

MANUAL HANDLING

19.1 Introduction

19.1.1 Based on the findings of the risk assessment, appropriate control measures should be put into place to protect those who may be affected. This chapter highlights some areas which may require attention in respect of manual handling.

19.1.2 The assessment should take full account not only of the characteristics of the load and the physical effort required but also of the working environment (eg ship movement, confined space, high or low temperature, physical obstacles such as steps or gangways) and any other relevant factors (eg the age and health of the person, the frequency and duration of the work). A fuller list of factors to be considered is given in Annex 19.1.

19.2 General

19.2.1 The term “manual handling” is used to describe any operation which includes any transporting or supporting of a load, lifting, putting down, pushing, pulling, carrying or moving by hand or by bodily force. This guidance is generally concerned with preventing musculo-skeletal injury.

19.2.2 There may of course be other hazards to those handling loads, for example from leakage of a hazardous substance from a package being moved, but these are dealt with in other relevant chapters.

19.2.3 Musculo-skeletal injuries can occur as a result of accident, poor organisation or an unsatisfactory working method.

19.3 Role of Employers

19.3.1 *So far as is reasonably practicable, the employer must take appropriate measures or provide the means to avoid the need for any manual handling operations which may cause injury to workers, for example by re-organisation of the work, or automating or mechanising the operation. Before instructing personnel to lift or carry by hand where there is a risk of injury, employers should consider whether alternative means of doing the same job would reduce the risk of injury.*

19.3.2 *Where there is no practical alternative to manual handling, the employer must -*

- (a) carry out an assessment of the manual handling operations, taking into account the factors and questions in Annex 19.1.*
- (b) take appropriate steps to reduce the risk of injury,*
- (c) provide workers with general indications, and where it is available, precise information on:*
 - the weight of each load;*
 - where the centre of gravity of any load is not positioned centrally, the heaviest side of the load;*
- (d) provide workers with proper training and information on how to handle loads correctly and the risks to their health and safety from incorrect handling.*

19.3.3 *Means of reducing the risk of injury may include -*

- re-organisation of work stations (to enable workers to maintain good posture while lifting or carrying); and*
- taking account of an individual's capabilities when allocating tasks.*

There are often severe limitations in a ship on the improvements that can be made, but the employer should ensure that, as far as reasonably practicable, risks have been minimised.

19.3.4 Instruction for personnel may involve experienced and properly trained personnel demonstrating best practice especially to new recruits.

19.4 Advice to seafarers

19.4.1 *Workers must make full and proper use of any system of work provided by the employer.*

19.4.2 Personnel should:

- use any mechanical aids provided;
- follow instructions; and
- take sensible precautions to ensure that they are aware of any risk of injury from the load before picking it up.

19.4.3 In manual lifting and carrying, the proper procedure to be followed is:

- assess the load to be lifted, taking account of any information provided by the employer;
- look for sharp edges, protruding nails or splinters, for surfaces which are greasy or otherwise difficult to grip and for any other features which may prove awkward or dangerous - for example sacks of ship's stores may be difficult to get off the deck;
- ensure that the deck or area over which the load is to be moved is free from obstructions and not slippery.

19.4.4 The diagram (Annex 19.2 Fig 1) illustrates some important points in lifting techniques.

- (a) A firm and balanced stance should be taken close to the load with the feet a little apart, not too wide, so that the lift will be as straight as possible.
- (b) A crouching position should be adopted, knees bent and maintaining the natural curve of the back to ensure that the legs do the work. It helps to tuck in the chin while gripping the load and then raise the chin as the lift begins.

- (c) The load should be gripped with the whole of the hand - not fingers only. If there is insufficient room under a heavy load to do this a piece of wood should be put underneath first.
- (d) The size and shape of the load are not good guides to its weight or weight distribution. If this information is not available a careful trial lift should be made, and if there is any doubt whether the load can be managed by one person help should be provided.
- (e) The load should be lifted by straightening the legs, keeping it close to the body. The heaviest side should be kept closest to the trunk. The body should not be twisted as this will impose undue strain on the back and other parts of the body.
- (f) If the lift is to a high level, it may be necessary to do it in two stages; first raising the load onto a bench or other support and then completing the lift to the full height, using a fresh grip (Fig 2).

19.4.5 When two or more people are handling a load, it is preferable that they should be of similar stature. The actions of lifting, lowering and carrying should, as far as possible, be carried out in unison to prevent strain and any tendency for either person to overbalance (Fig 3).

19.4.6 The procedure for putting a load down is the reverse of that for lifting, the legs should do the work of lowering - knees bent, back straight and the load close to the body. Care should be taken not to trap fingers. The load should not be put down in a position where it is unstable. If precise positioning is necessary, the load should be put down first, then slid into the desired position.

19.4.7 A load should always be carried in such a way that it does not obscure vision, so allowing any obstruction to be seen.

19.4.8 The risk of injury may be reduced if lifting can be replaced by controlled pushing or pulling. For example, it may be possible to slide the

load or roll it along. However, uncontrolled sliding or rolling, particularly of large or heavy loads, may introduce fresh risks of injury. Particular care must be taken if:

- Stooping or stretching is likely;
- Your hands when on the load are not between waist and shoulder height;
- The deck area is insecure or slippery;
- Force is applied at an angle to your body;
- The load may make sudden or unexpected movements.

19.4.9 For pulling and pushing, a secure footing should be ensured, and the hands applied to the load at a height between waist and shoulder wherever possible. Wheels on barrows and trolleys should run smoothly, consult your employer or safety representative if the equipment provided is not suitable, or is in poor condition (Fig 4(i) - 4(iii)). A further option, where other safety considerations allow, is to push with the worker's back against the load, using the strong leg muscles to exert the force (Fig 5).

