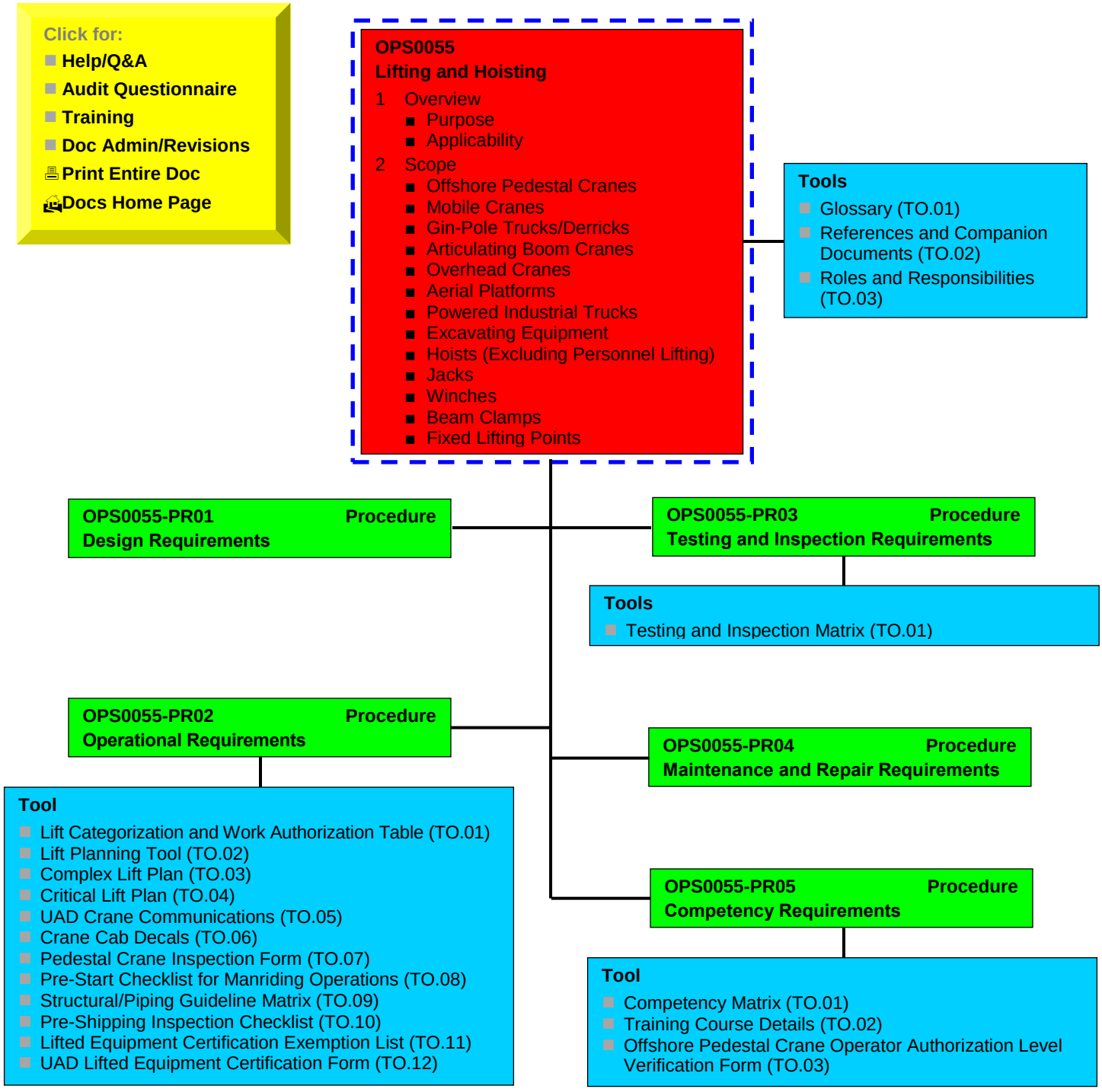
LIFTING AND HOISTING



Document Suite Map

1 Overview

1.1 Purpose

To prevent incidents associated with lifting and hoisting, this Standard establishes Shell Upstream Americas Deep Water (UAD) requirements for the:

- operation, maintenance, testing, certification, inspection, and design of lifting equipment and
- competency and qualifications of individuals involved with these operations.

NOTE: Design requirements in this Standard are not inclusive.

1.2 Applicability

This Standard applies to work performed on:

- UAD installations,
- leases, or
- right-of-ways.

This Standard also applies to work performed during:

- road,
- marine, or
- aviation operations supporting this work.

1.3 Specific Exclusions/ Clarifications

This Standard does not apply to the following lifting operations:

- Personnel and cargo elevators
- Diving or underwater lifting operations
- Well operations involving the crown block, traveling block, and top-drive systems
- Mining and earth moving equipment
- Lumber (timber) logging
- Vehicle maintenance lifts
- Mobile cranes on barges
- Helicopter lifting
- Manual lifting
- Operations by piling machines
- Geophysical and coring operations
- Pipe-laying operations
- Derrick barge operations

1.4 Summary of Changes

Changes for each revision are recorded in the Change Matrix.

1.5 References/ Companion Documents

See OPS0055-TO.02 for a complete list of reference and companion documents.

Continued on next page

1.6 Roles and Responsibilities

See OPS0055-TO.03 for a table of UAD lifting and hoisting roles and responsibilities.

1.7 Key Milestones

Approval Date	March 2012
Implementation Dates	April 1, 2012

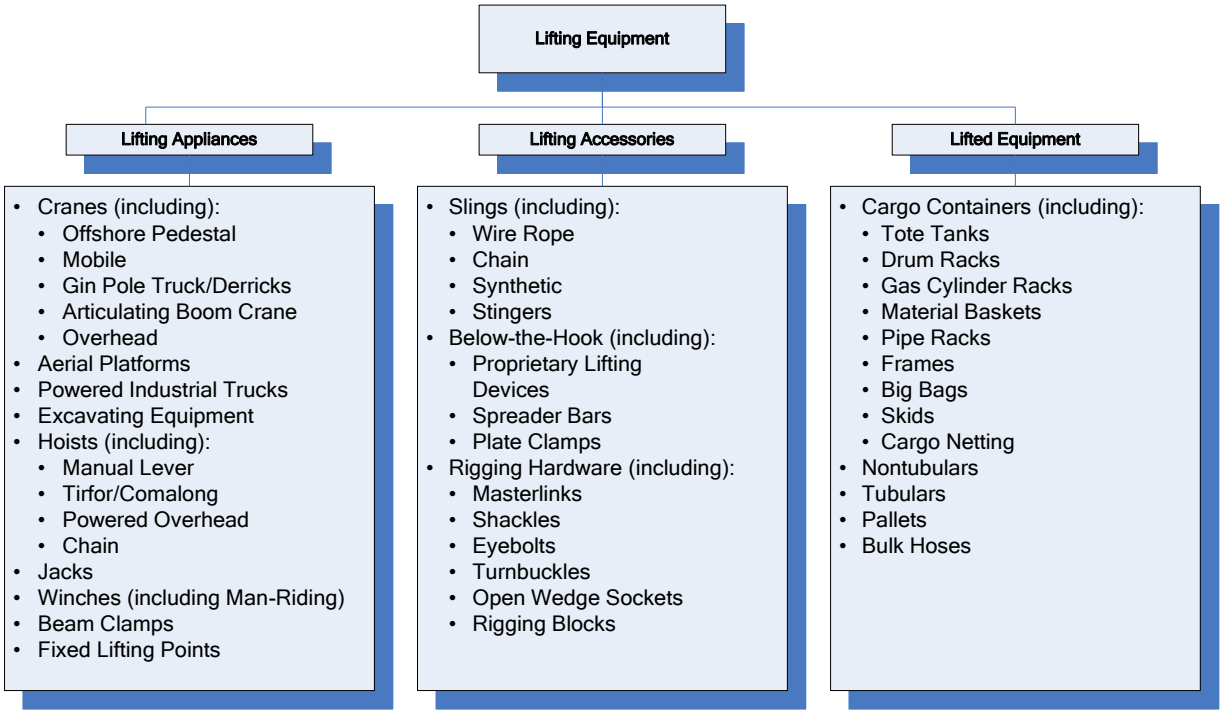
2 Scope

2.1 General

The lifting equipment covered in this document suite is grouped into the following categories as depicted in the diagram below:

- Lifting appliances (mechanical and support devices that do the lifting)
- Lifting accessories (rigging that connects items being lifted to the lifting appliance)
- Lifted equipment (items being lifted)

The following sub-sections provide additional details for select lifting equipment.



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2.2 Offshore Pedestal Cranes

Includes all offshore pedestal-mounted revolving cranes.

2.3 Mobile Cranes

Includes mobile cranes powered by internal combustion engines or electric motors, such as:

- crawler cranes,
- locomotive cranes, and
- wheel-mounted cranes.

The following are not in the scope of this Standard:

- Side boom tractors
- Cranes designed for railway and automobile wreck clearance
- Digger derricks
- Cranes designed or used for electrical energized line service
- Trolley boom cranes

2.4 Gin-Pole Trucks and Derricks

Includes all equipment that meets the following description: An apparatus consisting of a mast or equivalent member held at the end by guys or braces with or without a boom, for use with a hoisting mechanism and operating ropes.

Excludes drilling derricks.

2.5 Articulating Boom Cranes

Includes all equipment that meets the following description: Cranes articulated by hydraulic cylinders powered by internal combustion engines or electric motors and mounted on mobile chassis, e.g. autocranes.

NOTE: This definition applies only to articulating boom cranes rated 5 tons or less. Any articulating boom crane rated greater than 5 tons is considered a mobile crane in this Standard.

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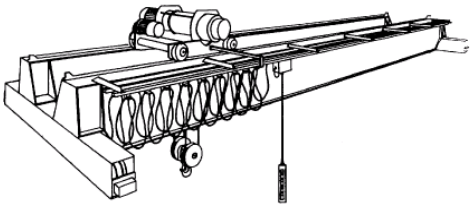
2.6 Overhead Cranes

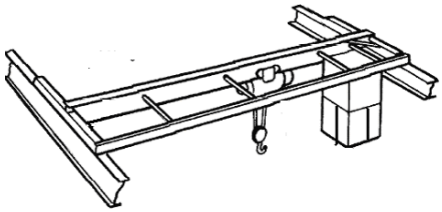
Includes overhead cranes (see figures below), powered or manually operated, that have a hoist that can move with a load attached, such as:

- gantry cranes (including fixed or moveable),
- monorail and underhung cranes,
- top-running bridges of single or double-girder construction,
- top-running trolleys,
- cab-operated cranes, and
- floor-operated cranes.

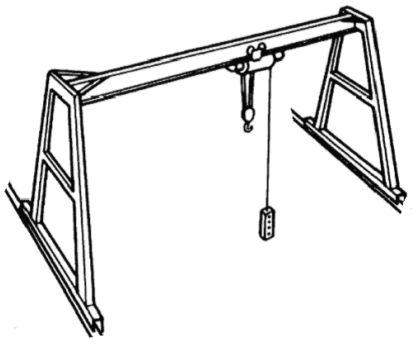
Excludes overhead hoists.



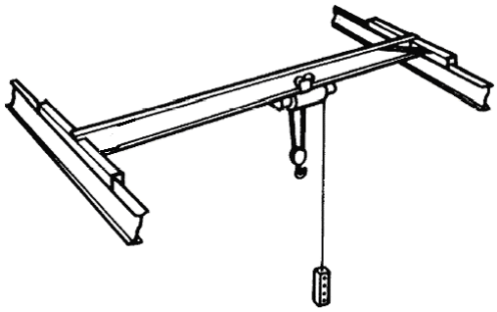
Overhead Crane (Double-Girder Top-Running Trolley)



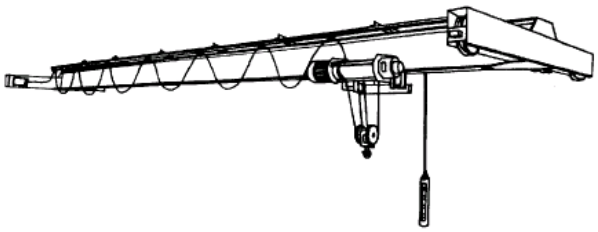
Cab-Operated Overhead Crane



Overhead Gantry Crane Rail Mount



Floor-Operated Overhead Crane



Overhead Crane (Single-Girder with Underhung Hoist)

Continued on next page

2.7 Aerial Platforms

Includes appliances used to lift personnel, such as:

- extensible boom platforms,
- aerial ladders,
- articulating boom platforms,
- vertical towers (scissor lifts), and
- any combination of such devices.

Excludes all lifting accessories that are not integral to the lifting appliance, such as Billy Pugh baskets and man-riding harnesses.

2.8 Powered Industrial Trucks

Includes all powered industrial trucks, including forklifts, as listed in ASME B56.6 and OSHA 29 CFR 1910.178.

2.9 Excavating Equipment

In general, excavating equipment is not covered in this Standard. If a piece of excavating equipment will be used as a lifting appliance, approval must first be obtained from the manufacturer. The conditions and requirements for lifting must be indicated on this approval.

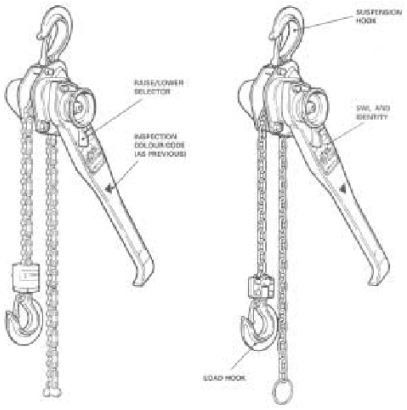
NOTE: Riggers and rigging equipment shall meet the requirements of this Standard.

Continued on next page

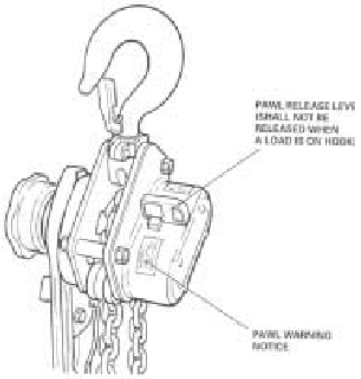
2.10 Hoists, Excluding Personnel Lifting

Includes (see figures below):

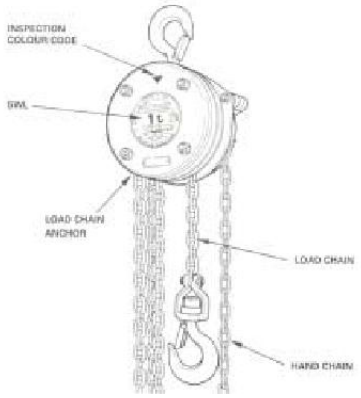
- manual lever-operated ratchet/pawl or friction brake hoists that use chain, wire rope, and web strap hoists for lifting, pulling, and tensioning applications, and
- manually operated chain hoists, electric- or air-powered chain hoists, and wire rope hoists for vertically lifting and lowering freely suspended and unguided loads.



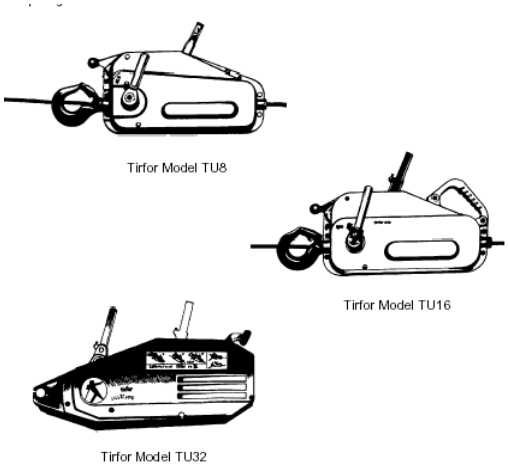
Typical Lever-Operated Chain Hoists



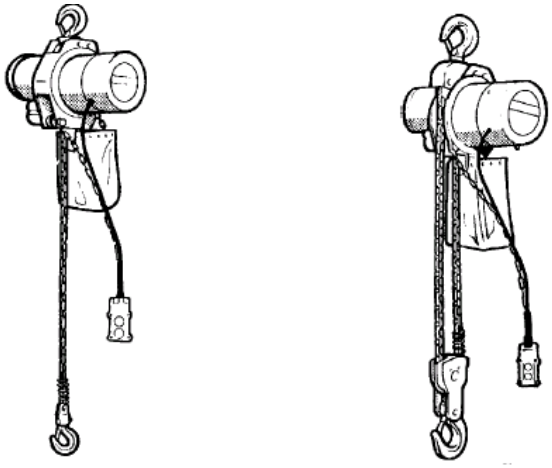
Lever-Operated Hoist with Pawl



Typical Chain Hoist Assembly



Various Tirfor Lifting and Pulling Machines from the TU Series



Typical Single- and Multi-Fall Powered Chain Hoists

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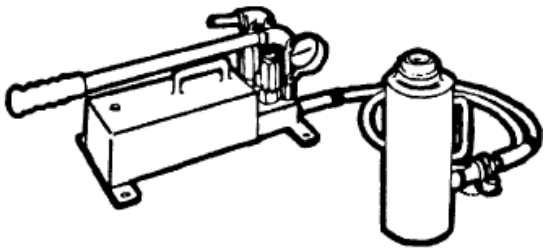
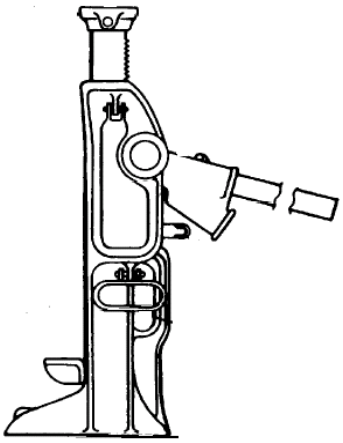
2.11 Jacks

Includes (portable jacks as per ASME B30.1):
- hand- or power-operated hydraulic and screw jacks and
- mechanical ratchet jacks (see figures below).

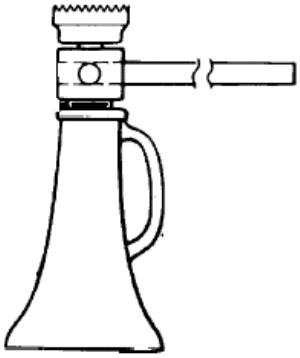
Excludes:
- jacks for automotive service,
- trip-lowered jacks, and
- jacks that are an integral part of other equipment.



Hydraulic Jacks



Mechanical Ratchet Jack



Screw Jack

2.12 Winches

Includes all winches, except when used as follows:
- For horizontal pulls (e.g. winch trucks that support onshore drilling operations)
- As an integral part of other lifting equipment (e.g. overhead crane)

2.13 Beam Clamps

Includes any portable lifting device that clamps onto a structural beam to which a hoist is attached.

2.14 Fixed Lifting Points

Includes certified and uncertified fixed lifting points.

Glossary

Definitions The following table provides definitions of terms used in this document suite.

Term/ Abbreviation	Definition
API	American Petroleum Institute
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
Below-the-Hook Lifting Devices	Devices used to attach the load to the hoisting gear below the hook (e.g. spreader bar).
Certificate of Conformity	A document provided by a manufacturer confirming that equipment meets the requirements of an industry standard (e.g. ASME, ANSI).
Certification	A document that certifies that a piece of equipment has been tested and inspected for use. The document normally relates to a specific piece of equipment (one that has a unique ID number), and may be subject to a time limitation.
Certified	The state of the lifting device or equipment after maintenance, inspection, tests, or other operational checks have been performed and are current.
CFR	Code of Federal Regulation
CMAA	Crane Manufacturers Association of America
DSP	Designated Signal Person
FIBCA	Flexible Intermediate Bulk Container Association.
HAKO	High Angle Kick Out
IADC	International Association of Drilling Contractors.
ICGB	International Cargo Gear Bureau.
JSA	Job Safety Analysis
Lift Sponsor	An individual appointed by the UAD Supervisor to coordinate and control all aspects of the lifting operation (e.g. Crane Operator, Deck Foreman).
LLFP	Local Lifting Focal Point
MBL	Minimum Breaking Load
NRTL	Nationally Recognized Testing Laboratory
OEM	Original Equipment Manufacturer
Operational Test	A test to validate that a piece of equipment is functioning properly.
OSHA	Occupational Safety and Health Administration
Qualified Inspector (QI)	A person trained in inspection in accordance with API RP 2D.

Continued on next page

Term/ Abbreviation	Definition
Qualified Operator (QO) (per API RP 2D)	A person designated by the employer or the employer's representative, who by virtue of his/her knowledge, training and experience, has successfully demonstrated the ability to perform specific duties relating to the subject matter and the work. Includes: • Offshore pedestal crane QOs • Mobile crane operators
Qualified Person (QP) (per ASME)	A person who by possession of a recognized degree in applicable field , or certificate of professional standing or who, by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter or work. Includes all lifting appliance operators not listed under QO.
SWL	Safe Working Load
SCI	Specialist Crane Inspector
Stinger	A wire rope sling made up of hard terminations incorporating a hook on one end and a masterlink on the other, used to extend the load block of a lifting appliance.
Toolbox Talk	Brief onsite safety meeting to discuss job scope, work authorization, and associated hazards and remediations.
UAD Installation	Any structure or vessel (e.g. floating rig, derrick barge, lift boat, anchor handler, dive boat) owned by or operated on behalf of UAD on UAD leases or right-of-ways.
UAD/Contractor Supervisor	The highest ranking UAD or contractor Supervisor on the worksite. The UAD/Contractor or Supervisor is responsible for all lifting and hoisting activities on a location. UAD/Contractor Supervisor will identify a Lift Sponsor for each lifting activity. (Examples of UAD/Contractor Supervisors include an OIM or PIC for a Platform or Rig, or the Master of a vessel)
USCG	United States Coast Guard
Working Load Limit (WLL)(also known as Rated Load or Rated Capacity)	The maximum load the lifting equipment must operationally handle and maintain.

TOOL

References and Companion Documents

Companion Documents

Documents in this suite are listed in the table below.

Document Number	Title
OPS0055	Lifting and Hoisting
OPS0055-TO.01	Glossary
OPS0055-TO.02	References and Companion Documents
OPS0055-TO.03	Roles and Responsibilities
OPS0055-PR01	Design Requirements
OPS0055-PR02	Operational Requirements
OPS0055-PR02-TO.01	Lift Categorization and Work Authorization Table
OPS0055-PR02-TO.02	Lift Planning Flowchart and Tables
OPS0055-PR02-TO.03	Complex Lift Plan
OPS0055-PR02-TO.04	Critical Lift Plan
OPS0055-PR02-TO.05	UAD Crane Communications
OPS0055-PR02-TO.06	Crane Cab Decals
OPS0055-PR02-TO.07	Pedestal Crane Inspection Form
OPS0055-PR02-TO.08	Pre-Start Checklist for Man-Riding Operations
OPS0055-PR02-TO.09	Structural/Piping Guideline Load Matrix
OPS0055-PR02-TO.10	Pre-Shipping Inspection Checklist
OPS0055-PR02-TO.11	Lifted Equipment Certification Exemption List
OPS0055-PR02-TO.12	UAD Lifted Equipment Certification Form
OPS0055-PR03	Testing and Inspection Requirements
OPS0055-PR03-TO.01	Testing and Inspection Matrix
OPS0055-PR04	Maintenance and Repair Requirements
OPS0055-PR05	Competency Requirements
OPS0055-PR05-TO.01	Competency Matrix
OPS0055-PR05-TO.02	Training Course Details
OPS0055-PR05-TO.03	Offshore Pedestal Crane Operator Authorization Level Verification Form

Reference Documents

Shell control documents, government regulations, and industry standards and codes referenced in this document suite are listed in the table below.

Document Number	Document Title
Shell Documents	
DEP 37.92.10.30-GEN	Offshore Pedestal-Mounted Cranes (Amendments/Supplements to API SPEC 2C)
HSE0026	Hazard and Effects Management Process (HEMP)
HSE0044	Fall Prevention and Protection
OPS0011	Marine Transport Operations
OPS0168A	Personnel Transfer Safety Procedures – Offshore Operations

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Reference Documents (cont.)

Document Number	Document Title
External Documents	
	American Rigging and Lifting Handbook
API RP 2D	API Recommended Practice for Operation and Maintenance of Offshore Cranes
API 2C	Specification for Offshore Pedestal Mounted Cranes
ASME B30	Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings
ASME B30.1	Jacks
ASME B30.2	Overhead and Gantry Cranes (Top-Running Bridge, Single or Multiple Girder, Top-Running Trolley Hoist)
ASME B30.4	Portal, Tower, and Pedestal Cranes
ASME B30.5	Mobile and Locomotive Cranes
ASME B30.6	Derricks
ASME/ANSI B30.7	Base-Mounted Drum Hoists
ASME/ANSI B30.9	Slings
ASME/ANSI B30.10	Hooks
ASME/ANSI B30.11	Monorail and Underhung Cranes
ASME/ANSI B30.12	Handling Loads Suspended from Rotorcraft
ASME/ANSI B30.14	Side Boom Tractors
ASME/ANSI B30.16	Overhead Hoists (Underhung)
ASME/ANSI B30.17	Overhead and Gantry Cranes (Top-Running Bridge, Single Girder, Underhung Hoists)
ASME/ANSI B30.20	Below-the-Hook Lifting Devices
ASME/ANSI B30.21	Manually Lever Operated Hoists
ASME/ANSI B30.22	Articulating Boom Cranes
ASME/ANSI B30.23	Personnel Lifting Systems
ASME/ANSI B30.26	Rigging Hardware
ASME/ANSI B56	Powered and Nonpowered Industrial Trucks
OSHA 29 CFR 1910.28	Safety Requirements for Scaffolding
OSHA 29 CFR 1910.67	Vehicle-Mounted Elevating and Rotating Platforms
OSHA 29 CFR 1910.68	Manlifts
OSHA 29 CFR 1910.178	Powered Industrial Trucks
OSHA 29 CFR 1910.179	Overhead and gantry cranes
OSHA 29 CFR 1910.333	Selection and Use of Work Practices
OSHA 29 CFR 1926.451	General Requirements: Scaffolding
OSHA 29 CFR 1926.453	Aerial Lifts
OSHA 29 CFR 1926.550	Cranes and Derricks

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Reference Documents
(cont.)

Document Number	Document Title
External Documents	
SAE J987	Lattice Boom Cranes Method of test
SAE J765	Crane Load Stability Test Code
USCG 46 CFR 109.437	Crane record book

TOOL

Roles and Responsibilities

R & R Table The following table describes the responsibilities of personnel involved in lifting operations (listed in alphabetical order). Qualifications for personnel described this document are listed on the Competency Matrix.

Role	Responsibilities
Competency Assessor, Offshore Pedestal Crane	• Attend required training and competency assessment tool. • Perform offshore pedestal crane QO competency assessments in a fair and unbiased manner. • Report offshore pedestal crane QO competency assessment results to the M&I Crane Resource Coordinator and/or UAD's Training Database.
Designated Signal Person (DSP)	• Participate in Lift Planning/JSA/risk assessment of lifting operations. • Maintain communication with crane operator (radio/visual). • Provide signals for the lifting, moving, and setting down of load when needed. • Wear a high-visibility vest.

Lift Sponsor	• Plan and execute lifts in accordance with the requirements in the Lift Planning section of this Standard.
	• Make himself/herself known to all persons directly involved in the lift and those involved in concurrent operations that could interact with the lift.
	• Coordinate and control all aspects of the lifting operations, including:
	  • Ensuring that every person involved is competent to perform his or her task.
	  • Ensuring that every person involved is aware of the task, the procedures to be followed, and his or her responsibilities.

Crane Resource Coordinator	• Ensure competency of all crane operators on Shell GoM production facilities, with or without simultaneous drilling operations. Each facility shall have dedicated pedestal crane operators. • Manage the Local Lifting Focal Point process/program. • Security of crane critical spare parts. • Manage the hoist and lifting device inspections and repairs.
Local Lifting Focal Point (LLFP)	• Attend LLFP workshops and required training. • Conduct field competency assessments for offshore pedestal and/or mobile QOs, core personnel, and call-outs. • Maintain regulatory paperwork. • Ensure Lifting and Hoisting training data for personnel in his/her workgroup is input into UAD's Training Database. • Perform crane competency level progression evaluations. • Offshore: Perform offshore pedestal crane authorization level verifications for UAD/Contractor Supervisor. • Act as field representative for Lifting and Hoisting group (a.k.a. Crane Group) in the Operations Services Department. • Perform local audits to ensure compliance with this Standard. • Periodically check pre-slung loads on location for expired or near-expired certificates (tags). • Periodically review critical and complex lift JSAs

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R & R Table (cont.)

