الشركة العمانية للغاز الطبيعي المسال ش.م.م

Oman LNG L.L.C.

MANUAL HANDLING ASSESSMENTS

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Documents Classification:-

By default all documents will be categorised as (Non-Critical /Non-Confidential unless otherwise specified)

Risk Classification

Non-Critical

Security Classification

Unclassified

Table of Contents

ISSUE HISTORY

Changes from previous issue are indicated in the table below

Issue	Description	Date
0	First draft	30/12/1998
1	2nd draft with guidance included	03/11/1999
2	Changed to Corporate document and sent for authorization by NG	10/11/999
3	Reviewed	08/06/2004
4	General Update	13/06/2009
5	General Update	11/03/2014
6	Updated responsibilities. Added training requirements. Added maximum weight that one person can carry. Added Good Handling Techniques for Lifting with visuals. Removed Flow Diagram, Manual Handling Assessment Record. (Note: assessments will be performed using the HRA process.) Changed document no from NG-P020 to QHSE-P309. Changed to Non-critical.	03/08/2017

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1 PURPOSE

The purpose of this procedure is to ensure that the risks to health and safety from manual handling activities are properly identified, assessed, and controlled.

2 SCOPE

The scope covers the risk assessment and control measures for all areas in OLNG where manual handling takes place.

3. DEFINITIONS

3.1. Manual Handling

Manual handling is lifting, putting down, pushing, pulling, carrying, or moving of a load with hands or bodily force, by the effort of one or more workers. Manual handling also includes supporting a load in a static posture, by the hands, shoulder or any other part of the body.

3.2. ALARP

As low as reasonably practicable - To reduce the risk to a level that is as low as is reasonably practicable involves balancing reduction in risk against the time, trouble, difficulty, and cost of achieving it. This level represents the point, objectively assessed, at which time, trouble, difficulty and cost of further risk reduction, measures become unreasonable disproportionate to the additional risk reduction obtained.

4. RESPONSIBILITIES

4.1. Line Manager

To ensure the Health Risk Assessment (HRA) is performed and controls are in place for manual handling activities.

4.2. Supervisor

Responsible for:

- Identifying manual handling activities in consultation with Line Manager and staff.
- Carrying out manual handling assessments and implementing control measures to ALARP.
- Maintaining a current HRA of manual handling activities.
- Arranging with the Occupational Hygienist for formal risk assessments for high risk activities.

4.3. Occupational Hygienist

Responsible for supporting Management in assessing and controlling the risks associated with manual handling activities and for providing “Manual Handling” training for all personnel.

5. PROCEDURE

5.1. TASK ASSESSMENT

Each department shall identify the manual handling tasks and the associated control measures. The risk associated with each task shall be assessed and documented in the HRA. Assistance with this activity can be obtained from the Occupation Hygienist. Refer to Appendix 1 (Guidance on Manual Handling Assessment) for the assessment.

5.2. TRAINING

All OLNG staff whose work involves manual handling shall be given training in correct lifting technique by the Occupational Hygienist.

5.3. REPORTING OF OCCUPATIONAL ILLNESS

Any medical conditions arising from repeated trauma sustained through manual handling at work shall be reported as an occupational illnesses.

5.4. REVIEW

A task shall be reviewed whenever there is reason to suppose that its former assessment is no longer valid, for example because the working conditions or the personnel carrying out the operation have changed.

The assessment shall be reviewed if an injury occurs.

5.5. RECORDS

Manual Handling technique training records shall be maintained by each department.

6. References

Manual Handling Operations Regulations 1992. Health and Safety Executive. 2016, rev4.

7. Appendices

Appendix 1: Guidance on Manual Handling Assessment

Manual Material handling is a task that almost every worker performs, either as a one-time or infrequent duty or as part of regular work. Material handling encompasses a wide range of work activities-from occasional movement of very large loads with cranes and powered industrial trucks to routine, repetitive lifting of relatively light objects and tasks that are incidental to a worker's regular, daily activities, such as an office move.
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1.1 Application of the Procedure

Not every manual handling operation needs a detailed assessment. It is necessary to identify and prioritise manual handling operations and then seek to avoid the need for those tasks that involve a risk of injury.

1.2 Identify and Prioritise

At the preliminary stage, Line Managers, Section Heads, and Supervisors who are familiar with the whole range of activities within their departments, should be able to identify from their knowledge and experience and in consultation with their staff, all the manual handling operations performed.

