Deep Water – Gulf of America (DW-GOA)

LIFTING AND HOISTING

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SUMMARY

This procedure documents Deep Water-Gulf of America (DW-GOA) and requirements for the lifting and hoisting discipline.

Key Words

Lifting, Hoisting, Crane, Clamps, Jacks, Winches

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1 OVERVIEW

1.1 PURPOSE

To manage the risks of Lifting and Hoisting operations within Upstream Deep Water Gulf of America (DW-GOA) in compliance with the SEAM Lifting and Hoisting requirements.

NOTE: For the purposes of this document Lifting and Hoisting is defined as "the act of raising, lowering, or otherwise moving a load in the air when suspended from above or below by equipment covered in this standard."

NOTE: The MOC tool, a documented ALARP study, or Complex Engineered Lift Plan may be used as appropriate to manage any deviations to this standard, any deviation shall have Shell L&H SME supporting the deviation.

NOTE: Design requirements in this Standard are not inclusive.

1.2 APPLICABILITY

This Standard applies to lifting and hoisting work performed on or lifted equipment being transported to on the offshore Shell operated DW-GOA installations listed below:

- Appomattox
- Auger
- Enchilada
- Mars
- Olympus
- Perdido
- Salsa
- Sparta
- Turritella (Stones)
- Ursa
- Vito
- Whale

This Standard also applies to lifted equipment (example: tubular bundles) lifted to and from Shell charted vessels.

1.3 SPECIFIC EXCLUSIONS/CLARIFICATIONS

This Standard does not apply to the following lifting operations:

- Well operations involving the crown block, traveling block, and top-drive systems
- Goods and personnel elevators
- Helicopter lifting operations
- Fall protection and rope access equipment
- Manual handling
- Diving or underwater lifting operations

- Pipe-laying operations
- Derrick barge operations
- Lifeboat and Fast Rescue Craft lifting equipment or operations

1.4 SUMMARY OF CHANGES

Changes for each revision are recorded in the Change Matrix

1.5 REFERENCES/COMPANION DOCUMENTS

See OPS0055-TO02 for a complete list of reference and companion documents.

1.6 ROLES AND RESPONSIBILITIES

See OPS0055-TO03 for a table of DW-GOA lifting and hoisting roles and responsibilities.

1.7 HSE RESPONSIBILITY

The Offshore Installation Manager (OIM) /Person In Charge (PIC) is the "Ultimate Work Authority (UWA)" on all DW-GOA Locations.

On DW-GOA locations, HSE Responsibility for the **operation** of offshore pedestal-mounted cranes will be as follows:

- PT Wells will have HSE Responsibility when there is drilling, workover or abandonment operation involving a rig or similar well removal equipment (i.e. pulling unit).
- Producing Operations will have HSE Responsibility for all other work modes outside of those described in bullet 1.

NOTE: Clear handover of responsibility between PT Wells and Producing Operations when conditions change (Rig up vs Rig down, etc.) is accomplished by updating the Concurrent Operating Agreement (COA).

HSE Responsibility includes but is not limited to:

- Safe execution of offshore pedestal mounted crane operations
- Ensuring personnel performing lifts (Qualified Operators (QOs), Designated Signal Persons (DSPs), Riggers, etc.) have the proper training and qualifications as defined in OPS0055-PR05 Competency Requirements
- Executing daily/monthly routine inspections
- Incident ownership and subsequent investigations

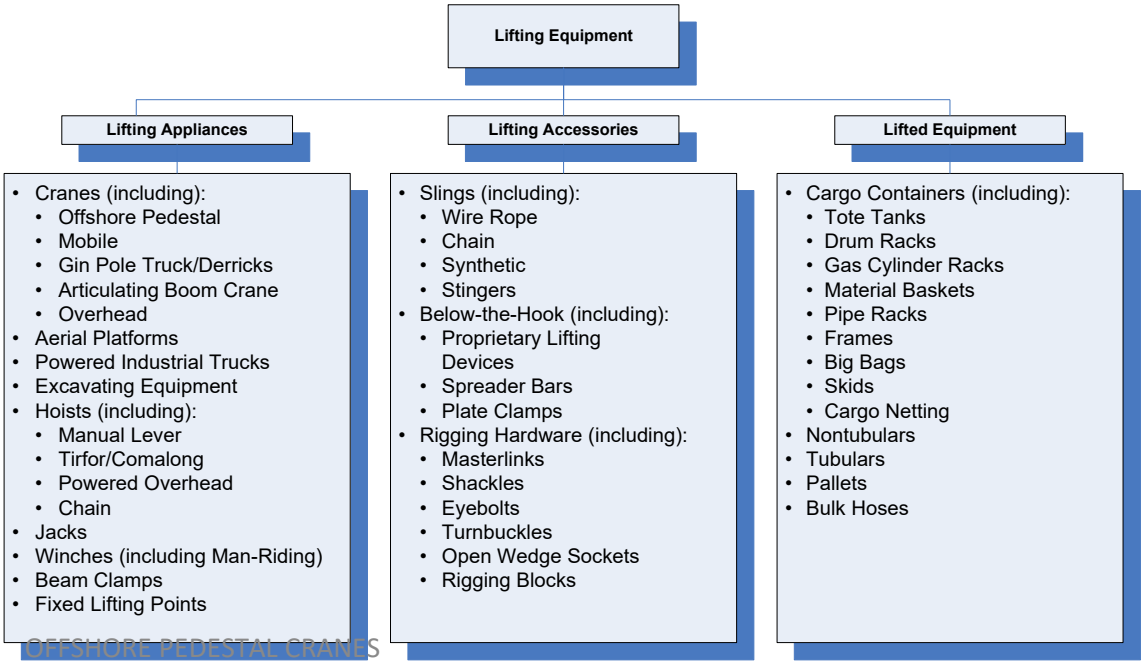
2 SCOPE

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



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

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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.

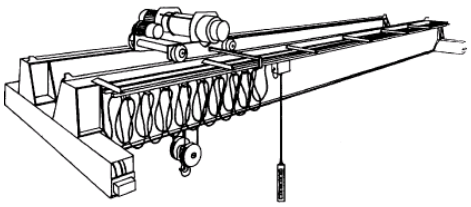
NOTE: This definition applies only to articulating boom cranes rated 5 tons or less. Any articulating boom crane rated greater than 5 tons is considered a mobile crane in this Standard

2.6 OVERHEAD CRANES

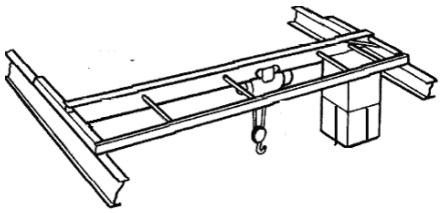
Includes overhead cranes (see figures below), powered or manually operated, that have a hoist that can move with a load attached, such as:

- 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.

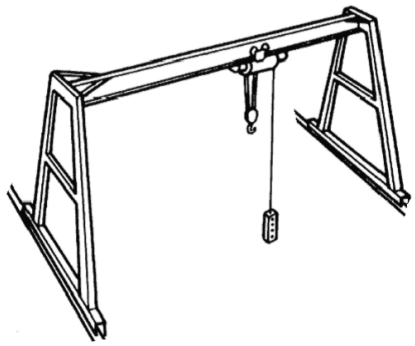
Excludes overhead hoists.



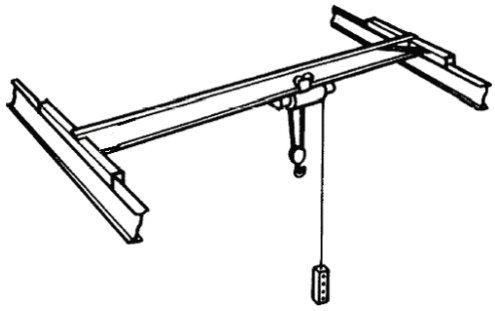
Overhead Crane (Double-Girder Top-Running Trolley)



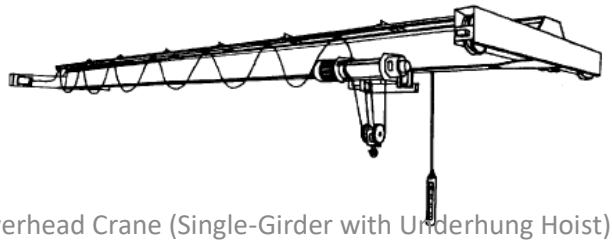
Cab-Operated Overhead Crane



Overhead Gantry Crane Rail Mount



Floor-Operated Overhead Crane



Overhead Crane (Single-Girder with Underhung Hoist)

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

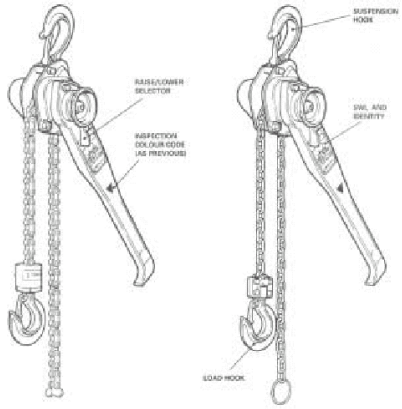
In general, excavating equipment is not covered in this Standard. If a piece of excavating equipment will be used as a lifting appliance, approval must first be obtained from the manufacturer. The conditions and requirements for lifting must be indicated on this approval.

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

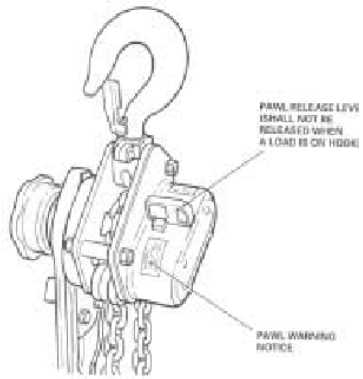
2.10 HOISTS, EXCLUDING PERSONNEL LIFTING

Includes (see figures below):

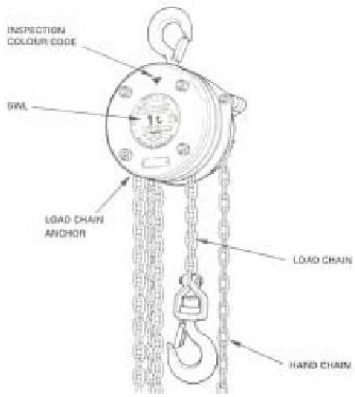
- manual lever-operated ratchet/pawl or friction brake hoists that use chain, wire rope, and web strap hoists for lifting, pulling, and tensioning applications, and
- manually operated chain hoists, electric- or air-powered chain hoists, and wire rope hoists for vertically lifting and lowering freely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



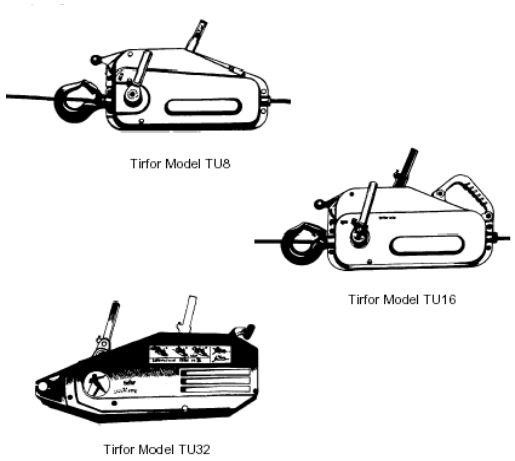
Typical Lever-Operated Chain Hoists



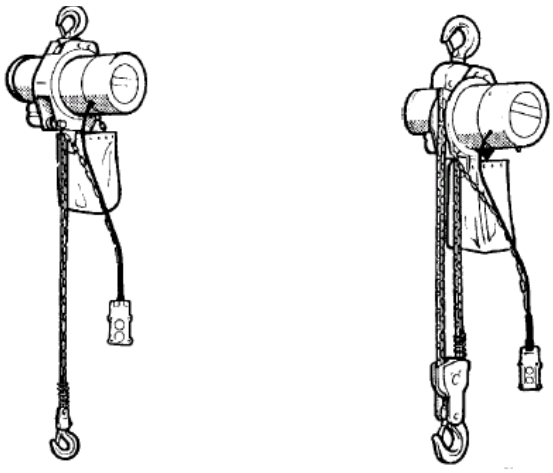
Lever-Operated Hoist with Pawl



Typical Chain Hoist Assembly



Various Tirfor Lifting and Pulling Machines from the TU Series



Typical Single- and Multi-Fall Powered Chain Hoists

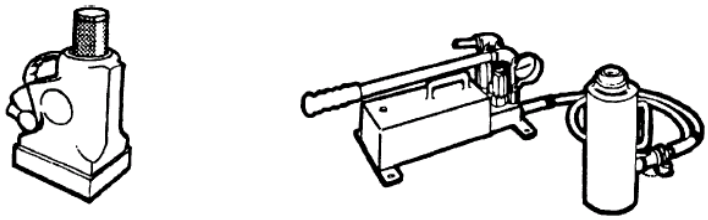
2.11 JACKS

Includes (portable jacks as per ASME B30.1):

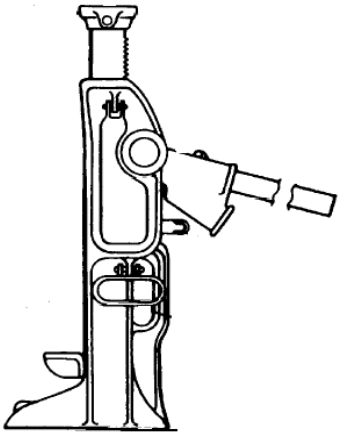
- hand- or power-operated hydraulic and screw jacks,
- a system of jacks intended to operate independent or synchronous, and
- mechanical ratchet jacks (see figures below).