Role	Responsibilities
Qualified Inspector (QI) – General	Perform and document the following inspections for equipment in their area of responsibility according to the Inspection and Testing Matrix: • Pre-Use, Monthly, and Quarterly for all equipment • Annual and Heavy Lifting for contract cranes
Qualified Inspector (QI) – Offshore (Offshore Pedestal Cranes)	• Perform and document load testing of offshore pedestal cranes. • Determine the need to replace wire rope on offshore pedestal cranes. • Conduct quarterly and annual inspections
Qualified Inspector (QI) – Rigging Gear	• Inspect all containers and pre-slung cargo rigging for shipment offshore. • Check container and sling certification.
Qualified Operator / Qualified Person (QO/QP) – General	• Operate lifting appliances as per applicable sections of this Standard. • Perform Daily/Pre-Use and Monthly documented/undocumented inspections. • Perform operational and load testing. • Perform first-line maintenance. • Participate in Lift Planning/JSA/risk assessment of lifting operations as per Lift Planning section of this Standard. • Address any safety concerns before or during any lifting operations (including weather conditions). • Adhere to any tags placed on crane. • Perform lifts. • Repair or replace, or supervise the repair and replacement of any critical lifting equipment components. • Take the crane out of or restrict service if adjustments/repairs are necessary. • Inform the UAD manger/supervisor and QI and request remedial action when a crane is taken out of service. • Refuse to handle loads or continue operations as safety dictates. • Ensure loads are not hoisted over personnel on any deck level. Before operations requiring radio communications: • Ensure radio communication is established. • Ensure the DSP understands and agrees to all radio signals. • Preview all sight (blind) lifts with the DSP and all riggers associated with the lift. During operations that require radio communications: • Never move a load if the signal is not understood. • Limit a radio signal to a single function (e.g. booming up vs. booming up and lifting up). • Use a dedicated radio frequency during all lifting operations. • Signals must be discernable or audible at all times. • Stop lifting operations immediately if communications are lost or anyone calls for a work stoppage. Work must not recommence until formal communication is re-established.

Continued on next page

R & R Table (cont.)

Role	Responsibilities

Qualified Operator (QO) – Gin Pole Truck	In addition to the general QO/QP responsibilities above, the QO for gin pole trucks has the following responsibilities:
	• Be at the controls at all times while the load is suspended.
	• Ensure that there is no sudden acceleration or deceleration of the moving load.
	• Ensure, when loads approach the maximum rating, that the weight of the load is determined within ±10% before it is lifted.
	• Take additional precautions, when using rotation resistant ropes with a design factor < 5 but in no case < 3.5, as follows:
	  • Appoint a DSP.
	  • Conduct operations in such a manner and at such speeds as to reduce dynamic effects.
	  • Record lifts in inspection records.
	• Ascertain that the rope is in satisfactory condition both before and after lifting. More than one broken wire in any one layer is reason to consider not using the rope for such lifts.

Qualified Operator (QO) – Mobile Crane	In addition to the general QO/QP responsibilities above, the QO for mobile cranes has the following responsibilities: • Complete all required crane operation logs. • Appoint a DSP. Prior to the lift: • For critical lifts, ensure the load does not exceed 75% of the crane's rated capacity. • Ensure control of personnel in path of load. • Ensure the swing radius of the superstructure is barricaded to prevent unauthorized personnel from entering the area. • Obtain a Safe Work Permit approved at the UAD Supervisor level or above for bypassing the boom kick-out, anti-two blocking, or other safety devices. • Ensure weight indicators are available to validate the weight of the load. • Adhere to blind lift requirements; ensure loads are kept in sight from time of pick up until the load and tag lines clear the deck. Before leaving the control station unattended, secure the crane against uncontrolled travel or interference with other operations.

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R & R Table (cont.)

Role	Responsibilities

Qualified Operator (QO) – Offshore Pedestal Crane	In addition to the general QO/QP responsibilities above, the QO for offshore pedestal cranes has the following responsibilities:
	• Complete all required crane operation logs.
	• Obtain a Safe Work Permit approved by the UAD Supervisor when bypassing any safety device such as the boom kick-out or anti-two blocking.
	• Appoint riggers to act as a load handler and a DSP.
	• Wear a high visibility vest.
	• Ensure the DSP is wearing a high visibility vest.
	• Perform dynamic lifts from supply boats.
	• Adhere to Blind Lift Requirements; ensure loads are kept in sight from time of pick up until the load and tag lines clear the deck.
	• Keep a logbook to record all lifts. The following information will be entered:
	  • Date of lift
	  • Type of lift: static or dynamic
	  • Category of lift: routine, critical, complex/engineered, or heavy engineered
	  • Weight (approximate)
	  • Supervised or unsupervised
	• Record authorization level verification records in his/her logbook to include the following:
	  • Date
	  • Signature
	  • Authorization level achieved

Qualified Operator (QO) – Overhead Crane	In addition to the general QO/QP responsibilities above, the QO for Overhead Cranes shall appoint a DSP if required.
Qualified Rigger (all types)	• Participate in JSA/risk assessment of lifting operations. • Assess load to be lifted. • Select rigging to suit load. • Rig the load. • Inspect the rigging and verify that it is satisfactory to use (including certification). • Attach the load to the crane. • Act as load handler. • Ensure correct selection and pre-use inspection of rigging equipment. • Maintain knowledge of standard hand signals. • Act as DSP.

Continued on next page

R & R Table (cont.)

Role	Responsibilities
UAD/Contractor Supervisor	• Identify a Lift Sponsor for each lifting operation. • Ensure that personnel involved in lifting operations meet the requirements of the Competency Matrix. • Post a list of Qualified Crane Operators on USCG-regulated facilities. • Approve the use of chain slings when necessary. For personnel lifts: • Review alternate methods of lifting personnel. • Ensure that each proposed personnel lift is the least hazardous, most practical method for performing the work. • Ensure work permit is authorized in writing. • Ensure that only QOs operate personnel lifting devices. • Ensure that all personnel lifting devices are within inspection and testing intervals. When offloading boats, the UAD/Contractor Supervisor, Lift Sponsor, QO, and the Boat Captain shall be jointly responsible for determining if weather conditions are satisfactory. For Offshore Pedestal Cranes: • Verify the authorization level of each QO. • Enter the current authorization level of each QO in UAD's Training Database.

PROCEDURE

DESIGN REQUIREMENTS

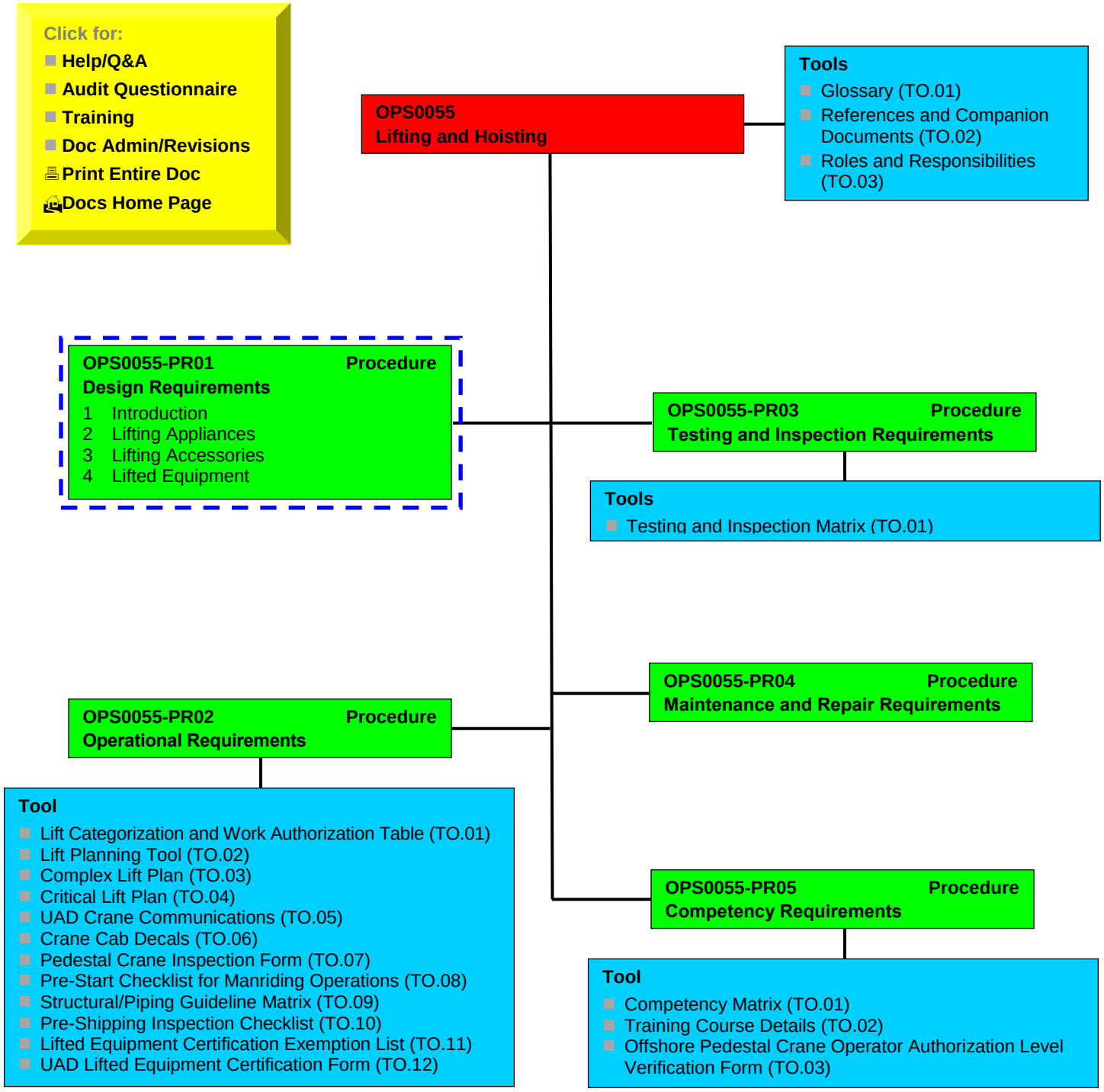

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Table of Contents

1 INTRODUCTION

1.1 Overview

1.1.1 Outline

This Procedure provides the design requirements for the following:

- Lifting appliances
- Lifting accessories
- Lifted equipment

2 LIFTING APPLIANCES

2.1 Cranes

2.1.1 Offshore Pedestal Cranes

Offshore cranes must be built in accordance with API Specification 2C or classed under the classification society of the vessel carrying the crane.

Additionally, offshore pedestal cranes must be equipped with:

- a functional weight indicator on the main hoist and auxiliary hoist, as well as a functional boom angle indicator (both must be visible to the operator),
- a swing locking mechanism (if equipped with single-swing drives and/or single-brake drives),
- anti-two blocking devices/systems (that stop the hoist from pulling up and the boom hoist from going down) installed on the main hoist and auxiliary hoist circuits,
- 1 high-intensity blue and one 1 high-intensity amber strobe light affixed to the gantry top, and
- an emergency shutdown operable at the control station.

2.1.2 Mobile Cranes

Must be designed and constructed per ASME B30.5:

- All mobile cranes must be equipped with a functional weight indicator on the main hoist and auxiliary hoist, as well as a functional boom angle indicator (both must be visible to the operator).
- Telescoping boxed boom cranes must be equipped with an anti-two block device or a two-block damage prevention feature for all points of two-blocking (i.e. jibs, extensions).
- Lattice boom cranes must be equipped with an anti-two block device that functions for all points of two-blocking.

2.1.3 Gin-Pole Trucks and Derricks

Must be designed and constructed per the current edition of IADC publication Gin Pole Truck Guidelines. Only certified trucks are to be used; examined trucks per this IADC guideline are not acceptable.

Continued on next page

2.1 Cranes, Continued

2.1.4 Articulating Boom Cranes

- Must be designed and constructed per ASME B30.22.
- Telescoping boxed boom cranes must be equipped with an anti-two block device or a two-block damage prevention feature for all points of two-blocking (i.e. jibs, extensions).

2.1.5 Overhead Cranes

Requirements for overhead cranes are as follows:

- All cranes must be clearly marked with the rated load.
- If the crane has more than one hoist, each load block must be marked with its rated load (this marking must be legible from the ground floor).
- Manufacturers tags are required as per OSHA 29 CFR 1910.179.
- All cranes must be built in accordance with CMAA guidelines.
- Hoists will not be sized higher than beam capacity without factory re-rating or the use of pull limiters
- All design drawings will be stamped by a Registered Professional Engineer and available upon request.

2.2 Additional Appliances

2.2.1 Aerial Platforms

Must be designed and constructed in conformance with ANSI A92.2 Vehicle Mounted Elevating and Rotating Platforms.

Manual type mobile aerial platforms must comply with ANSI A92.3.

2.2.2 Powered Industrial Truck

All equipment must be manufactured in accordance with ASME B56.6. and OSHA 1910.178.

2.2.3 Hoists

All manually operated lever hoists must be manufactured in accordance with ASME B30.21.

All overhead hoists (underhung) must be manufactured in accordance with ASME B30.16.

NOTE: Ratchet type manually operated lever hoists (without internal friction brakes) are not to be used for Lifting or Hoisting operations.

2.2.4 Jacks

All jacks must be manufactured in accordance with ASME B30.1.

2.2.5 Winches

All winches must be manufactured in accordance with ASME B30.7.

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2.2.6 Mounting Portable Winches

Foundations for portable winches must be:
- certified by a licensed engineer,
- suitable for the intended purpose, and
- capable of supporting 125% of the maximum intended load.

The intended load may be less than the maximum rated load of the winch.

All portable winches must have a tag affixed indicating the maximum intended load as determined by the lesser of the winch or foundation capacity.

2.2.7 Man-Riding Winches

All man-riding winches shall be purpose-built and certified by manufacturer as personnel rated.

Conversion of base-mounted material hoists are not acceptable unless performed by OEM and meeting all safety requirements.

Man-riding winches shall have all safety devices meeting the requirements of ANSI/ASSE A10.22 along with sub-references to ANSI/ASSSE A10.4 and ASME B30.7.

The following is a non-inclusive list of required safety devices:
- Upper and lower limit device
- Slack line shutdowns
- Dead man controls
- Power up and power down
- Minimum second brake automatically applied
- Maximum line pull limiter

NOTE: Riders shall have the ability to physically halt operations at any time while riding above monkey board or below the rig floor.

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2.2 Additional Appliances, Continued

2.2.8 Beam Clamps

At present, no standards exist to govern beam clamp design or manufacture; but the onshore/offshore industry generally uses the type that clamps onto and grips the beam by means of a threaded adjusting bar. Homemade beam clamps must not be allowed.

Beam clamps are designed for vertical lifts only. Do not subject them to side loading. Where some side loading is expected, use a beam clamp specially designed for side loading.

Beam clamps must be marked with the following information:
- Manufacturer's trademark or logo
- Serial number
- Rated load

A test certificate of conformance should be readily available.

3 LIFTING ACCESSORIES

3.1 Slings

3.1.1 Wire Rope Slings

All wire rope slings must be manufactured in accordance with API RP 2D (5.2.4b) and ASME B30.9.

NOTE: The following slings are not allowed:
- **Field-Fabricated slings**
- **Non-Flemished eyes**
- **Aluminum turnback eyes**

3.1.2 Synthetic Slings

Slings must be designed and built in accordance with the latest edition of the Web Sling Tie Down Association specification, manufacturer's guidelines, and industry standards (e.g. ASME B30.9).
- Slings must also be labeled legibly (marked with the working load, certification, and manufacture date).
- Design specifications for synthetic slings (e.g. fast rescue boats) are as follows:
  - Made of the continuous fiber-type construction
  - Have extra UV protection

3.1.3 Stinger Requirements

When a wire rope is used to extend the load block of a lifting appliance, it must:
- meet the wire rope sling requirements,
- have hard-eye terminations incorporating a hook at one end and a masterlink at the other, and
- have a positive locking latch (e.g. Crosby PL latch).

Continued on next page

3.1.4 Forklift Attachments

Attachments for powered industrial trucks (PIT) (forklifts) will only be used with written permission from the PIT manufacturer. Permissions are available upon request.

3.2 Below-the Hook

3.2.1 Spreader Bars and Special Lifting Devices

All spreader bars and special lifting devices must:

- be designed per AISC, API RP 2A, and Shell ENG0068SP (Schedule ZZ) (or later version of similar document and
- comply with ASME B30.20 Below-the-Hook Lifting Devices.

In addition, ensure the following:

- Certification paperwork is on-site; If no certification is available, the device must be certified by a licensed professional civil engineer.
- All padeye boreholes are smooth and perpendicular to the plate face.
- The working load limit is permanently marked or stamped on the bar or frame.

3.2.2 Plate Clamps

Plate clamps must comply with ASME B30.20 Below-The-Hook Lifting Devices.

3.2.3 Hooks

Except as noted immediately below, hooks must:

- be designed and manufactured in accordance with ASME B30.10,
- have a retainer (e.g. latch) to bridge the throat opening of the hook,
- be lockable as required by API RP 2D and ASME B30.23 when lifting personnel but may not be spring-loaded, scissor like hooks,
- be painted a high-visibility color (e.g. fluorescent orange) on offshore pedestal cranes, and
- be certified for a working load limit equal to or exceeding the equipment to which they are a part.

NOTE: Retainers are not required for hooks on certified chain sling assemblies used in onshore rig moves. Hooks without a retainer may be used in specific applications with chain attachments that are designed, rated, and certified for a specific application. The use of sorting hooks without retainers is restricted to pipe in situations where it is moved from a transport truck to the ground or very short distances with the lift maintained just above the ground.

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3.2.4 Tension Load Cells

Tension load cells used on all Shell sites shall maintain a factor of safety of 5:1 of the minimum breaking load (MBL) to the safe working load (SWL) at all times.

Tension load cells shall be considered structural members and shall be designed as such per API 2C specifications and per Shell DEP 37.92.10.30-GEN, Offshore Pedestal-Mounted Cranes (Amendments/Supplements to API Specification 2C). Specifically, this means that tension load cell design shall account for off-board dynamic loading, side-lead, and off-lead forces per API 2C section 4.3. Onshore applications shall use the appropriate local controlling codes (ANSI, ASME, etc.) for crane appurtenance design or reference API 2C section 4.3 if no local codes are available.

3.3 Rigging Hardware

3.3.1 Masterlinks

Masterlinks must be drop-forged (preferred on sizes up to 2 1/4") or welded and built to ASME B30.26.

Each masterlink must be marked in raised or stamped letters with the following information:

- Manufacturer's trademark or logo
- Size
- Rated load
- Identification code (for material traceability)

A certificate of conformity must be available (upon request from the manufacturer) for each masterlink.

3.3.2 Shackles

All shackles must meet the requirements of the latest edition of ASME B30.26 and Federal Specification RR-C-271D.

Each shackle body and pin must be marked in raised and or stamped letters with the following information:

- Shackle body:
  - Manufacturer's trademark or logo
  - Rated load
  - Size
  - Identification code (for material traceability)
- Shackle pin:
  - Manufacturer's name or code
  - Identification code (for material traceability)

Continued on next page

3.3.3 Eyebolts

Eyebolts must meet the requirements of ASME B30.26.

Eyebolts must be marked in raised or stamped letters with the following information:

- Manufacturer's trademark or logo
- Size
- Rated load
- Identification code (for material traceability)

3.3.4 Turnbuckles

Turnbuckles must meet the requirements of ASME B30.26.

Turnbuckles must be marked in raised or stamped letters with the following information:

- Manufacturer's trademark or logo
- Size
- Rated load
- Identification code (for material traceability)

3.3.5 Open-Wedge Sockets

Open-wedge sockets must meet the requirements of ASME B30.26.

Open-wedge sockets must be marked in raised or stamped letters with the following information:

- Manufacturer's trademark or logo
- Size
- Model is required to match wedge to body
- Identification code (for material traceability)
- Terminator types are acceptable

3.3.6 Rigging Blocks

Rigging blocks must be built to ASME B30.26.

Rigging blocks must be marked in raised or stamped letters with the following information:

- Manufacturer's trademark or logo
- Rope size(s)
- Rated load

A test certificate should be readily available.

4 LIFTED EQUIPMENT

4.1 Containers, Non-Tubulars, and Tote Tanks

4.1.1 General

All lifted equipment, at a minimum, will have lifting points designed/validated and certified by a licensed engineer.

4.1.2 Offshore Container Requirements

Containers must be permanently marked with:
- tare (empty) weight,
- working load limit (payload),
- maximum gross weight,
- floor area loading, and
- unique identification number.

Containers must have padeyes that are:
- clearly identified,
- capable of handling the maximum gross weight,
- undamaged,
- angled toward the direction of forces in the sling-set unless out-of-plane forces were accounted for in the engineering design of the padeyes, and
- are equipped with smooth, notch-free boreholes that are perpendicular to the plate face.

NOTE: All general purpose containers must have a solid floor for containment. For purpose-built containers where spill containment is not an issue, using a non-solid floor is acceptable. In either case, floor loading calculations will be part of the design.

Containers and their padeyes must be certified by DNV or Lloyd's Register to DNV2.7-1, 2.7-2, or 2.7-3 or:
- designed/validated and certified by a licensed engineer to meet the requirements of API RP2A Section 2.4.2c Dynamic Load Factors and Section 2.4.2d Allowable Stresses,
- documented with drawings, calculations, and Lifted Equipment Certification Form (OPS0055-PR02-TO.12) (formerly Appendix G) all:
  - stamped by a licensed engineer (Civil, Structural or Mechanical) and
  - available on request, and
- manufactured in accordance with these stamped drawings.

NOTE: All collapsible, synthetic rope-type cargo nets and containers are prohibited except when used for vessel to vessel transfer.

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4.1.3 Offshore Temporary Buildings

Offshore Temporary Buildings are required to follow all design requirements of Offshore Containers. All contents and furnishings shall be accounted for in Maximum Gross Weight value as noted in OPS0055-PR02-TO.12 (formerly Appendix G). Nothing shall be loaded into Temporary Offshore Buildings during transport and/or lifting that was not considered in original design.

4.1.4 Modifications

Any structural modifications to containers and/or their padeyes are prohibited unless performed in accordance with revised and stamped drawings.

4.1.5 ISO Containers

- ISO shipping containers are not designed for dynamic lifts and must not be used in offshore operations.
- ISO blocks/connectors are not permitted for use as lifting attachment points for containers used in dynamic lifting.
- Approved lifting devices (e.g. Tandemloc systems) are required for ISO containers with contents in static/shorebase operations, and may not be offloaded at an offshore location. Multi-leg bridles forming a single point lift from the top are not permitted unless the container is empty and meets the requirements of ISO 3874 Table 4.

4.1.6 Non-Tubulars and Lifting Frames

Non-tubulars too large to containerize and lifting frames must have:

- clearly identified lifting points capable of handling the total capacity of the load
- lifting points designed/validated and certified by a licensed engineer to meet the requirements of API RP2A Section 2.4.2c “Dynamic Load Factors” and Section 2.4.2d “Allowable Stresses”, documented with drawings, calculations, and the Lifted Equipment Certification Form (OPS0055-PR02-TO.12) all stamped by a licensed engineer and available on request,
- been manufactured in accordance with these stamped drawings, and
- padeye holes that are smooth and perpendicular to the plate face

4.1.7 Tote Tanks

Tote tanks shall have a protective means keeping the slings from getting caught under the DOT-type lids. *Example: DRP #102 from CAR Specialties, available through Redman.*

4.1.8 Bulk Bags

All Bulk bags are to be designed, marked, constructed and tested in accordance with the latest edition of ISO 21898 by a member of Flexible Intermediate Bulk Container Association (FIBCA).

Bags used for offshore operations will be used for one cycle, or filled once only.

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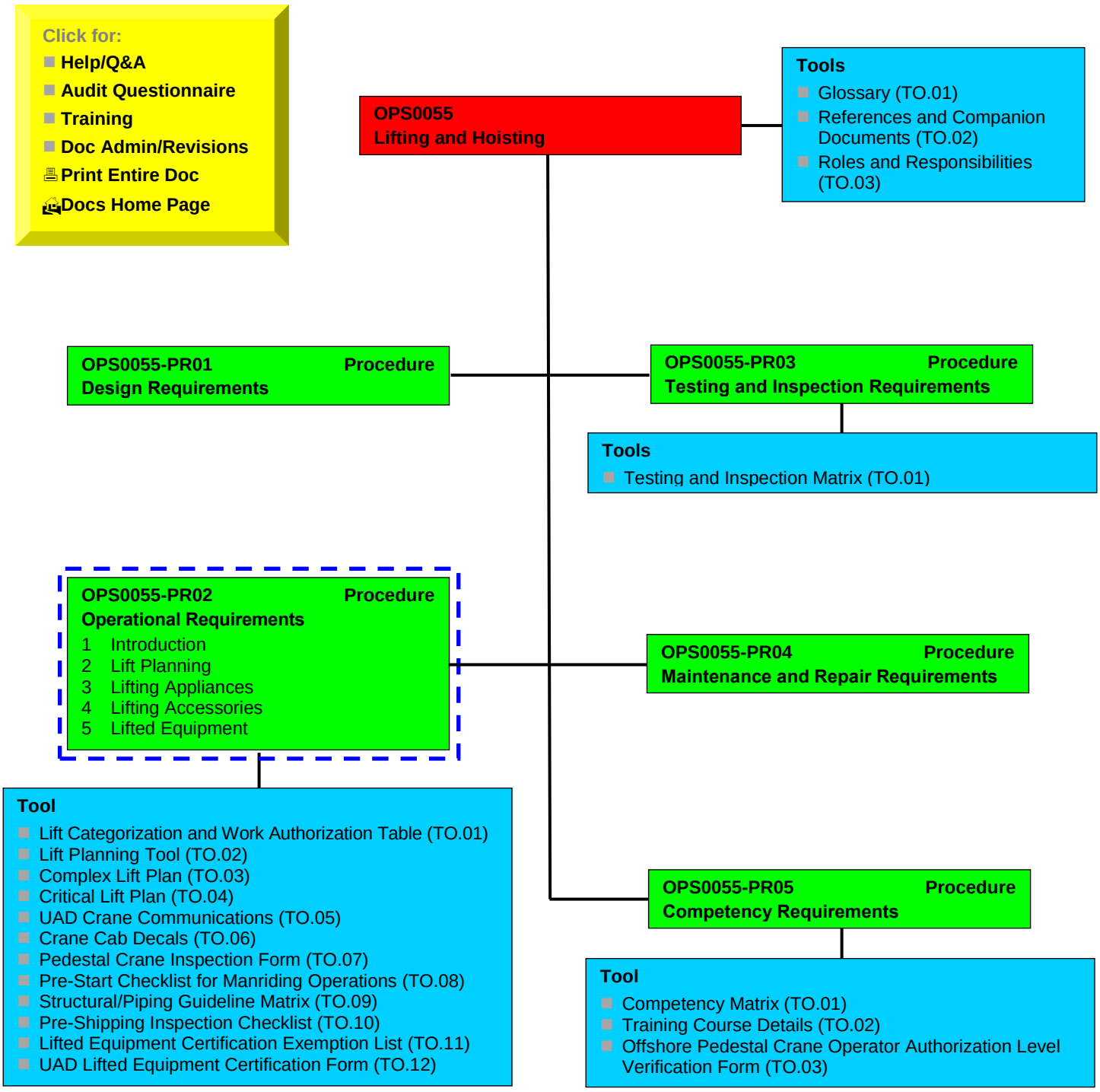

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Table of Contents, Continued

1 INTRODUCTION

1.1 Overview

1.1.1 Outline

This Procedure provides operational requirements for the following:

- Lift Planning
- Lifting Appliances
- Lifting Accessories
- Lifted Equipment

2 LIFT PLANNING

2.1 Overview

2.1.1 Assigning a UAD/ Contractor Supervisor

Each location will designate a person of suitable competence and qualification appointed by the company responsible for a site (e.g. a vessel, platform, a land location) to oversee and approve all lifting operations on this single location, on behalf of all personnel working on it. Examples include the Master of a Vessel, or the Offshore Installation Manager (OIM) of a platform.

2.1.2 Assigning a Local Lifting Focal Point

Each field operating or drilling unit will designate at a minimum one dedicated person in the field (more may be assigned if required) as the Local Lifting Focal Point. Major installations such as TLPs, SPARs, etc. along with other locations with construction, drilling, or workover operations shall have an LLFP on location at all times.

2.1.3 Assigning a Lift Sponsor

The UAD/Contractor Supervisor will assign a Lift Sponsor for all lifting and hoisting operations.

NOTE: The QO/QP may be assigned as the Lift Sponsor.

2.1.4 Lift Sponsor

When planning and executing lifting operations, the Lift Sponsor shall do the following:

- Use the Lift Categorization and Work Authorization Table (OPS0055-PR02-TO.01),
- Ensure that the lift area(s) is:
  - controlled to ensure individuals are safeguarded from entering the path of the load and
  - adequately sized for the load's size and weight,
- Verify that the answers to OPS0055-PR02-TO.02 Lift Planning Tool are addressed in a Toolbox Talk, and
- Ensure that applicable lift planning requirements in this Procedure are met.

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2.1.5 Designated Lift Areas

Each offshore location will identify normal working lay down areas used for lifting and hoisting. These areas will be free of obstacles not including other loads in the area. All designated lift areas will be at least 3' from any unguarded light pole, PA box, or other fragile equipment as well as any handrails not designed for impact. Standard platform handrails are not designed for impact. Any lift outside of the designated lift area GA will be classified as a critical lift and planned as such.

2.1.6 Planning the Lift

Lift planning shall be done minimally twice per operator shift or as operators change. Depending upon the amount of lifting to be performed more planning exercises might need to be performed. Only lifts identified in the planning session will be performed during operation session. All lifts other than Routine will require specific lift planning see (OPS0055-PR02-TO.03 and OPS0055-PR02-TO.04). Multiple Critical or Complex/Engineered lifts of similar nature may be incorporated in the same lift plan. For Routine lifts an approved JSA is equivalent to a generic lift plan.