Having identified the jobs that involve manual handling, the next stage is to consider the risk of injury from the operations and sort the manual handling operations into categories:

(a) manual handling tasks with insignificant risk of injury - no action required, but review if conditions change;

(b) manual handling tasks with possible risk of injury,

(i) where it is reasonably practical to AVOID manually moving the loads - by organisation or procedure change;

(ii) Where is it reasonably practical to AVOID manually moving the loads by automating or mechanising the task - will some risk of injury remain?

(iii) where it is reasonably practical to AVOID part of the task - will some risk of injury remain?

(iv) tasks with possible risk of injury that cannot be, avoided - prioritise for ASSESSMENT of the risks.

High-risk repetitive tasks should be eliminated with a greater degree of urgency than relatively low-risk, occasional tasks.

- Can the task be avoided?
- Can the movement of the loads be eliminated altogether?
- Are the handling operations unnecessary?
- Could the desired result be achieved in some entirely different way?
- Can the task be mechanised?
- Can part of the task be eliminated?
- Can it be automated?
- Will mechanisation or automation create other, different risks e.g. during maintenance or repair?

1.3 Avoidance of Manual Handling

Steps taken to avoid manual handling or reduce the risk of injury should be monitored to check that they have the desired effect in practice. If they do not, alternative steps should be sought.

1.4 Assessment of Risk

1.4.1 Scope

Where avoidance of manual handling operations involving risk of injury is not reasonably practicable, a more specific assessment shall be made. The significant findings of this assessment and the proposed remedial actions shall be recorded in the HRA.

It must be stressed that the weight of a load is only one of the factors to be considered. Its size, shape and nature must also be considered in relation to the task, the working environment, individual capability and other factors such as any need for personal protective equipment.

Not all manual handling operations arise in the course of routine unvarying work (e.g. maintenance procedures can involve a wide variety of manual handling tasks). In such cases it may be quite unrealistic to assess every instance of manual handling. Instead generic assessments should identify each type or category of manual handling likely to be encountered and to establish the range of risks that each creates, so that appropriate remedial measures can be determined on a broader basis.

1.4.2 The Assessment

A meaningful health risk assessment can only be based on a thorough practical understanding of the type of manual handling tasks to be performed, the loads to be handled and the working environment in which the task will be carried out.

The Line Manager shall appoint one or more trained persons to make suitable and sufficient assessments of risk in the manual handling operations to be performed and identify measures for removing or reducing the risks of injury to as low as reasonably practicable. The Occupational Hygienist will assist per the request of the Line Manager or his/her delegate.

For certain activities it may be appropriate to set up a small assessment team.

Areas of knowledge, expertise and competence likely to be relevant to the successful assessment and control of risks from manual handling operations include those of the line manager, section head, supervisor, occupational hygienist, and experienced staff..

OLNG staff are encouraged to play a positive part in the assessment process. Their views can be of particular value in identifying manual handling problems and determining practical solutions to them.

Statistics and records of occupational health related incidents can play a useful role in the assessment process. They should indicate the frequency and nature of accidents or risks associated with similar manual handling tasks.

1.5 Reducing the Risk of Injury

1.5.1 Improvement Options

It will usually be convenient to follow the same structured approach adopted for the assessment of risk, considering in turn the task, the load, the working environment and the individual capability.

The assessment findings should be reviewed, looking for pointers to improvement and emphasis given to each of the factors depending upon the nature and circumstances of the manual handling operation.

Routine operations carried out in virtually unchanging circumstances may lend themselves to improvement to the task procedure, the load package or the working environment.

Manual handling operations carried out in situations that change continually or as isolated events may offer less scope for improvement of the task, the load or the working environment. **For work of this kind the provision of effective information, instruction and training is especially important.**

1.5.2 The Task

The question should always be asked: "Does the load need to be manually handled at all?"

Very often lifting and carrying occurs simply because the job evolved around the needs of the work process or operational work requirement, rather than designed for the employees assigned to the task.

Health, safety and productivity are most likely to be optimised if an ergonomic approach is used, fitting the operation to the individual rather than attempting to adapt the person to the task.

Improvement may be achieved by redesigning the task to avoid moving the load or by automating or mechanising the operation. Particular consideration should be given to the provision of mechanical assistance where this is reasonably practicable.

Mechanical assistance involves the use of handling aids, retaining an element of manual handling but using bodily forces more efficiently and thereby reducing the risk of injury. A simple lever can reduce the risk by lessening the effort required to move a load, or by removing the need for fingers in a potentially damaging trap.

