



**OIL COMPANIES INTERNATIONAL MARINE FORUM**

**RECOMMENDATIONS FOR THE  
TAGGING/LABELLING, TESTING AND  
MAINTENANCE,  
DOCUMENTATION/CERTIFICATION FOR  
SHIPS' LIFTING EQUIPMENT**

**MAY 2005**

*OCIMF's mission is to be the foremost authority on the safe and environmentally responsible operation of oil tankers and terminals, promoting continuous improvements in standards of design and operation.*

*Issued by the  
Oil Companies International Marine Forum*



**OIL COMPANIES INTERNATIONAL MARINE FORUM**

27 QUEEN ANNE'S GATE  
LONDON SW1H 9BU  
ENGLAND  
TELEPHONE: +44 (0)20 7654 1200  
FAX: +44 (0)20 7654 1205  
E-Mail [enquiries@ocimf.com](mailto:enquiries@ocimf.com)  
[www.ocimf.com](http://www.ocimf.com)

REGISTERED OFFICE:  
CLARENDON HOUSE  
CHURCH STREET  
HAMILTON 5-33  
BERMUDA

© Oil Companies International Marine Forum

The Oil Companies International Marine Forum (OCIMF) is a voluntary association of oil companies having an interest in the shipment and terminalling of crude oil and oil products. OCIMF is organised to represent its membership before, and consult with, the International Maritime Organization (IMO) and other government bodies on matters relating to the shipment and terminalling of crude oil and oil products, including marine pollution and safety.

**Notice of Terms of use:**

While the information and advice given in this document has been developed using the best information currently available, it is intended purely as guidance to be used at the user's own risk. No warranties or representations are given nor is any duty of care or responsibility accepted by the Oil Companies International Marine Forum (OCIMF), the membership or employees of OCIMF or by any person, firm, corporation or organisation who or which has been in any way concerned with the furnishing of information or data, the compilation, publication or any translation, supply or sale of this document, for the accuracy of any information or advice given therein or any omission herefrom or for any consequences whatsoever resulting directly or indirectly from compliance with, adoption of or reliance on guidance contained herein even if caused by a failure to exercise reasonable care.

## Table of Contents

<b>1</b>	<b>Introduction</b>	<b>4</b>
<b>2</b>	<b>Reference material</b>	<b>4</b>
<b>3</b>	<b>Lifting Incident Data</b>	<b>5</b>
<b>4</b>	<b>Tagging/Labelling</b>	<b>6</b>
	<i>4.1 References</i>	<i>6</i>
	<i>4.2 Recommendations – Tagging/Labelling</i>	<i>7</i>
<b>5</b>	<b>Testing and Maintenance</b>	<b>8</b>
	<i>5.1 References</i>	<i>8</i>
	<i>5.2 Recommendations – Testing and Maintenance</i>	<i>10</i>
<b>6</b>	<b>Certification</b>	<b>11</b>
	<i>6.1 References</i>	<i>11</i>
	<i>6.2 Recommendations for certification/reporting</i>	<i>12</i>
<b>7</b>	<b>Supplementary items for consideration</b>	<b>12</b>

# 1 Introduction

The purpose of the following recommendations is to provide a basis for consideration when drafting internationally applicable and accepted guidelines, to enable builders owners and users of ships lifting equipment to install operate and maintain the equipment in a safe and efficient manner

The recommendations made have been formulated after due reference to applicable Rules, Regulations, Legislation and Standards within the following sectors: Marine, Offshore, Shore based (Dock Work, Ship Repair and Refit).

To keep things in context when formulating the recommendations, due consideration has also been given to the low incidence rates associated with this type of equipment, as detailed in the HSE Research report 183. The report provides useful incidence data for the offshore sector, which is arguably a more onerous environment.

The diverse nature of the reference material was considered necessary to evaluate the subject on a more global basis and to identify any common themes.