2.2 General Requirements

2.2.1 Register of Lifting Equipment

A register recording the following data shall be maintained for all lifting equipment:

- Manufacturer and description
- Identification number
- SWL
- Date when the equipment was first taken into use
- Particulars of defects and steps taken to remedy them
- Certificates with dates and numbers of tests, inspections, and examinations, and the name of person who performed these
- Due dates for previous and next periodic inspection or periodicity of inspections
- Maintenance log
- Current color scheme or color code process

NOTE: Each location will post current color code at each crane, bulletin board where qualified Operators QO's are posted, and all areas where rigging gear is stored.

Continued on next page

2.2.2 Personnel Being Lifted

The Lift Sponsor shall communicate the following requirements:

- Personnel shall wear fall protection as required by HSE0044 Fall Prevention and Protection.
- Keep all parts of the body, tools, and equipment inside the work platform periphery during raising, lowering, and traveling.
- Personnel shall hold onto platform with both hands.

NOTES:

- **Cranes being used for lifting or transfer of personnel must perform no other operation during the period of personnel lifting operations.**
- **Personnel lifts are considered critical and must only be conducted when the risk level is considered to be As Low As Reasonably Practical (ALARP).**
- **Blind lifts of personnel shall be minimized and shall not be permitted as repetitive operations.**

2.2.3 Onshore Personnel Lifts

Must be conducted in accordance with the following when applicable:

- OSHA 29 CFR 1926.550
- OSHA 29 CFR 1910.67
- OSHA 29 CFR 1926.453
- ASME B30.23
- ASME B30.5-3.2.2

See OPS0055-TO.02 Reference and Companion Documents for titles of above regulations and standards.

2.2.4 Offshore Personnel Transfers

All personnel transfers must be conducted in accordance with OPS0168A Personnel Transfer Safety Offshore.

NOTE: Personnel lifts are considered critical and must only be conducted when the risk level is considered to be ALARP.

2.2.5 Blind Lifts

Lifts out of sight of the operator (QO/QP) are considered blind lifts and require:

- the Designated Signal Person (DSP) to communicate with the operator per OPS0055-PR02-TO.05 UAD Crane Communications,
- a survey of the area to identify potential hang points and any special rigging needs, and
- clear radio communications when the DSP cannot see the operator.

NOTE: A boom tip camera must not be used in place of a DSP.

Continued on next page

2.2.6 Extreme Environmental Conditions

Each location or organizational group must develop local requirements for conducting lifting and hoisting operations during extreme environmental conditions, such as:

- high winds,
- electrical storms,
- high seas,
- poor visibility,
- high noise areas (communications),
- unstable or sloping terrain, and
- snow and ice.

NOTE: When offloading boats, the UAD/Contractor Supervisor, Lift Sponsor, QO, and the Boat Captain shall be jointly responsible for determining if weather conditions are satisfactory. Wind limits shall be in MPH.

2.2.7 General Lifting

Prior to making the lift, the Lift Sponsor shall do the following:

- Establish communications with Rigger, DSP, and, where applicable, Boat Captain. Refer to OPS0055-PR02-TO.05 UAD Crane Communications.
- Ensure that tag lines meet the requirements in Lifting Accessories.

2.2.8 Offshore Pedestal Cranes

Prior to making the lift, the Lift Sponsor shall do the following:

- Determine any interference caused by planned and scheduled helicopter flight operations, and re-plan or re-schedule crane operations as necessary (refer to helicopter operating procedures in OPS0055-PR02-TO.06 Crane Cab Decals).
- Ensure that loads to be shipped meet UAD pre-slinging and containerization requirements (refer to Sections 5.3.3 and 5.3.6).

2.2.9 Aerial Platforms and Mobile Cranes

The Lift Sponsor shall survey the area to identify hazards and take precautions for:

- overhead obstructions,
- high-voltage conductors as defined by (OSHA 29 CFR 1910.333),
- debris, bumps and loose obstructions, drop-offs, holes, ditches, open earth fills, obstructed path of travel, and unstable footing, and
- underground utilities (gas, electricity, water).

3 LIFTING APPLIANCES

3.1 Overview

3.1.1 In this Section

This section identifies operational requirements specific to the following lifting appliances:

- Cranes, including:
  - Offshore pedestal
  - Mobile
  - Gin pole trucks
  - Articulating boom
  - Overhead
- Aerial platforms
- Powered industrial trucks
- Hoists, including:
  - Manual lever
  - Tirfor/comealong
  - Powered overhead
  - Chain
- Jacks
- Winches (including man-riding)
- Beam clamps
- Fixed lifting points

3.1.2 General Requirements

Locations and organizational groups with hurricane procedures must ensure that these procedures include the following requirements:

- All lifting and hoisting equipment is secured to prevent damage.
- Before returning to service:
  - unsecure all lifting and hoisting equipment,
  - perform a complete visual inspection, and
  - reinstate utilities.

3.2 Offshore Pedestal Cranes

3.2.1 Prior to Starting the Crane

Before starting the crane the QO shall do the following:

- Ensure that lift planning has been completed by the Lift Sponsor.
- Conduct and document the Offshore Pedestal Crane Pre-Use Inspection (refer to OPS0055-PR02-TO.07).
- Use weight indicators and refer to the shipping manifest to determine the weight of the load.

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3.2.1 Prior to Starting the Crane (cont.)

- Compare the weight on the manifest with the written weight and date on the load sticker to ensure correctness.
- Each location will have an official High Angle Kick Out (HAKO) set point. This set point will be listed on the crane decal (refer to OPS0055-PR02-TO.06) and documented during the annual inspection performed by SCI.
- Follow the Pedestal Cranes Permitted Operations Matrix (refer to OPS0055-PR02-TO.06) for bypassing any safety device such as the boom kick-out or anti-two blocking device. Adjustment of the HAKO beyond the set point is considered bypassing. Follow instructions on HAKO Adjustment decal in OPS0055-PR02-TO.06.
- Appoint riggers to act as load handler and a DSP.
- Wear a high-visibility vest.
- Ensure that the DSP is wearing a high-visibility, mesh, reflective vest or hard hat cover that will clearly distinguish him/her from anyone else on the worksite.
- Adhere to any tags placed on crane.

NOTE: Review any discrepancy found on pre-use inspection against "Pedestal Cranes Permitted Operations" matrix, found in OPS0055-PR02-TO.06 and posted in crane cab or at control station.

3.2.2 Load Handling

During lifting operations, the QO shall:

- be at the crane controls at all times while a load is suspended,
- unless adhering to Blind Lift requirements, ensure loads are kept in sight from time of pick up until the load and tag lines clear the deck,
- ensure that all slings are attached to loads with a screw pin or anchor bolt type of shackle, and
- ensure tag lines are used in accordance with Tag Lines.

During lifting operations, the QO shall not:

- hoist a load over personnel on any deck level,
- move loads while personnel are on the load (unless in an approved work basket),
- lift a load out of a container until all personnel are clear of the container,
- use a crane to drag loads unless it is rigged properly, and
- operate the crane while a helicopter is landing, taking off, or has rotors turning on the helideck.

NOTE: Routine lifts may be conducted on two-man platforms using a qualified crane operator and DSP. The DSP may not perform rigger duties and DSP duties simultaneously.

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3.2.3 Shutting Down Lifting Operations

Before leaving the control station unattended, the QO shall:
- land any attached load,
- park the boom away from flare stacks or engine exhausts,
- set all locking devices,
- secure the crane against swinging interference with helicopter or other crane operations, and
- stow unused high-visibility vests out of the view of the helicopter pilot.

NOTE: All lifting accessories, except those integral to the crane, will be removed before stowing the boom in the boom rest.

3.2.4 Crane Operations near Helidecks

Follow the crane/helicopter procedures on the decal shown in OPS0055-PR02-TO.06 Crane Cab Decals.

3.2.5 Lifting with Stingers

Stingers must:
- have a working load limit of at least 125% of the load,
- be installed directly to the hoist hook,
- be used during all off/on board material lifts,
- have a positive locking latch (e.g. Crosby PL latch), and
- be hooked directly to the masterlink of sling-sets attached to pre-slung loads.

3.2.6 Emergency Procedures

Each offshore installation must develop crane and platform-specific methods and procedures for lowering a load in the event of crane malfunction (e.g. loss of power).

Cranes are equipped in accordance with API 2C for emergency lowering. This procedure shall be performed only by a trained/qualified person.

3.3 Mobile Cranes

3.3.1 Prior to Lift

The QO for mobile cranes shall:

- ensure that lift planning has been completed by the Lift Sponsor,
- conduct and document the Pre-Use Inspection,
- for critical lifts, ensure the load does not exceed 75% of the rated capacity of the crane,
- ensure control of personnel in path of load,
- ensure the swing radius of the superstructure is barricaded to prevent unauthorized personnel from entering the area,
- obtain a Safe Work Permit approved at the UAD Supervisor-level or above for bypassing the boom kick-out, and anti-two blocking or other safety devices,
- ensure weight indicators are available to validate the weight of the load, and
- appoint riggers to act as a load handler and a DSP, and
- ensure that the DSP is wearing a high-visibility, mesh, reflective vest or hard hat cover that will clearly distinguish him/her from anyone else on the worksite.

NOTE: Mobile cranes will not be operated with nonfunctioning high angle kick-outs.

3.3.2 Load Handling

During lifting operations, the QO shall:

- be at the crane controls at all times while a load is suspended,
- unless adhering to Blind Lift requirements, ensure loads are kept in sight from time of pick up until the load and tag lines clear the deck, and
- ensure that tag lines are used in accordance with Tag Lines.

During lifting operations the QO shall not:

- hoist a load over personnel,
- move loads while personnel are on the load (unless in an approved personnel work basket),
- lift a load out of a container until all personnel are out and clear of the container, and
- use a crane to drag loads (unless it is rigged properly for a vertical pull).

On-site travel of fully rigged cranes, whether loaded or unloaded, shall only be carried out if permitted by the manufacturer and there is no reasonable alternative. Such crane movements shall be planned and supervised.

Continued on next page

3.3 Mobile Cranes, Continued

3.3.3 Shutting Down Lifting Operations

Before leaving the control station unattended, the QO shall:

- land any attached load,
- set all locking devices,
- secure the crane against uncontrolled travel or interference with other operations, and
- if applicable, put controls in the OFF or NEUTRAL position.

NOTE: Lifting accessories shall be removed when crane is not in use.

3.3.4 Lifting with Stingers

Stingers must:

- have a working load limit of at least 125% of the load,
- be installed directly to the hoist hook,
- have a positive locking latch (e.g. Crosby PL latch), and
- be hooked directly to the masterlink of sling-sets attached to pre-slung loads.

3.4 Gin Pole Trucks and Derricks

3.4.1 General Requirements

The QP shall:

- ensure that lift planning has been completed by the Lift Sponsor,
- conduct Pre-Use Inspection,
- adhere to any tags placed on equipment, and
- appoint DSP if required.

NOTE: These requirements do not apply to drilling derricks.

3.4.2 Load Handling

During lifting operations, the QP shall:

- be at the controls at all times while the load is suspended,
- ensure that there is no sudden acceleration or deceleration of the moving load,
- ensure, when loads approach the maximum rating, that the weight of the load is determined within ±10% before it is lifted, and
- take additional precautions when using rotation resistant ropes with a design factor < 5, but in no case < 3.5, as follows:
  - Appoint a DSP.
  - Conduct operations in a manner and at speeds that reduce dynamic effects.
  - Record lifts in inspection records.
  - Ascertain that the rope is in satisfactory condition both before and after lifting. More than one broken wire in any one layer is reason to consider not using the rope for such lifts.

3.5 Articulated Boom Cranes

3.5.1 General Requirements

The QP shall:
- ensure that lift planning has been completed by the Lift Sponsor,
- conduct Pre-Use Inspection, and
- adhere to any tags placed on equipment.

3.5.2 Load Handling

During lifting operations, the QP shall:
- be at the controls at all times while the load is suspended,
- ensure that there is no sudden acceleration or deceleration of the moving load,
- ensure, when loads approach the maximum rating, that the weight of the load is determined within ±10% before it is lifted,
- ensure that the crane is level and that, where necessary, the vehicle/carrier is blocked properly,
- ensure that the stabilizers, if so equipped, are fully extended and set, and
- use blocking under stabilizers as needed.

3.6 Overhead Cranes (Including Gantry, Monorail, Underhung, and Top-Running)

3.6.1 Prior to Starting the Crane

Before starting the crane, the QP shall:
- ensure that lift planning has been completed by the Lift Sponsor,
- conduct an overhead crane Pre-Use Inspection,
- adhere to any tags placed on the equipment, and
- appoint a DSP, if required.

3.6.2 Load Handling

QP for overhead cranes shall:
- adhere to crane load limits,
- be at the crane controls at all times while a load is suspended,
- ensure that loads are kept in sight from time of pick up until the load and tag lines clear the deck,
- ensure that the load is attached to the hook by means of slings or other suitable devices (the latch must be closed to secure loose slings), and
- ensure that the hoist rope is not allowed to be wrapped around the load.

Continued on next page

3.6 Overhead Cranes (Including Gantry, Monorail, Underhung, and Top-Running), Continued

3.6.3 Shutting Down Lifting Operations

Before leaving the control station unattended, the QP shall:

- land any attached load,
- ensure that the load block is positioned above head-level when the crane is not in use,
- secure the crane against uncontrolled travel or interference with other operations, and
- if applicable, put controls in the OFF or NEUTRAL position.

3.7 Aerial Platforms

3.7.1 UAD or Contractor Supervisor Requirements

Ensure that:

- each proposed personnel lift is the least hazardous, most practical method for performing the work,
- only QOs operate personnel lifting devices, and
- all personnel lifting devices are within inspection and testing intervals.

3.7.2 Prior to Lift

The QO shall:

- ensure that lift planning has been completed by the Lift Sponsor,
- perform all functions in an unloaded condition, including operation of limit switches and tilt alarm/shutoff,
- use ground control station (where possible, operate close to ground level when using the platform control station),
- conduct a Pre-Use Inspection on the lifting device, and
- adhere to all tags placed on the controls.

3.8 Powered Industrial Trucks (PITs)

3.8.1 Prior to Lift

The QP shall:

- ensure that lift planning has been completed by the Lift Sponsor,
- conduct Pre-Use Inspection, and
- adhere to all tags placed on the hoist controls.

NOTE: PIT (forklifts) used for pipe handling shall be fitted with a pipe clamp to prevent pipes from inadvertently rolling off the forks by July 1, 2012.

3.9 Hoists, Jacks, and Winches

3.9.1 Operations

QP shall:

- ensure that lift planning has been completed by the Lift Sponsor,
- conduct Pre-Use Inspection,
- for any winch suspected of overload refer to corrective action per OPS0055-PR03 Testing and Inspection Requirements.
- adhere to all tags placed on the hoist controls, and
- for hoist and winches, remain at the controls at all times while a load is suspended, and lower-off slowly to avoid dynamic loading.

3.9.2 Hoist Storage

Hoists must be stored in a dedicated area that is covered, dry, or otherwise protected from the environment.

3.9.3 Man-Riding Winches

In addition to the requirements above, the following must be met:

- OPS0055-PR02-TO.08 Pre-Start Checklist for Man-Riding Operations must be filled out completely by all personnel involved.
- Only dedicated man-riding winches that incorporate appropriate safety devices as per ANSI A10.22, must be used for man riding. These winches must be clearly marked “Dedicated for Man Riding” and never used for any other purpose.
- All safety devices must be checked before every man-riding operation.
- Radio communications must be used at all times.
- The lift sponsor shall ensure that all rig operations in the area are shut down and locked out while man riding is carried out.
- A dedicated team, including the Lift Sponsor, QP, and person being lifted, must carry out the operation.
- The Lift Sponsor shall ensure that no other operation that could interfere with the man riding is carried out.
- Prior to installing or using winches, the following must be in place:
  - Emergency means by which all winch motion can be brought to a halt effectively and rapidly.
  - No man riding shall be allowed if the winch operator does not have clear sight of the rider.
- A secondary fall protection device must be used, independent of the primary lifting mechanism.
- Each rig shall have a list of needed activities requiring access above the monkey board or below the floor approved by the Lifting and Hoisting Technical Authority and the Wells Delivery Manager.

3.10 Beam Clamps

3.10.1 Operations

The QP shall:
- conduct Pre-Use Inspection,
- adhere to all tags, and
- use only on structural beams that have been certified (designed, tested, and marked with a working load limit).

For use on an uncertified beam refer to Fixed Lifting Points.

Typical beam clamps are not designed for side loading. Where side loading is expected, use only beam clamps designed for side loading.

3.11 Fixed Lifting Points

3.11.1 Operations of Certified Lifting Points

- QP shall use the correct shackle size to avoid high stress due to point loading.
- Padeyes must be loaded in the plane of the padeye only.
- No side loading shall be applied unless the padeye is specifically designed for that purpose.

3.11.2 Operations of Uncertified Lifting Points

If a section of the installation or plant structure or other uncertified beam will be used for lifting purposes, then:
- obtain a Safe Work Permit and
- plan the lift in accordance with OPS0055-PR02-TO.09 Structural/Piping Guideline Load Matrix.

NOTE: Consult with UAD civil engineer prior to the lift if there is any uncertainty about the capacity of the fixed lifting point.

4 LIFTING ACCESSORIES

4.1 Overview

4.1.1 In this Section

Operational requirements for the following are covered in UAD-approved rigger training:

Accessory	Requirements
Slings	• Wire Rope • Chain • Synthetic Slings (e.g. nylon web, poly-round, fiber rope) • Stingers
Below-the-Hook Lifting Devices	• Proprietary Lifting Devices • Spreader Bars • Plate Clamps • Pallet Hooks
Rigging Hardware	• Masterlinks • Shackles • Eyebolts • Turnbuckles • Open Wedge Sockets • Rigging Blocks • Hooks

All lifting accessories must be used in accordance with UAD approved rigger training. Operational requirements in the following sections are included for emphasis.

4.2 Slings

4.2.1 Synthetic Slings

Synthetic slings (e.g. nylon web, poly-round, fiber rope) may only be used where:

- there is no practicable alternative, and
- wire rope could crush or damage unprotected loads (e.g. piping or equipment with specialized coatings, rotating components from machinery, fragile equipment, etc.).

During rare occasions where a synthetic sling is exposed to a dynamic/offboard lift, the lift must:

- be considered a critical lift and thus subject to additional requirements for job planning and operating practice, and
- use slings with a working load rating that is double the load being lifted (e.g. a 5-ton straight lift requires a sling with a 10-ton working load rating).

Synthetic slings must not be used when exposed to:

- sharp edges or rough surfaces,
- temperatures exceeding 194°F, and
- chemicals,

or the load may rotate in the sling.

4.2.2 Wire Rope Slings

Wire rope slings are broken into two categories; pre-slung and general lifting.

Pre-slung slings are integral to pieces of equipment shipped to and from onshore and offshore locations. Pre-slung slings are part of the equipment owner's lifting register. Certificates will be available upon request.

General lifting slings are a location's stock and part of their lifting register.

General lifting wire rope slings shall be stored in an area where they will not be exposed to:

- water,
- extreme heat,
- corrosive fumes,
- liquid, and
- spray.

Slings shall not be stored on the deck. When not in use, slings shall be kept on a rack.

Continued on next page

4.2.3 Chain Slings

Chain slings will be used only during onshore rig moves and wellhead installations when:

- approved for use by the UAD/Contract supervisor and
- rated and certified for the intended use.

4.2.4 Stingers

Refer to Offshore Pedestal Crane/Mobile Crane operational requirements.

4.3 Below-the-Hook

4.3.1 Spreader Bars and Special Lifting Devices

Spreader bars and special lifting devices are fabricated steel structures typically used to ensure that rigging connected between the bar/frame and the load is vertical. Unlike a spreader bar, special lifting devices are engineered for specific lifting applications.

The QP shall be instructed in the use of the device by a designated person. Instructions should include but are not limited to the following:

- Application of the lifter to the load and adjustments, if any, that adapt the lifter to various sizes or kinds of loads
- Instructions for any special operations or precautions
- The manufacturer's recommended operating procedures
- Store the lifter to protect it from damage
- Do not exceed the rated capacity of the lifter

4.3.2 Plate Clamps

The use of plate clamps is restricted to situations where the plate is being:

- removed from a racking system, or
- moved a short distance with the lift maintained just above the deck/ground.

Universal plate clamps can lift a plate from horizontal to vertical and vice versa but must not be used to transport plates horizontally.

NOTE: The preferred and safest method of handling plate is cutting a hole and shackling per Engineer's specification.

4.3.3 Tension Load Cells

Side loading of tension load cells will be avoided at all times.

4.4 Rigging Hardware

4.4.1 Eyebolts

Eyebolts must only be used for local/on-skid maintenance activities (e.g. motor alignment, positioning).

4.4.2 Turnbuckles

Turnbuckles must only be used as part of a special lifting device.

4.4.3 Shackles

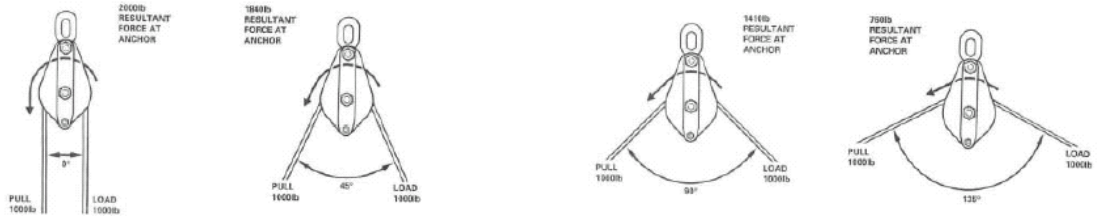
Avoid angle and side loading to prevent a reduction in shackle capacity.

4.4.4 Hooks

Hooks must only be used as an integral part of another lifting appliance/accessory.

4.4.5 Rigging Blocks

The load line multiplied by the block load factor must not exceed the rated load of the rigging block, as shown in the figure below.



4.4.6 Tag Lines

Tag lines must be used on all lifts for mobile and offshore pedestal crane operations except during tandem lifts of two cranes.

Personnel must:

- ensure tag lines are of sufficient length, and
- attach tag lines to the load to be lifted, and not the slings.

See OPS0168A (Personnel Transfer Safety) for specifications for tag lines used for personnel transfer baskets/nets. For all other lifts, tag lines must be:

- made of fiber,
- a minimum of 6' long,
- free of knots,
- without or free of frayed ends, and
- larger than 1/4" but less than 3/4" in diameter.

5 LIFTED EQUIPMENT

5.1 Overview

5.1.1 In this Section

This section contains the following subsections:

- Miscellaneous
- Personnel Work Baskets
- Lifted Equipment Going Offshore

5.2 Miscellaneous

5.2.1 Stacking Loads

Do not double-stack loads unless they are designed for that purpose. Riggers shall not have to climb aboard stacked loads to unrig.

When planning to double stack loads, consider the following:

- Access to the container for connecting/disconnecting the crane hook
- Deck loading
- Stability of the double stack
- Potential damage to rigging

5.2.2 Shipping Manifest

All loads must have shipping manifests that include load descriptions and weights.

5.2.3 Lifting Requirements for Hoses

Use only a certified lifting arrangement (this may be either a proprietary handling aid or regular loose lifting gear, such as wire rope slings and shackles).

5.3 Lifted Equipment Going Offshore

5.3.1 Color-Coded Decals

For lifts of 3,000 lbs or more, shore-based personnel must select the appropriate color-coded decal from the table below.

Weight Range	Color Codes
3,000 – 5,000	Green
5,001 – 15,000	Yellow
15,001 – and up	Red

NOTE: It is crucial that the weight on the decal match the weight obtained from the shore-based facility's certified weight indicator.

The decal must be completed by:

- entering the date and actual weight
- affixing the decal to the load where it is clearly visible to load-handling personnel, and
- ensuring that the decal matches the field shipping manifest prior to lift.

5.3.2 Pre-Shipping Inspection

Each lift must be visually inspected by a Qualified Rigging Inspector prior to loadout. An example of a Pre-Shipping Inspection Checklist can be found in OPS0055-PR02-TO.10.

5.3.3 Containeriz-ation

All loads going offshore must be placed in pre-slung containers except the following:

- Equipment identified by the Lifted Equipment Certification Exemption List (OPS0055-PR02-TO.11).
- Non-tubulars/tubulars too large to containerize
- Engineered equipment following OPS0055-PR2-TO.12 guidelines

5.3.4 Non-Tubulars and Lifting Frames

Non-tubulars too large to containerize and lifting frames must have:

- clearly identified lifting points capable of handling the total capacity of the load,
- lifting points designed/validated and certified by a licensed engineer to meet the requirements of API RP2A Section 2.4.2c "Dynamic Load Factors" and Section 2.4.2d "Allowable Stresses", documented with drawings, calculations, and the Lifted Equipment Certification Form (OPS0055-PR02-TO.12) all stamped by a licensed engineer and available on request,
- manufacture in accordance with these stamped drawings, and
- padeye holes that are smooth and perpendicular to the plate face.

Continued on next page

5.3.5 Tubulars

The following steps must be taken when handling tubulars:

Step	Action
1	Confirm the following: • The load capacity of the offshore crane • That a certified spreader bar is available if applicable
2	Determine the appropriate size of the tubular racks, if applicable, to be used on the motor vessel. The racks should: • contain each bundle within the uprighty stanchions of at least two racks and • prevent movement during rough weather. Leave slings wrapped around tubulars.
3	Verify that slings used for pre-slinging tubulars have a current certification.
4	Double-wrap tubulars on each end with a double-wrapped choker hitch using 3/4" x 30' slings with a 12" soft eye on one end and a thimble eye on the other end. Pass the soft eye through the thimble eye to form the choke.
5	Secure the sling lifting eye and the tag line (if one is fitted) neatly to the same bundle of the tubulars on both ends.
6	Place a piece of 4′-6′, 4″ nylon rope over each bundle to protect the slings from being crushed by additional bundles.
7	Ensure that the height of the tubulars in the racks does not exceed 6'.
8	Once tubulars are offloaded, tag the slings as “Used”.
9	Return slings to shore base for visual inspection and possible reuse.

Continued on next page

5.3.6 Sling Requirements when Pre-Slinging

In addition to the requirements outlined in OPS0055-PR01 Design Requirements, slings must have:

- a certification date of less than 1 year, and
- sufficient length to prevent personnel from climbing or using ladders to hook or unhook loads. (This may require fitting a longer leg sling to the masterlink.)

Sling sets must also:

- achieve a 60° angle to the horizontal, with 45° being an absolute minimum,
- connect multi-leg slings to a masterlink (subassembly preferred),
- have thimbles on both ends of each sling, and
- have a bolt-type anchor shackle.

NOTES:

- **Pre-slung slings that exceed their certification date while offshore can be used to ship the load to the terminal if:**
  - **the sling is inspected by a QP,**
  - **the sling is tagged with the following information:**
    - **inspection date,**
    - **QP's name, and**
    - **QP's signature, and**
  - **the load is manifested to indicate that the sling is out of certification and has been inspected by a QP.**
- **Removal of a sling and/or sling set used for pre-slinging for general lifting purposes is strictly prohibited.**
- **Equipment shipped one-way may be exempt from bolt-type anchor shackle and hard-eye (thimble) requirements. Screw pin shackles shall be moused (secured) with wire or tie wraps.**

5.3.7 Lifting Requirements for Pallets

Pallets must be lifted by a forklift or another certified pallet-lifting accessory such as a pallet fork. Do not use any type of pallet as a lifting device (e.g. putting slings through wooden pallets to lift them and their contents is prohibited).

5.3.8 Bulk Bags

Bulk bags are to be used for one offshore cycle (filled once) only.

Filled bulk bags are to be:

- transferred to and from the location in certified transporters and carriers only and
- protected from UV damage at all times while being stored.

