Manual Handling - Risk Assessment

Level 3 Health and Safety in the Workplace

Introduction

More than a third of all reported workplace injuries are caused by poor manual handling practices, such as lifting, lowering, pushing, pulling and carrying.

What's more, manual handling injuries can occur almost anywhere in the workplace, and heavy manual labour, awkward postures and previous or existing injuries can increase the risk.

This section of the course looks at how manual handling can cause injury and explains what you can do to control the risks.

Topics to be Covered

The topics covered in this section are:

- What is manual handling?
- Employer duties
- Can manual handling be avoided?
- Risk assessment
- Task, load, environment and individual capability

What is Manual Handling?

Manual handling is any action involving physical effort to move or support an object or person by:

- Lifting.
- Pushing.
- Pulling.
- Manoeuvring.
- Steadying.
- Carrying.
- Transporting.

The most common injuries from manual handling are:

- Sprains and strains.
- Contusions and lacerations.
- Fractures.
- Back injuries (mainly to muscles and ligaments).
- Injuries to fingers, thumbs and arms.
- Leg and lower limb injuries.

It's estimated that over 500,000 people in Great Britain suffer from a musculoskeletal disorder (MSD), mainly affecting the upper limbs or neck, that was caused, or made worse, by their current or past work.

MSDs are the most common occupational illness in Great Britain, affecting one million people a year and costing in excess of £5 billion.

As well as accounting for over a third of all accidents reported each year to the enforcing authorities, it's estimated that around nine million working days are lost each year due to MSDs.

Employer Duties

The Manual Handling Operations Regulations 1992 requires employers to ensure that a suitable and sufficient assessment of all manual handling operations is undertaken.

If a manual handling injury is foreseen, then the employer should:

- First try to avoid the need for manual handling activities that may put workers at risk of harm.
- If manual handling can't be avoided, assess the activities and identify the risks.
- Take appropriate steps to reduce the risk of injury to employees arising from manual handling activities.

Can Manual Handling be Avoided?

Where possible, employers should always try to eliminate the need for manual handling. In attempting to avoid manual handling, it must be considered whether the load needs to be handled at all or whether the work could be done in a different way.

Think about the following questions:

- Is it possible for the operation to be carried out without manual handling at all?
- Can the next stage of the processing be carried out in situ where the object is located, rather than moving the object to a different location?
- Can the material be piped to the next point of use, such as bulk raw material feeds, or transported on a conveyor belt?

Consideration should also be given to automation or mechanisation of the handling operation, the effectiveness of which is greater if it can be incorporated into the original design for the process.

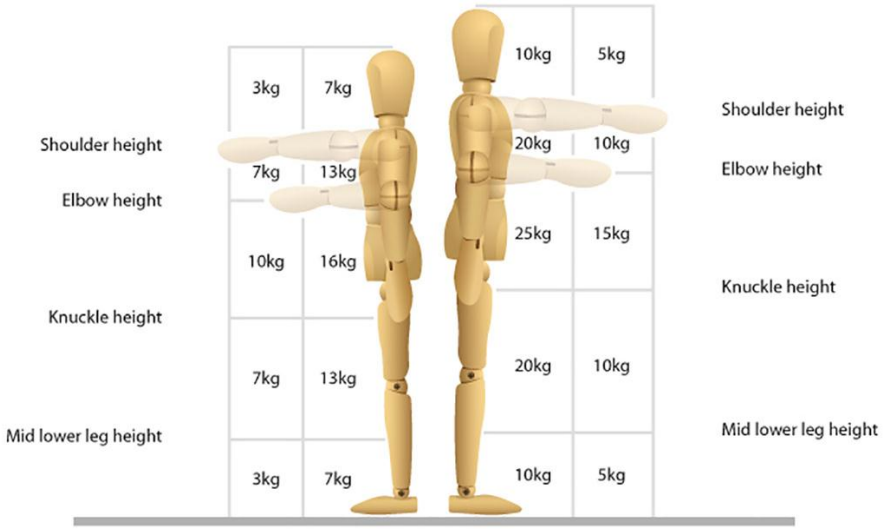
However, although avoiding manual handling is important, it is of little benefit if the resultant risks are greater than the original risks. For example, if introducing a forklift truck creates new hazards not originally considered.