## 2 Reference material

Ref. No.	Details **
[1]	Maritime and Coast Guard Agency. Code of Safe Working Practices for Merchant Seaman. (ISBN 0 11 5523693)
[2]	BS 2853: 1957. The Design and Testing of Steel Overhead Runway Beams.
[3]	Guide to Safety And Health in Dock Work (ILO) (ISBN 92-2-101081-3)
[4]	Safety and Health in Shipbuilding and Ship Repair. (ILO) (ISBN 92-2-101199-2)
[5]	UK Statutory Instrument 1998 No. 2307. The Lifting Operations and Lifting Equipment Regulations 1998.
[6]	UK Statutory Instrument 1988 No. 1639 The Merchant Shipping (Hatches and Lifting Plant) Regulations 1988
[6a]	UK Statutory Instrument 1992 No. 195 The Lifting Plant and Equipment (Records of Test and Examination etc.) Regulations 1992
[7]	Lloyd's Register, Code Of Lifting Appliances In The Marine Environment.
[7a]	Lloyd's Register, Rules and Regulations for the Classification of a Floating Offshore Installation at a fixed Location.
[8]	Shell U.K. Exploration and Production. (Std Ref. 3820-001)
[9]	Norsok Standard, Lifting Equipment Operation, R-003, Rev. 1, October 1997.

### Definition of Lifting Equipment

Work equipment used at work for lifting and lowering loads and includes attachments used for anchoring, fixing or supporting the load.

Equipment includes cranes, vacuum lifting cranes, hoists, scissors lifts, fork lift trucks, passenger lifts, mobile elevating work platforms, vehicle inspection platform hoists, vehicle tail lifts, bath hoists, dumb waiters, pallet trucks, agricultural lifting equipment such as front-end loaders.

Attachments include chains, ropes, slings, pulleys, eyebolts, shackles; examples of situations include rope and pulley systems on building sites and ropes used for climbing or work positioning in arboriculture

\*\*For all other definitions and abbreviations used in this paper see the relevant reference material for explanation.

### 3 Lifting Incident Data

Following data was obtained from: **Health and Safety Executive, Lifting Incident Review 1998~2003**, Prepared by Sparrows Offshore Services Ltd., for the Health and Safety Executive, Research Report 183.

- 4,624 Incidents reported to the HSE (1.4.1998 to 31.3.2003.)
- 795 Incidents (18.6%) Identified as occurring during Lifting operations.
- 469 Incidents (59%) attributed to Mechanical Handling operations  
(Mechanical Handling equipment defined as: 'All equipment not included within the drill package')

The root cause of lifting incidents:

- 59% were attributed to Human Factor
- 33% caused by equipment failure
- 7.7% not classified.

The report however does not give specific casualty data, so it is not possible to assign a level of severity to these incidents.

Note: The above figures include incidents associated with pedestal cranes.

**Incidence numbers Equipment Failure / Human Factors**

(Pedestal cranes and associated equipment not included)

YEAR	Equipment Failure	Human Factor
98~99	18 (*6, 9, 2)	22 (**15, 7)
99~00	22 (*13, 6, 3)	19 (**13, 6)
00~01	13 (*3, 3, 7)	8 (**6, 2)
01~02	14 (*6, 3, 5)	12 (**10, 2)
02~03	11 (*3, 5, 3)	8 (**8, 0)

(\*Manual lifting equip., Lifting accessories, Other cranes )

(\*\*Other – manual, Other – powered)

Manual lifting equipment failures:

- 74% Chain Hoist
- 20% Lever Hoist
- 3% Manual winch
- 3% Other

Human Factor:

- 46% Chain Hoist
- 5.8% Wire Rope Hoist (tirfor)
- 3.8% Beam Trolley
- 13% Lever Hoist
- 30% Other

## 4 Tagging/Labelling

### 4.1 References

The following are the applicable clauses / sections detailed in each of the reference material.