TOOL

Lift Categorization and Work Authorization Table

Type of Lift	Description	Work Authorization Level						
		JSA	WCC Permit	SWPL	Lift Plan - Specific	ENG	OM/RS/AO	SWT
Routine	**Includes:**							
	Lifts with known weight, shape, and center of gravity	X[7]						
	Lifts performed under calm environmental conditions	X[7]						
	Lifts using standard rigging and lifting equipment with a single lifting appliance with ample headroom	X[7]						
	Lifts inside designated lift area	X[7]						
	Lifts involving marine operations of loading and unloading vessels	X[7]						
Critical[10]	**Includes**:							
	Lifts over or within 6 feet (1.8 meters) horizontally of active or energized hydrocarbon-containing process equipment[3]	X	X		X			X
	Personnel transfer	X	X		X			
	Man-riding operations between the monkey board and the rig floor	X	X[9]		X			X[5]
	Man-riding operations above the monkey board or below rig floor[4]	X	X		X		X	X[6]
	Lifts that expose a synthetic sling to dynamic, shock, or snatch conditions	X	X		X			
	Loads outside designated lift areas	X	X		X			
	Blind lifts	X	X[8]		X			
	Lifts with unknown weight, center of gravity, or chance of being stuck	X	X		X			
	Lifts requiring special signals not part of standard hand signal chart	X	X		X			
	Personnel lifts with the intent of performing work from a work basket[2]	X	X		X			X
	Operators in training at levels requiring supervision	X	X		X			
	Lifts using more than one lifting appliance, including handing off loads and tailing pipe to a rig	X	X		X			X
	Lifts into or out of confined spaces or shafts like hull columns	X	X		X			X
	Lifts requiring bypass of safety devices	X	X		X		X	X
	Lifts beyond allowable wind conditions (MPH)	X	X		X		X	X

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2.2 Lift Categorization Table, Continued

Type of Lift	Description	Work Authorization Level						
		JSA	WCC Permit	SWPL	Lift Plan - Specific	ENG	OM/RS/AO	SWT
Complex / Engineered[1]	**Includes:**							
	Lifts of expensive items, such as gas turbines when not using engineered lifting tools, one-of-a-kind articles, or major facility components whose loss would have a serious impact on production operations	X	X	X	X	X	X	X
	Lifts near overhead electrical power lines as defined by applicable regulations	X	X		X	X		X
	Lifts with awkward shapes, unbalanced weight, unknown/difficult to estimate weight, or center of gravity	X	X		X	X		X
	Lifts with "special" non-standard rigging such as multiple sheave blocks or multiple spreader bars	X	X		X	X		X
	Lifts to upend or lay down (turn vertically 90 degrees) an object with a crane	X	X		X	X		X
	Lifts from un-certified lifting points outside the scope of OPS0055-PR02-TO.09	X	X		X	X		X
	Temporary crane installation and foundation	X	X	X	X	X	X	X
	Tandem lifts involving two cranes	X	X	X	X	X	X	X
	Lifts using both falls of a crane	X	X		X	X		X
	Temporary hoist foundation	X	X		X	X		X
Heavy (Engineered)	Lifts in excess of 90% of the maximum rated capacity of the lifting device (static or dynamic). **NOTE: Before proceeding with a heavy lift, a Shell SCI-written confirmation of the successful completion of a Heavy Lift Inspection must be obtained.**	X	X	X	X	X		X

1: For Offshore Pedestal Cranes, QO shall be a Level 2 Qualified Operator.
2: For personnel lifting involving Aerial Platforms, the Supervisor shall authorize, in writing, the use of the lifting appliance for each shift.
3: Does not apply to **onshore single well locations** where lifts are over or within 6 feet (1.8 meters) of the wellhead. Lifts made on multiple well locations or on locations covered by a Simultaneous Operations Plan (SIMOPs) require a WCC.
4: Riding above the Monkey board or below the rig floor requires Shell Rig Superintendent or Wells Delivery Manager Approval. Rig Manager and Lead Shell Foremen will be considered Lift Sponsor and be in attendance at all times while riders are above the Monkey board or below the rig floor.
5. Shell Drilling Foreman on duty.
6. Lead Shell Drilling Foreman on duty.
7. For routine lifts, an approved JSA is equivalent to a generic lift plan.
8. For blind lifts that would otherwise, be categorized routine, the WCC can be waived and QO can be at current competency level. DSP must be QO level 1C minimally.
9. In lieu of WCC the UAD Contractor Supervisor may delegate authorization to Drilling Foreman on duty.
10. QO can be at current competency levels.

JSA – Job Safety Analysis per applicable Shell requirements
WCC – Work Control Certificate per ISSOW
SWPL – Safe Work Plan

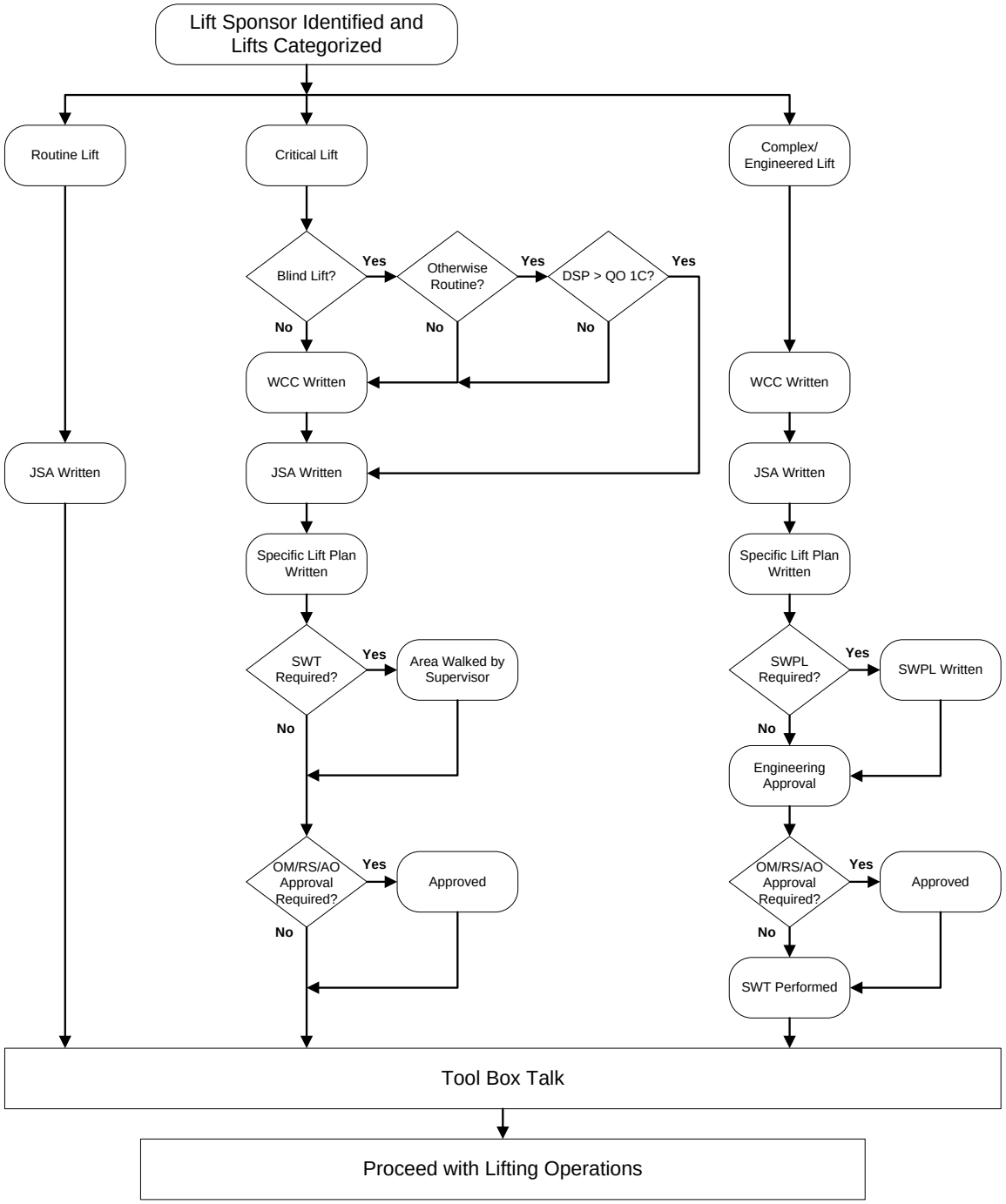
ENG – Engineering approval
OM/RS/AO – Operations Manager, Rig Superintendant, or Area Owner approval
SWT – Supervision Walk Through jobsite (shall be Shell Supervisor if on site, OIM/PIC or designee)

TOOL

Lift Planning Flowchart and Tables

Introduction

Refer to the flowchart below and the tables on the following page to determine requirements when planning lifts.



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Lift Planning Tool, Continued

Question	Yes	No
ANY NO ANSWER TO QUESTIONS BELOW WILL REQUIRE JOB TO BE STOPPED UNTIL MITIGATED!		
Has the Lift Sponsor been identified?		
Is everyone aware that a Toolbox Talk and JSA are necessary to make lifts?		
Has the daily Pre-Use Inspection been performed?		
Have all safety devices been tested?		
Is everyone involved certified for their individual jobs?		
Does everyone understand the lifting and hoisting procedures applicable to the lifts to be made?		
Have all lifting accessories been inspected, including color code and certification tags?		
Have all signals been agreed upon?		
Has the lift area been secured to keep non-lifting personnel out?		
Are environmental conditions known and favorable within the local operating parameters?		
Have the expectations and minimum requirements for Stop Work Authority been discussed?		
Has the landing area been cleared of all unsecured obstacles and trip hazards?		
Has a Designated Signal Person been identified and does everyone understand that with the exception of a STOP signal, signals will only be accepted from the DSP?		
Yes answers to ALL of the questions below constitute a Routine Lift that can proceed with JSA.		
Any NO answer to the questions below will require specific work authorizations in accordance with table in OPS0055-PR02-TO.01.		
HAS IT BEEN DETERMINED THAT:		
The lifts are to be lifted or landed in designated landing areas?		CRT
The load will be in the sight of the operator at all times?		CRT
All lifts are of known weights and centers of gravity?		CRT
No “special signals” will be needed?		CRT
No personnel transfer will take place?		CRT
No man-riding operations will take place?		CRT
No man-riding above the monkey board or below the rig floor will take place?		CRT
No personnel lifts in personnel baskets with the intent to perform work will take place?		CRT
There are no operators in training?		CRT
There are no lifts from uncertified lifting points or temporary mountings for hoists?		ENG
No lifts with “special” non-standard rigging (multiple sheave blocks, multiple spreader-bars, etc.) will be attempted?		ENG
No lifts will be over or within 6 feet (1.8 meters) horizontally of live hydrocarbon-containing process equipment?		CRT
There is only one lifting appliance being used for the lifts (including tailing pipe in drilling/workover or abandonment operations)?		CRT
There are no tandem lifts using two “cranes”?		ENG
There are no lifts using both blocks of a crane?		ENG
No lift will have to be upended or laid down (turned from horizontal 90 degrees or vice versa)?		ENG
No lift will expose a synthetic sling to dynamic, shock, or snatch conditions?		CRT
No lifts over 90% of the maximum capacity of the Lifting Appliance will be attempted?		HVL
The load is free to be lifted and/or there is no chance of the load becoming hung up?		CRT
There are no lifts involving expensive items such as gas turbines, one of a kind items, or major facility components whose loss would have serious impact on production operations?		ENG
There are no loads being lowered into or lifted out of confined spaces or shafts (e.g. Hull columns)?		CRT
No lifts requiring bypass to safety devices (e.g. anti-two blocking or high angle kick-out devices) will be attempted?		CRT

CRT – Critical Lift; ENG – Engineered Lift; HVL – Heavy Lift

OPS0055-PR02-TO.03 Complex/Engineered Lift Plan

Lift plan Category	Complex/Engineered (refer to OPS0055 PR02-TO.01 Lift Categorization and Work Authorization Table)			
Lift type Description				
References	Lift Plan no.		JSA no.	
	WCC no.		Safe Work Plan no.	

Lift plan number is Date + sequential number of lift plans for that day. (example 01-15-2011-1)

Asset Location			
Lifting Appliance to be used			
Lift Sponsor Name		Position on location	
Supervisor walkthrough	☐ Yes ☐ Not Required	Supervisor Name	
Lift location			

Description of lifting operation

Load details/crane details

Radius of lift		SWL at radii		Weather conditions	
Start:	Finish:	Start:	Finish:	Wind (MPH):	Wave (ft.):
Centre of gravity: ☐ Known ☐ Engineered ☐ Drawing		Load weight:		Crane configuration:	

Extra safety measures to be considered *(tick as applicable and detail in 'step-by-step'). List is NOT INCLUSIVE.*

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- ☐ Lifts of expensive items, such as gas turbines, one-of-a-kind articles, or major facility components whose loss would have serious impact on production operations.
  - ☐ Follow engineering details on Safe Work Plan.
  - ☐ All special lifting devices reviewed by Engineer.
  - ☐ All special lifting devices certified and inspected per OPS0055
  - ☐ Consider increasing safety factors of lifting accessories.
- ☐ Lifts near overhead electrical power lines as defined by applicable regulations.
  - ☐ Ensure allowed by local operating procedures
  - ☐ Reference local regulation documentation and attach to this lift plan.
  - ☐ Post extra watch person as needed
  - ☐ De-energize if possible
- ☐ Lifts with awkward shapes, unbalanced weight, unknown/difficult to estimate weight or center of gravity.
  - ☐ Follow Engineers instructions
  - ☐ Make sure weight indicator is correct and calibrated
  - ☐ Use dynamometer as necessary
- ☐ Lifts with "special non-standard rigging such multiple sheave blocks or multiple spreader bars.
  - ☐ Follow Engineers instructions
  - ☐ All lifting devices certified and inspected per OPS0055
- ☐ Lifts to upend or lay down (turn vertically 90 degrees) and object with a crane.
  - ☐ Follow Engineers instructions
- ☐ Lifts from uncertified lifting points outside of the scope of (OPS0055 PR02-TO.06) Structural Guideline Load Matrix.
  - ☐ Follow Engineers instructions
  - ☐ Perform NDE and Inspection per Engineers instructions
  - ☐ Use rigging accessories certified and inspected per OPS0055
- ☐ Temporary Crane installations
  - ☐ Follow Engineers instructions
  - ☐ Crane operators certified and assessed per OPS0055 and Crane resource coordinator.
  - ☐ NDE performed per Engineers instruction
  - ☐ Inspections and load test performed per OPS0055 and API RP 2D
  - ☐ Load test pull points per Engineers instruction
- ☐ Tandem lifts involving two cranes
  - ☐ Follow Engineers instructions
  - ☐ Both crane operator fully level 2QO and assessed and experienced in tandem lifts.
  - ☐ DSP competent and experienced in tandem lifting with cranes.
- ☐ Lifts using both falls of one crane
  - ☐ Follow Engineers instructions
  - ☐ Both falls must be capable of carrying the full load.
  - ☐ Rigging certified and inspected per OPS0055
- ☐ Temporary hoist foundation
  - ☐ Follow Engineers instructions
  - ☐ Tie down performed per Engineers instruction.
  - ☐ NDE performed per Engineers instruction

RISK ASSESSMENT Severity = low 1 - 5 high			
Top 5 risks associated with lifts.	Severity	Mitigations associated with lifts.	Resultant Severity
1.			
2.			
3.			
4.			
5.			

*more risks may be added if applicable

Any further safety measures

Communications available:	Communication checks:
☐ Primary (VHF) ☐ Secondary (hand signal) ☐ Other (specify):	☐ Primary checked ☐ Secondary checked

Lifting equipment and accessories to be used *(specify type, SWL, and configuration)*

Step-by-step details of lifting operation (may be part of Safe Work Plan and attached if applicable)	

Engineering Review	
Has an Engineering review been conducted?	☐ Yes (attach details) ☐ No
Engineer/position	

Sketches (may be part of Safe Work Plan and attached if applicable)
Sketch detailing the rigging-up of the lifting equipment and lifting accessories *(optional)*

Debrief and learning points *(did the lift go as planned or are changes to the lift plan required?)*

Reviewing Engineer	Print name(s)	Signature(s)	Date
Lift Sponsor	Print name(s)	Signature(s)	Date
PIC	Print name(s)	Signature(s)	Date
Appliance Operator	Print name(s)	Signature(s)	Date
Designated Signal Person	Print name(s)	Signature(s)	Date

OPS0055-PR02-TO.04 Critical Lift Plan

Lift type Description				
References	Lift Plan no.			
	WCC no.		Drawings ref.	

Lift plan number is Date + sequential number of lift plans for that day. (ex. 01-15-2011-1)

Asset Location			
Lifting Appliance to be used			
Lift Sponsor Name		Position on location	
Supervisor walkthrough	☐ Yes ☐ Not Required	Supervisor Name	
Lift location			

Load details/crane details

Radius of lift:		SWL at radii		Weather conditions	
Start:	Finish:	Start:	Finish:	Wind (MPH):	Wave (ft.):
Centre of gravity: ☐ Known ☐ Engineered ☐ Drawing		Load weight:		Crane configuration:	

Extra safety measures to be considered *(tick as applicable and detail in 'step-by-step'). List is NOT INCLUSIVE.*

- ☐ Lifts over or within 6' of active or energized hydrocarbon containing equipment.
  - ☐ Is there another route to avoid going over or within the equipment?
  - ☐ If the load bumped the equipment is there any instrumentation or valves whose breakage would cause damage or release?
  - ☐ Performed extra thorough pre-use inspection on all equipment associated with this lift.
  - ☐ Instituted 10:1 safety factor on rigging equipment.
  - ☐ Is equipment energized?
  - ☐ Is the Production Operator present?
  - ☐ Is there adequate landing room?
- ☐ Personnel Transfer
  - ☐ Training required in OPS0168A performed
  - ☐ Pre-use inspection performed by Qualified Person.
  - ☐ PIC informed that transfer is taking place.
  - ☐ Adequate landing area on vessel.
  - ☐ **Additional checks in next section.
- ☐ Normal Man-riding operations (between monkey board and rig floor.
  - ☐ Pre-start checklist filled out.
  - ☐ All safety devices operational
  - ☐ Is the Shell Drilling Foreman present?
- ☐ Man-riding "Above Monkeyboard or below Rig Floor.
  - ☐ Pre-start checklist filled out.
  - ☐ All safety devices operational
  - ☐ ADDITIONAL MANAGEMENT APROVAL OBTAINED
  - ☐ Are the Lead Shell Drilling Foreman & Rig Manager present?
- ☐ Lifts that expose a synthetic sling to dynamic shock or snatch conditions.
  - ☐ Pre-use Inspection conducted?
  - ☐ Document reason for no practical alternative to wire rope slings.
  - ☐ Is within the 12-month manufacture requirement.
  - ☐ The working load limit is double the weight of the item to be lifted.
- ☐ Lifts outside of the designated lifting areas
  - ☐ Document reason for lift to be landed outside of designated lifting area
  - ☐ Landing area surveyed and all potential hazards identified
  - ☐ May be combined with energized hydrocarbon equipment documentation requirements.
  - ☐ Extra riggers added as needed to assist in handling
- ☐ Blind lifts
  - ☐ Follow blind lifting procedures in OPS0055-PR02 Section 2.2.5
  - ☐ Operator and DSP survey area for potential hang points and other hazards.
  - ☐ Keep DSP in visual sight of the operator if at all possible
- ☐ Lifts with unknown weight, center of gravity or chance of being stuck
  - ☐ Load indicator used to verify weight not to exceed capacity of lifting appliance.
  - ☐ Auxiliary devices introduced to free stuck object
  - ☐ If unable to easily determine the COG move to complex (engineered) lift.
- ☐ Lifts requiring special signals not part of the standard hand signal chart
  - ☐ Signals agreed upon in advance by the Appliance operator and the designated signal person.
  - ☐ Signals documented on lift plan
- ☐ Personnel lifts with the intent of performing work from a work basket or Aerial Platform.
  - ☐ Follow work basket procedures outlined in HSE0044
  - ☐ Extra attention to body parts outside of work basket during work operation.
  - ☐ All body parts tools and equipment inside work basket during raising, lowering or traveling.
  - ☐ Operator will not perform any other functions or operations during the period of personnel lifting operations.
- ☐ Operator in training (see OPS0055-PR05)
  - ☐ Following the allowed lifts per competency section
  - ☐ Appropriate supervision per the competency section exercised.
  - ☐ Logging lifts as outlined in competency section.
- ☐ Lifts using more than one lifting appliance, including handing off loads and tailing pipe to a rig.
  - ☐ Is load rigged to prevent slippage during hand off
  - ☐ Is each Appliance capable of handling the load on its own
  - ☐ Care for side loading of sheaves, blocks, trolleys etc…
- ☐ Lifts into or out of confined spaces or shafts like hull columns.
  - ☐ Extra care for blind lifting communications exercised.
  - ☐ Extra riggers in place in strategic areas.
  - ☐ Additional person in cab to help watch load indicator.
- ☐ Lifts requiring bypass of safety devices.
  - ☐ ADDITIONAL MANAGEMENT APROVAL OBTAINED
  - ☐ Qualified person to perform adjustment or bypassing
  - ☐ additional personnel added to monitor
- ☐ Lifts beyond allowable wind conditions (MPH)
  - ☐ ADDITIONAL MANAGEMENT APROVAL OBTAINED
  - ☐ Crane operator comfortable with making the lift
  - ☐ Additional checks on swing brakes exercised

EQUIPMENT RISK ASSESSMENT	Severity = low 1 - 5 high		
Top 5 risks associated with lifts (e.g. needle valves on production equipment)	Severity (5)	Mitigations associated with lifts (e.g. extra riggers in place)	Resultant Severity (2)
1.			
2.			
3.			
4.			
5.			

*more risks may be added if applicable

Any further safety measures

Communications available:	Communication checks:
☐ Primary (VHF) ☐ Secondary (hand signal) ☐ Other (specify):	☐ Primary checked ☐ Secondary checked

Lifting equipment and accessories to be used *(specify type, SWL and configuration)*

Step-by-step details of lifting operation	

Engineering Review	
Has an Engineering review been conducted?	☐ Yes (attach details) ☐ No
Engineer/position	

Sketches
Sketch detailing the rigging-up of the lifting equipment and lifting accessories *(optional)*

Debrief and learning points *(did the lift go as planned or are changes to the lift plan required?)*

Lift Sponsor	Print name(s)	Signature(s)	Date
PIC (For blind lifts that do not require a WCC)			
Appliance Operator	Print name(s)	Signature(s)	Date
Designated Signal Person	Print name(s)	Signature(s)	Date

TOOL

UAD CRANE COMMUNICATIONS

General

Requirements

A communication method must be established prior to all lifting and hoisting operations.

Two-way radio communication is the preferred method.

Hand signals, as illustrated in this Tool, are an acceptable alternative method for lifting operations, except for blind lifts and offshore pedestal crane operations involving boats.

For blind lifts, two-way radio communication is mandatory.

For offshore pedestal crane operations involving boats:
- two-way radio communication is mandatory and
- radio communication with the boat captain and DSP on the boat must be maintained at all times.

If radio communications fail, lifting operations must cease until radio communications are re-established.

Radio Communications

Before Operations

The QP/QO must take the following steps:
- Ensure that radio communication is established.
- Ensure that the DSP understands and agrees to all radio signals.
- Preview all sight (blind) lifts with the DSP and all Riggers associated with the lift.

During Operations

The QP/QO must :
- must never move a load if the signal is not understood.
- limit a radio signal to a single function (e.g. booming up vs. booming up and lifting up).
- use a dedicated radio frequency during all lifting operations.
- ensure that signals are discernable or audible at all times.
- ensure that the DSP gives directions to the QP/QO at least every 10 seconds, but does not keep microphone keyed constantly.
- stop lifting operations immediately if communications are lost or anyone calls for a work stoppage. Work must not recommence until formal communication is re-established.

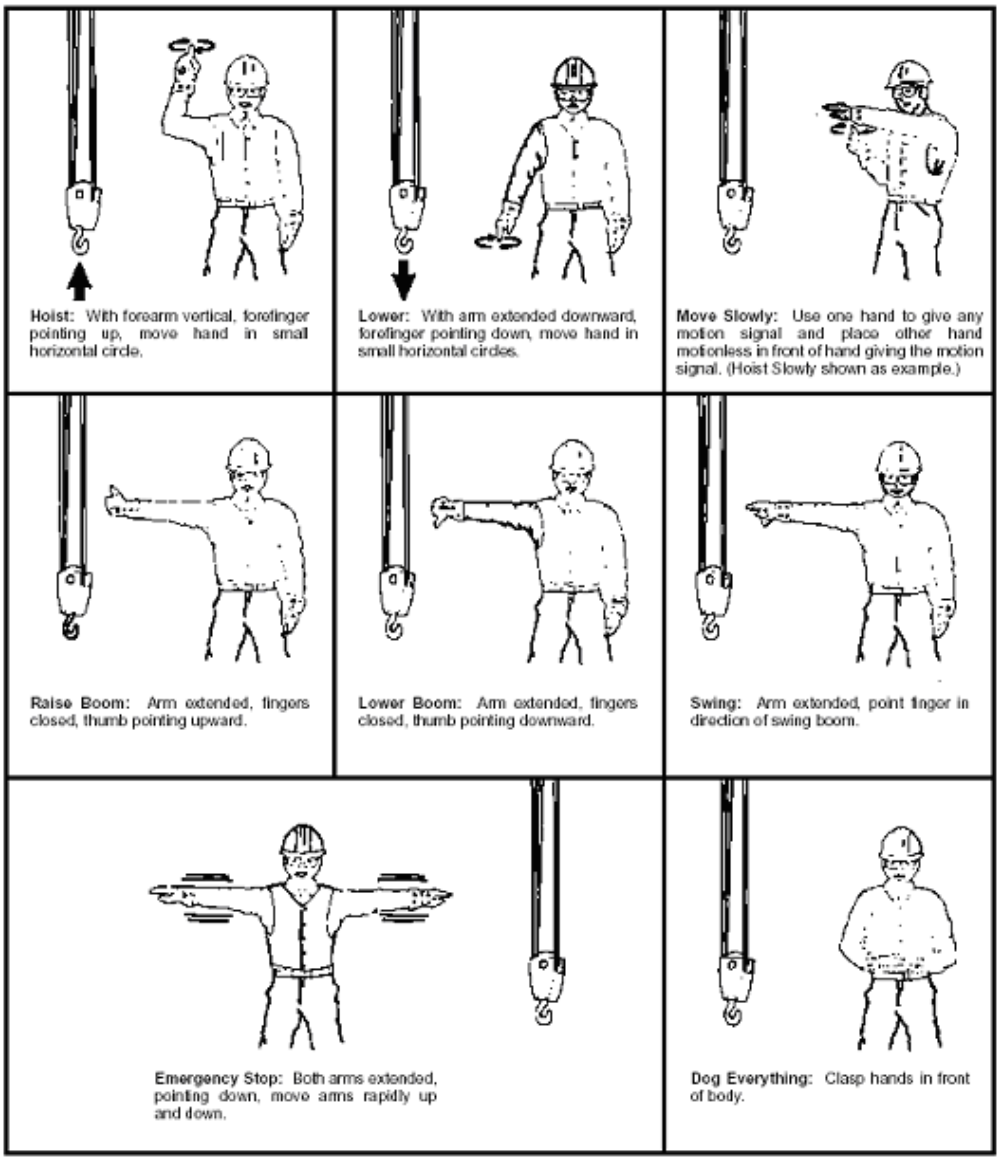
Crane Hand Signals

Posting

A weather-resistant copy of the standard hand-signal chart must be posted in an area where it can be easily found and read.

Offshore Pedestal Crane Hand Signals

Use the following hand signals for all offshore pedestal crane operations.

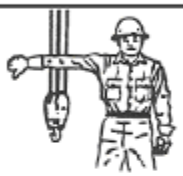
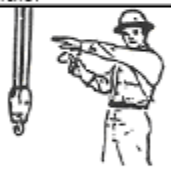
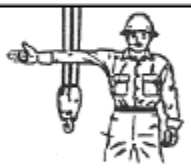
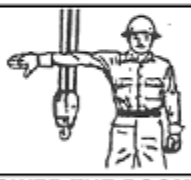
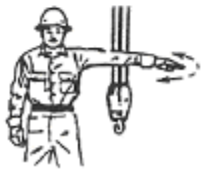


Continued on next page

Mobile Crane Hand Signals

Use the following hand signals for all mobile crane operations.

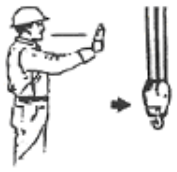
Mobile Cranes

		
HOIST. With forearm vertical, forefinger pointing up, move hand in small horizontal circle.	**LOWER.** With arm extended downward, forefinger pointing down, move hand in small horizontal circle.	**USE MAIN HOIST.** Tap fist on head then use regular signals.
		
USE WHIP LINE. (Auxiliary Hoist) Tap elbow with one hand, then use regular signals.	**RAISE BOOM.** Arm extended, fingers closed, thumb pointing upward.	**LOWER BOOM.** Arm extended, fingers closed, thumb pointing downward.
		
MOVE SLOWLY. Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist slowly shown as example.)	**RAISE THE BOOM AND LOWER THE LOAD.** With arm Extended, thumb pointing up. Flex fingers in and out as long as load movement is desired.	**LOWER THE BOOM AND RAISE THE LOAD.** With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.
		
SWING. Arm extended, point with finger in direction of swing of boom.	**STOP.** Arm extended, palm down, move arm back and forth horizontally.	**EMERGENCY STOP.** Both arms extended, palms down, move arms back and forth horizontally.

Continued on next page

Mobile Crane Hand Signals (cont.)

Mobile Cranes (Continued)

		
TRAVEL. Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.	**DOG EVERYTHING.** Clasp hands in front of body.	**TRAVEL.** (Both Tracks) Use both fists in front of body, making a circular motion, about each other, indicating direction of travel; forward or backward. (For land cranes only.)
		
TRAVEL. (One Track) Lock the track on side indicated by raised fist. Travel opposite track in direction indicated by circular motion of either fist, rotated vertically in front of body. (For land cranes only.)	**EXTEND BOOM.** (Telescoping Booms) Both fists in front of body with thumbs pointing outward.	**RETRACT BOOM.** (Telescoping Booms) Both fists in front of body with thumbs pointing toward each other.