Excludes:

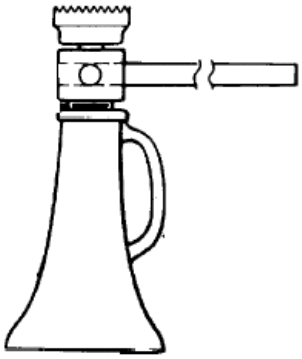
- jacks for automotive service,
- trip-lowered jacks, and
- jacks that are an integral part of other equipment (ex. pedestal crane).



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. Examples include pad-eyes that hang upside down from a fixed structure, a beam to which beam clamp is attached, or a beam to which sling are choked around to attach a suspended load.

3 TOOL OPS0055-TO01: GLOSSARY

Definitions

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

Term/ Abbreviation	Definition
ABS	American Bureau of Shipping
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ASNT	American Society for Nondestructive Testing
ASSE	American Society of Safety 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
DNV•GL	Det Norske Veritas and Germanischer Lloyd
DSP	Designated Signal Person
DW-GOA Installation	Any structure or vessel (e.g. floating rig, derrick barge, lift boat, anchor handler, dive boat) owned by or operated on behalf of DW-GOA on DW-GOA leases or rights-of-way.
DW-GOA/ Contractor Supervisor	The highest ranking DW-GOA or contractor Supervisor on the worksite. The DW-GOA/Contractor or Supervisor is responsible for all lifting and hoisting activities on a location. DW-GOA/Contractor Supervisor will identify a Lift Sponsor for each lifting activity. (Examples of DW-GOA/Contractor Supervisors include an OIM or PIC for a platform or rig, or the Master of a vessel)
EN	European National Standards
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 DW-GOA Supervisor to coordinate and control all aspects of the lifting operation (e.g. Crane Operator, Deck Foreman).
LLFP	Local Lifting Focal Point
LR	Lloyds Register
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.
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

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	▪ 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.
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.
SWL	Safe Working Load
Toolbox Talk	Brief onsite safety meeting to discuss job scope, work authorization, and associated hazards and remediations.
USCG	United States Coast Guard
Working Load Limit (WLL)	The maximum load the lifting equipment must operationally handle and maintain. Also known/referred to as Rated Load or Rated Capacity
WOTL	Well Operations Team Leader

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4 TOOL OPS0055-TO02: REFERENCES AND COMPANION DOCUMENTS

Companion Documents

Documents in this suite are listed on the table below.

Document Number	Title
OPS0055	Lifting and Hoisting
OPS0055-TO01	Glossary
OPS0055-TO02	References and Companion Documents
OPS0055-TO03	Roles and Responsibilities
OPS0055-PR01	Design Requirements
OPS0055-PR02	Operational Requirements
OPS0055-PR02-TO01	Lift Categorization and Work Authorization Table
OPS0055-PR02-TO02	Lift Planning Flowchart and Tables
OPS0055-PR02-TO03	Complex Lift Plan
OPS0055-PR02-TO04	Critical Lift Plan
OPS0055-PR02-TO05	DW-GOA Crane Communications
OPS0055-PR02-TO06	Crane Cab Decals
OPS0055-PR02-TO07	Pedestal Crane Inspection Form
OPS0055-PR02-TO08	Pre-Start Checklist for Man-Riding Operations
OPS0055-PR02-TO09	Structural/Piping Guideline Load Matrix
OPS0055-PR02-TO10	Pre-Shipping Inspection Checklist
OPS0055-PR02-TO11	Lifted Equipment Certification Exemption List
OPS0055-PR02-TO12	DW-GOA Lifted Equipment Certification Form
OPS0055-PR02-TO13	Letter to Suppliers
OPS0055-PR03	Testing and Inspection Requirements
OPS0055-PR03-TO01	Testing and Inspection Matrix
OPS0055-PR04	Maintenance and Repair Requirements
OPS0055-PR05	Competency Requirements
OPS0055-PR05-TO01	Competency Matrix
OPS0055-PR05-TO02	Training Course Details
OPS0055-PR05-TO03	Offshore Pedestal Crane Operator Authorization Level Verification Form
OPS0055-PR05-TO04	DW-GOA Start Work Checks: Mechanical Lifting

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)
HSE0044	Fall Prevention and Protection
HSE0135	RAM Assessment and Risk Management Guide
OPS0011	Marine Transportation Operations

Document Number	Document Title
OPS0168A-PR01	General Requirements for All Personnel Transfers
UAD-101-055	Structural Steel Design and Fabrication of Offshore Skids and Facility Packages, Amendments/Supplements to DEP 37.81.10.31-Gen, v.49.
External Documents	
--	American Bureau of Shipping Guide for Certification of Offshore Containers
	American Rigging and Lifting Handbook
ANSI/ASSE A10.4	Safety Requirements for Personnel Hoists and Employee Elevators on Construction and Demolition Sites
ANSI/ASSE A10.22	Safety Requirements for Rope-Guided & Non-Guided Workers' Hoists
ANSI A92.2	Vehicle Mounted Elevating and Rotating Platforms
ANSI A92.3	Manually Propelled Elevating Aerial Platforms
API RP 2A-WSD	Planning, Designing and Constructing Fixed Offshore Platforms - Working Stress Design
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 B30.12	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 B56.6	Powered and Nonpowered Industrial Trucks
DNV•GL 2.7-1	Standard for Certification of Offshore Containers
EN 12079	Offshore Containers and Associated Lifting Sets
--	IADC Gin Pole Truck Guidelines
ISO 3874	Series 1 freight containers -- Handling and securing
ISO 21898	Packaging - Flexible intermediate bulk containers (FIBCs) for non-dangerous goods
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 1910.180	Crawler locomotive and truck 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
RR-C-271D	Federal Specification - Chains and Attachments, Carbon and Alloy Steel
SAE J765	Crane Load Stability Test Code
SAE J987	Lattice Boom Cranes Method of test
USCG 46 CFR 109.437	Crane record book
--	Web Sling & Tie Down Association specifications

5 TOOL OPS0055-TO03: ROLES AND RESPONSIBILITIES

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 DW-GOA's Training Database.
DSP	▪ Ensure riggers are in safe position before and during lift. ▪ 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 Engineer	▪ Provide required engineering support and documentation for complex load handling activities. ▪ Develop initial concept for complex lift plans that is based on an Engineering Work Pack of the operation.
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 Owners	▪ Operations and Maintenance Team Leader on TLP/Spar or PIC for fixed leg platforms
	▪ Accountable for Lifting equipment maintenance and interfacing with MDT. ▪ Maintain regulatory paperwork. ▪ Provide support for crane and lifting issues.
	▪ Operations Services Team Leader on TLP/Spar or PIC for fixed leg platforms
	▪ Responsible for ensuring qualifications of all Non-crane lifting and hoisting operations. ▪ Support LLFP in ensuring qualifications of Crane Operations. ▪ Provide support for crane and lifting issues.
QI – General	▪ Perform and document the following inspections for equipment in their area of responsibility according to the Inspection and Testing Matrix:

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Role	Responsibilities
	▪ Pre-Use, Monthly, and Quarterly for all equipment. ▪ Annual and Heavy Lifting for contract cranes.
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.
QI – Rigging Gear	▪ Inspect all containers and pre-slung cargo rigging for shipment offshore. ▪ Check container and sling certification.
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, 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 DW-GOA 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.
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.

Role	Responsibilities
	▪ 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.
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 DW-GOA 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.
QO – Offshore Pedestal Crane	In addition to the general QO/QP responsibilities above, the QO for offshore pedestal cranes has the following responsibilities: ▪ Ensure lifts are carried out per lift plans. ▪ Complete all required crane operation logs. ▪ Obtain a Safe Work Permit approved by the DW-GOA 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

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Role	Responsibilities
	▪ 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
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. ▪ Follow approved lift plan. ▪ 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.
UWA Ultimate Work Authority (formerly DW-GOA/ 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 UWA, 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 DW-GOA's Training Database.

6 PROCEDURE OPS0055-PR01: DESIGN REQUIREMENTS

6.1 INTRODUCTION

6.1.1 OVERVIEW

6.1.1.1 OUTLINE

This Procedure provides the design requirements for the following:

- Lifting appliances
- Lifting accessories
- Lifted equipment

6.2 LIFTING APPLIANCES

6.2.1 CRANES

6.2.1.1 OFFSHORE PEDESTAL CRANES

Offshore pedestal cranes must be built in accordance with API Specification 2C.

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 1 high-intensity amber strobe light affixed to the gantry top, and
- an emergency shutdown operable at the control station.

6.2.1.2 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.

6.2.1.3 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.

6.2.1.4 ARTICULATING BOOM CRANES

- Must be designed and constructed per ASME B30.22.

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- 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).

6.2.1.5 OVERHEAD CRANES

Requirements for overhead cranes are as follows:

- All cranes must be clearly marked with the rated load.
- If located in a hazardous area, meet suitability requirements as agreed by Shell Electrical Engineering.
- Design shall account for platform specific motions for operating and stowed environmental conditions.
- 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.

6.2.1.6 FIXED LIFTING POINT PADEYES

Requirements for fixed lifting padeyes are as follows:

- Engineered in accordance with AISC ASD 9th edition or similar.
- Have a design amplification factor of 1.5 for SWL up to 6,000 lbs
- Have a design amplification factor of 1.3 for SWL greater than 6,000 lbs
- Consider a minimum of 5% out of plane load added to any expected out of plane load.
- Permanently marked with a unique ID and SWL, font to be minimum 1" high

6.2.2 ADDITIONAL APPLIANCES

6.2.2.1 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.

6.2.2.2 POWERED INDUSTRIAL TRUCKS

All equipment must be manufactured in accordance with ASME B56.6 and OSHA 29 CFR 1910.178.

6.2.2.3 HOISTS

All manually operated lever hoists must be manufactured in accordance with ASME B30.21 and shall be furnished with an overload limiting device.

All overhead hoists (underhung) must be manufactured in accordance with ASME B30.16. All hand chain manually operated Chain hoists shall be furnished with an overload limiting device.

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

6.2.2.4 JACKS

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

6.2.2.5 WINCHES

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

6.2.2.6 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.

6.2.2.7 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.

All safety devices for man-riding winches shall meet the requirements of ANSI/ASSE A10.22 and sub-references to ANSI/ASSE A10.4 and ASME B30.7.

The following is a non-inclusive list of required safety devices:

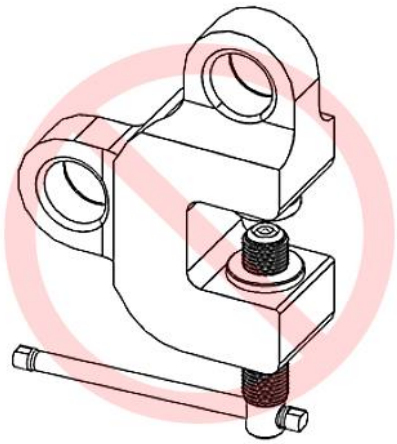
- Upper and lower limit device
- Slack line shutdowns
- Dead man controls
- Power up and power down
- Minimum second brake automatically applied
- Maximum line pull limiter

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

6.2.2.8 BEAM CLAMPS

Beam Clamps shall comply with ASME B30.20, typically ASME BTH-1 Design Category A, Service Class 0.

Homemade beam clamps must not be allowed.
Multi-directional clamps and positioning clamps (also known as eagle or g-clamps) are prohibited from use. See figure below.



(b) Positioning Clamp

Beam clamps are designed for vertical lifts only and not to 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.

6.3 LIFTING ACCESSORIES

6.3.1 SLINGS

6.3.1.1 WIRE ROPE SLINGS

NOTE: See Offshore Containers In Lifted Equipment for Sling Design Requirements on Offshore Containers and other pre-slung lifted equipment going Offshore.