19.4.10 Even a gentle uphill slope dramatically increases the force needed to push an object, help may be necessary when moving a load up a slope or ramp. Care should be taken with unbraked trolleys and sack trucks on a moving/rolling deck, as sudden changes in the angle of deck and direction of the slope may cause whiplash neck injuries. If a trolley becomes loose, do not try to stop it by standing in its way, but get behind it and try to act as a brake.

19.4.11 Care must be taken with the laying out of heavy mooring ropes and wire ropes/hawsers (Fig 6). This duty requires a good technique initially in lifting the heavy eye of the rope, followed by a good pulling technique. Crews should make sure that there are enough people available to do the duty safely.

19.4.12 When moving a load such as a barrel or a drum, rolling the load may be a safer operation than lifting it (Fig 7). Care must still be taken with reference to paragraph 19.4.8, and the use of a trolley should be considered for heavy or large barrels or drums.

19.4.13 Suitable shoes or boots should be worn for the job. Protective toecaps help to guard toes from crushing if the load slips; they can sometimes also be useful when putting the load down to take the weight while hands are removed from underneath.

19.4.14 Clothing should be worn which does not catch in the load and which gives some body protection.

19.4.15 Where the work is very strenuous, for example due to load weight, repetitive effort over a period or environmental factors, such as a confined space or an extreme of temperature, rest should be taken at suitable intervals, to allow muscles, heart and lungs to recover; fatigue makes accidents more likely on work of this type.

19.4.16 Whenever possible, manual lifting and carrying should be organised in such a way that each person has some control over their own rate of work.

ANNEX 19.1

FACTORS TO BE CONSIDERED

The following are examples of the factors to which the employer should have regard and questions he should consider when making an assessment of manual handling operations or providing instruction for personnel.

Plain text gives the general factors and questions to be considered in the risk assessment carried out under the regulations.

Additional specific factors which may be found on board ship are included for guidance (text in italics).

Factors

1 The tasks

Questions

Do they involve:

- activity which is too strenuous?
- holding or manipulating loads at distance from trunk?
- unsatisfactory or unstable bodily movement or posture, especially:
 - twisting the trunk?
 - stooping?
 - reaching upward?
- excessive movement of loads, especially:
 - excessive lifting or lowering distances?
 - excessive carrying distances?
- risk of sudden movement of loads?
- frequent or prolonged physical effort, particularly affecting the spine?
- insufficient rest or recovery periods?
- a rate of work imposed by a process?
- climbing up or down stairs?
- handling while seated?
- use of special equipment?
- team handling?

2 The loads

Are they:

- heavy?
- bulky or unwieldy, or difficult to grasp?

- unstable, or with contents likely to shift?
- likely, because of the contours and/or consistency, to injure workers, particularly if the individual collides with someone or something?
- wet, slippery, very cold or hot and therefore difficult to hold?
- sharp?
- potentially damaging/dangerous if dropped?

3 The working environment

Are there:

- space constraints preventing handling loads at a safe height or with good posture?
- uneven, slippery or unstable deck surface?
- variations in level of deck surfaces (eg door sills) or work surfaces?
- extremes of temperature or humidity?
- has account been taken of the sea-state, wind speed and the unpredictable movement of the deck?
- are there steps, stairs or ladders or self-closing doors to be negotiated?
- is the area adequately lit?
- is movement or posture hindered by personal protective equipment or by clothing?

4 Individual capability

Is the individual:

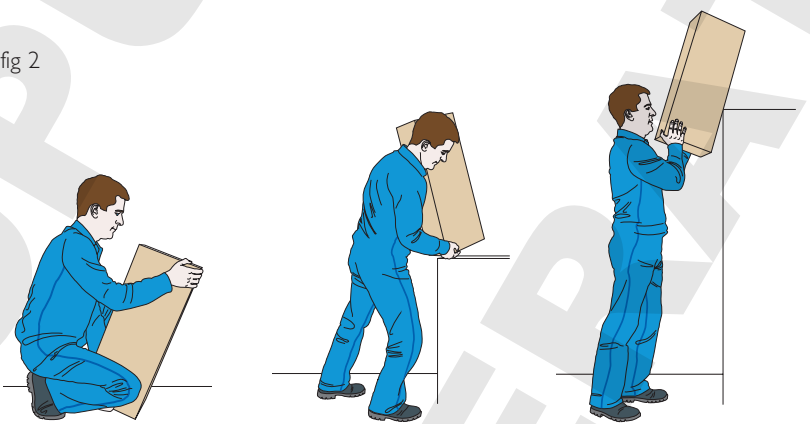
- physically unsuited to carry out the task, either because of the nature of the tasks or because of a need to protect an individual from a danger which specifically affects him?
ie Does the job require unusual strength, height etc? Is there a hazard to those who might reasonably be considered unsuited to the task? Does it pose a risk to those who are pregnant or have a health problem?
- wearing unsuitable clothing, footwear or other personal effects?
- inadequately experienced or trained?
- inadequately equipped?

Annex 19.2
Graphic illustrations of manual handling techniques

fig 1



fig 2



Graphic illustrations of manual handling techniques (continued)

fig 3

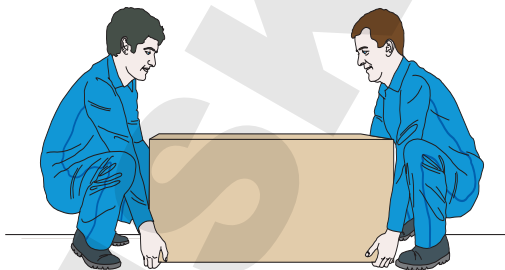


fig 4

(i)



(ii)



(iii)



Graphic illustrations of manual handling techniques (continued)

fig 5



fig 6



fig 7