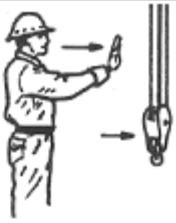
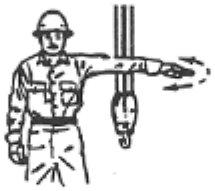
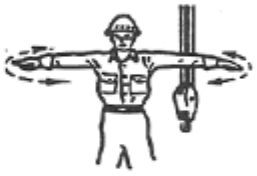
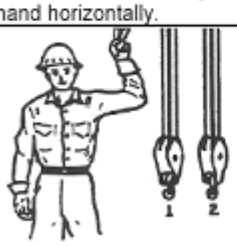
	
EXTEND BOOM. (Telescoping Booms) One Hand Signal. One fist in front of chest with thumb tapping chest.	**RETRACT BOOM.** (Telescoping Booms) One Hand Signal. One fist in front of chest, thumb pointing outward and heel of fist tapping chest.

Continued on next page

Overhead Crane Hand Signals

Use the following hand signals for all overhead crane operations.

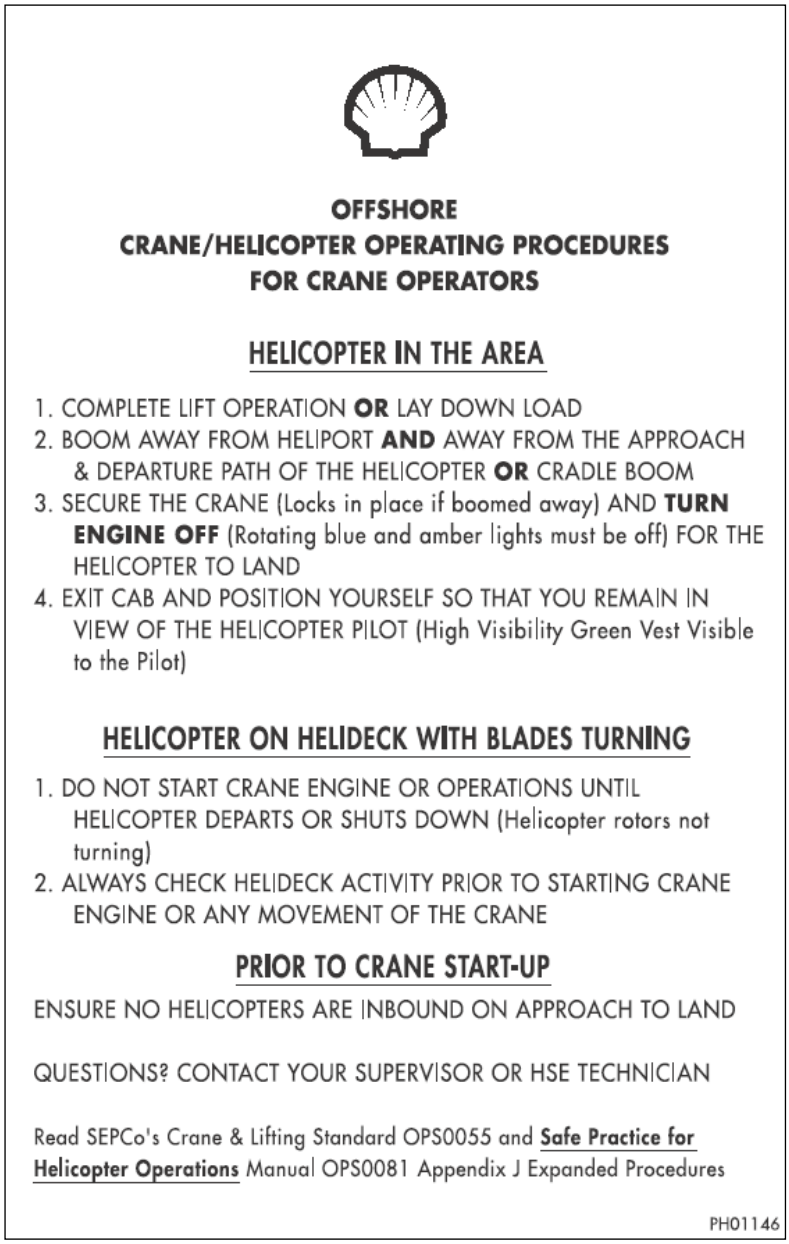
Overhead Cranes

		
HOIST. With forearm vertical, forefinger pointing up, move hand in small horizontal circle.	**LOWER.** With arm extended downward, forefinger pointing down, move hand in small horizontal circle.	**BRIDGE TRAVEL.** Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.
		
TROLLEY TRAVEL. Palm up, fingers closed, thumb pointing in direction of motion, jerk hand horizontally.	**STOP.** Arm extended, palm down, move arm back and forth.	**EMERGENCY STOP.** Both arms extended, palms down, move arms back and forth.
		
MULTIPLE TROLLEYS. Hold up one finger for block marked "1" and two fingers for block marked "2". Regular signals follow.	**MOVE SLOWLY.** Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist slowly shown as example.)	

Crane Cab Decals

Crane and Helicopter Cab Decal

Post the following decal in all offshore pedestal crane cabs or control stations.



OFFSHORE
CRANE/HELICOPTER OPERATING PROCEDURES
FOR CRANE OPERATORS

HELICOPTER IN THE AREA

1. COMPLETE LIFT OPERATION **OR** LAY DOWN LOAD
2. BOOM AWAY FROM HELIPORT **AND** AWAY FROM THE APPROACH & DEPARTURE PATH OF THE HELICOPTER **OR** CRADLE BOOM
3. SECURE THE CRANE (Locks in place if boomed away) AND **TURN ENGINE OFF** (Rotating blue and amber lights must be off) FOR THE HELICOPTER TO LAND
4. EXIT CAB AND POSITION YOURSELF SO THAT YOU REMAIN IN VIEW OF THE HELICOPTER PILOT (High Visibility Green Vest Visible to the Pilot)

HELICOPTER ON HELIDECK WITH BLADES TURNING

1. DO NOT START CRANE ENGINE OR OPERATIONS UNTIL HELICOPTER DEPARTS OR SHUTS DOWN (Helicopter rotors not turning)
2. ALWAYS CHECK HELIDECK ACTIVITY PRIOR TO STARTING CRANE ENGINE OR ANY MOVEMENT OF THE CRANE

PRIOR TO CRANE START-UP

ENSURE NO HELICOPTERS ARE INBOUND ON APPROACH TO LAND

QUESTIONS? CONTACT YOUR SUPERVISOR OR HSE TECHNICIAN

Read SEPCo's Crane & Lifting Standard OPS0055 and **Safe Practice for Helicopter Operations** Manual OPS0081 Appendix J Expanded Procedures

PH01146

Continued on next page

Load Identification

Post the following decal in all offshore pedestal crane cabs or control stations.

Shell Upstream Americas Deepwater Logistics Terminal Operations Crane Load Color Code Program

I. GENERAL

A. Logistics Terminals or Shore Bases operated by or under the supervision of Shell UAD Terminal Operations are responsible for the safety of material loading and unloading onto and off of Marine Vessels.

B. Shell UAD Terminal Personnel will insure loads are properly marked and that the description and weight of all loads are entered on the load sheet when loading material onto a Marine Vessel.

C. In order for Offshore Crane Operators to easily identify the weight range of a single lift, Terminal personnel shall standardize single lift markings. A color code decal indicating the approx. weight range of the load will be affixed to each lift 1,000 lbs. or greater.

II. COLOR CODE DECALS

A. There will be five different decals with weight range from 1,000 lbs. and up. The indicated weight range will be printed across the top of the decal, and the words "Shell UAD" printed near the bottom.

B. Each weight range decal will have a highly visible color background corresponding to the following codes:

Weight Range	Color Code
1,000 - 3,000	White
3,001 – 5,000 Lbs.	Green
5,001 – 15,000 Lbs.	Yellow
15,001 & up	Red
Heavy Lift Weight	Bright Orange

NOTE: Single lift loads are baskets, boxes, tanks, bottle racks, pallet boxes, bundled pipe etc….

C. The decals will be self adhesive and capable of withstanding the Marine environment

D. The decals will be affixed to all single lift crane loads and be placed to be readily visible to the offshore crane operator or the rigger onboard the marine vessel.

E. Each Terminal/Shorebase will have a depiction of the color coded decals and weight ranges posted in the crane cab. The same information will also be posted in all offshore pedestal crane cabs or control stations.

F. Terminal Supervisors will select a common vendor to supply the decals to assure standardization in color, sizes and material.

III. OPERATIONS

A. The gross max. weight will be clearly and permanently marked on each lift per OPS 0055.

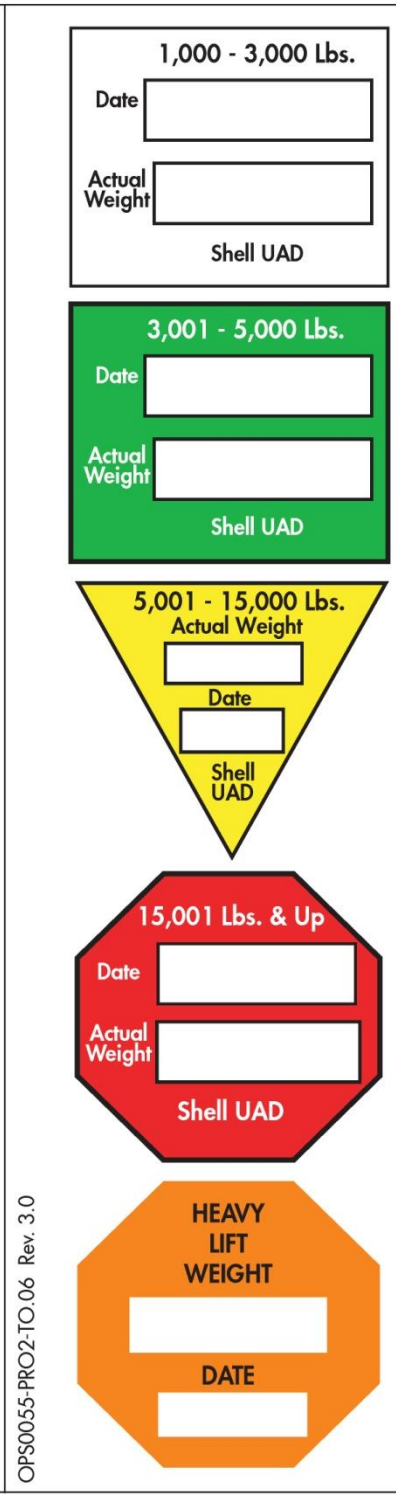
B. The actual weight markings will be placed on the appropriate decal by the Qualified Person weighing the load. The QP will include date and his/her initials on the decal before placing the decal onto the load.

C. Any single lift that is greater than 25,000 lbs. will not be loaded onto a Marine Vessel until proper authorization has been granted by the receiving location.

IV. DECAL REPLACEMENT AND/OR REMOVAL

A. Decals must be removed and/or replaced with the appropriate decal whenever the weight of the changes from one range to another, or from one actual weight to another.

B. All single lift loads, including those that have permanent visible affixed markings, must be decaled. Permanent weight markings must be verified prior to loading onto a Marine Vessel.



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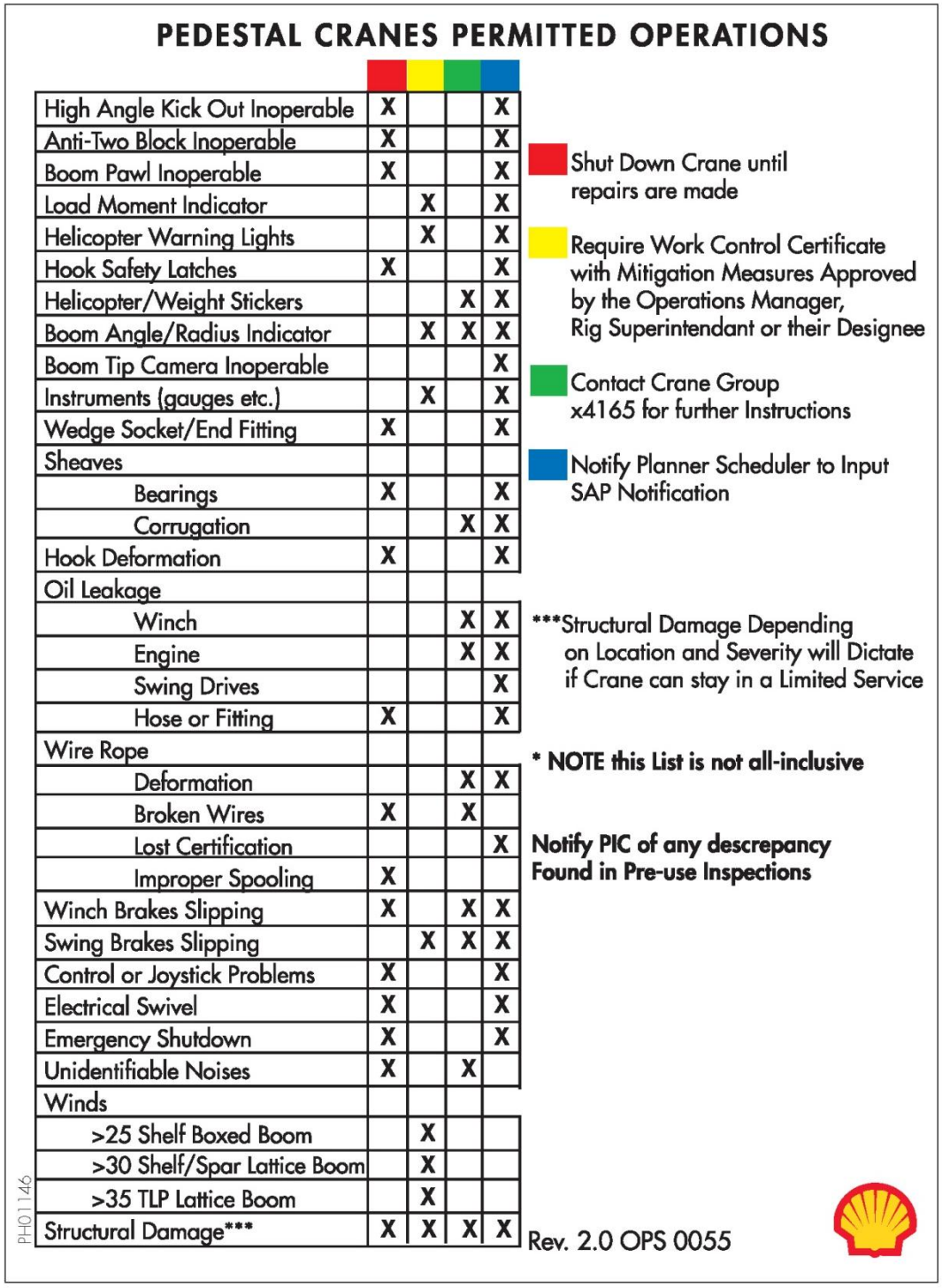
Crane Cab Decals, Continued

Permitted Operations

Post the following decal in all offshore pedestal crane cabs or control stations.



PEDESTAL CRANES PERMITTED OPERATIONS

High Angle Kick Out Inoperable	X			X
Anti-Two Block Inoperable	X			X
Boom Pawl Inoperable	X			X
Load Moment Indicator		X		X
Helicopter Warning Lights		X		X
Hook Safety Latches	X			X
Helicopter/Weight Stickers			X	X
Boom Angle/Radius Indicator		X	X	X
Boom Tip Camera Inoperable				X
Instruments (gauges etc.)		X		X
Wedge Socket/End Fitting	X			X
Sheaves				
Bearings	X			X
Corrugation			X	X
Hook Deformation	X			X
Oil Leakage				
Winch			X	X
Engine			X	X
Swing Drives				X
Hose or Fitting	X			X
Wire Rope				
Deformation			X	X
Broken Wires	X		X	
Lost Certification				X
Improper Spooling	X			
Winch Brakes Slipping	X		X	X
Swing Brakes Slipping		X	X	X
Control or Joystick Problems	X			X
Electrical Swivel	X			X
Emergency Shutdown	X			X
Unidentifiable Noises	X		X	
Winds				
>25 Shelf Boxed Boom		X		
>30 Shelf/Spar Lattice Boom		X		
>35 TLP Lattice Boom		X		
Structural Damage***	X	X	X	X

Shut Down Crane until repairs are made

Require Work Control Certificate with Mitigation Measures Approved by the Operations Manager, Rig Superintendant or their Designee

Contact Crane Group x4165 for further Instructions

Notify Planner Scheduler to Input SAP Notification

***Structural Damage Depending on Location and Severity will Dictate if Crane can stay in a Limited Service

* NOTE this List is not all-inclusive

Notify PIC of any descrepancy Found in Pre-use Inspections

PHO1146

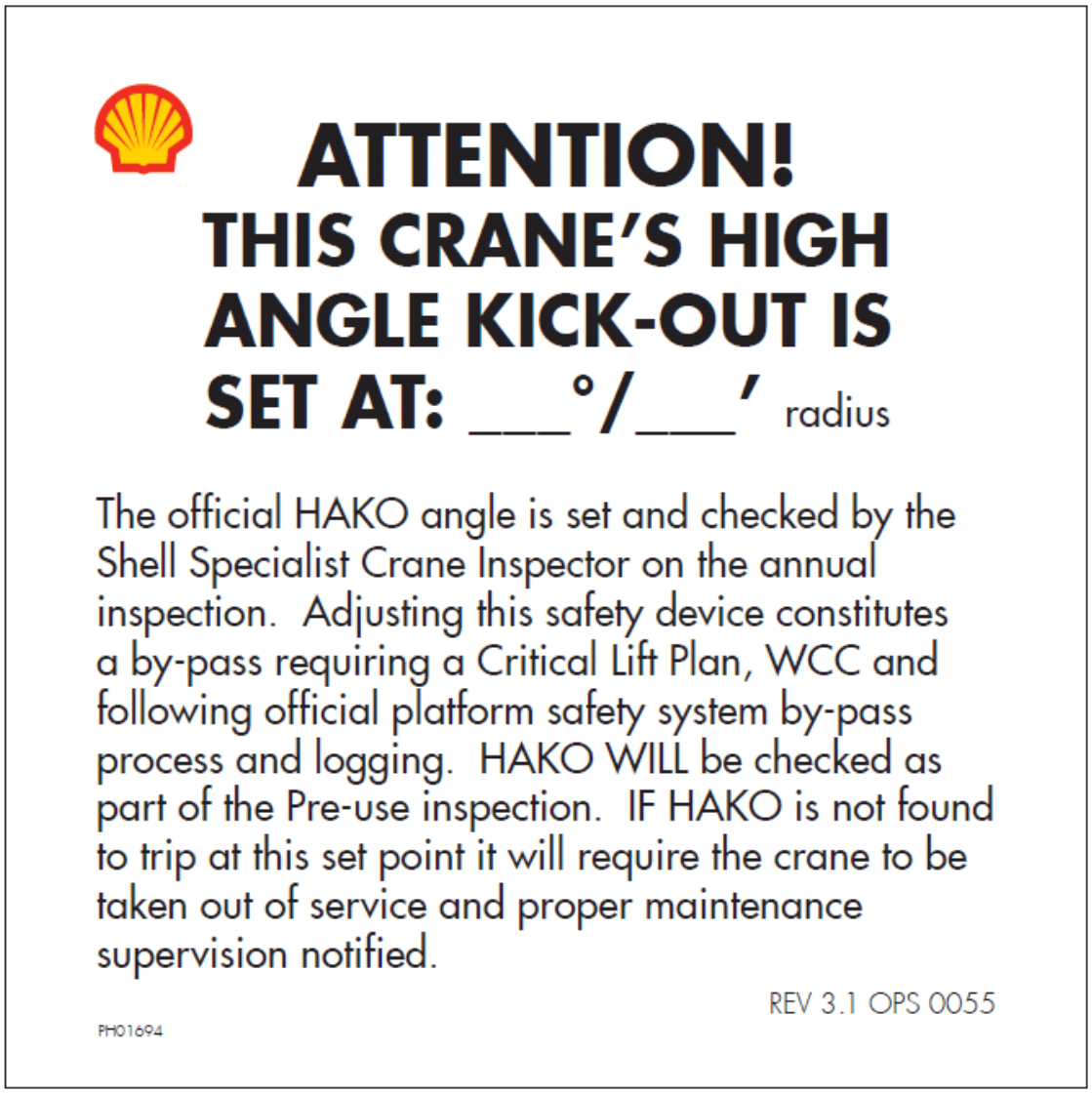
Rev. 2.0 OPS 0055

NOTE: Winds are measured in MPH.

Continued on next page

High Angle Kick Out (HAKO) Bypass Require-ments

Post the following decal in all offshore pedestal crane cabs or control stations.



TOOL

Pedestal Crane Inspection Form

Introduction Refer to the chart below to complete the pedestal crane Pre-Use Inspection form.

◀ Back to Document Suite Map

UAD Daily/Pre-Use Inspection Form

Date: (Month/Year) _____ **Location:** _____ **Crane Make:** _____ **Model:** _____ **Serial No:** _____

DATE																
1. FLUID LEVELS																
Engine oil																
Coolant level																
Hydraulic reservoir																
Fuel oil																
Ball ring lubricant level (if applicable)																
2. CONTROL MECHANISMS																
3. EXCESSIVE LEAKAGE																
Hoists																
Hoses																
Control valves																
4. SAFETY DEVICES																
Anti-two blocking system																
High angle kickout device																
Boom hoist pawl																
Helicopter warning lights																
Hook latches																
5. VISUAL OF BOOM FOR DAMAGE																
Chords																
Lacings																
6. CORRECT LOAD CHART VERIFIED																
7. WIRE ROPE DAMAGE OR IMPROPER REEVING																
Auxiliary hoist																
Main hoist																
Boom hoist																
8. LOOSE, MISSING, CORRODED BOLTS KEEPER OR COTTER PINS																
Auxiliary dead end																
Main hoist dead end																
Boom hoist dead end																
Boom connector pins																
9. RIGGING TO BE USED																
Slings																
Shackles																
10. DESIGNATED SIGNAL PERSON ASSIGNED																
Assigned																
Tasks discussed																
Radio communication established																
11. LIFT RISK CHAR. w/WORK AUTHORIZATION																
12. JSA, TBT INCLUDING QUESTIONS for a SAFE LIFT																
HOURS																
CUMULATIVE HOURS																

Pre-Use inspection will be performed Daily, when operated, by the first Operator and when Operators change. (Maintenance personnel are also required to perform pre-use inspections before operating)
Operators must initial each box as appropriate; write N/A when not applicable and I/O when inoperable.
Operators must sign and record the date, a brief description of work performed, any personnel lifts, and or any deficiencies found on reverse side of inspection form. Use more than one line if needed.
A new inspection checklist should be started as columns are filled up, no entry needed for days of non-operation.
Inspection items should be included but not limited to above.
Operators are expected to climb up to access platform on gantry for inspection of sheaves, wire rope and boom hoist termination.
TBT = Toolbox talk

CRANE OPERATION LOG

Operator	Date	Pre-Use Insp.	Time Start	Time Stop	Lifts				Down Time			Events
					R	C	CX	H	P	R	C	
					☐	☐	☐	☐	☐	☐	☐	
					☐	☐	☐	☐	☐	☐	☐	
					☐	☐	☐	☐	☐	☐	☐	
					☐	☐	☐	☐	☐	☐	☐	
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					☐	☐	☐	☐	☐	☐	☐	
					☐	☐	☐	☐	☐	☐	☐	
					☐	☐	☐	☐	☐	☐	☐	

PH01306

Inspection: T = Tour; I = Inter-tower (refer to OPS0055) **Lifts:** R = Routine; C = Critical; CX = Complex/Engineered; H = Heavy
Down Time in hours: R = Rig; P = Production; C = Crane only; N/A = Blank
Events: Any issue or activity beyond normal operations.

TOOL

Pre-Start Checklist for Man-Riding Operations

Checklist All personnel involved in the man-riding operation will be involved in the completion of this list.

START CRITERIA		OK
1.	Has a work permit/Work Control Certificate been obtained?	☐
2.	Have the reason for man riding and the job objectives been explained and clearly understood?	☐
3.	Verify that the passenger has agreed and understands that the ride is voluntary.	☐
4.	Verify that weather conditions are within the locations limits.	☐
5.	Does emergency means exists by which all motion can be effectively and rapidly brought to a halt?	☐
6.	Is the winch cable fit for operation and spooled correctly, and is the certification relevant and up to date?	☐
7.	Has the dedicated team including the Rig Manager and the Shell Drilling Foreman been identified?	☐
8.	Have all rig operations within the derrick been suspended and controls locked out?	☐
9.	Have all personnel reviewed the risk assessment and the company procedure for man riding?	☐
10.	Has a toolbox talk with all persons involved in the task been completed?	☐
11.	Has the emergency escape and rescue plan been completed and put in place?	☐
12.	Have all activities in the area of the man-riding task that may have interfered been stopped?	☐
13.	Has the operator been Shell-qualified per OPS0055 “Man-Rider Winch Operation”?	☐
14.	Are radio’s available and checked for operation?	☐
15.	Is the required secondary fall restraint system in place?	☐
16.	Have hand signals been agreed upon by all involved?	☐
17.	Has the “no signal-no movement” principal been agreed upon by all involved?	☐
18.	Are the harness and connectors in good condition and fit for operation with relevant current certification?	☐
19.	Is the harness inspection checklist filled out?	☐
20.	Has the harness been adjusted properly for comfort?	☐
21.	Is the correct PPE, complete with hard had and chin strap secured, being worn?	☐
22.	Is the winch line fitted to the harness directly without the use of hooks?	☐
23.	Is the winch marked for “Man Riding only” and certification up to date?	☐
24.	Verify there is enough wire on the hoist to maintain five wraps on the last layer.	☐
25.	Is the area above clear, or if not have any possible obstructions been removed or tied back?	☐
26.	Are all safety devices in place and in accordance with Manufacturer’s and Shell’s requirements?	☐
27.	Have all safety devices been tested including but not limited to:	☐
	• Upper and lower limits	☐
	• Line pull limiter	☐
	• Slack line shutdowns	☐
28.	Have the hand tools been checked and are they fit for purpose?	☐
29.	Are the hand tools secured with a lanyard correctly per the “DROPS” program?	☐
30.	Have all loose articles been removed from the person who is to go aloft?	☐
31.	Is the task for riding above the monkey board or below the rig floor on the approved list?	☐
32.	Has the winch been inspected by a Qualified Person and free of defects?	☐
33.	Verify that pre-use inspection for the man-riding winch has been performed by a Qualified Person?	☐

***Persons man riding will be in the sight of the operator at all times.**
****Man riding above the monkey board or below the rig floor requires Shell Rig Superintendent Approval.**

Operator: _____ Signature: _____
Rider: _____ Signature: _____
Rig Manager: _____ Signature: _____
Shell Drilling Foreman: _____ Signature: _____
**Shell Rig Superintendent: _____ Signature/e-mail approval: _____

◀ Back to Document Suite Map

TOOL

Structural/Piping Guideline Load Matrix

Overview

Use the Guideline Load Matrix in conjunction with the relevant load diagram, which indicates the method of support for the rigging.

The use of this table is for general guidance only. It is intended to provide guidance to field personnel to make small, occasional lifts up to 5,000 lbs. For lifts over 5,000 lbs., contact the UAD Civil Engineering group for assistance.

All proposed members being considered support members must be visually examined for signs of deterioration (especially at the end connections) and deformation. Additionally, the proposed support member shall be examined for the existence of other loads already supported by the member in question. If any of the above conditions exist, contact UAD Civil Engineering for assistance.

Continued on next page

Member Loading Guidance Table

The table below provides guidance for anchor points of lifting devices. The members selected were the lightest-weight members in their group. For example, the W12 selected is a W12x14, the lightest W12. The heaviest W12 is a W12x190. A W12x190 can hold a considerable amount more than what is listed here. If a question arises on a specific case, consult the UAD Civil Engineering group.

Angle

Channel

Member	Span (L) (feet)	Allowable Midspan load Fig 1 (pounds)	Allowable Cantilever Load Fig 2 & 3 (pounds)	Allowable Tension Load Fig 4 (pounds)
L 3x3	2	750	150	5000
	5	300	50	5000
	10	150	0	5000
L4x4	2	1800	450	5000
	5	700	150	5000
	10	350	50	5000
L5x5	2	3550	850	5000
	5	1400	350	5000
	10	700	150	5000
L6x6	2	5000	1250	5000
	5	2050	500	5000
	10	1000	250	5000
C4	2	3350	800	3339
	5	1350	300	3339
	10	650	150	3339
C6	2	5000	1900	5000
	5	5000	750	5000
	10	1500	350	5000
C8	2	5000	3550	5000
	5	5000	1400	5000
	10	2800	700	5000
C10	2	5000	5000	5000
	5	5000	2350	5000
	10	4700	1150	5000
C12	2	5000	5000	5000
	5	5000	3750	5000
	10	5000	1850	5000

Continued on next page

Member Loading Guidance Table (cont.)