All wire rope slings must be manufactured in accordance with API RP 2D or, DNV•GL 2.7

NOTE: The following slings are not allowed:

- Field-Fabricated slings
- Non-Flemished eyes
- Aluminum turnback eyes
- Chain

6.3.1.2 SYNTHETIC SLINGS

Slings must be designed and built in accordance with the latest edition of the Web Sling & Tie Down Association (WSTDA) 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

6.3.1.3 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) when used for personnel transfer.

6.3.1.4 FORKLIFT ATTACHMENTS

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

6.3.2 BELOW-THE HOOK

6.3.2.1 SPREADER BARS AND SPECIAL LIFTING DEVICES

All spreader bars and special lifting devices must:

- be designed per ASME BTH-1 usually to minimum design category B. Spreader bars designed to Category A shall be consulted with engineering prior to use offshore.
- comply with ASME B30.20 Below-the-Hook Lifting Devices.

In addition, verify 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.

6.3.2.2 PLATE CLAMPS

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

6.3.2.3 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.

6.3.2.4 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.

6.3.3 RIGGING HARDWARE

NOTE: See Offshore Containers in Lifted Equipment for Sling Design Requirements on Offshore Containers and other pre-slung lifted equipment going offshore.

6.3.3.1 MASTERLINKS

Masterlinks must be drop-forged (preferred on sizes up to 2 1/4") or welded and only from the following:

- Manufacturers with DNV•GL 2.7-1 type approved product
- Manufacturers listed in the Masterlink Cheat sheet in the Appendix

6.3.3.2 SHACKLES

NOTE: See Offshore Containers in Lifted Equipment for Sling Design Requirements on Offshore Containers and other pre-slung lifted equipment going offshore.

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

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- Identification code (for material traceability)

- Shackle pin:
  - Manufacturer's name or code
  - Identification code (for material traceability)

6.3.3.3 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)

6.3.3.4 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)

6.3.3.5 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

6.3.3.6 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.

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6.4 LIFTED EQUIPMENT

6.4.1 CONTAINERS, NON-TUBULARS, AND TOTE TANKS

6.4.1.1 GENERAL

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

6.4.1.2 OFFSHORE CONTAINER REQUIREMENTS

All offshore containers, Portable offshore units (POUs), and lifting sets must be certified to industry standards DNV•GL 2.7-1, DNV GL 2.7-3, EN 12079, or ABS Guide for Offshore Containers.. See OPS0055-PR02-TO13 Table 1 for guidance on requirements

Agencies approved to certify offshore containers to industry standards specification are:

- DNV•GL
- ABS
- Lloyds Register
- other agency approved in writing by Shell.

NOTES:

- **The list of approved certifying agencies is subject to change.**

- **Lifting sets for OFFSHORE CONTAINERs and POUs shall be fully compliant with above standards, with the following <u>not permitted</u>:**
  - chain slings
  - synthetic slings
  - turnback eye splice/alloy crimp on sling ends

- **OFFSHORE CONTAINERs, POUs, and lifts sets may be approved separately.**

- **Certifications must accompany OFFSHORE CONTAINER, POU, and pre-slung equipment at terminal facilities.**

6.4.1.3 REQUIREMENTS FOR LIFTED EQUIPMENT NOT MEETING OFFSHORE CONTAINER REQUIREMENTS

For lifted equipment going offshore and not meeting the definition of an OFFSHORE CONTAINER or POU, equipment must be:

- designed/validated and certified by a licensed engineer to meet the requirements of API RP2A section 5.4.2.3 Dynamic Load Factors and section 5.4.2.4 Allowable Stresses,
- documented with drawings, calculations, and Lifted Equipment Certification Form (OPS0055-PR02-TO12) (formerly Appendix G) all:
- stamped by a licensed engineer (Civil, Structural, or Mechanical) and

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- provided at terminal,
- manufactured in accordance with these stamped drawings,
- have lifting sets meeting DNV•GL 2.7-1 type approval by agencies and dates listed in 4.1.2 (lower enhancement factors for rigging that is used to assemble things offshore but not used to remove from a boat is allowed with Civil or Crane group approval), and
- padeyes that are smooth and perpendicular to the plate face.

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

6.4.1.4 OFFSHORE TEMPORARY BUILDINGS

Offshore temporary buildings are required to follow all non-OFFSHORE CONTAINER certified design requirements of offshore containers. All contents and furnishings shall be accounted for in Maximum Gross Weight value as noted in OPS0055-PR02-TO12 (formerly Appendix G). Nothing shall be loaded into temporary offshore buildings during transport and/or lifting that was not considered in original design.

See OPS0055-PR03 for specific testing requirements for temporary buildings.

6.4.1.5 MODIFICATIONS

Any structural modification or repair will follow guidance of the industry standard for which it was manufactured.

Any structural modifications or repairs of non-OFFSHORE CONTAINERs and their padeyes are prohibited unless performed in accordance with revised and stamped drawings.

6.4.1.6 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/shore base 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.

6.4.1.7 STAINLESS STEEL (SS) IBC-TYPE TOTE TANKS

SS IBC-type tote tanks shall meet requirements of non-OFFSHORE CONTAINERs in 6.4.1.3, including lifting sets.

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

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ALL VALVE CAPS, PLUGS AND OTHER ANCILLIARY DEVICES (UNLESS THREADED OR MECHANICALLY CONNECTED), FOR ANY TANK SHALL BE TETHERED.

6.4.1.8 BULK BAGS

All bulk bags are to be designed, marked, constructed and tested in accordance with the latest edition of ISO 21898.

- All bags to be used in compactors shall, at minimum, meet the ISO 21898 definition of 'single trip,' including a marked reference to the ISO 21898 standard.
- For any other use or shipment, bulk bags shall meet the ISO 21898 definition of 'heavy-duty, reusable' and be marked as such.
- Any bulk bag that does not meet ISO 21898 standards should not be lifted and shall be removed from location

7 PROCEDURE OPS0055-PR02: OPERATIONAL REQUIREMENTS

7.1 INTRODUCTION

7.1.1 OVERVIEW

7.1.1.1 OUTLINE

This Procedure provides operational requirements to ensure that following equipment is used for its intended purpose or operating limits:

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

7.2 LIFT PLANNING

7.2.1 OVERVIEW

7.2.1.1 ASSIGNING AN ULTIMATE WORK AUTHORITY

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 floating platform or the PIC over a fixed leg platform.

7.2.1.2 ASSIGNING A LOCAL LIFTING FOCAL POINT

Each field operating or drilling unit operating offshore pedestal-mounted cranes will designate 1 dedicated person in the field as the Local Lifting Focal Point (LLFP). For locations with Deck Supervisors, the Deck Supervisor will fill the LLFP role unless a full time LLFP is identified. For fixed leg locations the contract crane operator or full time LLFP will fill the LLFP role.

7.2.1.3 APPOINTING A PERSON-IN-CHARGE FOR THE LIFT

The UWA or Designee (example Deck Supervisor) will appoint the person-in-charge of the lift.

NOTE: The QO/QP may be appointed as the person-in-charge of the lift.

7.2.1.4 LIFT SPONSOR

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

- Ensure that equipment should only be used for its intended purpose or operating limits.
- Use OPS0055-PR02-TO01 Lift Categorization and Work Authorization Table.
- Verify that the lift area(s) is:
  - controlled to verify that 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-TO02 Lift Planning Flowchart and Tables are addressed in a Toolbox Talk.
- Verify that applicable lift planning requirements in this Procedure are met.
- Verify that the number of riggers needed for each lift has been adequately planned. (Blind lifts will always require a minimum of 2 riggers and a DSP. Other lift types may require more or fewer riggers due to lift complexities.).
- Verify that all “new type” or “not previously performed” lift plans are loaded into the OPS0055 Lift Plan repository.

7.2.1.5 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.

7.2.1.6 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-TO03 and OPS0055-PR02-TO04). 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.

For lifts where complex engineering and steps were developed on-shore, the onshore engineering contractor or person should initiate the lift plan development and get feedback from the Civil Marine and Crane (CMC) team to develop as much as possible. Once the plan is supported by CMC, the offshore lifting local focal points should complete any local or job specific items and final approvals.

A HAZID with a Lifting and Hoisting Subject Matter Expert shall be performed for any lifting and hoisting operations with a RED RAM ranking or if a **People Severity 4 or 5 is heard of in the industry**. in the figure below. Refer to HSE0135 RAM Pocket Guide and Material for details on RAM use.

SEVERITY	CONSEQUENCES				INCREASING LIKELIHOOD				
	People	Assets	Community	Environment	A	B	C	D	E
					Never heard of in the Industry	Heard of in the Industry	Has happened in the Organisation or more than once per year in the Industry	Has happened at the Location or more than once per year in the Organisation	Has happened more than once per year at the Location
0	No injury or health effect	No damage	No effect	No effect					
1	Slight injury or health effect	Slight damage	Slight effect	Slight effect					
2	Minor injury or health effect	Minor damage	Minor effect	Minor effect					
3	Major injury or health effect	Moderate damage	Moderate effect	Moderate effect					P,A,C,E
4	PTD or up to 3 fatalities	Major damage	Major effect	Major effect		P	P	P,A,C,E	P,A,C,E
5	More than 3 fatalities	Massive damage	Massive effect	Massive effect		P	P,A,C,E	P,A,C,E	P,A,C,E

Figure 1 - Risk Assessment Matrix (RAM)

7.2.2 GENERAL REQUIREMENTS

7.2.2.1 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 the current color code at each crane, each bulletin board where QO's are posted, and in all areas where rigging gear is stored.

7.2.2.2 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. Blind personnel lifts require concurrence between the Ultimate Work Authority (per Safety and Environmental Management System [SEMS]) and the Operations Manager or Well Operation Team Lead.**

7.2.2.3 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-TO02 References and Companion Documents for titles of above regulations and standards.

7.2.2.4 OFFSHORE PERSONNEL TRANSFERS

All personnel transfers must be conducted in accordance with OPS0168A General Requirements for All Personnel Transfers.

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

7.2.2.5 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-TO05 DW-GOA Crane Communications,

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- 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.

7.2.2.6 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
- high seas
- high noise areas (communications)
- snow and ice
- electrical storms
- poor visibility
- unstable or sloping terrain

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

7.2.2.7 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-TO05 DW-GOA Crane Communications.
- Verify that tag lines meet the requirements in 6.3 Lifting Accessories.
- Verify the confidence in the lift weight and ensure the following contingencies can be met:
  - Known weights from a scale or dyno – 1.0 Contingency factor x known weight.
  - Engineered weight – 1.25 to 1.50 contingency factor x engineered weight.
  - Estimated weight – 1.33 to 2.0 contingency factor x estimated weight

7.2.2.8 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).
- Verify that loads to be shipped meet DW-GOA pre-slinging and containerization requirements (refer to 7.5.3.3 and 7.5.3.6).

7.2.2.9 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

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- underground utilities (gas, electricity, water).

7.3 LIFTING APPLIANCES

7.3.1 OVERVIEW

7.3.1.1 IN THIS SECTION

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

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

7.3.1.2 GENERAL REQUIREMENTS

Locations and organizational groups with hurricane procedures must verify 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.

7.3.2 OFFSHORE PEDESTAL CRANES

7.3.2.1 PRIOR TO STARTING THE CRANE

Before starting the crane, the QO shall do the following:

- Verify that lift planning has been completed by the Lift Sponsor.
- Conduct and document the Offshore Pedestal Crane Pre-Use Inspection (refer to OPS0055-PR02-TO07).
- Use weight indicators and refer to the shipping manifest to determine the weight of the load.
- Compare the weight on the manifest with the written weight and date on the load sticker to verify 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-TO06) and documented during the annual inspection performed by SCI.
- Follow the Pedestal Cranes Permitted Operations Matrix (refer to OPS0055-PR02-TO06) for bypassing any safety device such as the boom kick-out or anti-two blocking device. Adjustment of the HAKO

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beyond the set point is considered bypassing. Follow instructions on HAKO Adjustment decal in OPS0055-PR02-TO06.

NOTE: DURING BYPASSING OF HAKO FOR CRITICAL LIFTS. AT NO TIME WILL THE BOOM BE ALLOWED TO TOUCH OR COMPRESS BACKSTOPS.

- Verify that the DSP and the correct number of riggers are in place per the lift plan.
- Verify that the DSP's rigger certificate has a qualification endorsement.
- Wear a high-visibility vest.
- Verify 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.
- Verify that measures identified in the lift plan are in place to keep unauthorized personnel out of lift areas.

NOTE: Review any discrepancy found on pre-use inspection against the "Pedestal Cranes Permitted Operations" matrix found in OPS0055-PR02-TO06 and posted in crane cab or at control station.

