The Compatibility of Manufacturers' Hoists and Slings: The need for risk assessment

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Introduction

This paper has been written to highlight some of the factors that require consideration when the compatibility of manufacturers hoists and slings are being addressed. The paper aims to:

- Describe compatibility in relation to hoists and slings
- Define risk assessment
- Summarise the regulatory background
- Outline the aims, requirements and components of a risk assessment to examine hoist and sling combinations
- List some hazards and risks which may be identified

What is meant by Compatibility?

For the purpose of this paper, compatibility is described as

> "The facility to use two or more items of equipment together, without altering or reducing their efficacy"

When the compatibility of manufacturers hoists and slings, this requires the two items to work together without compromising on safety, function or capacity to execute the required task.

What is a Risk Assessment?

The Health and Safety Executive (1999) describe risk assessment simply as

> "A careful examination of what, in your work, could cause harm to people"

The aim of a risk assessment is to decide whether a hazard is significant and whether sufficient precautions have been taken so that the risk is small. In this context, a hazard describes anything that can cause harm and a risk is the chance (high, medium or low) that someone will be harmed by the hazard.

The Regulatory Background

There are a number of statutory and regulatory requirements that underpin safe practice in the workplace. The provision and use of hoists and slings may be deemed a workplace activity and it is important to be aware of elements within the legislative and regulatory framework that may be relevant to this activity. Some of these are summarised in Table 1.

It is also important that any purchaser and/or provider of hoists and slings is mindful of the roles played by the British Standards Institution, Medical Devices Agency and the Conformity European scheme.

British Standard EN ISO 10535: 1998 concerns requirements and test methods for 'hoists for the transfer of disabled persons' and outlines requirements for sling attachment, hoist marking and instructions for use (British Standards Institution, 1998).

The Medical Devices Agency (2000) aims to ensure that 'medical devices and equipment meet appropriate standards of safety, quality and performance and that they comply with relevant Directives of the European Union'.

The Conformity European (CE) mark on a piece of equipment provides the user with assurance that the manufacturer is demonstrating that their products perform as the manufacturer intends and are safe when used as instructed (Medical Devices Agency, 1997).

TABLE 1:

ASPECTS OF LEGISLATION AND REGULATIONS RELEVANT TO THE PROVISION AND USE OF HOISTS AND SLINGS

Health and Safety at Work Act (HASAW) 1974

Employers and employees have responsibilities regarding:

- Safe systems of work
- Safe use of equipment

Management of Health and Safety at Work Regulations (MHSAW) 1992

Employers must ensure:

- Suitable and sufficient assessment of risks posed by the work place and activities therein
- Appointment of competent people

Manual Handling Operations Regulations (MHOR) 1992

Equipment that is used must be suitable for the task

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 1995

Collapse, overturning or failure of load bearing parts and lifting equipment is a reportable occurrence

Provision and Use of Work Equipment Regulations (PUWER) 1998

Equipment provided must be:

- suitable for intended use
- safe for use, maintained, inspected
- accompanied by safety measures e.g. warnings, markings

Lifting of Loads and Lifting Equipment Regulations (LOLER) 1998

Equipment used for lifting people must be:

- safe, strong, stable, suitable for proposed use
- visibly marked with information re. safe use
- subject to thorough examination by competent person at least six monthly

Aims and Requirements of a Risk Assessment

When considering combining hoists with slings, a number of aims for risk assessments may be identified through the legislation. These are:

- To ensure equipment is appropriate for the task (Provision of Use of Word Equipment Regulations (PUWER) 1998).
- To explore the suitability of specific equipment for an individual client and/or task (Manual Handling Operations Regulations (MHOR) 1992, PUWER 98, Lifting of Loads & Lifting Equipment Regulations (LOLER) 1998.
- To identify the potential risks of hoist and sling combinations (LOLER 98)

The legislation also requires that a risk assessment be recorded in writing (Management of Health & Safety at Work Regulations (MHASW) 1992, LOLER 98) and only carried out by a competent person (LOLER 98, PUWER 98). To be deemed competent, a person would require training in risk assessment, knowledge of each item of equipment being assessed and a clear understanding of the intended use of the equipment.