- [1] **7.7.1**  
The employer and the master must ensure that each lifting appliance, lift truck and each item of lifting gear carried is clearly marked with its Safe Working Load and a means of identification.  
Where such marking is not reasonably practicable the Safe Working Load shall otherwise be readily ascertainable.
- [2] **Section 9**  
The SWL, identification number and any limiting conditions shall be plainly and permanently marked on the runway beam so as to be clearly visible to the operator.
- [3] **Page 70**  
Inspection, examination, marking of Safe Working Load.  
The tests serve to determine the Safe Working Loads of the various lifting appliances and gear. The loads should be marked legibly and durably on them. To prevent effacement of the inscriptions, they should be incised or stamped.
- [4] **5.1.4**  
The maximum Safe Working Load should be marked in a conspicuous place in a legible and durable manner, for example by incision or stamping.
- [5] **Marking of lifting equipment**  
7. Every employer shall ensure that –  
a) Machinery and accessories for lifting loads are clearly marked to indicate their Safe Working Loads.
- [6] **Section 9**  
(1) The employer and the master shall ensure that each lifting appliance is clearly and legibly marked with its Safe Working Load and a means of identification.  
(3) The employer and the master shall ensure that each item of lifting gear is clearly and legibly marked with its Safe Working Load and a means of identification, except where such marking is not reasonably practicable, but in such a case a Safe Working Load shall be readily ascertainable by any user
- [7] **Section 2.1.1**  
Each lifting appliance and each item of loose gear is to be clearly and permanently marked with its Safe Working Load, with an identification mark to enable it to be readily related to its appropriate test certificate and with the mark of the Surveyor of manufacturer who carried out the proof test.  
  
**Section 2.2.2**  
Permanent identification marks, or symbols are to be made with stamps having rounded profiles (Low stress stamps) the number of marks is to be kept to the minimum.  
(Table 9.2.2 gives physical size of markings).
- [8] **Section 5**  
(LOLER (UK Lifting Operations and Lifting Equipment Regulations) requirements are quoted in addition to the following).  
  
2.0. Safe Working Load  
Where possible, the actual value of the SWL must be marked (stamped) on the equipment in such a way that it cannot be easily removed, where this is not practicable a coding system, or similar may be used to provide the user with the equipment SWL.

2.9. All items of lifting equipment and lifting accessories must have stamped on, or attached to it, a permanent identification mark through which it can be identified throughout its life span.

**[9] 5.1.2.2 Marking and Signposting**

Lifting appliances shall be marked with a number and with Working Load Limit (SWL). Lifting appliances shall have permanent and easily legible signs with specifications containing:

- Necessary information for safe operation of the lifting appliance
- Manufacture and date of production
- Supplier

**4.2 Recommendations – Tagging/Labelling**

Requirements at a glance:

Reference	SWL	I.D.	'Clearly marked'	Alternative to marking. Information easily ascertainable	Permanently marked	Legible and durable	Incised or stamped
1	**	X	X	X	X		
2		X	X				X
3		X				X	
4		X					X
5	**	X		X		X	
6	**	X	X	X	X		
7	**	X	X	X	X	X	X
8		X			X		X
9		X	X		X	X	

Given the above requirements and in particular the requirements identified under reference data highlighted, \*\* the following recommendations are considered to be practicable and applicable:

1. SWL and identification mark required. ID mark to enable the operator/duty holder etc. to trace the equipment to its Certificate. This is important for determining the age of the equipment and for tracking the equipment history, particularly with regard inspection/testing and to any equipment taken out of service as a result of damage or age.
2. SWL and ID should as a minimum be paint stencilled onto the equipment or immediate structure. Typical detail being black lettering/numbering as large as is reasonably practicable (min 10mm) on a white background.
3. Where this is deemed impractical by the appointed competent person, the SWL and ID particulars should be recorded on a register, which also details the equipments precise location. The precise location should be represented in the form of a structural drawing allowing due reference to easily identifiable adjacent structures/items. The register is then to form an integral part of the Ships' Lifting Equipment Register.

# 5 Testing and Maintenance

## 5.1 References

The following are the applicable clauses/sections detailed in each of the reference material.

### **Definition of Competent Person:**

Means a person who has sufficient theoretical knowledge and practical experience to understand the lifting equipment design, its function, to perform calculations, examinations and testing as required and to issue a certificate of application and other certificates prescribed by the authorities

#### **[1] 7.5.5**

Lifting plant should be kept in good efficient working order and in good repair. Systematic preventative maintenance should be carried out following any manufacturer's instructions. This should include regular inspection by a competent person to assess whether the lifting plant is safe for continued use. These inspections are separate from, and additional to, those required under the regulations (see paragraph 7.6.1). The interval between such inspections will depend on the character and use of the plant.

