attention.
- Consider individual characteristics such as age, sex, physical fitness, strength and psychosocial factors when completing the score sheets (see the guidance on regulation 4(3) in paragraphs 57–83 in the main text for more information).
- Make sure you complete the task description and consider the indications of a high-risk task.
- Use the scores to help identify which risk factors need to be examined and the total level of exposure to risk.
- If the individual does a number of tasks, assess each one separately and prioritise action to address the highest scoring task.
- You can use the total scores to rank tasks to decide which ones require attention first. You can also use the scores as a way of evaluating potential improvements. Generally, the most effective improvements will bring about the highest reduction in the score. The scores can be used for comparison purposes but the total scores do not relate to specific action levels.

29 When you have made changes, repeating the risk assessment will help you check that your actions have been successful and that no other significant risks remain.

## A full risk assessment

30 You do **not** need to go through all three stages of the assessment process (described in paragraph 2 of this appendix) if you are confident that you need to go straight to a full risk assessment. You are likely to need to carry out a full risk assessment when any of the following apply:

- The activities cannot be assessed by the MAC or RAPP tools because they do not meet their assumptions, eg tasks involving lifting or lowering at more than 12 lifts per minute/one lift every five seconds.
- You have individual employees who may be at significant risk due to temporarily reduced or low capability to do physical work. Examples would be pregnant women, young workers, people new to the workforce or job, and those with a significant health problem or a recent manual handling injury.
- Factors from Schedule 1 not included in the MAC or RAPP tools are important in a particular operation (see paragraph 32 of this appendix).
- The types of handling are not covered by the MAC or RAPP tools and are also outside the limits of the risk filters for:
  - handling when seated;
  - carrying on the shoulder without lifting the load first.

31 If the task is largely repetitive handling of light loads in the hands, then it may be appropriate for you to use HSE's ART tool to assess the risks. The MAC tool is more appropriate for assessing loads above 8 kg.

### Using the MAC/RAPP tools plus additional factors

32 Because the MAC and RAPP tools do not include all the risk factors listed in Schedule 1 of the Regulations, using them alone may not comprise a fully 'suitable and sufficient' risk assessment. The additional risk factors are:

- large vertical movement;
- risk of sudden movement of loads;
- a rate of work imposed by a process;
- unstable or with contents likely to shift;
- sharp, hot or otherwise potentially damaging;
- require unusual strength, height etc;
- require special information or training for its safe performance;
- movement or posture is hindered by PPE or by clothing.

33 If you use MAC/RAPP and then decide to carry out a full risk assessment, you can use the information you have already gathered as the basis for that full risk assessment. The score sheets for the MAC/RAPP tools provide space to document individual characteristics and psychosocial factors which you may need to consider.

### Using the online checklists

34 See the online examples of checklists<sup>8</sup> to help you carry out full risk assessments by systematically working through all of the risk factors in Schedule 1 of the Regulations. There is one for lifting and carrying and a separate one for pushing and pulling. You can print and copy them freely and adapt them if you need to assess a more unusual type of manual handling.

35 Work through the three sections of the appropriate checklist:

- **Section A – Preliminary:** Describe the task you are assessing. You may find it helpful to include diagrams or photographs to illustrate the tasks, as well as a written description.
- **Section B – More detailed assessment:** Work through the list of factors and tick the level of risk you believe to be associated with each item. Use the findings/colour bands from any MAC or RAPP assessment you have already done of the task to help you decide the risk levels.

There are spaces for you to note the precise nature of the problem and for your ideas about remedial action. You may find it useful to list the people or groups in your organisation who you will wish to consult about implementing the remedial steps.

Some tasks may involve more than one operator, each with a different level of risk depending on the exact nature of their duties. Either note the differences on one checklist or use a separate one for each operator.

Return to the end of Section A and decide whether the overall risk of injury is Low, Medium or High.

- **Section C – Remedial action to be taken:** Summarise the remedial steps you intend to take to improve that task. Put them in order of priority and identify who is responsible for carrying out each one. Set target dates for each action to be completed. Only complete the final column when the action has been taken. There are likely to be several ways to reduce the risks identified and some will be more effective than others. Do not delay action on easy and quick changes simply because they may be less effective than others.

36 You can compare the completed checklists from different manual handling tasks to help prioritise the most urgent actions. One way is to count up the number of High and Medium risk factors for each task and to concentrate on tasks with the most High risk factors. Remember to check that any actions taken have had the desired effect.

37 People who may be able to suggest ways of reducing risk include your workers and their safety representatives, the quality management team within your organisation, relevant trade or industry associations and professional ergonomists. Useful sources of information include HSE publications, trade journals and magazines and ergonomics textbooks. See HSE's web page on 'Competence in health and safety' for further useful information ([www.hse.gov.uk/competence](http://www.hse.gov.uk/competence)).

## Useful contacts

### **Backcare**

Monkey Puzzle House  
69–71 Windmill Road  
Sunbury-on-Thames TW16 7DT  
Tel: 0208 977 5474  
Website: [www.backcare.org.uk](http://www.backcare.org.uk)

### **Chartered Institute of Ergonomics and Human Factors**

Elms Court  
Elms Grove  
Loughborough  
Leicestershire LE11 1RG  
Tel: 07736 893350  
Website: [www.ergonomics.org.uk](http://www.ergonomics.org.uk)

### **Institution of Occupational Safety and Health (IOSH)**

The Grange  
Highfield Drive  
Wigston  
Leicester LE18 1NN  
Tel: 0116 257 3100  
Website: [www.iosh.co.uk](http://www.iosh.co.uk)

### **National Back Exchange**

Linden Barns  
Greens Norton Road  
Towcester  
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## Further information

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