Mechanisation options could include:

- Lift trucks, such as forklifts, reach trucks and side loaders.
- Cranes and hoists.
- Conveyor systems.
- Powered pallet trucks.
- Pneumatic transfer systems.
- Pumped pipe work systems.
- Gravity fed systems.

Risk Assessment

If manual handling cannot be easily eliminated, then a detailed assessment of every manual handling operation is necessary. This could be a great undertaking, but it will help you to determine which manual handling activities involve a significant risk of injury and so require specific control measures.
Start by identifying all of the manual handling activities undertaken by employees, no matter how small, by referring to a generic risk assessment of work activities, consulting with employees and doing workplace inspections and observations.
The identified manual handling activities must then be evaluated to determine which of them present a significant risk. The Health and Safety Executive risk assessment guidelines are recommended for use in making a judgement as to whether a significant risk exists.



This HSE diagram provides guidelines for the maximum weight for lifting and lowering in relation to each area of the body.
The guideline maximum weights are less if handling with arms extended or at high or low levels, as this is where injuries are most likely.

If the load is passed between zones, then the lower weight must be selected. For example, if a man (right diagram) is lowering a load from head height, the total weight should not exceed 5kg. If a man is lowering a weight from shoulder height, then it must not exceed 10kg.

However, the guidelines make several assumptions:

- That the load is easy to grasp.
- That the manual handling operation takes place in good working conditions, with the handler in a stable position.
- That the handler is suitably trained and able to carry out the manual handling operation in accordance with that training.
- That there is an adequate recovery period between each handling activity.
- That the task does not involve any stooping or twisting.

These aspects of manual handling must be considered as part of your risk assessment.

Where the preliminary risk assessment is deemed not to be suitable and sufficient, a more detailed risk assessment is needed.

This would be in cases where:

- The conditions given for using HSE guidelines are not met.
- The person doing the manual handling has reduced capacity, such as due to pregnancy or a disability.
- The handling operation must take place outside the parameters indicated by the HSE guidelines.
- HSE guideline figures are exceeded.
- There are extra risk factors, such as uneven floors, confined spaces or the load is to be moved more than 20 metres.

All risk assessments should cover four key areas, which can be remembered using the **TILE** acronym:

- **T**ask.
- **I**ndividual capability.
- **L**oad.
- **E**nvironment.

Task

The task is the activity that requires manual handling. When identifying the hazards in regards to the task, consider:

- Does the task involve repetitive handling or insufficient rest time?
- Does the task involve holding loads away from the body, long carrying distances or strenuous pushing or pulling?
- Does the task involve twisting, stooping or reaching upwards?
- Does the task require unusual strength or height?
- Does the task involve a risk of sudden movement of the load? Climbing stairs or carrying loads with uneven weight distribution can result in the bulk of the load falling or exceeding a safe weight.
- Does the task involve more than one person? Two people can lift about 1.3 times as much as one person, and three people can lift about 1.5 times as much.

Individual Capability

Each individual is different in terms of build, strength, health, skills and knowledge. Employers should design manual handling operations to be safe for the majority of employees and protect individuals who are at an increased risk.

The risk assessment should identify those involved in manual handling operations who may be particularly at risk. The assessor would be expected to know, or find out:

- Whether the individuals are male or female.
- If they are particularly small or large.
- Whether they have suffered a musculoskeletal injury recently.
- What training in manual handling they have received.
- If any of the female handlers are, or have recently been, pregnant.
- Whether any particular clothing or special equipment is used by the handlers.

Load

The load is the object, person or animal being handled, whether it is being lifted, lowered, pushed, pulled or carried.

The features of the load that need to be taken into account are the forces required to handle it, its size, how easy it is to grasp, its stability and any external features that may create a hazard.

There is no single safe weight for lifting, pushing or pulling as it depends on several other features of the operation. However, legal regulations require information on weight distribution to be marked on loads.

The further the centre of gravity of the load from the body, the greater the leverage effect on the spine, and the higher the risk of injury. Large loads present a greater risk than small loads.