7.3.2.2 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 , verify that loads are kept in sight from time of pick up until the load and tag lines clear the deck,
- verify that all slings are positively attached to loads with a screw pin or anchor bolt type of shackle,
- verify that items within containers are secure and not overflowing or interfere with center of gravities
- verify that nothing is left on top or around un-secured on a load that would create a dropped object, and
- verify that tag lines are used in accordance with 7.4.4.6 Tag Lines.

During lifting operations, the QO shall not:

- hoist a load over personnel on any deck level,
- hoist loads directly over the deck of the boat to and from the platform, unless absolutely necessary to do so due to crane capacity or other circumstances,
- 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,
- operate the crane while a helicopter is landing, taking off, or has rotors turning on the helideck,
- allow any part of the crane structure, wire, blocks, rigging, or load to come in contact or rub against any structure, or
- hoist or park a load in proximity of exhaust fumes.

7.3.2.3 SHUTTING DOWN LIFTING OPERATIONS

Before leaving the control station unattended, the QO shall:

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- land any attached load with the exception of supporting wireline lubricators while on wellheads during wireline operations,
    - With UWA approval, the crane operator may leave the crane unattended for up to 45 minutes while the wireline lubricator is suspended from the crane and on the wellhead, but the crane engine must be off and all crane slew and hoist locking devices set.
- 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.

7.3.2.4 CRANE OPERATIONS NEAR HELIDECKS

Follow the crane/helicopter procedures on the decal shown in OPS0055-PR02-TO06.

7.3.2.5 LIFTING WITH STINGERS

Stingers must:

- have a working load limit of at least 125% of the load to be lifted, but need not exceed the max rated crane capacity of the block the stinger is attached to,
- be installed directly to the hoist hook unless integral to the block,
- be used during all off/on board material lifts,
- have a positive locking latch when using during personnel lifts (e.g., Crosby PL latch), and
- be hooked directly to the masterlink of sling-sets attached to pre-slung loads.

7.3.2.6 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.

7.3.3 MOBILE CRANES

7.3.3.1 PRIOR TO LIFT

The QO for mobile cranes shall:

- verify that lift planning has been completed by the Lift Sponsor,
- conduct and document the pre-use inspection,
- for critical lifts, verify that the load does not exceed 75% of the rated capacity of the crane,
- verify control of personnel in path of load,
- verify that the swing radius of the superstructure is barricaded to prevent unauthorized personnel from entering the area,
- obtain a Safe Work Permit approved by the UWA or above for bypassing the boom kick-out, and anti-two blocking or other safety devices,

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- verify that weight indicators are available to validate the weight of the load, and
- appoint riggers to act as a load handler and a DSP, and
- verify 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.

7.3.3.2 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, verify that loads are kept in sight from time of pick up until the load and tag lines clear the deck, and
- verify that tag lines are used in accordance with 7.4.4.6 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, or
- 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.

7.3.3.3 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.

7.3.3.4 LIFTING WITH STINGERS

Stingers must:

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

7.3.4 GIN POLE TRUCKS AND DERRICKS

7.3.4.1 GENERAL REQUIREMENTS

The QP shall:

- verify that lift planning has been completed by the Lift Sponsor,
- conduct a pre-use inspection,
- adhere to any tags placed on equipment, and
- appoint a DSP if required.

NOTE: These requirements do not apply to drilling derricks.

7.3.4.2 LOAD HANDLING

During lifting operations, the QP shall:

- be at the controls at all times while the load is suspended,
- verify that there is no sudden acceleration or deceleration of the moving load,
- verify, 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.

7.3.5 ARTICULATED BOOM CRANES

7.3.5.1 GENERAL REQUIREMENTS

The QP shall:

- verify that lift planning has been completed by the Lift Sponsor,
- conduct a pre-use inspection, and
- adhere to any tags placed on equipment.

7.3.5.2 LOAD HANDLING

During lifting operations, the QP shall:

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

7.3.6 OVERHEAD CRANES (INCLUDING GANTRY, MONORAIL, UNDERHUNG, TOP-RUNNING)

7.3.6.1 PRIOR TO STARTING THE CRANE

Before starting the crane, the QP shall:

- verify 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.

7.3.6.2 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,
- verify that loads are kept in sight from time of pick up until the load and tag lines clear the deck,
- verify 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
- verify that the hoist rope is not allowed to be wrapped around the load.

7.3.6.3 SHUTTING DOWN LIFTING OPERATIONS

Before leaving the control station unattended, the QP shall:

- land any attached load,
- verify 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.

7.3.7 AERIAL PLATFORMS

7.3.7.1 UWA REQUIREMENTS

Verify 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.

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7.3.7.2 PRIOR TO LIFT

The QO shall:

- verify 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.

7.3.8 POWERED INDUSTRIAL TRUCKS (PITS)

7.3.8.1 PRIOR TO LIFT

The QP shall:

- verify that lift planning has been completed by the Lift Sponsor,
- conduct a 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.

7.3.9 HOISTS, JACKS, AND WINCHES

7.3.9.1 OPERATIONS

QP shall:

- verify that lift planning has been completed by the Lift Sponsor,
- conduct a 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.

7.3.9.2 HOIST STORAGE

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

7.3.9.3 MAN-RIDING WINCHES

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

- OPS0055-PR02-TO08 Pre-Start Checklist for Man-Riding Operations must be filled out completely by all personnel involved.

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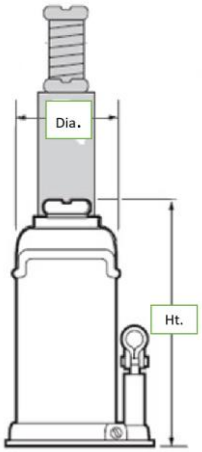
- Only dedicated man-riding winches that incorporate appropriate safety devices as per ANSI A10.22 must be used for man-riding. These winches must be clearly marked “Dedicated for Man-Riding” and never used for any other purpose.
- All safety devices must be checked before every man-riding operation.
- Radio communications must be used at all times.
- The lift sponsor shall verify 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 verify 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 Well Operations Manager.

7.3.9.4 JACKS

- Jacking practices should follow ASME B30.1 operating practices.
- Personnel shall not place any part of their body under a load supported by a jack(s).
- Lateral loads from external forces applied on the lifted equipment shall be evaluated when determining if jacking system is suitable.
- When using jacks to lift the entire load in a synchronized lift, the ability to manage even raising and lowering should be tested in a controlled environment prior to being used offshore to demonstrate that prevention cross loading, instability, and overloading can be accomplished.
- Jacking operations should be done in environments with winds less than 35 mph unless a specific procedure allows otherwise.
- Jacks that exceed the following stability ratio(s) shall require a civil or offshore structural Technical Authority to confirm if any additional restraints are required.

Stability Ratio > Ht./Dia. need TA	Facility Type	Assumed Lateral load (g)	
1.5	Jacket	0.1	
1.25	TLP, Semi, FPSO	0.2	
1.0	Spar	0.3	

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7.3.10 BEAM CLAMPS

7.3.10.1 OPERATIONS

The QP shall:

- conduct a 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 7.3.11 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.

7.3.11 FIXED LIFTING POINTS

7.3.11.1 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.
- Padeyes shall be labeled with a SWL and ID number.

7.3.11.2 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-TO09 Structural/Piping Guideline Load Matrix.

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

7.4 LIFTING ACCESSORIES

7.4.1 OVERVIEW

7.4.1.1 IN THIS SECTION

Operational requirements for the following are covered in DW-GOA-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

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	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 DW-GOA approved rigger training. Operational requirements in the following sections are included for emphasis.

7.4.2 SLINGS

7.4.2.1 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).

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.

7.4.2.2 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

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- spray.

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

7.4.2.3 CHAIN SLINGS

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

- approved for use by the UWA, and
- rated and certified for the intended use.

7.4.2.4 STINGERS

Refer to Offshore Pedestal Crane/Mobile Crane operational requirements.

7.4.3 BELOW-THE-HOOK

7.4.3.1 SPREADER BARS AND SPECIAL LIFTING DEVICES

Spreader bars and special lifting devices are fabricated steel structures typically used to verify 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.

7.4.3.2 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.

7.4.3.3 TENSION LOAD CELLS

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

7.4.4 RIGGING HARDWARE

7.4.4.1 EYEBOLTS

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

7.4.4.2 TURNBUCKLES

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

7.4.4.3 SHACKLES

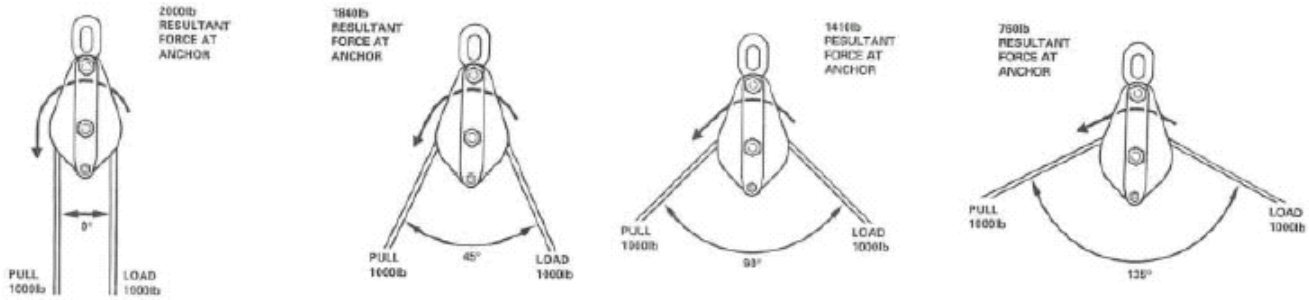
- Avoid angle and side loading to prevent a reduction in shackle capacity.
- Anchor bolt shackles shall be fitted with manufacturer-approved cotter keys or keepers.

7.4.4.4 HOOKS

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

7.4.4.5 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.



7.4.4.6 TAG LINES

The use of tag lines and their design must be evaluated on all lifts for mobile and offshore pedestal crane operations except during tandem lifts of two cranes. Tangle-resistant tag lines must be used for load control. The use of non-tangle resistant tag lines should be minimized and will require the approval of the UWA.

Personnel must:

- verify that tag lines are of sufficient length, and
- attach tag lines to the load to be lifted, at the lowest engineered point of connection possible. The shackles should be a point of connection for tag lines only when unable to connect to the load itself. Connecting tag lines to slings should only be done as a last resort. If tag lines serve no use to the control of the load, then approval to abandon tag lines must come from the UWA.

See OPS0168A Glossary (Personnel Transfer Safety) for guidance regarding tag lines that are to be used during personnel transfer baskets/nets.

For all other lifts, tag lines must be:

- manufactured to a tangle resistant design,
- a minimum of 6' below the bottom surface of the load,
- free of knots,
- if attached using a carabiner, carabiner must be double action, and
- without or free of frayed ends.

7.5 LIFTED EQUIPMENT

7.5.1 OVERVIEW

7.5.1.1 IN THIS SECTION

This section contains the following subsections:

- Miscellaneous
- Lifted Equipment Going Offshore

7.5.2 MISCELLANEOUS

7.5.2.1 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

7.5.2.2 SHIPPING MANIFEST

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

7.5.2.3 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).

7.5.3 LIFTED EQUIPMENT GOING OFFSHORE

7.5.3.1 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.

7.5.3.2 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-TO10.

7.5.3.3 CONTAINERIZATION

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

- Equipment identified by the Lifted Equipment Certification Exemption List (OPS0055-PR02-TO11).
- Non-tubulars/tubulars too large to containerize.
- Engineered equipment following OPS0055-PR02-TO12 guidelines.

7.5.3.4 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 5.4.2.3 Dynamic Load Factors and section 5.4.2.4 Allowable Stresses, documented with drawings, calculations, and the Lifted Equipment Certification Form (OPS0055-PR02-TO12) 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.

7.5.3.5 TUBULARS

The following steps must be taken when handling tubulars:

NOTE: In no case will more than one bundle of tubulars be allowed to be lifted at a time.

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 upright stanchions of at least two racks, and

	▪ prevent movement during rough weather. ▪ Have the tubular height capacity clearly painted as the engineered limit at the top of the stanchions. Best practice is to paint "Stop Work" above the engineered capacity demarcation line. 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. All tubular bundles in the rack above 5 ft of the boat deck shall have matched sets of sling eyes tethered together to avoid lifting un-matched tubular slings.
6	Place a piece of 4'-6', 4" nylon rope over each bundle to protect the slings from being crushed by additional bundles.
7	Verify that the height of the tubulars in the racks does not exceed the engineering capacity of the rack. If the height of the tubulars in the racks is above the engineered capacity, a stop work should be initiated and documented approval from Marine Assurance will be needed before going offshore.
8	Once tubulars are offloaded, tag the slings as "Used".
9	Return slings to shore base for visual inspection and possible reuse.