Other examples of mechanical assistance include hoists, trolleys, sack trucks, roller conveyors and chutes using gravity to move the load to a lower level.

Where mechanical assistance is not reasonably practicable, other possible improvements to the task, the load, and the working environment should be explored.

1.5.3 The Load

Consideration should be given to reducing the weight of the load. If a great variety of weights is to be handled it may be possible to sort the loads into weight categories so that additional precautions can be applied selectively. If the weight of the load is >23 kg for any activity that includes lifting/lowering, pushing/pulling, or carrying, then a Remedial Action Plan shall be developed by the Occupational Hygienist and added to the Health Risk Assessment.

However other aspects are important:

(i) Can the load be made smaller or easier to manage?

(ii) Can the load be made easier to grasp?

(iii) Can the load be made less damaging to hold?

(iv) Can the load be made more stable? -

1.5.4 The Working Environment

Particular attention should be given to providing sufficient clear floor space and headroom and constrictions caused by narrow access and the positioning of fixtures, machines, etc. should be avoided.

There should be sufficient well-directed light to enable handlers to see clearly what they are doing, to see the layout of the workplace and to make accurate judgements of distance and position.

1.5.5 Individual Capability

Despite the wide variation in strength and fitness of any population, handling injuries are most often associated with the task rather than with personal characteristics.

The scope for preventive action on an individual basis is limited. Clearly health, fitness and strength standards may significantly affect the ability to perform a task safely but there is no statistical correlation between these norms and injury incidence. Motivation and self-confidence in the ability to handle loads are important factors in reducing the risk. It should not be assumed that knowledge and training alone would ensure safe handling.

The primary aims should always be to optimise the design of the manual handling operation, improving the task, the load and the working environment as appropriate.

1.5.6 Provision of Information and Training

Where possible supervisors should ensure that loads are clearly marked with their weight. Where this is not reasonably practicable employees should be given information about the range of loads to be handled, including general indication of their weights.

In the case of loads whose center of gravity is not positioned centrally, marking of the heavier side is often possible. Examples include boxed instruments and VDU monitors whose uneven weight distribution may be disguised in an unmarked carton or box.

Those who originate loads - the manufacturer or the warehouse packer generally mark loads clearly with their weight and, where appropriate identify the heavier side.

All employees will benefit from basic awareness training in the techniques of lifting, carrying and putting-down heavier objects correctly, and the consequences of incorrect manual handling.

Training is important, but on its own, it can't overcome:

- A lack of mechanical aids
- Unsuitable loads
- Bad working conditions.

Training shall cover:

- Manual handling risk factors and how injuries can occur.
- How to carryout safe manual handling, including good handling techniques.
- Systems of work for the individual's tasks and environment.
- Use of mechanical aids.
- Practical work to allow the trainer to access the trainee and intervene if the trainee is not performing the task safely.

Appendix 2: Good Handling Techniques for Lifting

2.1Think before lifting/handling

Plan the lift. Can handling aids be used? Where is the load going to be placed? Will help be needed with the load? Remove obstructions such as discarded wrapping materials. For a long lift, consider resting the load midway on a table or bench to change grip. (Figure 1)

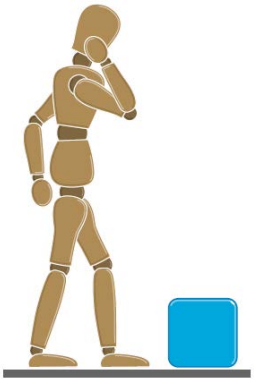

Figure 1.

2.2 Adopt a stable position

The feet should be apart with one leg slightly forward to maintain balance (alongside the load, if it is on the ground). The worker should be prepared to move their feet during the lift to maintain their stability. Avoid tight clothing or unsuitable footwear, which may make this difficult.(Figure 2).

Figure 2.

Get a good hold. Where possible, the load should be hugged as close as possible to the body. This may be better than gripping it tightly with hands only.

Start in a good posture. At the start of the lift, slight bending of the back, hips and knees is preferable to fully flexing the back (stooping) or fully flexing the hips and knees (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. (Figure 3)

Figure 3.

Keep the load close to the waist. Keep the load close to the body for as long as possible while lifting. 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. (Figure 4)

Figure 4.