I-Beam

Square Tube

Member		Span (L) (feet)		Allowable Midspan load Fig 1 (pounds)		Allowable Cantilever Load Fig 2 & 3 (pounds)		Allowable Tension Load Fig 4 (pounds)
W4		2		5000		2350		5000
		5		3800		950		5000
		10		1900		450		5000
W6		2		5000		2400		5000
		5		3850		950		5000
		10		1900		450		5000
W8		2		5000		3400		5000
		5		5000		1350		5000
		10		2700		650		5000
W10		2		5000		4750		5000
		5		5000		1900		5000
		10		3800		950		5000
W12		2		5000		5000		5000
		5		5000		2600		5000
		10		5000		1300		5000
W14		2		5000		5000		5000
		5		5000		5000		5000
		10		5000		2500		5000
W16		2		5000		5000		5000
		5		5000		5000		5000
		10		5000		3350		5000
W18		2		5000		5000		5000
		5		5000		5000		5000
		10		5000		5000		5000
TS 2x2		2		5000		250		2667
		5		5000		100		2667
		10		5000		50		2667
TS 3x3		2		3000		750		4242
		5		1200		300		4242
		10		600		150		4242
TS 4x4		2		5000		1400		5000
		5		2300		550		5000
		10		1150		250		5000
TS 5x5		2		5000		2300		5000
		5		3750		900		5000
		10		1850		450		5000

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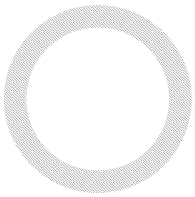
Member Loading Guidance Table (cont.)



Pipe

Member		Span (L) (feet)		Allowable Midspan load Fig 1 (pounds)		Allowable Cantilever Load Fig 2 & 3 (pounds)		Allowable Tension Load Fig 4 (pounds)
TS 6x6		2		5000		3450		5000
		5		5000		1350		5000
		10		2750		650		5000
TS8x8		2		5000		5000		5000
		5		5000		2550		5000
		10		5000		1250		5000
TS 10x10		2		5000		5000		5000
		5		5000		4050		5000
		10		5000		2000		5000
TS 12x12		2		5000		5000		5000
		5		5000		5000		5000
		10		5000		2950		5000
2" SCHD 40		2		950		200		2247
		5		350		50		2247
		10		150		0		2247
3" SCHD 40		2		3000		750		4683
		5		1200		300		4683
		10		600		150		4683
4" SCHD 40		2		5000		1400		5000
		5		2200		550		5000
		10		1100		250		5000
5" SCHD 40		2		5000		2350		5000
		5		3800		950		5000
		10		1900		450		5000
6" SCHD 40		2		5000		3700		5000
		5		5000		1450		5000
		10		2950		700		5000
8" SCHD 40		2		5000		5000		5000
		5		5000		2900		5000
		10		5000		1450		5000
10" SCHD 40		2		5000		5000		5000
		5		5000		5000		5000
		10		5000		2600		5000
12" SCHD 40		2		5000		5000		5000
		5		5000		5000		5000
		10		5000		3800		5000

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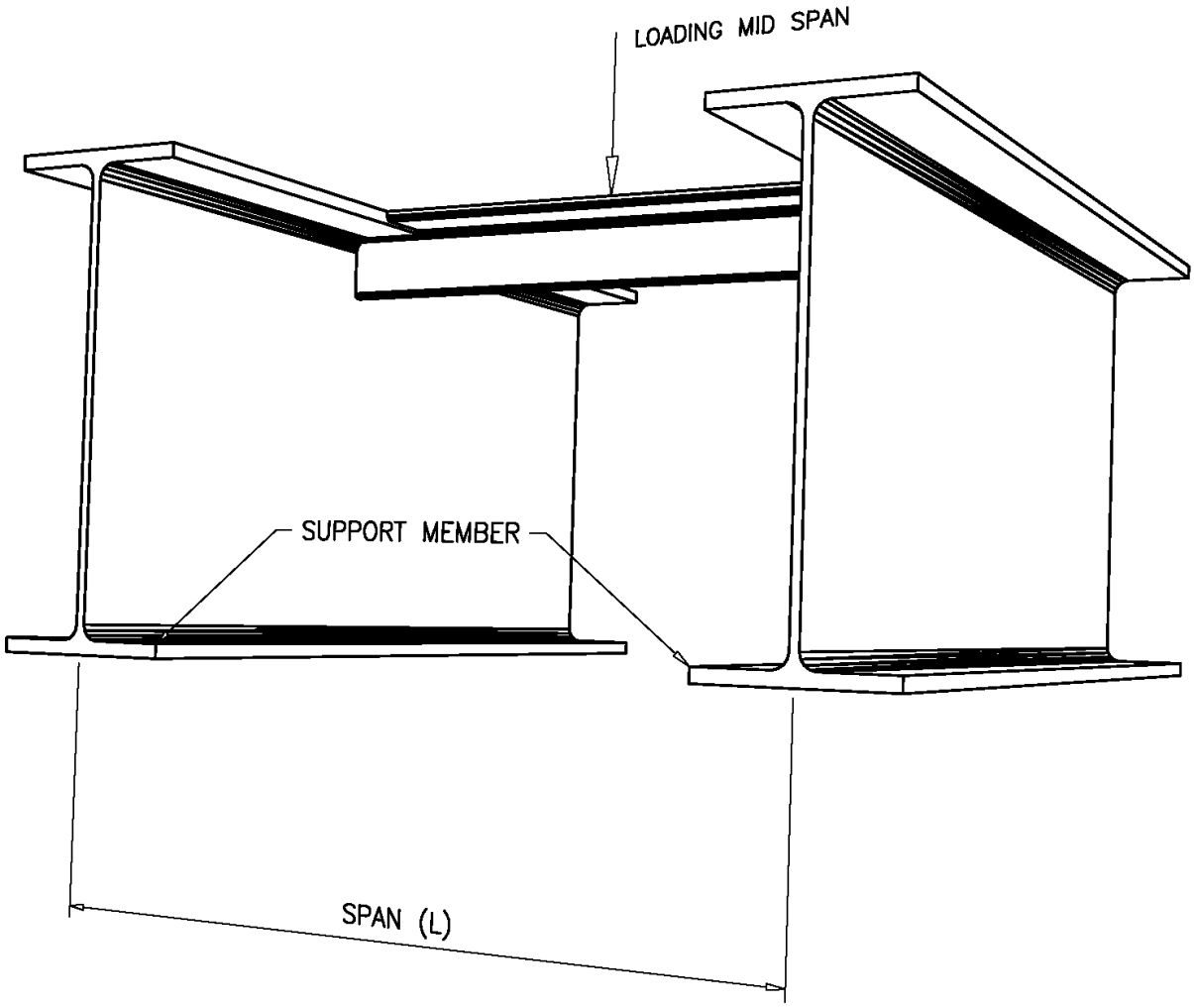
Loading Diagrams



Intercostal Member – Horizontal

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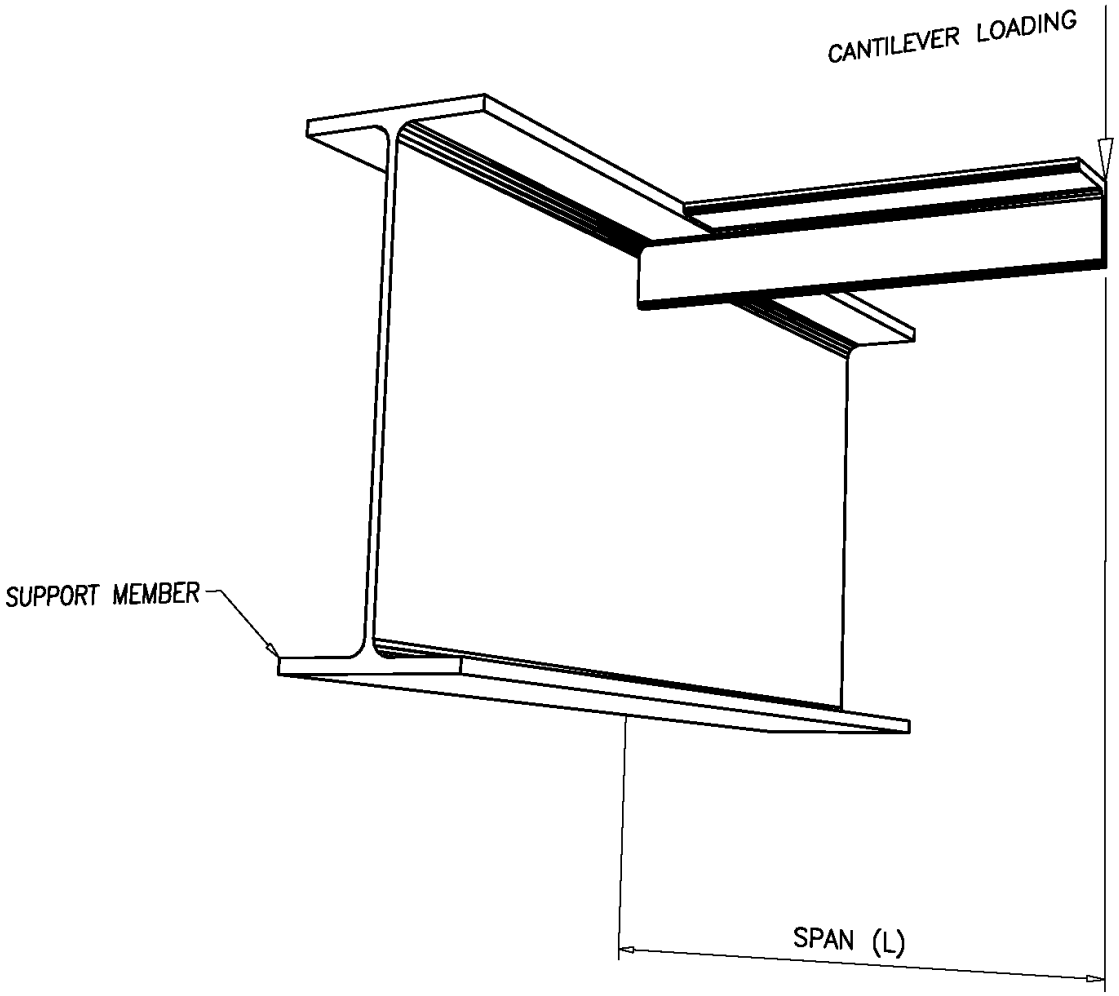

Cantilever Member – Horizontal

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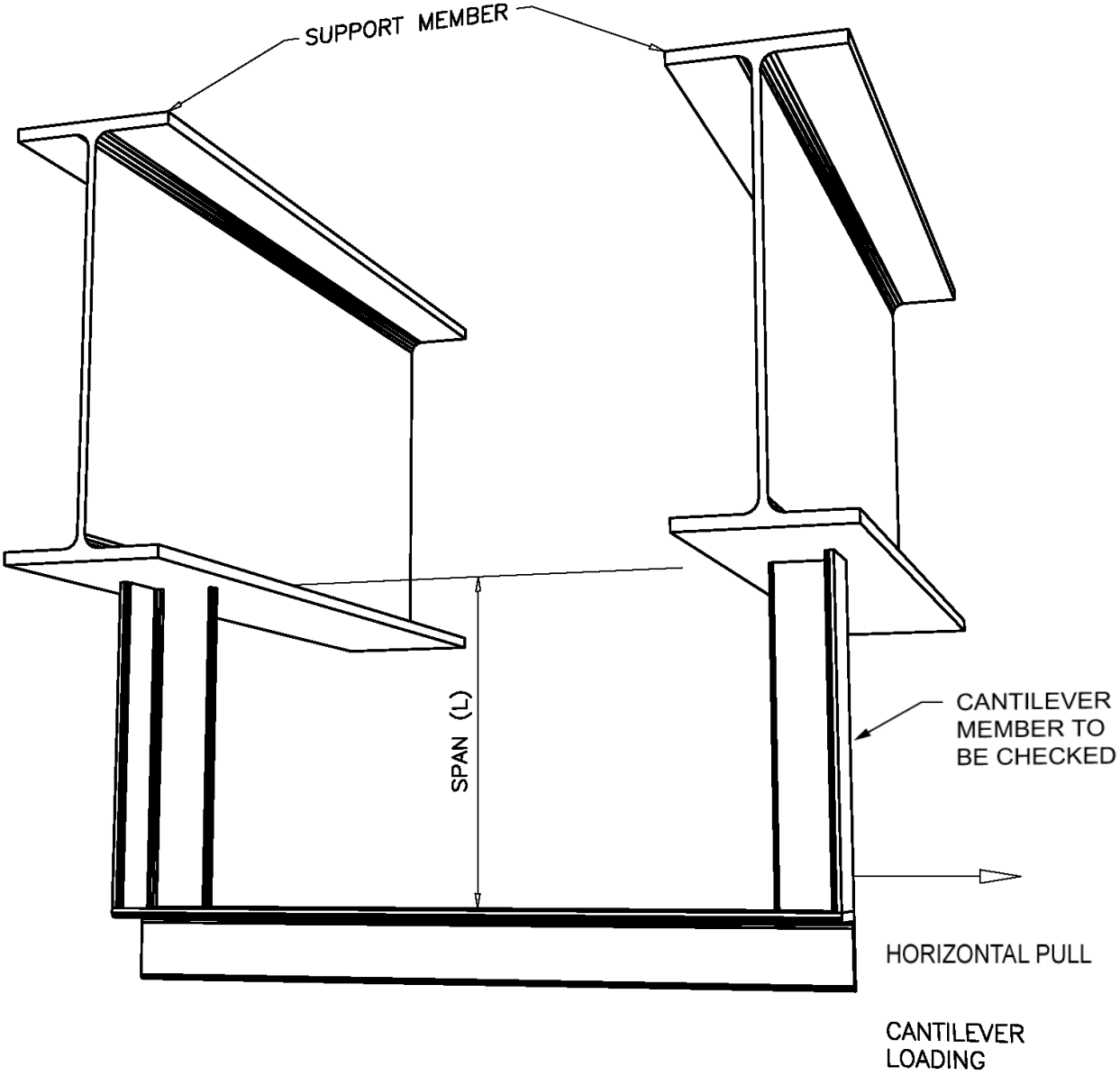

Cantilever Member – Vertical

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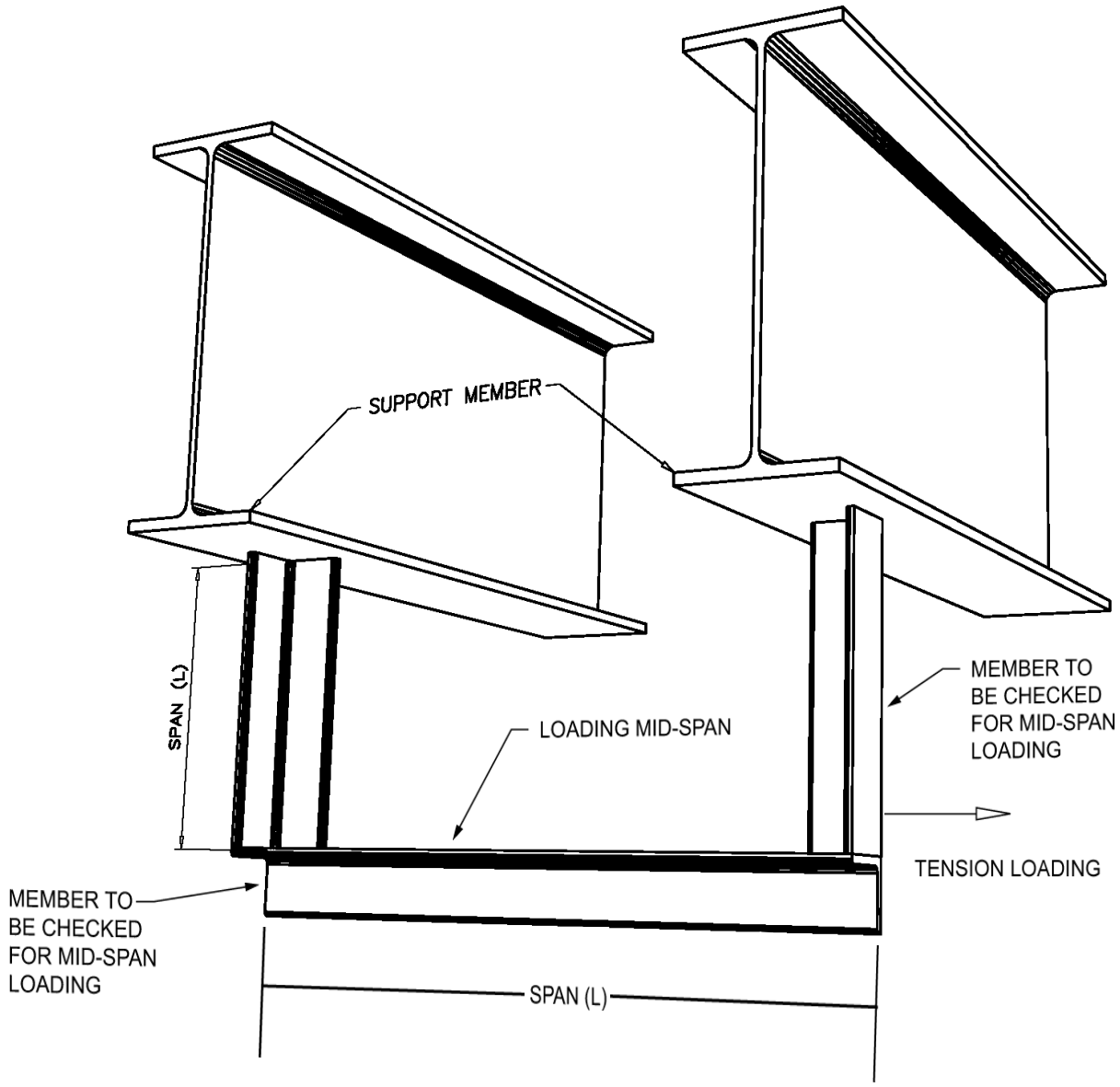


Tension Member – Vertical

TOOL

Pre-Shipping Inspection Checklist

SHACKLES

1. Are cotter pins or equivalent securing devices in place? If pins are too long cut and/or bend them. (Screw pin shackles are acceptable for one-way preslinging.)	☐ Y	☐ N
2. Are the shackles USA or equivalent?	☐ Y	☐ N
3. Is there any wear and tear on shackles?	☐ Y	☐ N
4. Are the shackles deeply rusted?	☐ Y	☐ N
5. Are there any cracks or deformation on the shackle?	☐ Y	☐ N
6. Is each shackle body marked in raised or stamped letters with the manufacturer's trademark or logo, rated load, and size?	☐ Y	☐ N
7. Is there any risk of getting injured by the cotter pins?	☐ Y	☐ N

CERTIFICATION TAGS ON PRE-SLUNG SLINGS

1. Is the tag readable?	☐ Y	☐ N
2. Is the weight capacity on the tag and rated for the lift?	☐ Y	☐ N
3. Is the tag secure?	☐ Y	☐ N
4. Is the tag date within 1 year?	☐ Y	☐ N

PADEYES

1. Are bore holes in padeyes smooth and unjagged?	☐ Y	☐ N
2. Are padeyes bent or deformed in any way?	☐ Y	☐ N
3. Is rust or corrosion visible in padeye?	☐ Y	☐ N

WIRE ROPE SLINGS

1. Is there rust within the slings?	☐ Y	☐ N
2. Are there any twists or kinks on the sling?	☐ Y	☐ N
3. Are there any broken wires or lays?	☐ Y	☐ N
4. Are the slings pitted?	☐ Y	☐ N
5. Are there any signs of heat damage or chemical burns on the slings?	☐ Y	☐ N

Continued on next page

Pre-Shipping Inspection Checklist, Continued

SPREADER BAR

1. Are there bent padeyes on the spreader bar?	☐ Y	☐ N
2. Are there any cracks on the spreader bar?	☐ Y	☐ N
3. Is the load rating and SWL visible?	☐ Y	☐ N
4. Is there any corrosion on the assembly?	☐ Y	☐ N

DAMAGE ON EQUIPMENT

1. Is the frame of the equipment bent?	☐ Y	☐ N
2. Does the equipment have any punctures or cracks?	☐ Y	☐ N
3. Is there any sign of leakage?	☐ Y	☐ N
4. Is there any sign of rocks or trash?	☐ Y	☐ N

HOOKS		
1. Do the hooks have any cracks in them?	☐ Y	☐ N
2. Do the hooks have any nicks in them?	☐ Y	☐ N
3. Do the hooks have any gouges in them?	☐ Y	☐ N
4. Is the manufacturer identification legible?	☐ Y	☐ N

SHIPPING CONTAINERS

1. Are the containers pre-slung?	☐ Y	☐ N
2. Are the slings in compliance?	☐ Y	☐ N
3. Does the container have an SWL permanently marked on it?	☐ Y	☐ N
4. Are shackles in compliance?	☐ Y	☐ N
5. Does the latch work?	☐ Y	☐ N
6. Are the hinges working correctly?	☐ Y	☐ N
7. Does the door close?	☐ Y	☐ N
8. Does the door lock?	☐ Y	☐ N

WEIGHT DECALS

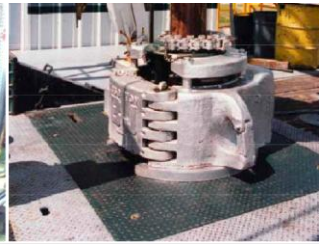
1. Are the proper color-coded decals clearly visible to load-handling personnel on all lifts?	☐ Y	☐ N
2. Are the dates and weights marked on the decals?	☐ Y	☐ N
3. Are old, out-of-date color-coded decals not visible on the loads?	☐ Y	☐ N

TOOL

Lifted Equipment Certification Exception List

NOTES:

1. **The following type items are exempt from the requirement of having a "Lifted Equipment Certification Form" (OPS0055-PR02-TO.12).**
2. **Requests for additions to the exempt list shall be addressed to Randall Abadie (X-4755) or Jim Mcclellon (X-7132).**

No.	Item Name	Description	Usual Vendors	Example Pictures
1	Drilling Tubulars			
2	Platform Crane Boom Sections	Lattice Type Structure used to make up the crane booms.	UAD-owned Seatrax Energy Cranes	
3	Drilling Elevators		Franks, etc.	 

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No.	Item Name	Description	Usual Vendors	Example Pictures
4	Drilling Bails		Franks, etc.	
5	Annular Preventer (Drilling)	The lifting points are designed to hold the weight of the entire BOP stack.		
6	Top Drive (Drilling)	The lifting points on a Top Drive unit are designed to hold the entire drill string weight (the Top Drive bails).	H&P, NOV	 Top Drive, Traveling Block and Hook with them all made up together

Continued on next page

No.	Item Name	Description	Usual Vendors	Example Pictures
7	Traveling Block (Drilling)	The lifting points are cast into the block housing as an integral unit and are designed to hold the block during drill line slip/cut operations.	H&P, NOV	
8	Hook (Drilling)	The lifting points (bail ears) are designed to hold the entire drill string weight.	H&P, NOV	
9	Personnel Escape Capsules	Capsules are designed for lifts with full compliment of personnel on board. Shipping offshore empty is not near the same loading.		
10	Personnel Basket	Basket is designed for the transport of personnel to and from and vessels and offshore platforms.	Billy Pugh	

TOOL

Lifted Equipment Certification Form (formerly Appendix G) (updated 12/2010)

Shell Purchased: ☐ **Supplier:** _____

Rental Equipment: ☐ **Owner (Vendor):** _____

Tare Weight (lbs.): _____
(Empty weight of container, tank, package, skid)

Working Load Limit (lbs.): _____
(Weight of liquid in tank, items in container, etc.)

Maximum Gross Weight (lbs.): _____
(Tare Weight + Working Load Limit = Maximum Gross Weight)

Floor Area Loading (psf): _____
(The maximum offshore dynamic load (psf) allowed on the floor of the container or building being certified. For buildings and containers only – N/A for other lifts)

Unique Identification Number: _____ (For rental equipment only)

I certify that the above-described lifted equipment: is designed for offshore dynamic lifting in accordance with the provisions of API RP2A-WSD (latest edition) Section 2.4.2c "Dynamic Load Factors" and Section 2.4.2d "Allowable Stresses", documented with drawings and calculations.

NOTE: Rigging shall be per Shell UA Deep Water OPS0055.

_____ _____

Registered Professional Engineer (Civil, Structural, or Mechanical) **Date**

Seal

Notes:
1. Owners of rental equipment shall keep a copy of this form on file for duration of equipment life and shall submit a copy to Shell upon request.
2. ISO blocks/connectors may not be used as lifting attachment points.

PROCEDURE

TESTING AND INSPECTION REQUIREMENTS

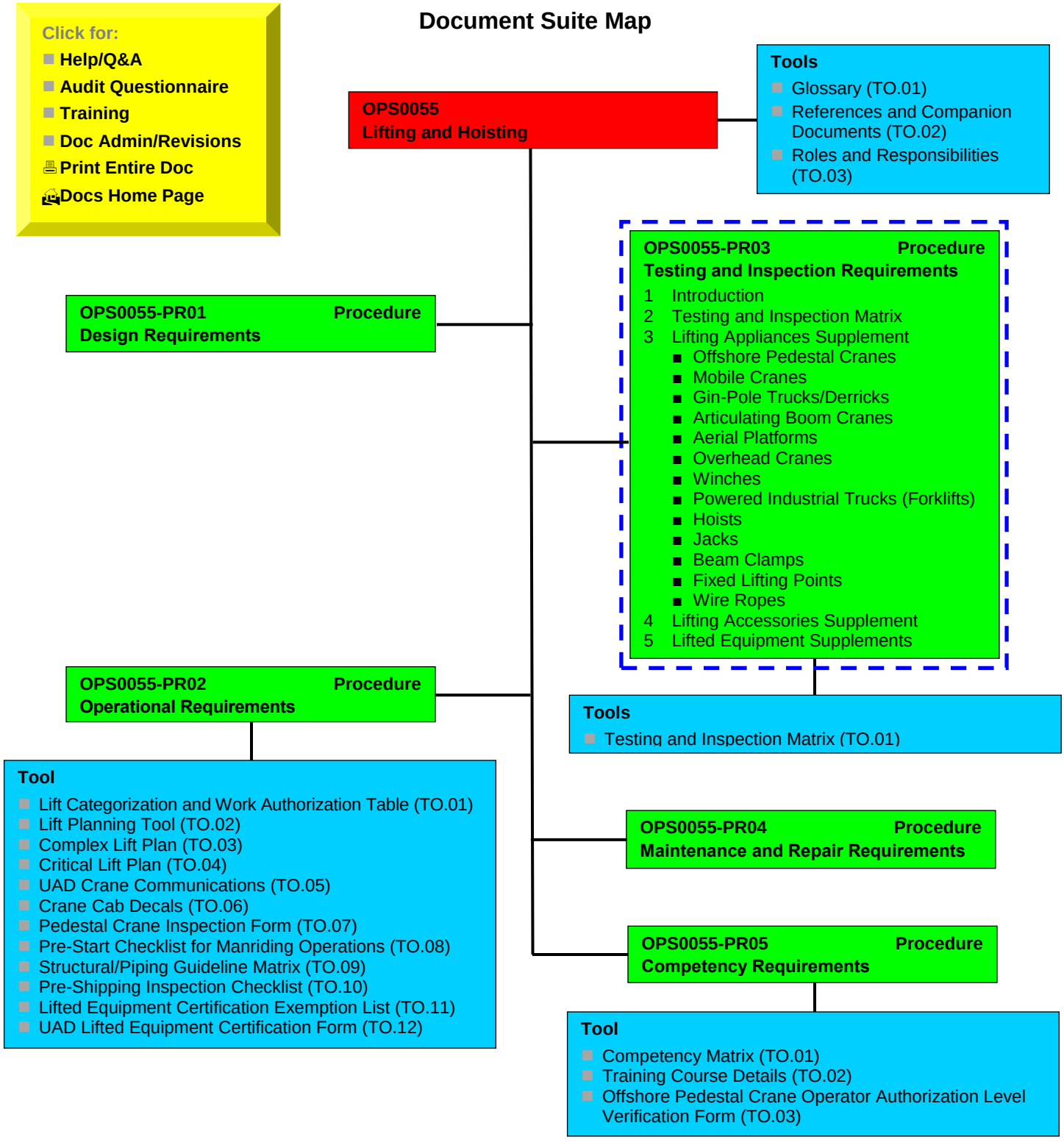

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Table of Contents, Continued

1 INTRODUCTION

1.1 Overview

1.1.1 In this Chapter

This Procedure includes:

- A Testing and Inspection Matrix that identifies the type and frequency of tests and inspections
- The following supplemental sections that outline additional details associated with these tests and inspections:
  - Lifting Appliances Supplement,
  - Lifting Accessories Supplement, and
  - Lifted Equipment Supplement.

1.1.2 Inspections

Inspections must be performed and documented by the following individuals:

Inspection	Responsible Party
Pre-Use	QO/QP/QI
Monthly	QO/QP/QI
Quarterly	QI
Annual	UAD Cranes-SCI/ Contract Crane-QI
Heavy Lift	UAD Cranes-SCI/ Contract Crane-QI

1.1.3 General Requirements

UAD locations will have a common inspection schedule and color code scheme for all lifting equipment regardless of ownership.

2 TESTING AND INPECTION MATRIX

2.1 Matrix

2.1.1 Matrix Tool

See OPS0055-PR03-TO.01 for matrix.

3 LIFTING APPLIANCES SUPPLEMENT

3.1 Offshore Pedestal Cranes

3.1.1 Certification

UAD-owned offshore pedestal cranes will maintain certification with the International Cargo Gear Bureau (ICGB).

3.1.2 Inspection Frequency

For the purposes of inspection frequency, all UAD offshore pedestal cranes are designated as heavy usage cranes and therefore require Pre-Use, Monthly, Quarterly, and Annual inspections.