7.5.3.6 SLING REQUIREMENTS WHEN PRE-SLINGING

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

- a certification/recertification 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.

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7.5.3.7 LIFTING REQUIREMENTS FOR PALLETS

Pallets must be lifted by a PIT/forklift or certified pallet-lifting accessory such as a pallet fork when lifting overhead with a crane or general lifting appliance. 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).

NOTE: All material must be secured to pallet when lifting overhead using crane or general lifting appliance.

7.5.3.8 BULK BAGS

In addition to the requirements outlined in OPS0055-PR01 Design Requirements, bulk bags shall be:

- utilized in a manner that is compliant with all manufacturer instructions printed on the tag Including confirming the weight limitation before lifting the load,
- lifted one at a time and in accordance with printed manufacturer instructions on the tag,
- removed from service before lifting if any degradation is observed in the pre-
- manufactured straps,
- used only with contents that are compatible with all bulk bag components before offloading to the facility. FIBCs may not be the approved storage device for some
- materials, as certain products may have an adverse effect on their overall integrity, and
- loaded such that all straps have equal distribution when lifting to prevent overloading.

Filled bulk bags are to be:

- transferred to and from the location in certified transporters and carriers only; to ensure they are maintained in a safe condition,
- used within the time and content restriction as dictated by the manufacturer and communicated through the tag,
- protected from UV damage at all times while being stored, and
- protected from cold weather (>32°F) at all times.

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8 TOOL OPS0055-PR02-TO01: LIFT CATEGORIZATION AND WORK AUTHORIZATION TABLE

Type of Lift	Description	Work Authorization Level							
		JSA	WCC Permit	SWPL	Lift Plan -Specific	ENG	OM/WOTL/AO	SWT	SWC[13]
Routine[12]	**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]							
(Non-Routine Simple)[12] 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[11]	X			X[11]	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 where crane boom will be closer than 3ft of an obstruction other than crane rest.	x	x		x				
	Lifts to upend or lay down (turn vertically 90 degrees) an object shorter than 15ft and lighter than 5,000 lbs with a crane with a 1D crane operator	x			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	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	X
	Lifts requiring bypass of safety devices	X	X		X		X	X	X
	Lifts beyond allowable wind conditions (MPH)	X	X		X		X	X	

Type of Lift	Description	Work Authorization Level							
		JSA	WCC Permit	SWPL	Lift Plan -Specific	ENG	OM/WOTL/AO	SWT	SWC[13]
(Non-Routine Complex) [12] 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. This is at the discretion of the asset leadership to determine as they will have the best understanding of impact to production.	X	X	X	X	X	X	X	X
	Any lift of a Lifeboat or similar boat that involves the use of a Pedestal Crane	x	x		x	x		x	x
	Lifts near overhead electrical power lines as defined by applicable regulations	X	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	X
	Lifts with "special" non-standard rigging such as multiple sheave blocks or multiple spreader bars	X	X		X	X		X	X
	Lifts to upend or lay down (turn vertically 90 degrees) an object longer than 15ft or equal to or heavier than 5,000 lbs with a crane	X	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	X
	Tandem lifts involving two cranes.	X	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	X
	Lifts with Jacks exceeding the stability ratio defined in operational section for Jacks section 3.9.3	x	x		x	x		x	x
(Non-Routine Complex)[12] HEAVY ENGINEERED	Lifts in excess of 90% of the maximum rated capacity of an offshore, pedestal-mounted crane. **NOTE:** Before proceeding with a heavy lift, confirmation of the successful completion of a Heavy Lift Inspection must be obtained. A heavy lift inspection may be done by the Asset Crane mechanic with API 2D Inspector Certification.	X	X	X	X	X		X	

Type of Lift	Description	Work Authorization Level							
		JSA	WCC Permit	SWPL	Lift Plan -Specific	ENG	OM/WOTL/AO	SWT	SWC[13]
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 Well Operations Team Lead (WOTL) or Well Operation 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 DW-GOA Contractor Supervisor may delegate authorization to Drilling Foreman on duty. 10. QO can be at current competency levels. 11. Blind lifting of personnel will require concurrence between the UWA and the OM/WOTL/AO. 12. Routine, Non-Routine Simple, and Non-Routine Complex is the Control Framework terminology to reference. 13. SWC is intended for an independent Verifier to perform a start work check at the job site in accordance with TOOL OPS0055-PR05-TO04.									
JSA – Job Safety Analysis per applicable Shell requirements WCC – Work Control Certificate per ISSOW SWPL – Safe Work Plan UWA – Ultimate Work Authority as defined by SEMS	ENG – Engineering approval OM/WOTL/AO – Operations Manager, Well Operations Team Lead, or Area Owner approval SWT – Supervision Walk Through jobsite (shall be Shell Supervisor if on site, OIM/PIC or designee)								

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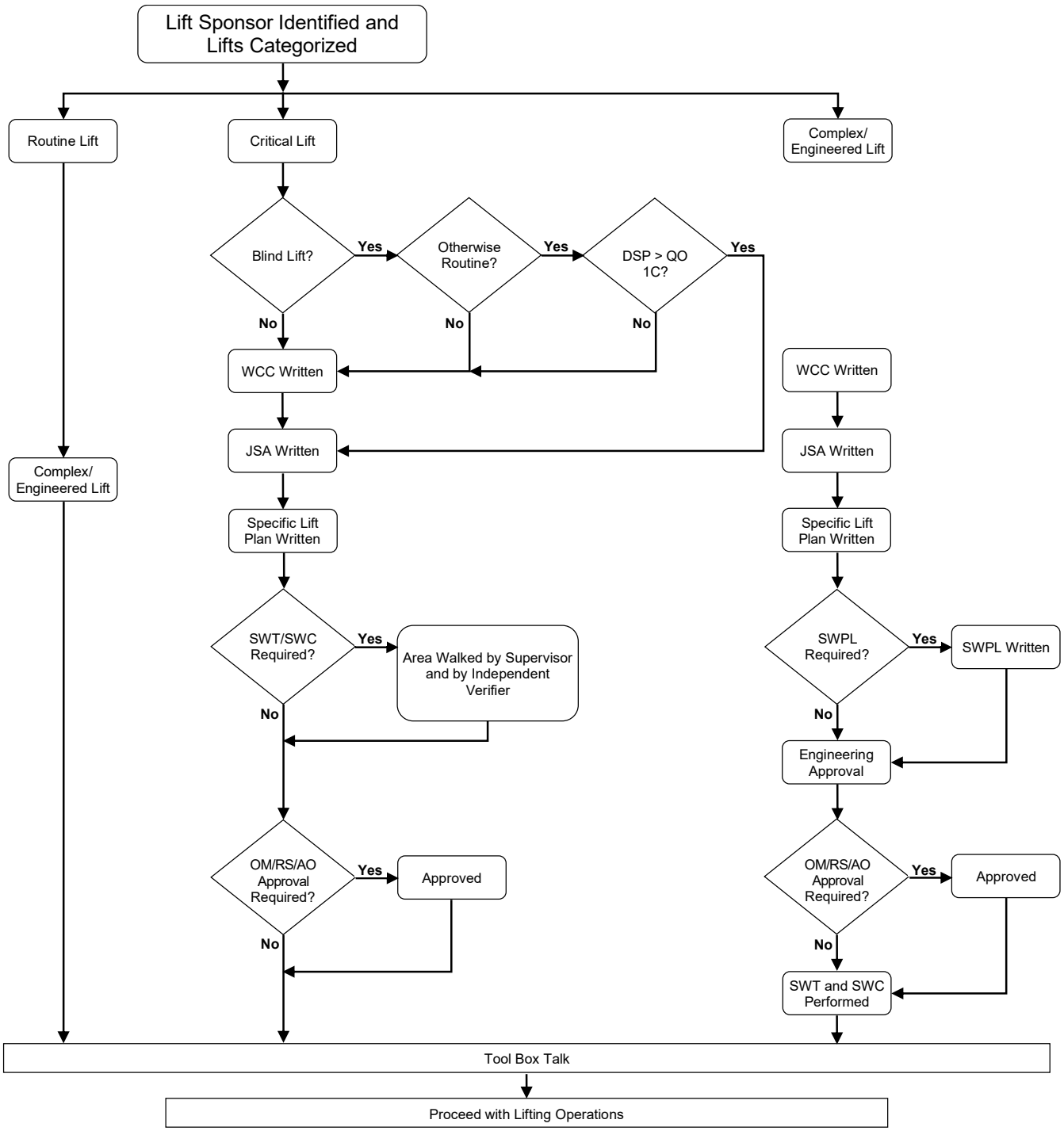
9 TOOL OPS0055-PR02-TO02: LIFT PLANNING FLOWCHART AND TABLES

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



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Question		
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 Offshore, pedestal-mounted crane 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

10 TOOL OPS0055-PR02-TO03: COMPLEX/ENGINEERED LIFT PLAN

OPS0055-PR02-TO03.pdf

11 TOOL OPS0055-PR02-TO04: CRITICAL LIFT PLAN

OPS0055-PR02-TO04.pdf

12 TOOL OPS0055-PR02-TO05: DW-GOA CRANE COMMUNICATIONS

12.1 GENERAL

12.1.1 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.

12.2 RADIO COMMUNICATIONS

12.2.1 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.

12.2.2 DURING OPERATIONS

The QP/QO 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, and

- 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.

12.3 CRANE HAND SIGNALS

12.3.1 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.

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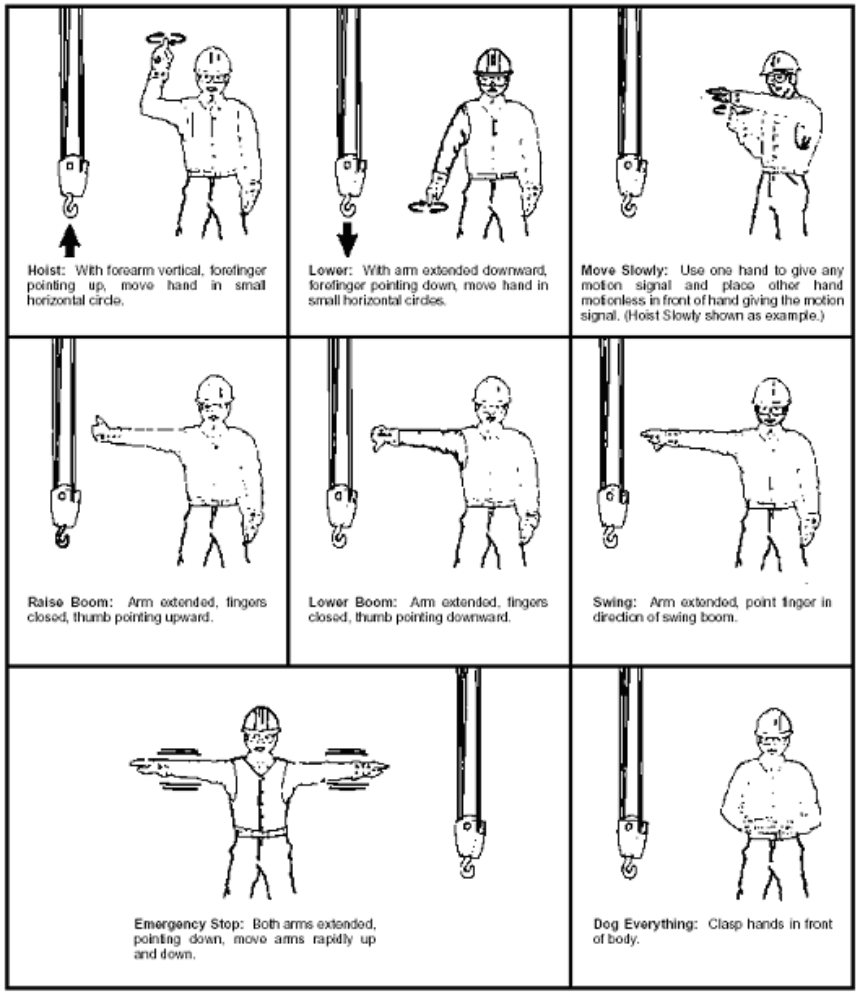
12.3.2 OFFSHORE PEDESTAL CRANE HAND SIGNALS

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



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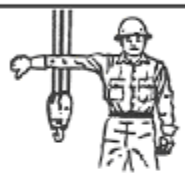
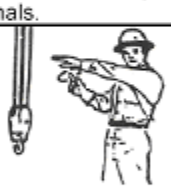
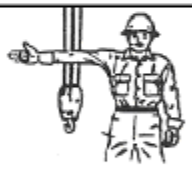
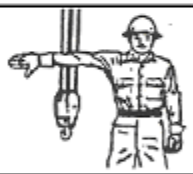
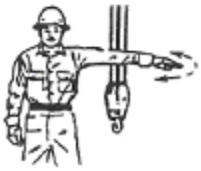
12.3.3 MOBILE CRANE HAND SIGNALS

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.