When objects are contained within a carton or packing case, it may not be apparent which part is heaviest and so the risk of injury is increased.
The risk of injury is increased if:

- Loads are not easy to grasp. For example, they may be slippery or have sharp edges and so the risk of dropping the load is increased.
- A load is unstable or its contents are likely to shift during handling. For example, containers of fluid.
- If the load is hot or cold. For example, if the load is taken from a cold store.
- The load has chemical hazards that may expose the handler to risks from inhalation and absorption.
- The load is in a damaged container.

Environment

The environment includes space constraints, the conditions of the floor and other surfaces, extremes of temperature and humidity, lighting and visibility, chemicals, noise and level of housekeeping.

If the space available limits the posture a handler can adopt, then the risk of injury will be increased. This also applies to the amount of headroom, the clarity of walkways and the risk of trapping.

Pay particular attention to:

- Any differences in floor level and surface type.
- The temperature and humidity and whether this will affect grip or cause fatigue.
- Whether the lighting is sufficient.
- Noise levels that may distract the employee.
- The level of housekeeping and whether there are any objects that may cause trip or slip hazards.

Space constraints

If the space available limits the posture a handler can adopt, the risk of injury will be increased. Restricted headroom causes stooping and narrow walkways or tight gaps between furniture or machinery will increase the likelihood of having to twist while carrying an object. The risk of trapping hands against a wall or fixed object will also increase.

Floor and surface levels

Steps and slopes increase the risks involved with handling loads as they can cause a person to trip or slip. Floor surfaces should also be properly maintained and kept free from debris or obstructions to prevent slip, trip and fall hazards.

Furthermore, moving a load from one surface to another that's at a different height can increase the risk of injury, especially when lifting from floor level to above shoulder height. The optimum height for a work surface is around waist level.

Extremes of temperature or humidity

Very hot and humid conditions reduce the ability to carry out physical work, increasing the rate of perspiration and reducing the grip on the load.

Very low temperatures impair the sensation of touch and the ability to control the muscles, making loads harder to grasp. In cooler temperatures, fatigue also sets in earlier and recovery is slower.

Lighting

Poor lighting can increase the risk of injury as it reduces visibility.

Glare or shadowing can lead to misjudgement of distance or height and too much contrast or glare can render objects invisible. Visibility, rather than overall levels of illumination, should be the primary focus of the assessment.

Chemicals

Organic solvents can have a narcotic influence, similar to the effects of alcohol consumption, which may disturb balance and co-ordination. Exposure to chemicals may increase the risk of injury when carrying or lifting loads as they can be inhaled or absorbed through the skin.

Noise

Noisy environments reduce the ability to notice sounds that may occur when lifting or adjusting a load. For example, noise may obscure sounds that indicate the contents of a heavy load are shifting.

Housekeeping standards

Housekeeping needs to be a priority if an employee's line of sight may be obscured by the load that they are carrying. Employees are more prone to slips, trips and falls while carrying loads, and poor housekeeping will further increase this risk.

The Competent Person

The person carrying out the risk assessment must be a designated competent person. This means they should have the knowledge, skills and experience to understand the purpose of a risk assessment, know what information needs to be obtained, draw up an action plan and seek further advice if they need it. They must have:

- An understanding of the regulations.
- A knowledge of the handling operations to be assessed.
- An awareness of individual capabilities and limitations.
- An ability to recognise risks.
- An ability to recommend reasonably practicable solutions.
- A judgement of what constitutes an acceptable residual risk.

Once produced, the manual handling risk assessment must be kept up to date, reviewed at appropriate intervals and revised when a significant change occurs, or in the light of experience.

Exercise

What are the four key aspects that need considering in a manual handling risk assessment?

- [x] Individual capability
- [ ] Housekeeping
- [x] Task
- [x] Environment
- [x] Load

Summary

In this module, you've learnt why it's important to comply with the Manual Handling Operations Regulations 1992 and carry out a risk assessment of all manual handling activities.

Where possible, employers should always aim to eliminate the need for manual handling completely, such as by mechanising an operation. However, this isn't always practical, in which cases care should be taken to ensure the risks to employees' health are minimised.

To assess the risks, you'll need to consider all manual handling activities undertaken by employees and focus on the task, load, environment and individual capability of each worker. Considering each activity in turn will help you to determine which of them pose significant risks to health. The HSE risk assessment guidelines can be used to help you judge whether a significant risk exists.