NOTES:

- **A full Pre-Use inspection is required any time a crane will be operated, including maintenance duties.**
- **Pre-Use inspection will be performed by the first operator of the day and after any operator change.**

3.1.3 Heavy Lift Inspections

- A heavy lift inspection is valid for 14 days.
- Any deficiencies identified after the inspection, but before the lift, must be communicated to the SCI Group for review.

3.1.4 Load Testing

Load tests must be:

- performed and documented by a QI in accordance with the Inspection and Testing Matrix (OPS0055-PR03-TO.01) and API RP 2D Appendix E and
- documented and submitted to the SCI Group.

3.2 Mobile Cranes

3.2.1 Frequent Inspections

The QP shall perform daily and monthly documented inspections.

NOTE: Inspections for running wire rope must be documented.

3.2.2 Periodic Inspection

The QP shall perform and document periodic inspections as follows:

- Permanently affix a tag to the equipment showing that it passed inspection. The tag must include:
  - date of inspection,
  - person and company that performed the inspection,
  - unit or serial number, and
  - date that the inspection expires.
- All cranes deemed unfit for use as a result of inspection must be taken out of service and repaired before being put back into service.

Continued on next page

3.2.3 Operational Test

The QP shall test all motions (hoisting/lowering/traversing) with a nominal load.

An operational test must be performed:
- after each boom change (when boom disassembly/assembly is required), and/or
- when replacing ropes.

3.2.4 Load Testing

Load tests conducted by the manufacturer before delivery are acceptable if load test papers are provided to verify the extent and thoroughness of the test.

The QP shall:
- perform and document the load test in accordance with SAE J987 (structural load testing) and SAE J765 (stability testing),
- ensure test loads are:
  - as close as possible to, but not exceeding, 110% of the rated load at the given radius, and
  - lifted slowly and in an area where minimal damage will occur if the crane fails, and
- check holding brakes to:
  - verify stopping capabilities, and
  - demonstrate the ability to hold a rated load. The load must be held long enough to allow any dynamics to dampen out.

NOTE: Repairs or alterations to non-lifting, secondary lifting, or holding components (suspension assemblies, electrical system, crane cab, etc.) do not require a load test, although a functional check should be performed to determine if the repairs or alternations are acceptable.

Load tests are required on components directly involved with lifting or holding that have been repaired or altered.

NOTE: A Load test is not required when replacing ropes with certified equipment.

Continued on next page

3.2 Mobile Cranes, Continued

3.2.4 Load Testing

Load tests conducted by the manufacturer before delivery are acceptable if load test papers are provided to verify the extent and thoroughness of the test.

The QP shall:

- perform and document the load test in accordance with SAE J987 (structural load testing) and SAE J765 (stability testing),
- ensure test loads are:
  - as close as possible to, but not exceeding, 110% of the rated load at the given radius, and
  - lifted slowly and in an area where minimal damage will occur if the crane fails, and
- check holding brakes to:
  - verify stopping capabilities, and
  - demonstrate the ability to hold a rated load. The load must be held long enough to allow any dynamics to dampen out.

3.3 Gin Pole Trucks and Derricks

3.3.1 Frequent Inspection

The QP shall conduct daily and monthly *undocumented* inspections.

NOTE: Inspections for running wire rope must be documented.

3.3.2 Periodic Inspection

The QP shall perform and document periodic inspections as follows:

- Permanently affix a tag to the equipment showing that it passed inspection. The tag must include:
  - date of inspection,
  - person and company performing inspection,
  - unit or serial number, and
  - date that the inspection expires.
- Inspect critical items such as:
  - hoisting machinery,
  - sheaves,
  - hooks,
  - chains, and
  - ropes.
- All gin-pole trucks and derricks deemed unfit for use by inspection must be taken out of service and repaired before being put back into service.

Continued on next page

3.3 Gin Pole Trucks and Derricks, Continued

3.3.3 Operational Test

The QP shall test all motions (hoisting/lowering/traversing) with a nominal load.

NOTE: Repaired, altered, or modified gin pole trucks and derricks must be functionally tested.

3.3.4 Load Testing

Must be performed and documented with known weights or a certified dynamometer by a QP as follows:

- Lift the load slowly and in an area where minimal damage will occur if the gin pole truck/derrick fails.
- Check holding brakes to:
  - verify stopping capabilities, and
  - demonstrate the ability to hold a rated load. The load should be held long enough to allow any dynamics to dampen out.

NOTE: Repairs or alterations to non-lifting, secondary lifting, or holding components (suspension assemblies, electrical system, crane cab, etc.) do not require a load test, although a functional check should be performed to determine if the repairs or alternations are acceptable.

3.4 Articulating Boom Cranes

3.4.1 Frequent Inspection

The QP shall conduct daily and monthly *undocumented* inspections.

NOTE: Inspections for running wire rope must be documented.

3.4.2 Periodic Inspection

The QP shall perform and document periodic inspections as follows:

- Permanently affix a tag to the equipment showing that it passed inspection. The tag must include:
  - date of inspection,
  - person and company performing inspection,
  - unit or serial number, and
  - date that the inspection expires.
- Inspect critical items such as:
  - hoisting machinery,
  - sheaves,
  - hooks, and
  - ropes.
- All articulating boom cranes deemed unfit for use by inspection must be taken out of service and repaired before being put back into service.

Continued on next page

3.4 Articulating Boom Cranes, Continued

3.4.3 Operational Test

The QP shall test all motions (hoisting/lowering/traversing) with a nominal load.

NOTE: Repaired, altered, or modified articulating boom cranes must be functionally tested.

3.4.4 Load Testing

Must be performed and documented with known weights or a certified dynamometer by a QP as follows:

- Lift the load slowly and in an area where minimal damage will occur if the articulating boom crane fails.
- Check holding brakes to:
  - verify stopping capabilities, and
  - demonstrate the ability to hold a rated load. The load should be held long enough to allow any dynamics to dampen out.

NOTE: Repairs or alterations to non-lifting, secondary lifting, or holding components (suspension assemblies, electrical system, crane cab, etc.) do not require a load test, although a functional check should be performed to determine if the repairs or alternations are acceptable.

3.5 Aerial Platforms

3.5.1 Frequent Inspection

The QP shall conduct daily and monthly *documented* inspections.

3.5.2 Periodic Inspection

The QP shall perform and document periodic inspections in the lifting register as follows:

- Permanently affix a tag to the equipment showing that it passed inspection. The tag must include:
  - date of inspection,
  - person and company performing inspection,
  - unit or serial number, and
  - date that the inspection expires.

NOTE: All platforms deemed unfit for use as result of inspection must be taken out of service and repaired before being put back into service.

Continued on next page

3.5 Aerial Platforms, Continued

3.5.3 Operational Test

The QP shall test all motions (hoisting/lowering/traversing) with a nominal load.

The following additional requirements apply:

- Perform all functions in an unloaded condition, including operation of limit switches and tilt alarm/shutoff.
- Where possible, use ground control station.
- When required to use the platform control station, operate close to ground level.

3.5.4 Load Test

The QP shall perform and document the load test as follows:

- The load must be secured to the aerial platform and lifted slowly in an area where minimal damage will occur if the device fails.
- Test at maximum boom radius over the rear, if applicable. Hold the load for a minimum of 5 minutes and verify drift does not exceed that specified by the responsible engineering organization.

NOTES:

- **Repairs or alterations to non-lifting or non-holding components do not require a load test, although a functional check should be performed to determine if the repairs or alterations are acceptable.**
- **A load test is not required when replacing ropes with certified equipment.**

3.6 Overhead Cranes

3.6.1 Frequent Inspection

The QP shall conduct daily and monthly *undocumented* inspections.

NOTE: Inspections for running wire rope and chain must be documented.

3.6.2 Periodic Inspection

The QP shall perform and document periodic inspections as follows:

- Permanently affix a tag to the equipment showing that it passed inspection. The tag must include:
  - date of inspection,
  - person and company performing inspection,
  - unit or serial number and
  - date that the inspection expires.
- All cranes deemed unfit for use as a result of inspection must be taken out of service and repaired before being put back into service.

3.6.3 Operational Test

The QP shall test all motions (hoisting/lowering/traversing) with a nominal load.

NOTE: The operational test for a modified crane can be tailored to test those portions of the equipment that were modified.

Continued on next page

3.6.4 Load Testing

Load tests of monorail systems shall be performed in accordance with following:

- Hoists used in monorail systems shall have been conducted by the manufacturer prior to delivery, and documentation verifying the description and completion of the test shall be provided by the manufacturer
- The hoist load magnitude used to conduct the test of the monorail system shall be the same load magnitude as was used when the hoist was tested by the manufacturer
- All connections between beams and supporting structure will be inspected, and if connections are welded, 100% of all welds shall be tested using approved NDE methods
- Lift the load slowly and in an area where minimal damage will occur if the hoist or lifting device fails
- Check holding brakes to :
  - Verify stopping capabilities, and
  - Demonstrate the ability to hold a rated load. The load should be held long enough to allow any dynamics to dampen out

Load tests of monorail systems may be waived on a case by case basis with the approval of the Technical Authority, Lifting and Hoisting, under the following conditions:

- The monorail beams and support system, including all connections, shall have been designed by a Registered Professional Engineer for the full load carrying capacity of the hoist or load carrying mechanism plus the required overload factor.
- All connections between beams and supporting structure will be inspected, and if connections are welded, 100% of all welds shall be tested using approved NDE methods
- An Operational Test shall be performed as described in section 3.6.3
- The project team shall deliver a data book containing the following:
  - Monorail design calculations stamped by a registered Professional Engineer.
  - Fabrication records
  - NDE test results for all welding performed

NOTE: Repairs or alterations to non-lifting, secondary lifting, or holding components (suspension assemblies, electrical system, crane cab, etc.) do not require a load test, although a functional check should be performed to determine if the repairs or alternations are acceptable.

Load tests are required on components directly involved with lifting or holding that have been repaired or altered.

NOTE: A load test is not required when replacing ropes with certified equipment.

Continued on next page

3.7 Winches

3.7.1 Frequent Inspection

The QP shall conduct daily and monthly *undocumented* inspections.

3.7.2 Periodic Inspection

The QP shall perform and document periodic inspections in the lifting register as follows:

- Permanently affix a tag to the equipment showing that it passed inspection. The tag must include:
  - date of inspection,
  - person and company performing inspection,
  - unit or serial number, and
  - date that the inspection expires.
- All winches deemed unfit for use as a result of inspection must be taken out of service and repaired before being put back into service.
- Any winch with suspected or confirmed overload shall be taken out of service, disassembled, inspected, repaired, and tested before returning to service.

3.7.3 Operational Test

The QP shall test all motions (hoisting lowering).

NOTE: The operational test for winches can be tailored to test only those portions of the equipment that were modified.

3.7.4 Load Test

Must be performed and documented with known weights or a certified dynamometer by a QP as follows:

- Lift the load slowly and in an area where minimal damage will occur if the winch fails.
- Check holding brakes to:
  - verify stopping capabilities, and
  - demonstrate the ability to hold a rated load. The load should be held long enough to allow any dynamics to dampen out.

NOTE: Only components directly involved with lifting or holding that have been repaired or altered require load testing. A load test is not required when replacing ropes with certified equipment.

3.8 Powered Industrial Trucks (Forklifts)

3.8.1 Frequent Inspection

The QP shall conduct daily and monthly *documented* inspections.

3.8.2 Periodic Inspection

The QP shall perform and document periodic inspections as follows:

- Permanently affix a tag to the equipment showing that it passed inspection. The tag must include:
  - date of inspection,
  - person and company performing inspection,
  - unit or serial number, and
  - date that the inspection expires.
- All powered industrial trucks deemed unfit for use by inspection must be taken out of service and repaired and inspected before being put back into service.

3.8.3 Operational Test

Operational tests must be completed by a QP as follows:

- Perform all functions in a loaded condition, including tilt operation.
- Hold the load for a minimum of 5 minutes.
- Verify drift does not exceed that specified by the responsible engineering organization.

NOTE: The operational test for a modified powered industrial truck can be tailored to test only those portions of the equipment that were modified/repaired.

3.8.4 Load Test

Must be performed and documented with known weights or a certified dynamometer by a QP as follows:

- Lift the load slowly and in an area where minimal damage will occur if failure occurs.
- Check holding brakes to verify stopping capabilities and demonstrate the ability to hold a rated load. The load should be held long enough to allow any dynamics to dampen out.

NOTE: Repairs or alterations to non-lifting or non-holding components do not require a load test, although a functional check should be performed to determine if the repairs or alterations are acceptable.

3.9 Hoists (Manual Lever and Manual/Powered Overhead Hoists)

3.9.1 Frequent Inspection

The QP shall conduct daily and monthly undocumented inspections.

NOTE: Inspections for running wire rope must be documented.

3.9.2 Periodic Inspection

- Must be performed and documented in the lifting register by a QP.
- All hoists deemed unfit for use by inspection must be taken out of service and repaired and inspected before being put back into service.
- Add color coding to indicate inspection date.

3.9.3 Operational Test

The QP shall test all motions (hoisting/lowering).

3.9.4 Load Test

Must be performed and documented with known weights or a certified dynamometer by a QP as follows:

- Lift the load slowly and in an area where minimal damage will occur if hoist fails.
- Check holding brakes to verify stopping capabilities and demonstrate the ability to hold a rated load. The load should be held long enough to allow any dynamics to dampen out.

NOTES:

- **Load test certificates shall be available upon request.**
- **Only components directly involved with lifting or holding that have been repaired or altered require load testing. A load test is not required when replacing ropes with certified equipment.**
- **If a hoist is re-rated, a load test must be performed based on the re-rating.**

3.10 Jacks

3.10.1 Frequent Inspection

The QP shall conduct daily and monthly *undocumented* inspections.

3.10.2 Periodic Inspection

- Must be performed and documented in the lifting register by a QP.
- Jacks deemed unfit for use as a result of inspection must be taken out of service and repaired before being put back into service.
- Add color coding to indicate inspection date.

Continued on next page

3.10 Jacks, Continued

3.10.3 Operational Test

The QP shall test all motions (hoisting/lowering).

3.10.4 Load Test

Must be performed and documented with known weights or a certified dynamometer by a QP as follows:

- Lift the load slowly and in an area where minimal damage will occur if jack fails.
- Check holding brakes to verify stopping capabilities and demonstrate the ability to hold a rated load. The load should be held long enough to allow any dynamics to dampen out.

NOTE: Only components directly involved with lifting or holding that have been repaired or altered require load testing.

3.11 Beam Clamps

3.11.1 Frequent Inspections

The QP shall perform frequent, undocumented inspections as follows:

- Ensure the correct size of beam clamp is selected.
- Check for defects such as damage, distortion, cracks, corrosion, wear, etc. (Particular attention should be paid to the threads.)

NOTE: All beam clamps unfit for use must be tagged Do Not Use, and sent for repair or destroyed at the earliest opportunity.

3.11.2 Periodic Inspections

Must be performed and documented in the lifting register by a QP as follows:

- File sling annual inspection records with certification papers.
- Add color coding to indicate the inspection date.

3.12 Fixed Lifting Points

3.12.1 Frequent Inspections

The QP shall perform frequent, undocumented inspections as follows:

- Check for defects such as damage, distortion, cracks, corrosion, etc. (Particular attention should be paid to the condition of the flanges.)
- Where gantry cranes or beam trolleys are used, ensure the runway beams have end stops fitted.

3.12.2 Periodic Inspections

The QP shall perform a thorough visual inspection every 2 years to include inspection of the securing bolts/welds that support the beam itself.

NOTE: All fixed lifting points shall be listed in lifting register.

Continued on next page

3.12 Fixed Lifting Points, Continued

3.12.3 Uncertified Lifting Beams

Any accessible load-supporting arrangement (e.g. a hole in the beam, welded plate) that is not certified must be identified and tagged “Not Suitable For Lifting”.

3.12.4 Load Testing

Padeyes must be:

- proof tested to 125% of the working load limit, or
- tested/inspected in accordance with licensed engineer’s requirements before being put into use and following any significant repairs or modifications.

Tests must be conducted with magnetic particles and/or dye penetrant following proof testing.

3.13 Wire Rope

3.13.1 Wire Rope Inspection Criteria

Use the table below to determine the standard to use for inspecting and replacing wire rope.

Equipment	Wire Rope Inspection Criteria
Offshore pedestal cranes	API RP 2D, OPS0055-PR02-TO.12 (formerly Appendix G)
Mobile cranes	Latest edition of the respective ASME Standard
Overhead cranes	
Derricks	
Winches	
Any other type of crane	

4 LIFTING ACCESSORIES SUPPLEMENT

4.1 Slings – Wire Rope

4.1.1 Frequent Inspection

The QP shall complete frequent, undocumented inspections as follows:

- Check for defects such as damage and corrosion.
- Check for proper configuration (the lifting assembly and associated hardware, as load tested).
- Ensure the sling has current certification.

NOTES:

- **Any sling without a certification tag must be removed from service and recorded in the lifting register. The sling must be re-certified prior to use.**
- **Slings must be removed from service if any inadequacy is found.**

Continued on next page

4.1.2 Periodic Inspection

The QP shall perform and document periodic inspections as follows:
- File sling annual inspection records with certification papers.
- Add color coding to indicate the inspection date.
- Verify pre-slung slings are replaced or recertified annually.
- Verify sling is logged in the location's lifting register.

Slings found in an unsafe operating condition must be discarded according to discard procedure below.

4.1.3 Discard Procedure

- Tag as Do Not Use.
- Remove from service.
- Record in lifting register.
- Remove test certificates from the filing system.
- Cut the eyes out of the sling or ensure that the sling is otherwise obviously destroyed to an unusable state and sent for disposal.

4.1.4 Certification of Wire Rope Slings

Certification/recertification tags are required as described in:
- API RP 2D (ref. 5.2.4b) and
- ASME B30.9.

Certification tags must list the following:
- Sling manufacturer
- Working load limit
- Proof test certification number
- Sling length and diameter
- Date of proof test
- Rated load for the type of hitch(es) and the angle upon which it is based

Slings used to pre-sling cargo must bear a certification tag not more than 1 year old. The certification tag must clearly indicate certification date. Recertification of pre-slung slings will include a load test.

4.1.5 Load Test

The QP shall perform and document a load test in accordance with the Testing and Inspection Matrix (OPS0055-PR03-TO.01), ensuring to test all components together as a system, if practical.

NOTE: Load tests performed by the manufacturer before delivery are acceptable, if the necessary load test papers are provided to verify the extent and thoroughness of the test on the specific item.

4.2 Slings – Synthetic

4.2.1 Frequent Inspection

The QP shall complete frequent, undocumented inspections as follows:

- Check for defects such as damage and deterioration.
- Check for proper configuration (the lifting assembly and associated hardware, as load tested).
- Verify the sling has current certification.

NOTES:

- **Any sling without a certification tag must be removed from service and recorded in the lifting register. The sling must be re-certified prior to use.**
- **Slings must be removed from service if any inadequacy is found.**

4.2.2 Periodic Inspection

Synthetic slings must:

- be replaced annually and have a certificate of conformity available upon request from the sling owner, indicating that the sling is not more than 1 year old,
- be logged in the location's lifting register,
- be stored in a enclosed area (e.g. rigging/store and contractors tool-house/box) to minimize exposure to moisture, UV rays, and chemicals,
- have a legible tag marked with the working load and certification and manufacture date, and
- be inspected by a Qualified Rigger to ensure the following do not exist:
  - cuts, tears, or abrasion,
  - fraying or bursting of stitching,
  - penetration of foreign bodies (e.g. sand, metal, glass, etc.) into the fibers,
  - damage from heat or chemicals, and
  - distortion or excessive wear of the metal eyes, where fitted.

Any of the above conditions require the sling to be removed from service and discarded using the sling discard procedure (Section 4.1.3).

4.3 Slings – General

4.3.1 Certification

As part of the lifting register, an up-to-date inventory of all slings kept on the installation must be readily available for audit purposes. As new slings are received, the lifting register must be updated (e.g. periodic recertification program). The lifting register must contain the following information:

- Certificate number
- Date of certification
- Working load limit
- Basic description of sling (size, length, etc.)
- Name of manufacturer/certifying test facility

Continued on next page

4.3 Slings – General. Continued

4.3.2 Load Test

The QP shall perform and document a load test in accordance with the Testing and Inspection Matrix (OPS0055-PR03-TO.01), testing all components together as a system, if practical.

NOTE: Load tests performed by the manufacturer before delivery are acceptable if the necessary load test papers are provided to verify the extent and thoroughness of the test on the specific item.

4.4 Spreader Bars/Special Lifting Devices/Plate Clamps

4.4.1 Frequent Inspections

The QP shall check for:

- damage,
- corrosion,
- smooth boreholes (padeyes),
- cracks,
- security of weld/bolts,
- wear,
- deformation, and
- correct and legible tag information.

4.4.2 Periodic Inspection

The QI shall perform and document periodic inspections in the lifting register as follows:

- Permanently affix a tag to the equipment showing that it passed inspection. The tag must include:
  - date of inspection,
  - person who performed inspection,
  - unit or serial number, and
  - date that the inspection expires.
- Add color coding to indicate inspection date.

All spreader bars/special lifting devices/plate clamps deemed unfit for use by inspection must be:

- tagged as Do Not Use, and
- taken out of service and repaired, retested, or destroyed.

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4.4.3 Load Testing

After performing and documenting the load test in accordance with the Testing and Inspection Matrix (OPS0055-PR03-TO.01), the QP shall verify the following are permanently affixed:

- Working load limit
- Weight of lifting device
- Serial number
- Manufacturer's name

NOTE: Load tests performed by the manufacturer before delivery are acceptable, if the necessary load test papers are provided to verify the extent and thoroughness of the test on the specific item.

4.4.4 Tension Load Cells

Load cells shall be periodically inspected as recommended by the manufacturer's in-service inspection plan to verify the integrity of the product over its life. The inspection plan shall include frequency and type of inspection.

Minimum requirements shall be a detailed annual visual inspection and a wet fluorescent magnetic particle NDE and inspection of the critical areas of the load cell every 3 years. Load cells shall be replaced based on fatigue calculations supplied by the vendor.

Tension load cell designs used on all Shell sites shall be proof tested 33% over the SWL as per the recommendations for design verification of crane components in API 2C. Proof loading certificates of conformity shall be readily available for all cranes and lifting devices using the tension load cells.

All tension load cells used in the vicinity of wells and perforating equipment shall be certified as safe and that the wireless transmissions will not affect perforating operations. The load cell supplier shall supply upon request a certified statement that their product does not affect well perforating operations.

4.5 Shackles/Eyebolts/Masterlinks/Turnbuckles

4.5.1 Frequent Inspections

The QP shall complete frequent, undocumented inspections as follows:

- Check for defects (damage, distortion, corrosion, etc.)
- Ensure the shackle has the correct pin and fits satisfactorily.

All shackles not fit for use must be tagged as Do Not Use and destroyed at the earliest opportunity.

4.6 Open-Wedge Sockets

4.6.1 Frequent Inspections

The QP shall:

- Ensure the correct size of open wedge socket is selected.

NOTE: Particular attention should be paid to ensure that all components of the assembly are matched (wedge, socket, and pin).

- Check for defects such as damage, distortion, cracks, corrosion, wear, etc.

All open wedge sockets not fit for use must be tagged as Do Not Use and destroyed at the earliest opportunity.

4.6.2 Periodic Inspection

Incorporated into the applicable lifting appliance inspection for the system of which it is a part.

4.7 Rigging Blocks

4.7.1 Frequent Inspections

The QP shall complete frequent, undocumented inspections as follows:

- Check for defects (damage, distortion, cracks, corrosion, wear, etc.).
- Check rigging blocks for free rotation.
- Examine swivel head fitting and check for wear, stretch, etc.

All rigging blocks unfit for use must be tagged as Do Not Use, and sent for repair or destroyed at the earliest opportunity.

4.7.2 Periodic Inspection

The QP shall perform and document periodic inspections in the lifting register in accordance with the Testing and Inspection Matrix (OPS0055-PR03-TO.01), to include:

- Filing annual inspection records with certification papers
- Adding color-coding to indicate the inspection date

4.7.3 Proof Testing

The QP shall perform a proof test in accordance with the manufacturer's recommendations following any significant repairs or modifications.

5 LIFTED EQUIPMENT SUPPLEMENT

5.1 Testing and Inspection Requirements

5.1.1 Offshore Containers

Before first use, container owners are responsible for verifying the following:

- If multiple like containers are produced per engineered drawings, only one per production model shall be tested.
- Containers and their padeyes must be visually inspected by a certified (licensed) inspector.
- All padeyes and critical load path connections shall be tested with magnetic particles and/or dye penetrant before first use and when determined necessary by visual inspection.

NOTE: All containers shall have padeyes and critical load path connections load tested and tested with magnetic particles and/or dye penetrant at least once every 5 years.

5.1.2 Temporary Offshore Buildings

Temporary Offshore Buildings are required to follow all Testing and Inspection requirements for offshore containers with the exception of full load tests. Temporary Offshore Buildings will not be loaded with anything that was not taken into account on the original design calculations.

5.1.3 Frequent Inspection

The QP shall conduct daily pre-use undocumented inspections.

5.1.4 Periodic Inspections

The QP shall conduct inspections annually. Documentation does not have to accompany the lifted equipment, but shall be available upon request.

TOOL

Testing and Inspection Matrix

Introduction

The following matrix identifies the type and frequency of tests and inspections of lifting appliances, lifting accessories, and lifted equipment.