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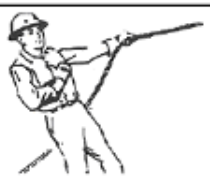
Mobile Cranes (Continued)

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.

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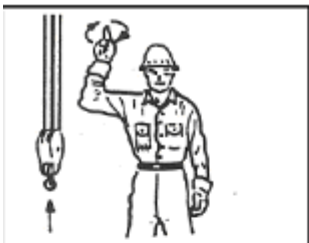
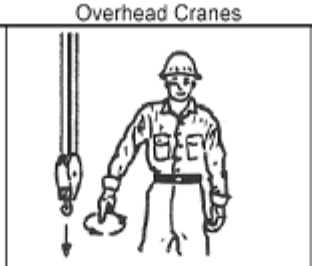
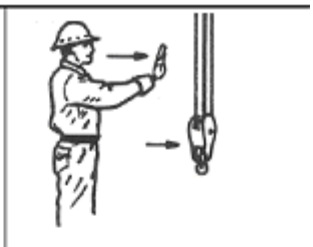
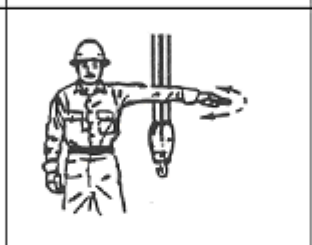
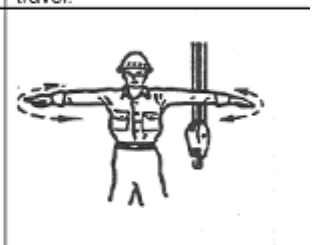
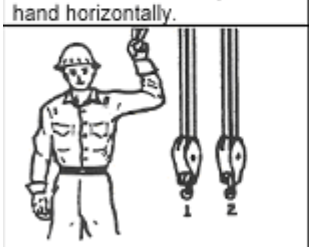
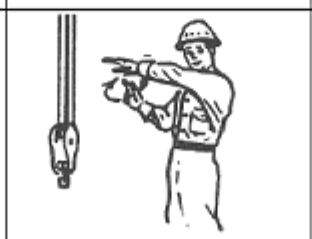
12.3.4 OVERHEAD CRANE HAND SIGNALS

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.)	

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13 TOOL OPS0055-PR02-TO06: CRANE CAB DECALS

OPS0055-PR02-TO06.pdf

14 TOOL OPS0055-PR02-TO07: PEDESTAL CRANE INSPECTION FORM

OPS0055-PR02-TO07.pdf

15 TOOL OPS0055-PR02-TO08: PRE-START CHECKLIST FOR MAN-RIDING OPERATIONS

OPS0055-PR02-TO08.pdf

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16 TOOL OPS0055-PR02-TO09: STRUCTURAL/PIPING GUIDELINE LOAD MATRIX

16.1 OVERVIEW

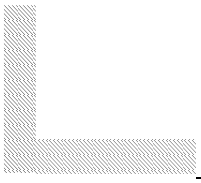
Use the Guideline Load Matrix in conjunction with the relevant load diagram, which indicates the method of support for the rigging.

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 DW-GOA Civil Engineering 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 DW-GOA Civil Engineering for assistance.

16.2 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 DW-GOA Civil Engineering.



Member		Span (L) (feet)		Allowable Midspan load Fig 1 (pounds)		Allowable Cantilever Load Fig 2 and 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

Angle

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

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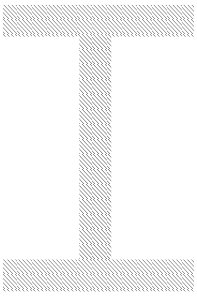
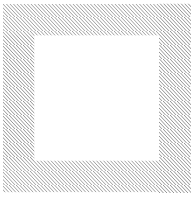


I-Beam



Square Tube

Member		Span (L) (feet)		Allowable Midspan load Fig 1 (pounds)		Allowable Cantilever Load Fig 2 and 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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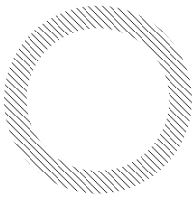
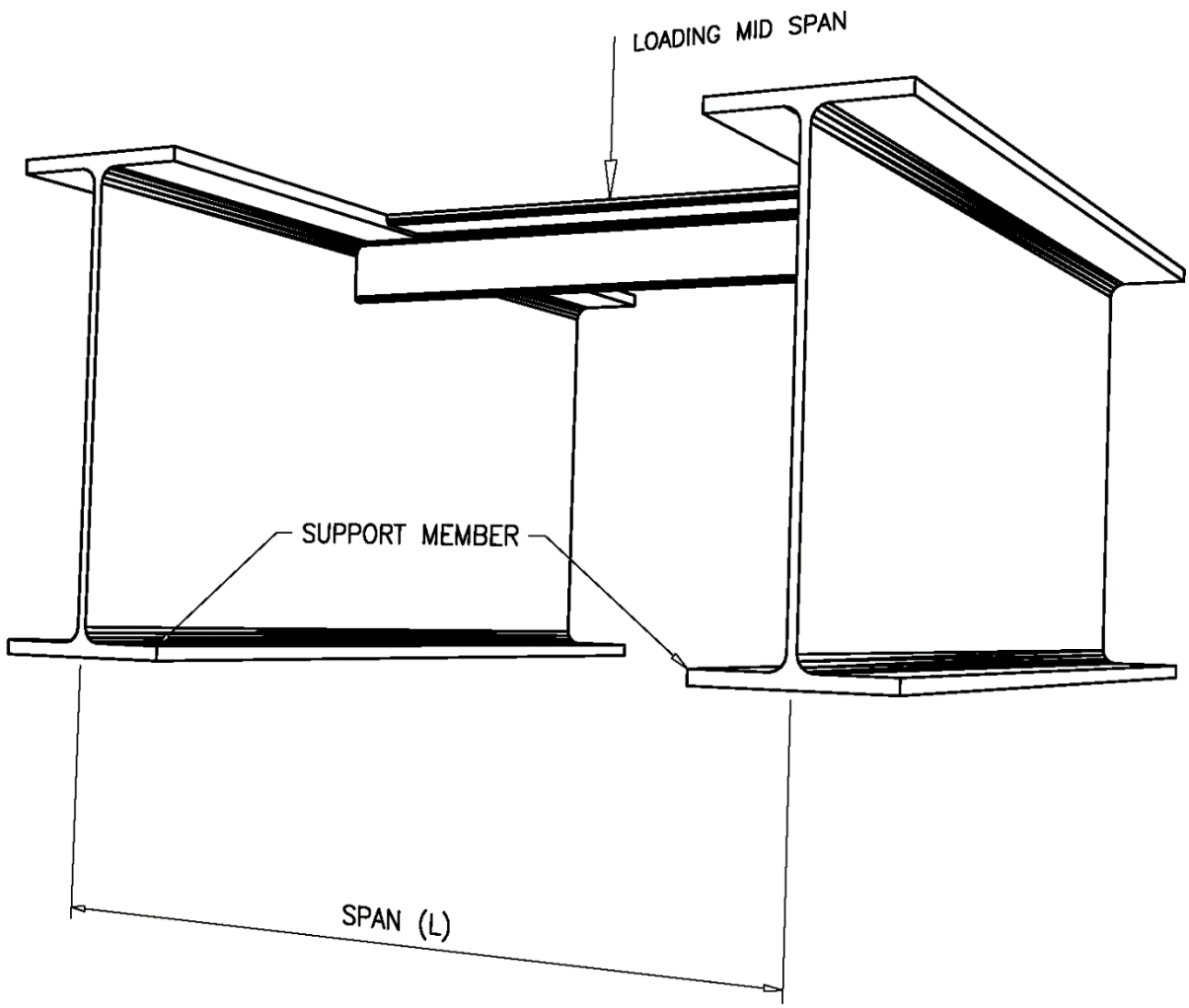
Member		Span (L) (feet)		Allowable Midspan load Fig 1 (pounds)		Allowable Cantilever Load Fig 2 and 3 (pounds)		Allowable Tension Load Fig 4 (pounds)
TS 6x6		2		5000		3450		5000
		5		5000		1350		5000
		10		2750		650		5000
TS8x8		2		5000		5000		5000
		5		5000		2550		5000
		10		5000		1250		5000
TS 10x10		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

