

SUB-COMMITTEE ON SHIP DESIGN AND
EQUIPMENT
57th session
Agenda item 18

DE 57/18
3 December 2012
Original: ENGLISH

**DEVELOPMENT OF REQUIREMENTS FOR ONBOARD LIFTING
APPLIANCES AND WINCHES**

**Onboard lifting appliances and winches on mobile offshore drilling units (MODUs)
and other vessels employed in offshore exploration and production activities**

**Submitted by Liberia, Vanuatu and the International Association of Drilling
Contractors (IADC)**

SUMMARY

Executive summary: This document provides information on the types of specialized lifting appliances and winches, and the standards relevant thereto, found on MODUs and other vessels employed in offshore exploration and production activities

Strategic direction: 5.2.1

High-level action: No related provisions

Planned output: No related provisions

Action to be taken: Paragraph 19

Related documents: DE 56/2 and MSC 89/22/12

Introduction

1 MSC 89 agreed to include, in the post-biennial agenda of the Committee, an output on "Development of requirements for onboard lifting appliances and winches", with two sessions needed to complete the output, assigning the DE Sub-Committee as the coordinator. The Committee agreed that ILO should be consulted on this matter to avoid any duplication of work, and that the Sub-Committee should first agree on the specific deliverables before undertaking any technical work and seek the Committee's approval accordingly.

2 While the proposal for this work programme item (MSC 89/22/12) specifically called for development of SOLAS requirements, the work item is not so limited. The co-sponsors note that other instruments, both mandatory and non-mandatory, developed by the Organization incorporate or could reasonably incorporate, provisions relating to lifting appliances and winches, in particular, the provisions of chapter 12 of the *Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code)*, adopted by resolution A.1023(26), as well as earlier editions of the Code.

3 The co-sponsors would also note that many of the lifting appliances on board MODUs are associated with, or are integral to, industrial systems (e.g. drilling and production equipment) which are outside the traditional competence of the Organization and may be subject to requirements imposed by the coastal State.

4 Chapter 12 of the MODU Code is dedicated to Lifting devices, personnel and pilot transfer. While earlier versions of the Code contained provisions addressing cranes and drilling derricks, new provisions were added to the 2009 edition of the Code to provide Administrations with a specific means of regulating other types of lifting and hoisting equipment.

Types of lifting appliances and winches

5 A large variety of lifting appliances and winches are employed on MODUs and other vessels employed in offshore exploration and production activities. Such equipment includes, but is not limited to those listed in annex 1.

6 The equipment ranges in capacity from small portable appliances rated in 10's of kilograms to platform installation cranes with capabilities in excess of 14,000 tonnes. Subsea lifting equipment may be designed to install and retrieve equipment on the seabed at water depths in excess of 3,500 meters.

Relationship to the Occupational Safety and Health (Dock Work) Convention, 1979

7 In the co-sponsor's view, most of the lifting appliances employed in exploration and production activities would fall outside the applicability of the Occupational Safety and Health (Dock Work) Convention, 1979 (ILO C 152).

Standards associated with the design and operation of onboard lifting appliances and winches

8 The proposal for this work programme item identified ISO standards as being applicable, but did not attempt to specifically identify which ISO standards would apply. At least four separate ISO technical committees (TC 8, TC 67, TC 96 and TC 178) have standards applicable to equipment that could fall within the definition of "lifting appliances and winches."

9 In addition, a wide variety of other standards cover the lifting appliances and winches employed on MODUs and other vessels employed in offshore exploration and production activities. These include, but are not limited to, those of:

- .1 Other internationally recognized standards bodies, such as the American Petroleum Institute (API) and ASME;
- .2 Classification societies;
- .3 Regional standards organizations such as the European Committee for Standardization (CEN);
- .4 National regulatory agencies (not necessarily maritime authorities);
- .5 National standards bodies such as Standards Australia, Associação Brasileira de Normas Técnicas (ABNT), Dirección General de Normas (Mexico), Federal Agency on Technical Regulating and Metrology (GOST R, Russian Federation), and Standards Norway; and

- .6 International and national industry associations such as the International Association of Oil and Gas Producers (OGP), Australian Petroleum Production and Exploration Association (APPEA), Netherlands Oil and Gas Exploration and Production Association (NOGEPa), and Oljeindustriens Landsforening (OLF) (Norway).

10 One of the most important of these standards for the offshore oil and gas industries is API Specification 2C, Offshore Pedestal-mounted Cranes. The seventh edition of this standard was issued in March 2012 and became effective in October 2012.