#### **7.6.1**

No lifting appliance on board ship is used unless it has been tested by a competent person within the preceding five years;

No lifting plant is used unless it has been thoroughly examined:-

a) by a competent person at least once in every 12 month period.

Note: sections 7.6.3, 7.6.4, 7.6.5 and 7.6.6 provide clarification on terminology and specify increased inspections where circumstances dictate.

#### **[4] Section 5.1.23**

Before being placed in service, all new lifting appliances should be thoroughly inspected and tested by competent persons.

#### **Section 5.1.24**

Lifting appliances should be thoroughly inspected at least once a year by a competent person, and tested after every substantial alteration or repair and at such other times as are deemed necessary by the competent person.

#### **[5] Section 9**

(1) Every employer shall ensure that before lifting equipment is put into service for the first time by him it is thoroughly examined for any defects unless either-

(a) the lifting equipment has not been used before; and

(b) in the case of an EC declaration of conformity is in place for the equipment and received by the employer within the proceeding 12 months.

(2) Every employer shall ensure that, where the safety of lifting equipment depends on the installation conditions, it is thoroughly examined –

(a) after installation and before putting into service for the first time; and

(b) after assembly and before being put into service at a new site or in a new location, to ensure that it has been installed correctly and is safe to operate

(3) Every employer shall ensure that lifting equipment which is exposed to conditions causing deterioration which is liable to result in dangerous situations is–

(a) thoroughly examined -

(i) in the case of lifting equipment for lifting persons or an accessory for lifting, at least every 6 months;

(ii) in the case of other lifting equipment, at least every 12 months; or

(iii) in either case, in accordance with an examination scheme; and



- (b) if appropriate for the purpose, is inspected by a competent person at suitable intervals between thorough examinations, to ensure that health and safety conditions are maintained and that any deterioration can be detected and remedied in good time.

**[6] Section 7 (2)**

After 1 January 1993 the employer and the master shall ensure that a lifting appliance is not used unless it has been suitably tested by a competent person within the preceding 5 years.

**Section 8**

The employer and the master shall ensure that any lifting plant is not used unless it has been thoroughly examined by a competent person:

- (a) at least once in the preceding 12 month period; and
- (b) following a test in accordance with section 7.

**[6a] Section 1(b)**

Every lifting appliance shall be thoroughly examined by a competent person at least once in every period of twelve months and a record of every examination and of the results thereof, containing the particulars required by the Lifting Plant and Equipment (Records of Test and Examination etc) Regulations 1992, shall be kept and the particulars in that record shall be available for inspection.

**[7] Chapter 9**

1.1.1 Every lifting Appliance is to be tested and thoroughly examined before being taken into use for the first time or after any subsequent alteration or repair which may affect the strength of the appliance or at certain Periodical Surveys.

1.1.2 Every item of loose gear is to be proof tested and thoroughly examined before being taken into use for the first time or after any subsequent repair or alteration which may affect the strength of the item.

**Note loose gear definition:**

For the purposes of these requirements loose gear is defined as including:

Hooks, Blocks, Chains, Shackles, Swivels, Rings, and similar items not permanently attached to the lifting appliance. Lifting beams, spreaders, frames and similar items of equipment which are not an integral part of the lifting appliance are also considered as loose gear.

**[7a] Part 3, Ch.11**

sect.1.5: Runway beams are to be designed and tested in accordance with a recognised standard and marked with the Safe Working Load.

sect.1.6: Pad eyes in any position which are to be used with a rated appliance are to be proof tested after installation and marked with the Safe Working Load (SWL).

**[9] Section 6.1**

Prior to first time use on the installation, fixed lifting equipment shall be inspected and examined by an enterprise of competence.

**Section 6.3**

Periodical control: The control should be carried out according to manufacturer's recommendations at least every 12 months or more often depending on the operation mode and environmental factors. The control may extend to a longer period when justified by the enterprise of competence. The control may also be shorter than 12 months due to environmental conditions.

**Section 7.9**

Load testing of, or periodic inspection of fixed load attachment points is not required if not deemed necessary by the enterprise of competent, but a post-use and pre-use check of the loading point shall be carried out.