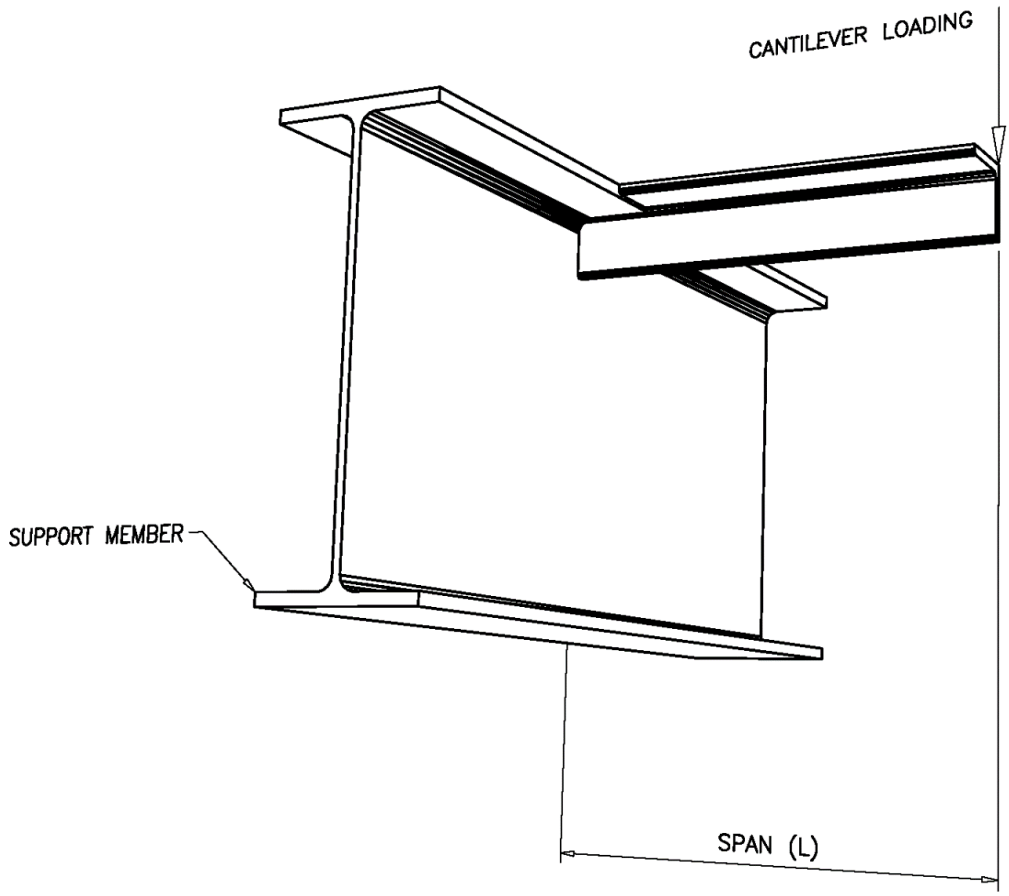


Pipe

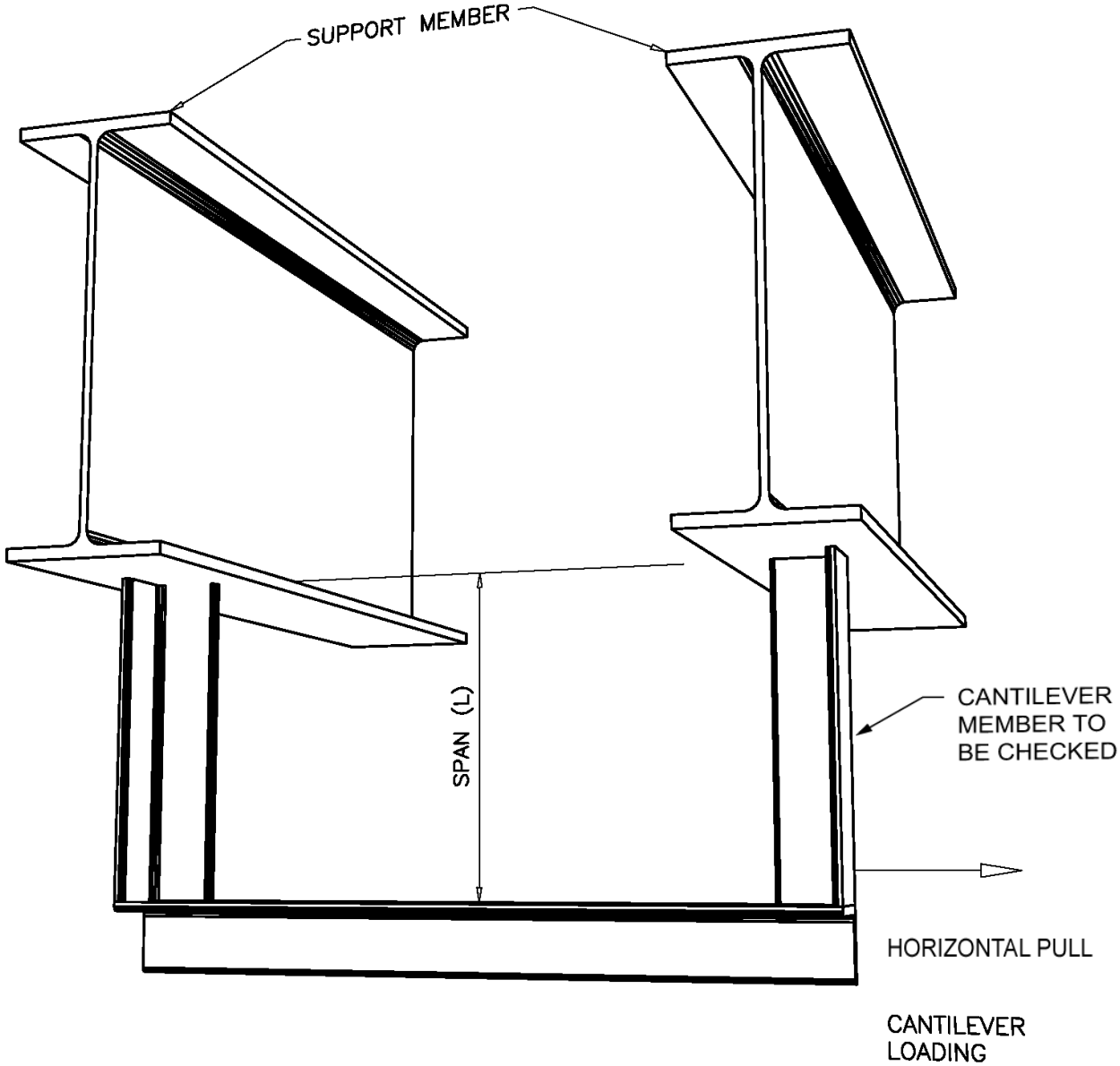
16.3 LOADING DIAGRAMS



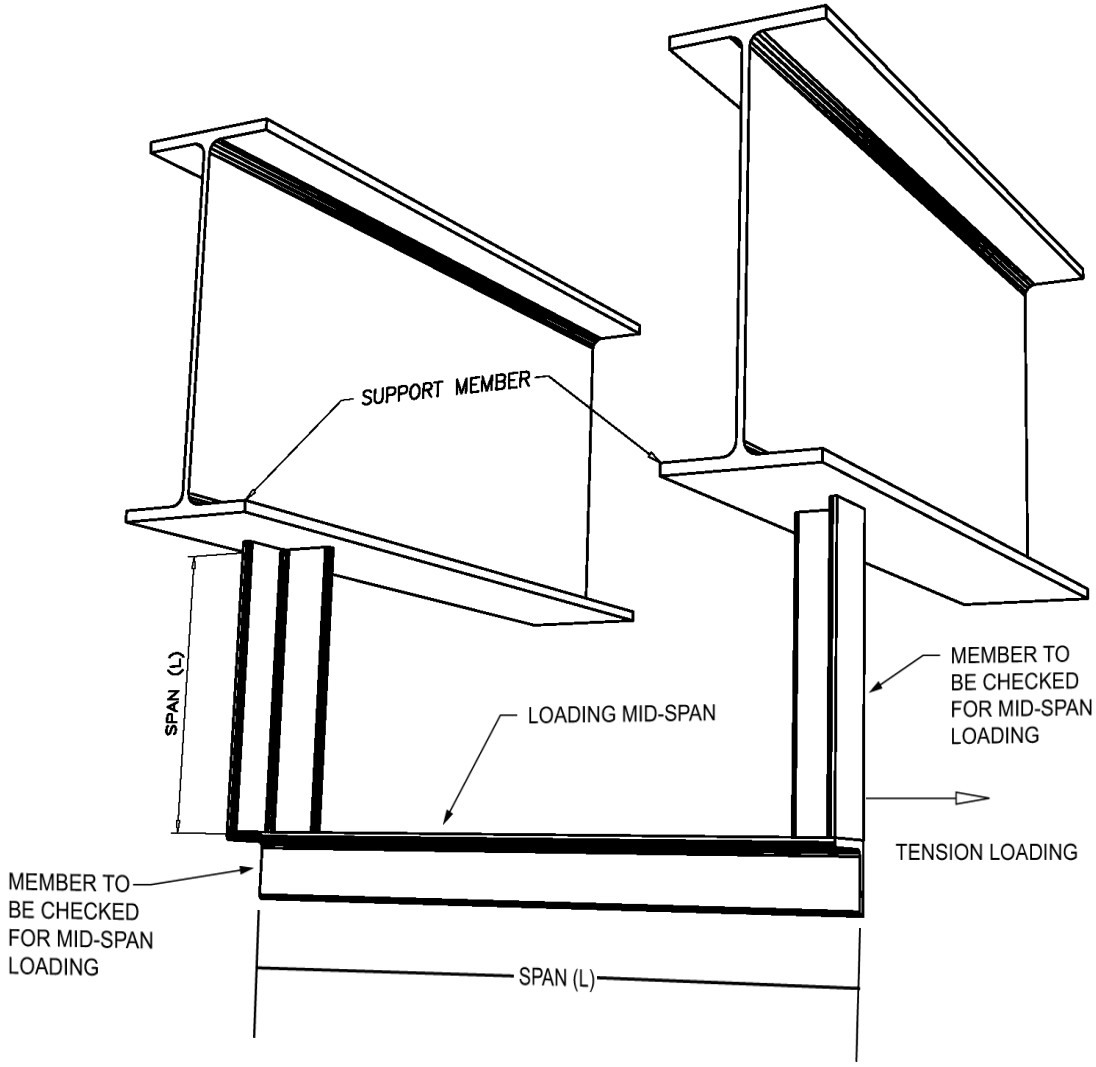
Intercostal Member – Horizontal



Cantilever Member – Horizontal



Cantilever Member – Vertical



Tension Member – Vertical

17 TOOL OPS0055-PR02-TO10: PRE-SHIPPING INSPECTION CHECKLIST

OPS0055-PR02-TO10.pdf

18 TOOL OPS0055-PR02-TO11: LIFTED EQUIPMENT CERTIFICATION EXCEPTION LIST

NOTES:

- The following type items are exempt from the requirement of having a "Lifted Equipment Certification Form" (OPS0055-PR02-TO12).
- Requests for additions to the exempt list shall be addressed to the Lifting and Hoisting Discipline Lead.

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.	DW-GOA-owned Seatrax Energy Cranes	
3	Drilling Elevators		Franks, etc.	

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	
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	

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No.	Item Name	Description	Usual Vendors	Example Pictures
9	Personnel Escape Capsules	Capsules are designed for lifts with full complement 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	

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19 TOOL OPS0055-PR02-TO12: LIFTED EQUIPMENT CERTIFICATION FORM (FORMERLY APPENDIX G) (UPDATED 02/2015)

OPS0055-PR02-TO12.pdf

20 TOOL OPS0055-PR02-TO13

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21 PROCEDURE OPS0055-PR03: TESTING AND INSPECTION REQUIREMENTS

21.1 INTRODUCTION

21.1.1 OVERVIEW

21.1.1.1 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.

21.1.1.2 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 Approved by Shell Crane Group
Annual	QI, Pedestal Cranes QI must be Approved by Shell Crane Group
Heavy Lift	QI, Pedestal Crane QI must be Approved by Shell Crane Group

21.2 TESTING AND INPECTION MATRIX

21.2.1 MATRIX

21.2.1.1 MATRIX TOOL

See OPS0055-PR03-TO01 for matrix.

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21.3 LIFTING APPLIANCES SUPPLEMENT

21.3.1 OFFSHORE PEDESTAL CRANES

21.3.1.1 INSPECTION FREQUENCY

For the purposes of inspection frequency, all DW-GOA 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.**
- **A full pre-use inspection will be performed by the first operator of the day and after any operator change.**
- **In situations where an operator must be relieved for less than one hour, a substitute operator of equal qualification must perform a pre-use inspection, less walking the boom.**
- **Any relief lasting longer than 1 hour will be deemed an operator change and a full pre-use inspection must be performed. Short changes shall be minimized.**

21.3.1.2 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 Shell Crane Group for review.

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21.3.1.3 LOAD TESTING

Load tests must be:

- performed in daylight hours only,
- performed and documented by a QI in accordance with the Inspection and Testing Matrix (OPS0055-PR03-TO01) and API RP 2D Annex D,
- values approved by the Civil Marine Group, and
- documented and submitted to the Shell Crane Group.

NOTE: Offshore temporary cranes require NDE pre-load and post-load tests.

21.3.1.4 PULL TEST

Pull test is required for:

- calibrating weight indicators, and
- when installing temporary cranes and, if any one piece of the temporary crane package is equal to or exceeds 80% of the rated capacity of the platform crane at the anticipated radius, an annual type inspection and pull test will be performed within 30 days prior to the lift.

21.3.2 MOBILE CRANES

21.3.2.1 FREQUENT INSPECTIONS

The QP shall perform daily and monthly documented inspections.

NOTE: Inspections for running wire rope must be documented.

21.3.2.2 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.

21.3.2.3 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.

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21.3.2.4 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),
- verify that 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.

21.3.3 GIN POLE TRUCKS AND DERRICKS

21.3.3.1 FREQUENT INSPECTION

The QP shall conduct daily and monthly undocumented inspections.

NOTE: Inspections for running wire rope must be documented.

21.3.3.2 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,
  - 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.

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21.3.3.3 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.

21.3.3.4 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.

21.3.4 ARTICULATING BOOM CRANES

21.3.4.1 FREQUENT INSPECTION

The QP shall conduct daily and monthly undocumented inspections.

NOTE: Inspections for running wire rope must be documented.

21.3.4.2 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.

21.3.4.3 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.

21.3.4.4 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.

21.3.5 AERIAL PLATFORMS

21.3.5.1 FREQUENT INSPECTION

The QP shall conduct daily and monthly documented inspections.

21.3.5.2 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.

21.3.5.3 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.

21.3.5.4 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 that 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.**

21.3.6 OVERHEAD CRANES

21.3.6.1 FREQUENT INSPECTION

The QP shall conduct daily and monthly undocumented inspections.

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

21.3.6.2 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.

21.3.6.3 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.

21.3.6.4 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 (Ref ASME B30.17 for detailed guidance).

- 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 21.3.6.3.
- 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.

21.3.7 WINCHES

21.3.7.1 FREQUENT INSPECTION

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

21.3.7.2 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.

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21.3.7.3 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.

21.3.7.4 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.

21.3.8 POWERED INDUSTRIAL TRUCKS (FORKLIFTS)

21.3.8.1 FREQUENT INSPECTION

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

21.3.8.2 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.

21.3.8.3 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 that 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.

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21.3.8.4 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.

21.3.9 HOISTS (MANUAL LEVER AND MANUAL/POWERED OVERHEAD HOISTS)

21.3.9.1 REQUENT INSPECTION

The QP shall conduct daily and monthly undocumented inspections.

NOTE: Inspections for running wire rope must be documented.

21.3.9.2 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.

21.3.9.3 OPERATIONAL TEST

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

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21.3.9.4 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**.

21.3.10 JACKS

21.3.10.1 FREQUENT INSPECTION

The QP shall conduct daily and monthly undocumented inspections.

21.3.10.2 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.

21.3.10.3 OPERATIONAL TEST

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

21.3.10.4 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.

21.3.11 BEAM CLAMPS

21.3.11.1 FREQUENT INSPECTIONS

The QP shall perform frequent, undocumented inspections as follows:

- Verify that 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.)

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

21.3.11.2 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.

21.3.12 FIXED LIFTING POINTS

21.3.12.1 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, verify that the runway beams have end stops fitted.

21.3.12.2 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.

21.3.12.3 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”.

21.3.12.4 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.