Offshore oil and gas industry experience

11 The International Regulators Forum (IRF) is a group of eleven regulators of health and safety in the offshore upstream oil and gas industry. In the mid-2000's, the IRF found that injuries arising from lifting operations accounted for a significant proportion of the total of those occurring offshore; typically about 20 per cent.

12 In response, in 2007, the IRF Lifting Working Group formulated a regulatory strategy to address worldwide lifting operations. As part of this strategy the Group developed a series of inspection templates addressing: Planning of lifting operations, Competency assurance, Maintenance, and Man riding using winches. Information on these templates on the IRF's regulatory strategy and on the inspection templates can be found at: <http://www.irfoffshoresafety.com/programmes/>

13 In accord with the IRF's regulatory strategy, the United States Minerals Management Service (now Bureau of Safety and Environmental Enforcement, BSEE) issued new regulations requiring detailed reporting on incidents involving crane operations on the US outer continental shelf beginning in 2006. This has provided detailed data which is summarized in the graphs provided in annex 2.

14 Based on an early review of the data, a joint industry/governmental work group came to the following conclusions:

- .1 hardware failures, while occurring, were not predominant factor for incidents;
- .2 not following training or established procedures was main factor leading to an incident; and
- .3 the Rigger was job function that needed to be focused upon to achieve the most rapid and effective reduction in incidents.

15 The work group made the following recommendations:

To industry:

- .1 Review current lifting programmes with a view to improving processes and procedures, in particular those for:
 - .1 Training and qualifications;
 - .2 Lift planning and Job Safety Analysis (JSAs);

- .3 Communications (especially between crane operators, riggers, and supply vessel masters); and
 - .4 Stop Job Authority.
- .2 Support and participate in industry initiatives aimed to improved safety associated with lifting activities.
 - .3 Encourage sharing of information on incidents and near misses.
 - .4 Emphasize familiarity with associated regulatory requirements.

To the International Association of Drilling Contractors, the American Petroleum Institute (API) and the Offshore Operators Committee (OOC):

- .1 Update API Recommended Practice 2D, Recommended Practice for Operation and Maintenance of Offshore Cranes, specifically directed towards rigger training, lifting planning and JSAs. (This effort was initiated in early 2010).
- .2 Communicate issues, best practices, and recommendations to industry and regulatory bodies.
- .3 Organize and sponsor lifting safety conferences. (IADC and API cooperate to alternate the sponsorship of annual conferences with the support of the OOC).

16 The co-sponsors believe that the lack of appropriate design standards for lifting equipment is not a significant contributor to lifting incidents in the offshore oil and gas industry. This conclusion is based on the conclusions reached by the IRF, the review of the detailed data that has become available through the BSEE database, and information available from the IADC's Incident Statistics Program.

17 Consistent with the recommendations of the IRF, it is the co-sponsor's view that the most appropriate focus of efforts to reduce incidents associated with lifting and material handling should be:

- .1 Training and qualifications;
- .2 Lift planning and Job Safety Analysis (JSAs);
- .3 Communications (especially between crane operators, riggers, and supply vessel masters); and
- .4 Stop Job Authority.

18 In addition, the co-sponsors believe that emphasis should be placed on routine inspection and maintenance of lifting appliances and winches, particularly those that may be used infrequently.

Action requested of the Sub-Committee

19 The Sub-Committee is asked to consider the information provided and to take it into account when deciding on the specific deliverables for this work programme item.

ANNEX 1

LIFTING APPLIANCES AND WINCHES USED IN EXPLORATION AND PRODUCTION OPERATIONS

The types of lifting appliances and winches employed on MODUs and other vessels employed in offshore exploration and production activities include, but are not limited to:

A-frames	Hose handling cranes
Accommodation ladder hoists/winches	Jacking systems and chocks
Anchor handling winches	Lift tables
Balancers	Lifting hooks
Beam clamps	Lifting spreader beams
Beam trolleys	Lifting tongs
Below-the-hook lifting devices	Lightweight jib cranes
Blowout preventer handling systems	Loader cranes
Boat davits (those not being regulated as life saving equipment)	Loose gear (slings, strops, etc)
Bridge cranes	Magnetic load lifters
Blowout preventer handling systems	Manrider winches
Cable pullers	Mobile work lifts
Capstans	Mooring winches
Casing running tools	Motion compensators
Chain slings	Overhead rail systems
Chain winches	Padeyes and engineered lifting points
Coiled tubing units	Pallet lifters
Crown blocks	Pedestal mounted cranes
Cylinder hoisting rigs	Personnel baskets
Deck (chain handling) manipulators	Personnel lifts
Diver lifts	Pilot ladder winches
Diving cursor systems	Pipe conveyors
Diving winches	Pipe davits
Drill floor (pipe handling) manipulators	Pipe elevators and spiders
Drilling derricks	Pipe fishing equipment
Drilling fishing tools	Pipe grabs
Drilling masts	Pipe handling systems
Drilling drawworks	Pipe racking systems
Drive-pipe tensioners	Pipe slips
Drum lifters and racks	Plate clamps
Elevators / lifts (personnel)	Portable hoists (powered and manual)
Elevators (pipe and casing)	Portable jacks (powered and manual)
Eyebolts	Portable gantry cranes
Equalizing beams	Portable masts
Fender davits	Portable rescue hoist systems
Flag hoists	Power swivels and top drives
Fork lifts and lift trucks	Riser handling systems
Gantry cranes	Riser pull-in systems
Gas cylinder racks	Riser slips
Grab buckets	Riser tensioners
Hang-off systems	Remotely Operated Vehicle (ROV) handling systems
Hoisting beams	Running tools
Hook blocks	Sack handling units
Hooks	Self retracting lifelines