## 5.2 Recommendations – Testing and Maintenance

Requirements at a glance:

Reference	Testing as required by a competent person	Testing/ inspection, required for new equip. and equip. into service	Periodical survey	Examination scheme approach	Testing/inspection Frequency subject to service and environmental conditions	Annually	5 year
1 **	X	X			X	X	X
4	X	X				X	
5 **	X	X		X	X	X	
6 **		X				X	X
7 **		X	X				
9		X			X	X	

**Note:**

Testing and maintenance to be carried out in accordance with manufacturers' recommendations for proprietary items, like chain blocks, slings etc.

1. Where manufacturers' guidelines are not applicable all equipment/fittings are to be inspected and tested prior to use.
2. Where practicable annual inspections should be carried out and testing as required by the competent person. Records of these inspections should be maintained for review by Regulatory bodies, users of the equipment etc. Where annual inspections/testing are not considered practicable, the equipment is to be inspected prior to use by the competent person and load tested prior to use as deemed necessary.
3. A five year test and inspection of all equipment is required.
4. Frequency of additional testing/inspection should be carried out with due regard to service and environmental conditions and as specified by the competent person. Appropriate records are to be maintained.

## 6 Certification

### 6.1 References

- [1] **7.8.1**  
The master shall ensure that a certificate or report in the required form is supplied within 28 days following any statutory test or examination.

**7.8.3**  
Certificates or reports should be kept readily available on board and copies of the latest certificates or reports should be available to any dock worker or shore employer using ship's plant.

**7.8.4**  
Reports should be in a form approved by the Secretary of State. These model forms contain the minimum information required by the ILO Convention 152.

**7.8.5**  
A register of lifting appliances and items of loose gear should be maintained in a form based on the model recommended by the ILO.

- [2] **Section 10**  
The certificate shall identify the runway beam to which it refers, quoting its distinguishing number or mark and grades of steel...

- [3] **Page 73**  
Model form of register of ships lifting appliances and certification as required by article 25(2) of ILO, The Occupational Safety and Health (Dock Work) Convention 1979 (No 152).

- [6] **Section 10.1**  
The employer and master shall ensure that a certificate or report in a form approved by the Secretary of State is obtained within 28 days following any test under regulation 7 or examination under regulation 8 and is kept on board ship for a period of at least 2 years from receipt of the certificate or report of the following test or examination.

- [7] **Section 1.2**  
The certification adopted by LR is the recognised form recommended by the International Labour Office (ILO) and is also in accordance with current relevant directives of the European Community (EC).

Note. 1.1. It is a requirement of most National Authorities that lifting appliances are approved, examined, tested and certified by a competent person or organisation before being taken into use and thereafter are periodically surveyed to maintain the validity of the certification.

Tables 10.1.1 and 10.1.2 give details of appropriate certification.

## 6.2 Recommendations for certification/reporting

Requirements at a glance:

Reference	ILO 152	LR Forms	Statutory requirements	Certificate details
1 **	X			
2				X
3	X			
6 **	X			
7 **	X	X	X	

1. Certification/Reporting is to be in accordance with I.L.O. 152.
2. Register of ships lifting appliances required (Typical format as per LR cert. LA1)  
Note: 'Lay out plan required' to support Register of Lifting Appliances, where permanent marking of equipment is deemed in-practicable or not maintainable.
3. Certificate of test and thorough examination of loose gear before being taken into use required (Typical format as per LR cert. LA.3)

**Note:**

Records of Reports and Registers may be kept either in paper form or electronic form. Certificates and Reports are to be produced as soon as is reasonably practicable and in no event later than 28 days following the inspection to which the report refers. Certificates, Reports, Registers and associated supplementary documentation are to be maintained/ updated and kept readily available onboard.

## 7 Supplementary items for consideration

In association with the aforementioned recommendations, it is considered essential that ships' Management Procedures incorporate these recommendations and that the 'Competent Person' is clearly identified.

Suitable training of personnel associated with lifting activities is also considered essential to support these recommendations and to optimize the safe use of lifting equipment.

Records of appropriate training should be kept readily available onboard.