The Written Record

A risk assessment that is aimed at examining hoist and sling combinations must identify and record:

- Sling make, model and serial number

(LOLER 98 requires specific identification of individual slings)

- Hoist make, model and serial number
- Type of carry bar - a sketch or photo is a useful record
- Task details
- Load details (physical properties, not personal)
- Inspection findings

Components of the Inspection

The inspection is the process by which the hazards and risks of combining the sling and hoist together are identified. The inspection needs to cover:

- Written information on the equipment
  - do labels meet requirements?
  - are user guides available for all items?
- Identification of hazards and risks of equipment combinations when examining:
  - tasks and load
  - attachment points and method
  - suspension points
  - stability

It is suggested that a risk assessment should always consider the 'worst case scenario', that is to say the assessor needs to be mindful of the other situations or ways in which the equipment may be used. This is essential if written instructions and procedures do not clearly describe or rule out specific applications.

Suggested Areas for Assessment

The assessment is carried out by undertaking an inspection of both the sling and hoist being used together in a variety of situations. Having identified the ***Task(s) and Load*** the assessor needs to consider:

- Will the combination lower far enough to lift from the lowest position that may be required? (May be task specific)
- Will the combination of sling and hoist lift high enough to clear all obstacles? (May be task specific)
- Is there risk of injury due to the user hitting any part of their body on the equipment? (May be load specific)

When looking at the ***Attachment Points and Method*** of the hoist and sling, the following aspects should be examined:

- Are the methods of attachment as the design intends?
- Are the attachment points of suitable size and shape?
- Could the sling "become inadvertently detached"?

- Could the method of attachment cause wear or damage?

When looking at ***Suspension Points*** the assessor needs to identify whether the points at which the sling is attached to the carry bar of the hoist are closer together or wider apart than is usual. Similarly, any vertical variation in suspension points needs to be identified. If the sling is to be used with a different type of carry bar or spreader bar then the combination must be looked at as part of the assessment. Any variation in suspension points may lead to an alteration in the performance of the sling.

When considering the ***Stability*** of the combination, the assessor needs to be aware of the effects of gravity. The British Standard Institution states that states that mobile and free standing hoists may only have a 10 degree tilt (BS EN 10535:98). Any load or surface that causes the hoist to tilt in excess of this will deem the hoist unsafe.

Possible Hazards and Risks

Table 2 summarises some of the hazards that may be identified by closely inspecting the hoist and sling combinations. The list is by no means exhaustive, but will give the reader an indication of the types of hazards that may be presented. The risk presented by the hazard will be determined by the specific task being carried out, the load, environment and the individual capacities of the person(s) using the equipment.

TABLE 2.

SOME OF THE HAZARDS PRESENTED WHEN COMBINING HOISTS AND SLINGS

Assessment Area	Possible Hazards

Task	Combination may not work for all required transfers, (e.g. may hoist from chair, but not from floor)
Load	Tall client may come into contact with carry bar
Attachment Points	Attachment points may be damaged, thus preventing secure attachment of sling Attachment points may be designed for a specific type of sling – another type of sling may slip off
Suspension Points	Closer suspension points may cause: • Discomfort or injury by compression • Respiratory problems • Pressure problems on legs and shoulders • Forward pitching risk of impact on carry bar or falling out of sling Wider spread suspension points may cause: • Reduced support, risk of injury or falling • Increased aperture, risk of "jack knifing" • Pressure problems near aperture periphery • Excess recline - risk to carer when positioning • Excess recline - risk to client of neck injury or falling back Vertical variation on suspension points may cause: • Forward pitching • Excess recline • Instability • Incorrect positioning/support within the sling
Stability	Loads acting other than vertically could destabilise the hoist Centre of gravity of load may be altered if the load: • Is not suspended vertically below the central suspension point (e.g. "rigid body supports" such as stretchers or scoops)

	• Has contact with the ground or other surface causing the direction of pull on the hoist to be dragged away from the vertical (e.g. a standing sling)

Conclusion

The compatibility of manufacturers' hoists and slings can not be assumed. Thorough assessment is required to identify the hazards and ascertain the risks that may be presented when the equipment is used to undertake a specific task with an identified load. Although there is currently no legal ban that prevents any combination of equipment being used, the legal requirement for safe systems of work and safe equipment for use at work dictates the need for thorough risk assessment of moving and handling tasks carried out in the workplace. It is advisable that a record of the assessment is kept. Also, some manufacturer's have a unique serial number on slings for traceability and inspection records. It therefore follows that hoist and sling combinations require careful consideration. The responsibility for compatibility rests with whoever provides or specifies the equipment and *not* the supplier or manufacturer, although a manufacturer may be able to offer information to assist in risk assessment. If there are any doubts, a combination must not be chanced. Safety must never be compromised.

References

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