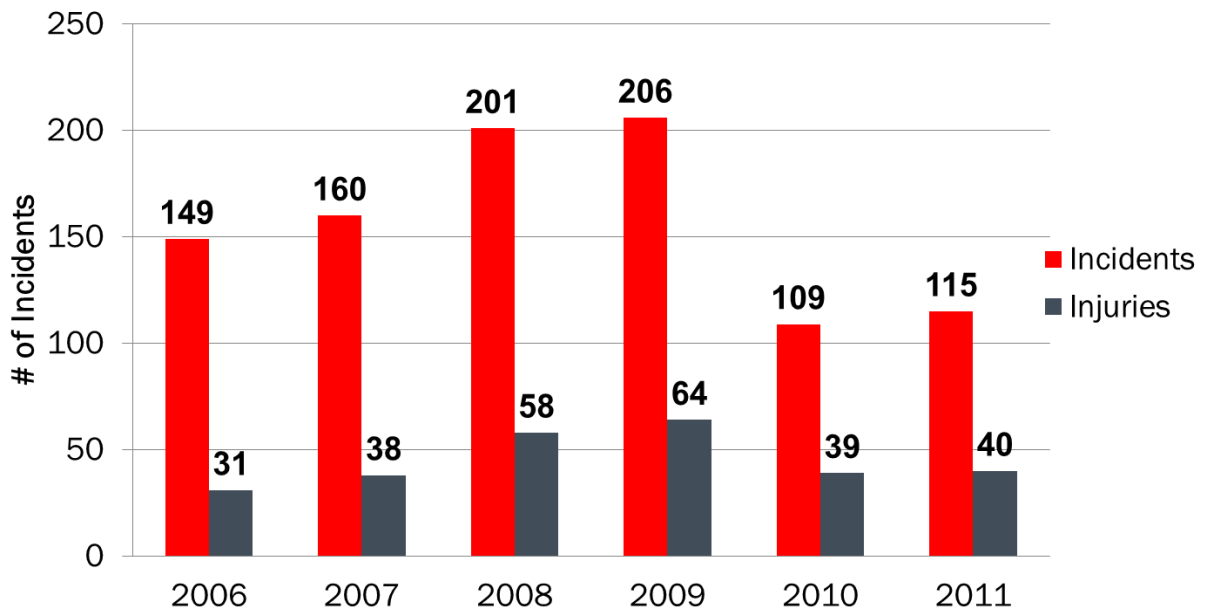
Shackles
Sheaves
Shear leg cranes
Slip bowls
Spreader beams and frames
Stacker cranes
Swivels and swivel rings
Tension meters
Thimbles

Torque arms and torque tubes
Towing winches
Traveling blocks
Turnbuckles
Vacuum lifters
Wedge sockets
Well logging units
Wireline masts