Avoid twisting the back or leaning sideways, especially while the back is bent. Shoulders should be kept 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. (Figure 5)

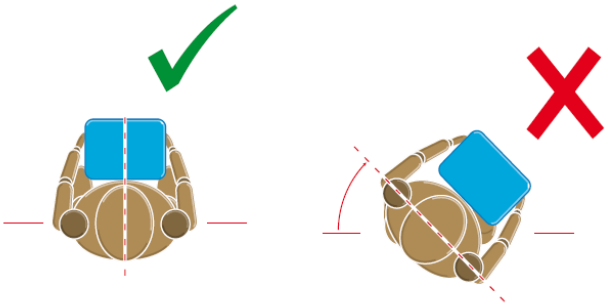

Figure 5.

Keep the head up when handling. Look ahead, not down at the load, once it has been held securely.

Move smoothly. The load should not be jerked or snatched 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. (Figure 6)

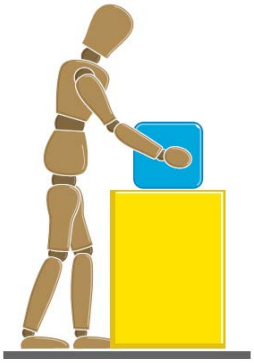

Figure 6.

2.3 Good handling technique for pushing and pulling

Handling devices. Aids such as barrows and trolleys should have handle heights that are between the shoulder and waist. Devices should be well maintained with wheels that run smoothly. The law requires that equipment is maintained. When you buy new trolleys etc, make sure they are good quality with large diameter wheels made of suitable material and with castors, bearings etc which will last with minimum maintenance. Consulting your employees and safety representatives will help, as they know what works and what doesn't.

Force. As a rough guide the amount of force that needs to be applied to move a load over a flat, level surface using a well-maintained handling aid is at least 2% of the load weight. For example, if the load weight is 400 kg, then the force needed to move the load is 8 kg. The force needed will be larger, perhaps a lot larger, if conditions are not perfect (eg wheels not in the right position or a device that is poorly maintained). The operator should try to push rather than pull when moving a load, provided they can see over it and control steering and stopping.

Slopes. Employees should get help from another worker whenever necessary, if they have to negotiate a slope or ramp, as pushing and pulling forces can be very high. For example, if a load of 400 kg is moved up a slope of 1 in 12 (about 5°), the required force is over 30 kg even in ideal conditions – good wheels and a smooth slope. This is above the guideline weight for men and well above the guideline weight for women.

Uneven surfaces. Moving an object over soft or uneven surfaces requires higher forces. On an uneven surface, the force needed to start the load moving could increase to 10% of the load weight, although this might be offset to some extent by using larger wheels. Soft ground may be even worse.

Stance and pace. To make it easier to push or pull, employees should keep their feet well away from the load and go no faster than walking speed. This will stop them becoming too tired too quickly.

2.4 General risk assessment guidelines

Use Figure 7 to make a quick and easy assessment. Each box contains a guideline weight for lifting and lowering in that zone. (As you can see, the guideline weights 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.)

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

If the lifter's hands enter more than one box during the operation, use the smallest weight. Use an in-between weight if the hands are close to a boundary between boxes.

The guideline weights assume that the load is readily grasped with both hands and that the operation takes place in reasonable working conditions, with the lifter in a stable body position.

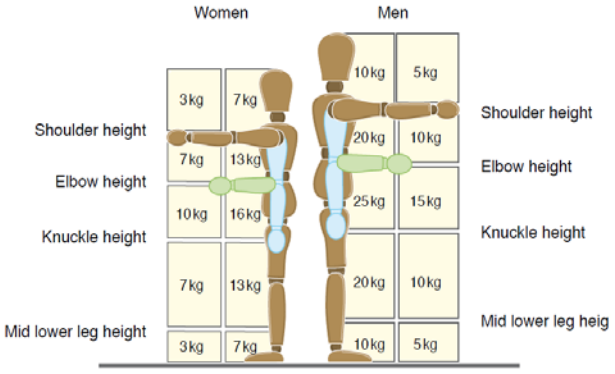

Figure 7

Twisting

Reduce the guideline weights if the handler twists to the side during the operation. As a rough guide, reduce them by 10% if the handler twists beyond 45°, and by 20% if the handler twists beyond 90°.

Frequent lifting and lowering

The guideline weights are for infrequent operations – up to about 30 operations per hour – where the pace of work is not forced, adequate pauses to rest or use different muscles are possible, and the load is not supported by the handler for any length of time. Reduce the weights if the operation is repeated more often. As a rough guide, reduce the weights by 30% if the operation is repeated once or twice a minute, by 50% if it is repeated 5–8 times a minute, and by 80% where it is repeated more than 12 times a minute.