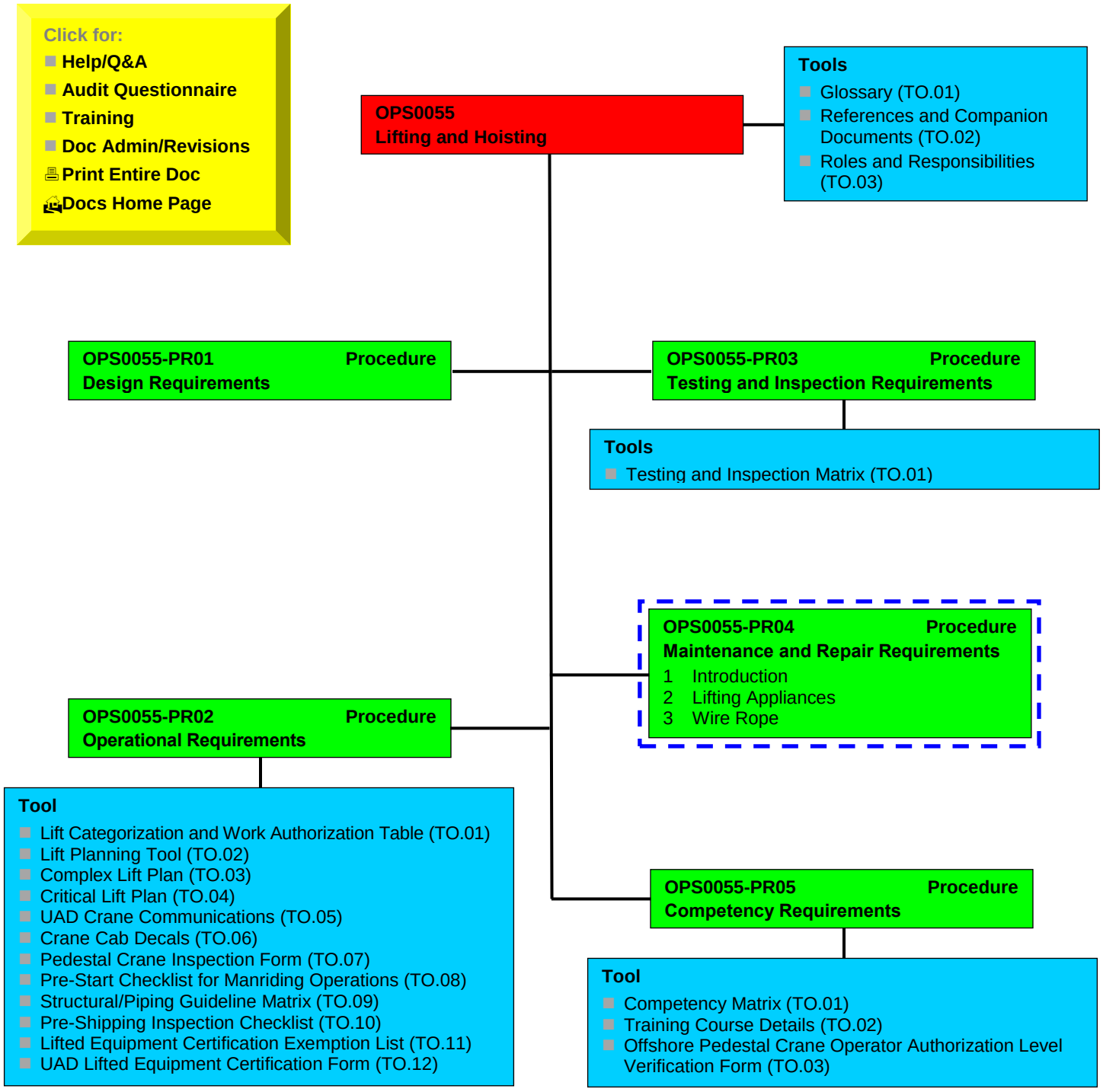
All inspections and tests shall be performed by qualified personnel according to written (specific or general) testing and inspection procedures

	Location	Inspection Requirements								Testing Requirements							Record Requirements	
		Documented Inspections (D) Undocumented Inspections (U)								Documented Operational Test (DO) Documented Load Test (DL)								
	Applies to	Pre-Use / Shift Change	Monthly	Quarterly	Annually	Every 2 years	Every 3 years	After repair / modification	Prior to Heavy Lift (UAD Cranes)	Pre Use	Prior to First Usage	After structural repair / modification	Annually	Every 4 Years	Every 5 Years	DL Test to	Inspection Tag Required on Equipment	Documented Inspection and Test Records to be filed On Location / archived Off Location (Years)
LIFTING APPLIANCES	Offshore Pedestal Crane Fixed Platform	Offshore	D	D	D	D[4]			D	D		DL, DO[5]	DL, DO[5]				If WLL is: • 0-40K lbs—125% • 40K-100K lbs—WLL+10K lbs • >100K—110%	NO	4/5[12]
	Offshore Pedestal Crane Floating	Offshore	D	D	D	D[4]			D	D		DL, DO[5]	DL, DO[5]			DL, DO		NO	4/5[12]
	Offshore Temporary Cranes	Offshore	D	D	D	D			D	D		DL, DO[5]	DL, DO[5]			DL, DO		NO	2/3
	Overhead and Gantry Cranes	Both	U	D[6]		D[4]			U			DL[17], DO[5]	DL[8], DO[5]				100% WLL	YES	Life/0
	Overhead Hoists Underhung (chain hoists, air hoists)	Both	U	D[6]		D[4]			U			DL	DL[8]				125% WLL	YES	Life/0
	Manual Lever Hoists (Come-alongs)	Both	U	U		D[4]			U			DL	DL[8]				125% WLL	NO	Life/0
	Wire Rope Hoists (Tirfors)	Both	U	U		D			U			DL	DL[8]				125% WLL	NO	Life/0
	Mobile Cranes	Both	U	D[6, 7]		D[4]			D			DL, DO[5]	DL[8], DO[5]				110% WLL	YES	Life/0
	Gin Poles/Derricks	Both	U	D[6]		D[4]			D			DL	DL, DO[5]				110% WLL	YES	Life/0
	Wire Rope for above	Both	U									DL					200%WLL	NO	Life/0
	Winches	Both	U	U		D[4]			U			DL, DO[5]	DL[8], DO[5]				125% WLL	YES	Life/0
	Man-Riding Winches	Both	D	D		D[4]			D			DL,DO[5]	DL, DO[5]	DL, DO[5]				YES	Life/0
	Forklifts	Both	D	D		D			D			DL, DO	DL, DO					YES	Life/0
	Jacks	Both	U			D[4]			U			DL, DO[5]	DL, DO[5]				100% WLL	YES	Life/0
	Aerial Platforms	Both	D	D		D[4]			D				DL, DO				125% WLL	YES	Life/0
LIFTING ACCESSORIES	Shackles	Both	U														200% WLL	NO	Life/0
	Masterlinks	Both	U														200% WLL	NO	X
	Eyebolts	Both	U														200% WLL	NO	X
	Turnbuckles	Both	U														200% WLL	NO	X
	Open Wedge Sockets	Both	U	D[10]	D[10]	D[10]											50% Rope Break	NO	Life/0
	Slings	Both	U			D[1]						DL	DL				200% WLL	YES	Life/0
	Spreader Bars	Both	U			D[4]			D[2]			DL	DL[2]				125% WLL	YES	Life/0
	Stingers	Both	U			D						DL					200% WLL	NO	Life/0
	Beam Clamps	Both	U			D						DL					125% WLL	NO	Life/0
	Beam Trolleys	Both	U			D[10]						DL					125% WLL	NO	Life/0
	Plate Clamps	Both	U			D						DL					125% WLL	NO	Life/0
	Sheave Blocks	Both	U			D						DL	DL				200% WLL	NO	Life/0
	Padeyes	Both	U				D					DL[11]	DL[11]				125% WLL	NO	Life/0
	Tension Load Cells	Both		D[10]	D[10]	D[10]		D[14]				DL[15]					133% WLL	NO	Life/0
LIFTED EQUIP.	Offshore Containers	Offshore	U			D[16]			D[16]			DL[13]	DL			DL	220 %WLL	NO	Life/0

1. Wire rope slings shall be replaced, re-certified, or inspected annually. Man-made fiber slings shall be replaced annually. Refer to Test/Inspection procedures for additional information.
2. Surface NDT inspection (magnetic particle or dye penetrant) shall be conducted following proof load testing and prior to further use of equipment.
3. DL and DO tests shall be kept on location by the owner for a minimum of two test cycles and shall be made readily available.
4. Where periodic inspections were suspended for idle or standby equipment, a formal documented inspection is required prior to returning equipment to service.
5. Operational testing may be carried out as part of heavy lift inspections or at any time deemed appropriate to check equipment integrity.
6. Monthly running rope inspection.
7. Monthly hook inspection per OSHA 29 CFR 1910.180(d) (6)
8. A Registered Professional Engineer will determine whether or not load testing is required for load-bearing components affected by repairs. A proof load test is not required when replacing ropes with certified items (however, an operational test is required). Repairs or alterations to non-lifting components or components such as electrical or control systems, crane cab, etc., do not require a load test, although a functional check shall be performed to determine if the repairs or alternations are acceptable.
9. Pre-use load test shall be carried out each time the personnel lifting device is taken to a new job site and when the device is moved to a previously tested site. The pre-use load test requirement may be fulfilled by a concurrently performed load test.
10. Inspection included with equipment of which it is a part.
11. Padeyes must be proof tested to 125% of the working load limit or tested/inspected in accordance with licensed engineer's requirements prior to being put into use and following any significant repairs or modifications.
12. USCG Load Test must be kept on location for 5 years.
13. See OPS0055-PR03 Section 5.1.1 for testing requirements.
14. Wet Fluorescent Magnetic Particle NDE inspection.
15. See OPS0055-PR03 Section 4.4.4 for testing requirements.
16. Documentation does not have to accompany the lifted equipment, but shall be available upon request.
17. As determined by a Registered Professional Engineer, see OPS0055-PR03 Section 3.6.4.

PROCEDURE

MAINTENANCE AND REPAIR REQUIREMENTS



Document Suite Map

1 INTRODUCTION

1.1 Overview

1.1.1 In this Chapter

This chapter provides the maintenance requirements for the following:

- Lifting Appliances
- Wire Rope

2 LIFTING APPLIANCES

2.1 Overview

2.1.1 In this Section

This section provides the requirements for the maintenance of all lifting equipment.

2.1.2 General Requirements

The following is required for all lifting equipment:

- A Preventive Maintenance (PM) program based on manufacturers' recommendations, which will document completed work and correction of deficiencies, must be implemented.
- A functional test must be conducted and documented after repairs or replacement.
- All critical components must be repaired or replaced promptly by or under supervision of a QP.
- The maintenance program must be contained in SAP PM for UAD-owned equipment. Contractors shall have a system in place for their equipment and maintain records on rental equipment as prescribed by applicable regulations.

2.1.3 Replacement Parts

For lifting equipment, an Original Equipment Manufacturer (OEM) or other approved vendor shall supply parts or components.
For UAD lifting equipment, the Specialist Crane Inspector (SCI) Group or designee must approve contractor/vendor selection.

For offshore pedestal cranes, an API Spec 2C-licensed shop may supply crane parts or components (booms, winches, bearings, gantry pedestals, etc.).

Continued on next page

2.1 Overview, Continued

2.1.1 Repairs

Structural repairs of lifting equipment must be performed by qualified personnel per manufacturers' recommendations and the applicable ASME B30 document. For UAD lifting equipment the SCI Group or designee shall perform/approve the scope of all structural repair and Contractor/Vendor selection.

For offshore pedestal cranes:

- The OEM or an API Spec 2C-licensed shop must perform repairs to any structural members (booms, winches, gantry pedestals, etc.).
- For structural repairs of UAD pedestal cranes, the SCI Group must approve the scope of repairs and contractor selection.

3 WIRE ROPE

3.1 Overview

3.1.1 In This Section

This section specifies requirements for wire rope.

3.1.2 Wire Rope Replacement

The need to replace wire rope must be determined by a QP based on inspection results.

For offshore pedestal cranes, the QI shall determine the need to replace wire rope. Unless conditions (e.g. exposure to heat) warrant earlier replacement, use the following table to replace wire rope.

Rope Type	Replace Every
Running	
• Boom hoist	6 Months*
• Main and auxiliary hoist	3 years
Static	5 years

*** NOTE: Depending on duty cycle, may be extended to 1 year with approval from the Hoisting and Lifting T/A or designee.**

Continued on next page

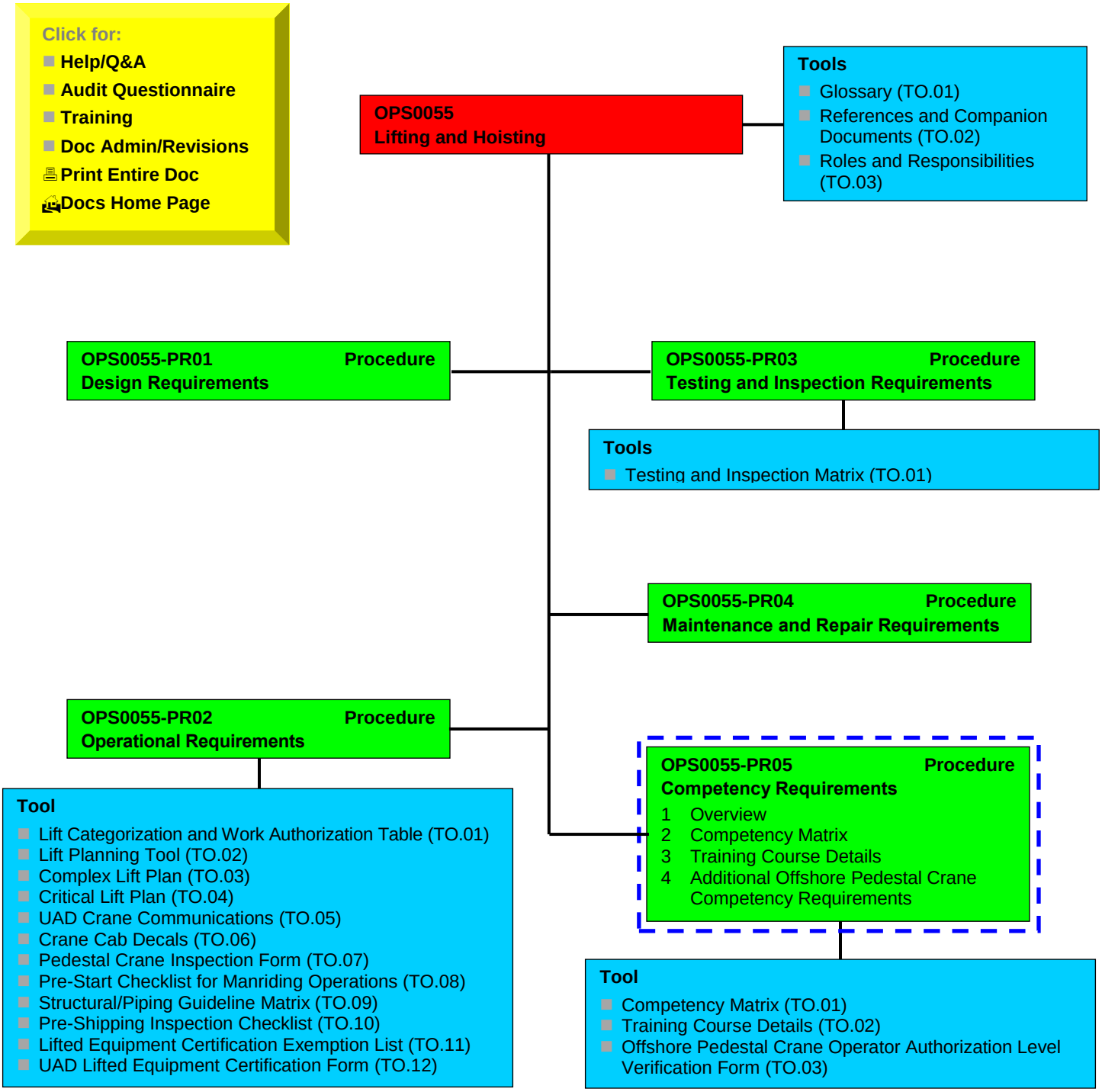
3.1.3 Changing Wire Rope Using a Cable Grip (Snake)

This operation requires a written procedure and JSA that at a minimum covers the following:

- hazards related to wire grips slipping or parting,
- the correct size cable grip (snake) for the wire rope; do not use the grip if the size is not listed on the grip,
- performing a pre-use inspection of the cable grip,
- requirement that only an LSG-X Lewis snake grip be used,
- cleaning the wire thoroughly with solvent or cleaner,
- manufacturer's recommended practice for installation and securing methods,
- keeping the boom angle as low as possible to avoid excess strain on cable grip,
- keeping the pulling speed to a minimum, and
- posting someone at the sheaves each time the grip is passed through, to stop operations if there is a hang up.

PROCEDURE

COMPETENCY REQUIREMENTS



Document Suite Map

1 Overview

1.1 In this Chapter

This Procedure provides the following:

- Competency matrix and training course details
- Additional offshore pedestal crane competency requirements

1.2 Training Authority

The custodian of OPS0055 approves all training courses outlined in the Competency Matrix below. Approved courses will be designated as “UAD-Accepted”.

1.3 Competency Assessment

To ensure competency of lifting appliance QO/QPs, employers shall have a competency assessment process in place. In addition, UAD shall specifically ensure the competency of Offshore Pedestal Crane QOs by performing assessments of all offshore pedestal crane QOs every 2 years using a UAD-accepted offshore pedestal crane operator competency assessment tool.

1.4 Local Lifting Focal Point (LLFP)

Qualifications are as follows:

- Prior crane (mobile or pedestal) operator certification and experience operating cranes is preferred (not required).
- LLFP training every 2 years
- Relevant onshore or offshore crane operator and rigging schools
- Competency assessment training defined and approved by custodian of this Standard
- Detailed training on the OPS0055 Standard requirements
- Recordkeeping requirements

2 Competency Matrix

2.1 Competency Matrix

To demonstrate competency for HSE critical roles, individuals shall identify their roles in the in OPS0055-PR05-TO.01 and complete the required training.

3 Training Course Details

3.1 Training Course Details

Details concerning UAD-accepted OPS0055 courses are provided in OPS0055-PR05-TO.02.

Continued on next page

3 Training Course Details, Continued

3.2 Training Course Curricula

Individual training course curricula will be available separately and posted on the UAD HSE Controlled Document Livelink site.

3.3 UAD-Accepted Contractor Training Courses

Contractors may develop their own training courses to meet the competency and training requirements of this document. For a contractor's training to be accepted by UAD, the contractor must:

- show a business need,
- meet the course curricula requirements of the OPS0055 Lifting and Hoisting training curricula,
- have the course approved as "UAD-accepted" by the custodian of OPS0055 Lifting and Hoisting Standard (i.e. UAD's Technical Authority for Lifting and Hoisting), and
- agree to submit all training records to UAD's Training Database for tracking purposes.

NOTE: Contact Shell's Robert Training and Conference Center for details on UAD's Training Database at 504-728-1200 or 985-543-1200.

4 Additional Offshore Pedestal Crane Competency Requirements

4.1 Offshore Pedestal Cranes

Additional competency requirements related to offshore pedestal cranes are listed below.

4.2 Offshore Pedestal Crane Authorization Levels

After successful completion of UAD-accepted offshore pedestal crane operation and rigging training, Qualified Operators of offshore pedestal cranes will be assessed by a third party competency assessor as dictated by the crane resource coordinator. After the competency assessment, the Qualified Operator is authorized to conduct lifts in accordance with the offshore pedestal crane operator authorization levels below. As stated in OPS0055-PR05-TO-01, operators less than 2QO will attend UAD-accepted offshore pedestal crane operation and rigging training annually, unless otherwise approved in writing by the Crane Resource Coordinator. Operators never having been third-party assessed at a Shell location will not be allowed to operate until the assessment is performed.

The UAD Contractor/Supervisor is responsible for ensuring the following tasks are performed by the LLFP:

- Verifying the authorization level of each QO
- Entering the current authorization level of each QO in UAD's Training Database.

See OPS0055-PR05-TO.03 Offshore Pedestal Crane Operator Authorization Level Verification Form.

Continued on next page

4.3 Offshore Pedestal Cranes Log Requirements

QO shall keep a logbook to record all lifts. The following information will be entered:

- Date of lift
- Type of lift: static or dynamic
- Category of lift: routine, critical, complex/engineered, or heavy engineered
- Weight (approximate)
- Supervised or unsupervised

In addition, the QO shall record authorization level verification records in his/her logbook to include the following:

- Date
- Signature
- Authorization level achieved

4.4 Recordkeeping

In accordance with 46 CFR 109.437 Crane record book each location must have a file for each crane.

The master or person in charge shall ensure that the following are maintained in a crane record book:

- Descriptive information to identify each crane including:
  - The API name plate data
  - The rated load chart for each line reeving and boom length that may be used.
- Dates and results of frequent inspections
- Dates and results of periodic inspections and tests
- Date and result of each rated load test, along with pre- and post-inspections.
- Date and description of each replacement or renewal of wire rope, hooks, and other load components.
- Date and description of each failure of the crane, or any component or safety feature.
- Date and description of each repair to the crane structure, boom, or equipment.

Continued on next page

4.5 Authorization Level Requirements

The table below details the authorization level requirements for offshore pedestal crane QOs.

Level	Must Complete To Operate At This Level	Allowed Lifts			Perform Maintenance	Perform Inspections
		Static	Dynamic (From Boats)	Personnel		
1 OT	2 Months Experience and 25 Supervised[2] Static Lifts[1]	Unsupervised up to 5 Tons	No	No	No	Pre-Use Only
1A QO	3 Months Experience and 75 Static Lifts[1] (50 Unsupervised)	Unsupervised up to 5 Tons	Supervised[2] up to 5 Tons	No	No	Pre-Use Only
1B QO	(25) 5 Ton or Less Dynamic Lifts[1]	Unsupervised up to 5 Tons	Unsupervised up to 5 Tons	No	No	Pre-Use Only
1C QO	(25) 5 Ton or Less Unsupervised Dynamic Lifts[1]	Unsupervised up to 15 Tons	Unsupervised up to 15 Tons	Yes Supervised[2]	No	Pre-Use Only
1D QO	(10) Dynamic Lifts[1] Between 5 Tons and 15 Tons	Supervised[2] over 15 Tons	Supervised[2] over 15 Tons	Yes Supervised[2]	Yes	Pre-Use and Monthly
2 QO[3]	(10) Personnel Lifts[1] and be assessed by the Competency Assessor as fully competent for any and all unsupervised lifts	Unlimited 50 Lifts[1] Current[3]	Unlimited 25 Lifts[1] Current[3]	Yes Unsupervised	Yes	Pre-Use and Monthly

[1] Recorded in QO Log Book
[2] Supervised by Fully Qualified Level 2 QO or LLFP
[3] Currency Requirements: Level 2 Qualified Operator must show evidence of 50 static and 25 dynamic lifts in last 12 month period or be moved back to Level 1D QO.
Dynamic lifts referred to above are lifts from supply boats
OT = Operator Trainee; QO = Qualified Operator

TOOL

Competency Matrix

Competency Matrix

To demonstrate competency for HSE critical roles, individuals shall identify their roles in the matrix below and complete the required training.

UAO-Accepted OPS0055 Courses	Course Number	Obsolete Course Number	Terminal Personnel Inspecting Cargo for Shipment	Local Lifting Focal Point	Qualified Rigger			Qualified Operator/Qualified Person													Qualified Inspector			Qualified Maintenance Provider	Refresher Requirements (Yrs)
					ONSHORE Mobile Cranes Only	OFFSHORE Pedestal Cranes Only	Marine Deckhand (Employed by Boat Co.)	Offshore Pedestal Crane	Mobile Crane	Gin Pole Truck	Overhead Crane	Aerial Platform	Powered Industrial Truck	Manual Lever Hoist	Tirfor/Come-along Hoist	Powered Overhead Hoist	Chain Hoist	Jack	Winch	Man-Riding Winch	Rigging Gear	Pedestal Crane	Onshore Crane		
Offshore Pedestal Crane Rigging (Only)	HSSMGT002037	PH 4135				X																X		X	4
Onshore Mobile Crane Rigging (Only)	HSSMGT001447	PH 4149			X				X													X		X	4
"Back Deck" Rigging	HSSMGT001445	PH 4147					X																		4
TPCP Certified API RP 2D Rigger	HSSMGT002037	PH 4135					X																		4
General Lifting Appliance Operation and Rigging	HSSMGT001425	PH 4145		X										X	X	X	X	X	X						4
Offshore Pedestal Crane Operation and Rigging	HSSMGT001480	PH 4138		X[1]				X																	4[5]
NCCCO Certification	HSSMGT001484	PH 4154		X[2]					X[4]																3
Aerial Platform Operation	HSSMGT001446	PH 4148										X													4
Gin Pole Truck/Autocrane Operation and Rigging	HSSMGT001490	PH 4152								X															4
Powered Industrial Truck Operation	HSSMGT001414	PH 4150											X												3[5]
Powered Overhead Crane Operation and Rigging	HSSMGT001489	PH 4151									X														4
Man-Riding Winch Operation	HSSMGT001483	PH 4153																							4
Local Lifting Focal Point Training (Offshore) Local Lifting Focal Point Training (Onshore)	HSSMGT001476 HSSMGT001424	PH 4130 PH 4156		X																					2
Rigging Gear Inspector	HSSMGT001471	PH 4155																			X				2
Terminal Cargo Inspector			X																						
OFFSHORE: Applicable USCG, BSEE, or API RP 2D Crane Inspector																						X		X	4
ONSHORE: Applicable OSHA, ASME, API RP 2D Crane Inspector																						X		X	4
UAO Offshore Mechanic: SPBP Level 3 Mechanic																						X		X	NA
Contractor or UAD Onshore Mechanics: Crane Mechanic																						X		X	NA

1: For LLFPs on offshore facilities
2: For LLFPs on onshore facilities either CCO preparatory class or approved ASME training
3: *Reserved for future use.*
4: Shell specific class on OPS0055 in addition to NCCCO Certification.
5: Operators less than 2QO will attend UAD-accepted offshore pedestal crane operation and rigging training annually, unless otherwise approved in writing by the Crane Resource Coordinator.

NOTE: UAD's Specialist Crane Inspectors (SCIs) and Competency Assessors will be trained and appointed by this Standard's custodian.

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Training Course Details

Training Course Details Details concerning UAD-accepted OPS0055 courses are provided in the table below.

Course	Covers	Prerequisites	Target Audience	Training Delivery	Proof of Training
Offshore Pedestal Crane Rigging (Only) (API RP 2D Certification)	Includes API RP 2D training on lifting devices, lifting accessories and lifted equipment. Includes Awareness Training review and OPS0055 content relevant to curriculum.		Anyone rigging offshore pedestal cranes, including boat riggers	SRTCC or API TPCP provider with curriculum verified to meet min Shell requirements	Certification issued by SRTCC or UAD-approved training provider and entry in Training Database
Onshore Mobile Crane Rigging (Only)	Includes mobile crane, gin pole and autocrane rigging. Includes training on lifting accessories and lifted equipment Includes Awareness Training review and OPS0055 content relevant to curriculum.		Anyone rigging onshore	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-approved training provider and entry in Training Database
"Back Deck" Rigging	Specific rigging techniques for working on back decks of supply boats in Gulf of Mexico. Includes Awareness Training review and OPS0055 content relevant to curriculum.		Only deck hands on supply boats employed by boat company	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-approved training provider and entry in Training Database
TPCP Certified API RP 2D Rigger	Covers API RP 2D Rigger Training, TPCP Certified Course	"Back Deck" Rigging	Only deck hands on supply boats employed by boat company	API TPCP training provider	API RP 2D Rigger Certification and entry in Training Database
General Lifting Appliance Operation and Rigging	Operation of manual lever hoists, Tirfor/come-along, manual overhead hoist, chain hoist, jacks, winches, beam clamps and fixed lifting points. Includes Awareness Training review and OPS0055 content relevant to curriculum.		Onshore and offshore fitters/welders, mechanics, production operators, etc that routinely use subject devices in performing their jobs (note exclusion for irregular use)	SRTCC or 3rd party providers / construction contractors with curriculum verified to meet minimum Shell requirements	Certification issued by SRTCC or UAD-approved training provider and entry in Training Database
Offshore Pedestal Crane Operation and Rigging	API RP 2D Pedestal Crane Operator Certification, Hands on training, Competency Assessment, Includes Awareness Training review and OPS0055 content relevant to curriculum.	Annual training on OPS0055	Offshore pedestal crane operators	SRTCC delivered course	Certification by SRTCC and entry in Training Database
NCCCO Certification	NCCCO certification for mobile cranes	Onshore Mobile Crane Rigging	Onshore mobile crane operators	NCCCO	NCCCO Certification
Aerial Platform Operation	Operation of spiders, scissor lifts, personnel work baskets. Includes Awareness Training review and OPS0055 content relevant to curriculum.		Onshore and offshore aerial platform operators	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-Approved (OSHA/ASME) approved training provider and entry in Training Database
Gin Pole Truck / Autocrane Operation and Rigging	Operation of gin pole trucks and autocranes. Includes Awareness Training review and OPS0055 content relevant to curriculum.		Gin pole and autocrane operators	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-approved (OSHA/ASME) approved training provider and entry in Training Database

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Training Course Details (cont.)

Course	Covers	Prerequisites	Target Audience	Training Delivery	Proof of Training
Powered Industrial Truck Operation	Operation of forklifts. Includes Awareness Training review and OPS0055 content relevant to curriculum.		Forklift operators	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-approved (OSHA/ASME) approved training provider and entry in Training Database
Powered Overhead Crane Operation and Rigging	Operation of powered overhead cranes. Includes Awareness Training review and OPS0055 content relevant to curriculum.		Personnel operating large powered overhead cranes, e.g. logistics terminals, Auger wellbay, etc.	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-approved (OSHA/ASME) approved training provider and entry in Training Database
Man-Riding Winch Operation	Operation of dedicated man-riding winches. Includes fall protection / harness rigging. Includes Awareness Training review and OPS0055 content relevant to curriculum.		Personnel operating winches used for handling personnel	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-approved (OSHA/ASME) approved training provider and entry in Training Database
Local Lifting Focal Point Training	Introduction to UAD Lifting and Hoisting support group Local Lifting Focal Point network Competency assessment training Detailed training on Standard Recordkeeping requirements	Held prior crane (mobile or pedestal) operator certification and has operated cranes, but qualification does not have to be current. Relevant onshore or offshore rigging schools	Former or current qualified pedestal or mobile crane operators and/or qualified riggers	SRTCC provided with curriculum verified by Lifting and Hoisting Technical Authority	Certification by SRTCC and entry in Training Database
Rigging Gear Inspector	Inspection of loose rigging for cargo traveling offshore. Includes Awareness Training review and OPS0055 content relevant to curriculum.		Rigging Inspectors at marine terminals	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-approved training provider and entry in Training Database
Terminal Cargo Inspector	Lifted equipment, accessories, OPS0055-PR02-TO.12 validation, OPS0055-PR02-TO.10 pre-shipping checklist	PH4149, PH4135, and PH4146	Terminal personnel responsible for inspecting cargo going offshore	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-approved training provider
OFFSHORE: Applicable USCG, BOEMRE, or API RP 2D Crane Inspector	Inspection requirements for offshore pedestal cranes		Offshore pedestal crane inspectors	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-approved training provider
ONSHORE: Applicable OSHA, ASME, API RP 2D Crane Inspector	Inspection requirements for onshore mobile cranes		Onshore mobile crane inspectors	3rd party training providers with curriculum verified to meet minimum Shell requirements	Certification issued by UAD-approved training provider
UAD Offshore Mechanic: SPBP Level 3 Mechanic	Mechanical competencies to repair and maintain offshore pedestal cranes.		UAD Mechanics	Skill Performance Base Pay (SPBP)	SPBP records
Contractor or UAD Onshore Mechanics: Crane Mechanic	Mechanical competencies to repair and maintain onshore mobile cranes.		Contractor or UAD Mechanics	Skill Performance Base Pay (SPBP) and contractor competency programs	SPBP records and contractor training records

TOOL

Offshore Pedestal Crane Operator Authorization Level Verification Form

I _____ (UAD/Contractor Supervisor's name) verify
(Print)

that _____ (QO's name) has satisfied the requirements of
(Print)

following authorization levels as per the Offshore Pedestal Crane Operator Authorization

Level Requirements section in the OPS0055-PR05 Competency Requirements:

- ☐ 1 OT
- ☐ 1A QO
- ☐ 1B QO
- ☐ 1C QO
- ☐ 1D QO
- ☐ 2 QO

QO's Employer

QO's ID Number
- ☐ Shell Employee Number
- ☐ Contractor's Social Security Number
- ☐ Contractor's Drivers license Number

QO's Signature

LLFP (Print)

UAD Contractor/Supervisor's Signature

LLFP's Signature

Location

Date

Crane Manufacturer

Crane Model

Scan and e-mail this completed form to:
Shell Robert Training and Conference Center
E-mail: mailto:rtc-crane.lifting@shell.com

Call SRTCC at (985) 543-1200 for e-mail verification if desired.