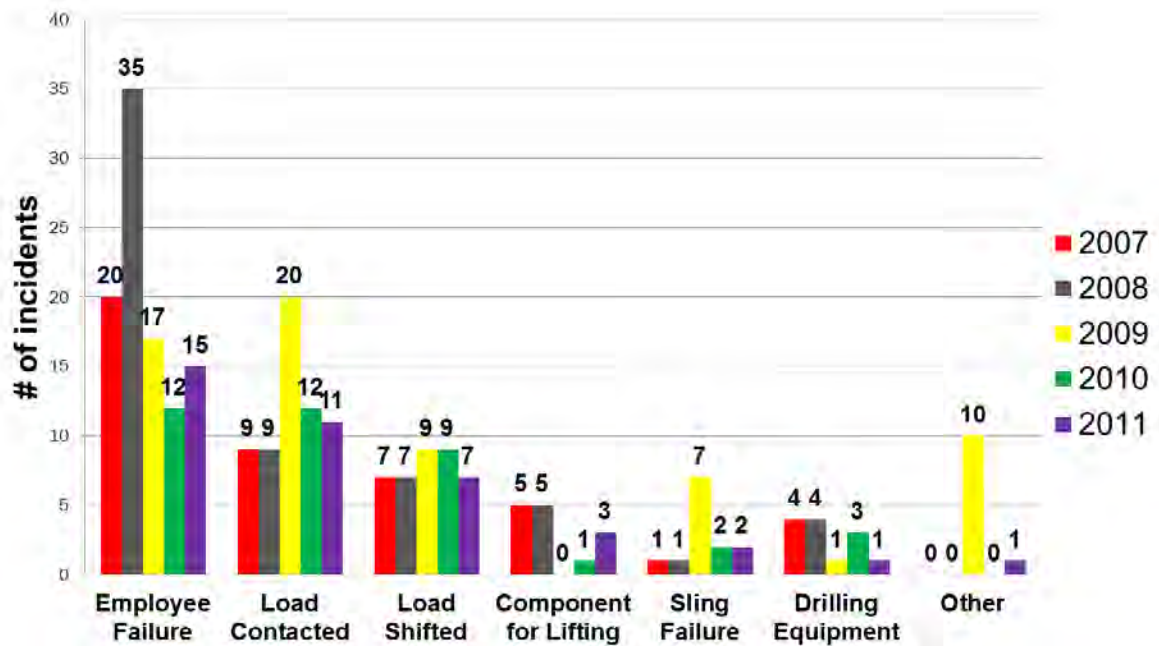
ANNEX 2

ANALYSIS OF DATA FROM LIFTING INCIDENTS ON THE US OUTER CONTINENTAL SHELF

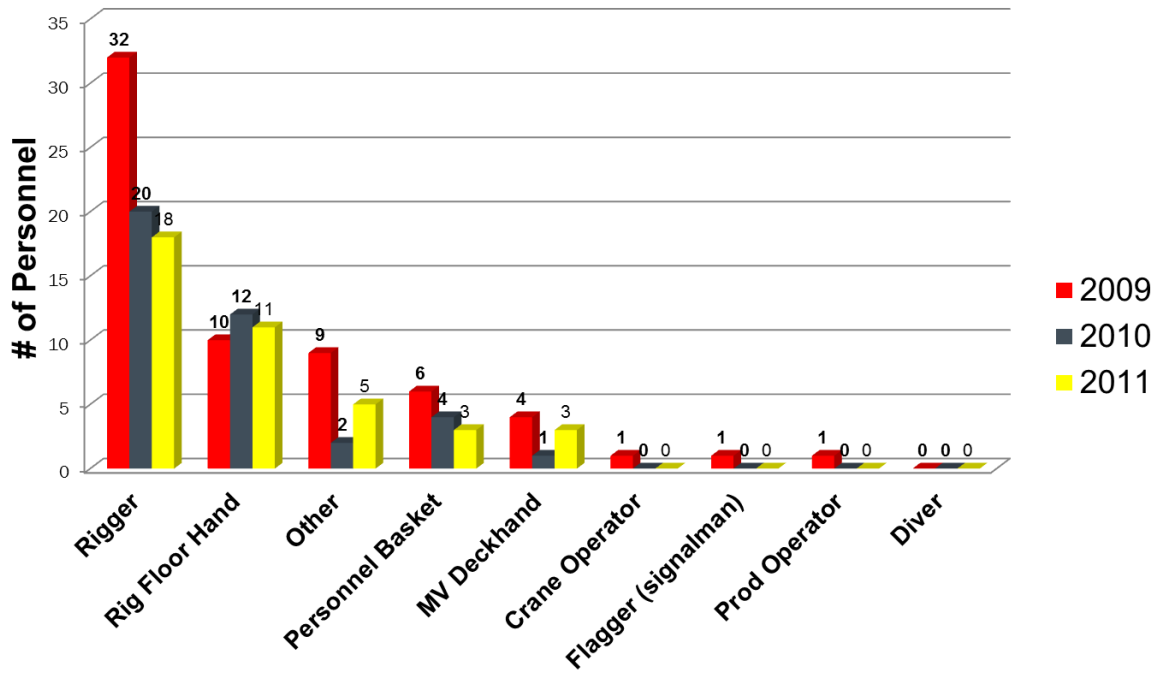
Annual occurrence of incidents and injuries associated with incidents



General cause of injuries



Injuries by job classification



Injuries by type of lift