21.3.13 WIRE ROPE

21.3.13.1 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-TO12 (formerly Appendix G)
Mobile cranes	Latest edition of the respective ASME Standard

Overhead cranes	
Derricks	
Winches	
Any other type of crane	

21.4 LIFTING ACCESSORIES SUPPLEMENT

21.4.1 SLINGS – WIRE ROPE

21.4.1.1 FREQUENT INSPECTION (NON PRE-SLUNG)

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).
- 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.**

21.4.1.2 PERIODIC INSPECTION (NON PRE-SLUNG)

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 that pre-slung slings are replaced or recertified annually.
- Verify that sling is logged in the location's lifting register.

Slings greater than 6 years old or found in an unsafe operating condition should be discarded according to discard procedure below. High Value Slings over 6 years old may be kept with authorization from the Shell Crane Group and may be subject to additional pull test and inspections.

21.4.1.3 DISCARD PROCEDURE (NON PRE-SLUNG)

- 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 verify that the sling is otherwise obviously destroyed to an unusable state and sent for disposal.

21.4.1.4 CERTIFICATION OF NEW WIRE ROPE SLINGS (NON PRE-SLUNG)

Certification/recertification tags are required as described in:

- API RP 2D and
- ASME B30.9.

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Certification tags must list the following:

- Sling manufacturer, certificate number, and date of manufacture
- 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
- Minimum basket, choke and vertical

NOTE: In 2016 all sling master and sub-masterlink assemblies shall be:

- **From a Shell-accepted manufacturer as listed in OPS0055-PR01 section 6.3.3.1** or
- **Provide tagging and documentation of NDE from a 3rd party inspection agency qualified to ASNT level 2 or equivalent.**

Starting January 1, 2017, all sling master and sub-masterlink assemblies shall be from a Shell-accepted manufacturer as listed in **OPS0055-PR01 section 6.3.3.1**.

21.4.1.5 RE-CERTIFICATION OF WIRE ROPE SLINGS USED FOR OFFSHORE CONTAINERS AND NON-OFFSHORE CONTAINER EQUIPMENT

Slings used for pre-slinging equipment going offshore must bear a certification/re-certification tag not more than 1 year old.

Re-certification of pre-slung slings will include a load test.

The certification tag must clearly indicate:

- Re-certification date
- Original manufacture date
- Load test date

If original manufacturing tags are removed by the re-certifying agency, all OEM tag information must be kept on the new certificate.

NOTE: In 2016 all sling master and sub-masterlink assemblies shall:

- **be from a Shell-accepted manufacturer as listed in OPS0055-PR01 section 6.3.3.1 or**
- **provide tagging and documentation of NDE from a 3rd party inspection agency qualified to ASNT level 2 or equivalent.**
- **Starting January 1, 2017, all sling master and sub-masterlink assemblies shall be from a Shell-accepted manufacturer as listed in OPS0055-PR01 section 6.3.3.1.**
- **Starting January 1, 2018, sling sets for OFFSHORE CONTAINERs and non-OFFSHORE CONTAINER pre-slung equipment (including masterlinks and shackles) must be fully compliant with DNV•GL 2.7-1 or EN 12079 standards. See OPS0055-PR01 section 6.4.1.2 for more details.**

21.4.1.6 LOAD TEST

The QP shall perform and document a load test in accordance with the Testing and Inspection Matrix (OPS0055-PR03-TO01), ensuring to test all components together as a system, if practical.

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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.

21.4.2 SLINGS – SYNTHETIC

21.4.2.1 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 that 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.**

21.4.2.2 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 an 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 verify 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, or
- 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 (6.4.1.3).

21.4.3 SLINGS – GENERAL

21.4.3.1 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

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- Basic description of sling (size, length, etc.)
- Name of manufacturer/certifying test facility

21.4.3.2 LOAD TEST

The QP shall perform and document a load test in accordance with the Testing and Inspection Matrix (OPS0055-PR03-TO01), 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.

21.4.4 SPREADER BARS/SPECIAL LIFTING DEVICES/PLATE CLAMPS

21.4.4.1 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.

21.4.4.2 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.

21.4.4.3 LOAD TESTING

After performing and documenting the load test in accordance with the Testing and Inspection Matrix (OPS0055-PR03-TO01), the QP shall verify that 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.

21.4.4.4 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.

21.4.5 SHACKLES/EYEBOLTS/MASTERLINKS/TURNBUCKLES

21.4.5.1 FREQUENT INSPECTIONS

The QP shall complete frequent, undocumented inspections as follows:

- Check for defects (damage, distortion, corrosion, etc.).
- Verify that 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.

21.4.6 OPEN-WEDGE SOCKETS

21.4.6.1 FREQUENT INSPECTIONS

The QP shall:

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

NOTE: Particular attention should be paid to verify 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.

21.4.6.2 PERIODIC INSPECTION

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

21.4.7 RIGGING BLOCKS

21.4.7.1 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.

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21.4.7.2 PERIODIC INSPECTION

The QP shall perform and document periodic inspections in the lifting register in accordance with the Testing and Inspection Matrix (OPS0055-PR03-TO01), to include:

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

21.4.7.3 PROOF TESTING

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

21.5 LIFTED EQUIPMENT SUPPLEMENT

21.5.1 TESTING AND INSPECTION REQUIREMENTS

21.5.1.1 OFFSHORE OFFSHORE CONTAINERS

Starting January 1, 2018, OFFSHORE CONTAINER owners are responsible for ensuring that OFFSHORE CONTAINERs are inspected and tested per DNV•GL 2.7-1 or EN 12079 requirements.

Non-OFFSHORE CONTAINER pre-slung equipment shall meet the testing requirements in OPS0055-PR03-TO01.

21.5.1.2 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.

21.5.1.3 FREQUENT INSPECTION

The QP shall conduct daily pre-use undocumented inspections.

21.5.1.4 PERIODIC INSPECTIONS

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

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22 TOOL OPS0055-PR03-TO01: TESTING AND INSPECTION MATRIX

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 (DW-GOA Cranes)	Pre Use	Prior to First Usage	After structural repair / modification	Annually	Blank	Blank	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%	NO	4/5[12]
	Offshore Pedestal Crane Floating	Offshore	D	D	D	D[4]			D	D		DL, DO[5, 18]	DL, DO[5]					NO	4/5[12]
	Offshore Temporary Cranes	Offshore	D	D	D	D			D	D		DL, DO[5]	DL, DO[5]					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 (not part of sling sets)	Both	U			D											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 (non-pre-slung)	Both	U			D						DL	DL				200% WLL	YES	Life/0
	Slings (pre-slung)	Offshore	U			D[1]						DL	DL	DL[1]			200% WLL		
	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 Certified Lifting Points (not part of containers)	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 CONTAINER[13] and POU	Offshore	U			D[16]			D[16]			DL[13]	DL			DL	220 %WLL	NO	Life/0

1. Wire rope slings shall be replaced or re-certified annually. Man-made fiber slings shall be replaced annually. Refer to Test/Inspection procedures for additional information. Sling sets will be retired from service at 10 years from date of manufacture.
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.
18. Offshore temporary cranes require NDE pre- and post-load test.

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23 PROCEDURE OPS0055-PR04 MAINTENANCE AND REPAIR REQUIREMENTS

23.1 INTRODUCTION

23.1.1 OVERVIEW

23.1.1.1 IN THIS CHAPTER

This chapter provides the maintenance requirements for the following:

- Lifting Appliances
- Wire Rope

23.2 LIFTING APPLIANCES

23.2.1 OVERVIEW

23.2.1.1 IN THIS SECTION

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

23.2.1.2 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 DW-GOA-owned equipment. Contractors shall have a system in place for their equipment and maintain records on rental equipment as prescribed by applicable regulations.

23.2.1.3 REPLACEMENT PARTS

For lifting equipment, an Original Equipment Manufacturer (OEM) or other approved vendor shall supply parts or components.

For DW-GOA 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.).

23.2.1.4 REPAIRS

Structural repairs of lifting equipment must be performed by qualified personnel per manufacturers' recommendations and the applicable ASME B30 document.

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For DW-GOA 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 DW-GOA pedestal cranes, the SCI Group must approve the scope of repairs and contractor selection.

NOTE: Repair documentation of critical components shall include MTRs (as applicable), welder qualifications, and welding procedure(s) identification number. This documentation shall be maintained in the crane files for the life of the crane.

23.3 WIRE ROPE

23.3.1 OVERVIEW

23.3.1.1 IN THIS SECTION

This section specifies requirements for wire rope.

23.3.1.2 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	6 Years

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

23.3.1.3 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,

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- 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.

24 PROCEDURE OPS0055-PR05 COMPETENCY REQUIREMENTS

24.1 OVERVIEW

24.1.1.1 IN THIS CHAPTER

This Procedure provides the following:

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

24.1.1.2 TRAINING AUTHORITY

The custodian of OPS0055 approves all training courses outlined in the Competency Matrix below. Approved courses will be designated as "DW-GOA-Accepted".

24.1.1.3 COMPETENCY ASSESSMENT

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

24.1.1.4 LOCAL LIFTING FOCAL POINT (LLFP)

Qualifications are as follows:

- Level 1D QO for Offshore pedestal mounted cranes.
- LLFP training every 2 years.
- Relevant onshore or offshore crane operator and rigging schools.
- Competency assessment training defined and approved by custodian of OPS0055.
- Detailed training/SME on the OPS0055 standard and requirements.

24.1.1.5 TRAINING GRACE PERIOD

Anyone rigging to or operating any lifting appliance or crane shall have:

- General Lifting Appliance Operation and Rigging certificate
  - if job requires use of general lifting appliances (example, bridge crane, chain fall, etc.) or job requires rigging to pedestal cranes
  - not valid for operating pedestal cranes
- General Pedestal Crane Operation and Rigging certificate
  - if job requires operating pedestal cranes or rigging to pedestal cranes

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- not valid for operating general lifting appliances.

From Shell Robert Training Center unless approved for a 6-month grace period. Grace periods should not be extended.

A valid 6-month grace period has the following requirements:

- A documented application via email with an expiration date approved by the UWA of the facility. The UWA reserves the right to deny or shorten the grace period at any time during the grace period for any reason.
- Proof of current training API 2D certification or similar (example OPTIO Level 2).
- Assigned a mentor to work under the supervision for a least 10 days or until assessed as competent (which ever takes longer); the mentor should be of suitable experience and approved by the UWA.

Grace period application request example:

<***UWA name***>,

<Supplier Company Name>, requests a grace period until ***<expiration date>*** for ***<employee name>***, to perform ***<choose one or both, General Lifting Appliance Operation and Rigging and/or General Pedestal Crane Operation and Rigging>*** at Shell's ***<name of offshore facility>***. ***<Employee name>*** will have ***<mentor's name>*** assigned as a mentor for at least 10 days or until assessed competent before being allowed to perform ***<choose one or both; General Lifting Appliance Operation and Rigging or General Pedestal Crane Operation and Rigging>*** without supervision. Attached is proof of current API 2D certification, or equal, not set to expire before the grace period ends.

Please reply back with approval or otherwise at your earliest convenience.

Regards,
<Supplier Representative Requesting Grace Period>

24.2 COMPETENCY MATRIX

24.2.1 COMPETENCY MATRIX

To demonstrate competency for HSE critical roles, individuals shall identify their roles in the in OPS0055-PR05-TO01 and complete the required training.

24.3 TRAINING COURSE DETAILS

24.3.1 TRAINING COURSE DETAILS

Details concerning DW-GOA-accepted OPS0055 courses are provided in OPS0055-PR05-TO02.

24.3.2 TRAINING COURSE CURRICULA

Individual training course curricula will be available separately and posted on the DW-GOA HSE Controlled Document site.

24.3.3 DW-GOA-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 DW-GOA, the contractor must:

- submit an application and show a business need **every 12 months**,
- meet the course curricula requirements of the OPS0055 Lifting and Hoisting training curricula,
- agree to submit CV of trainers,
- agree to submit copy of training material,
- have the course approved as "DW-GOA-accepted" by the custodian of OPS0055 Lifting and Hoisting (i.e., DW-GOA's Technical Authority for Lifting and Hoisting), and
- agree to submit all training records to DW-GOA's Training Database for tracking purposes.

NOTE: Contact Shell's Robert Training and Conference Center (SRTCC) for details on DW-GOA's Training Database.

24.4 ADDITIONAL OFFSHORE PEDESTAL CRANE COMPETENCY REQUIREMENTS

24.4.1 OFFSHORE PEDESTAL CRANES

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

24.4.2 OFFSHORE PEDESTAL CRANE AUTHORIZATION LEVELS

After successful completion of DW-GOA-accepted offshore pedestal crane operation and rigging training, QOs of offshore pedestal cranes will be assessed by the approved competency assessor. Level 1 OT through Level 1D QO may be assessed by an existing Level 2 QO. After the competency assessment, the QO is authorized to conduct lifts in accordance with the offshore pedestal crane operator authorization

levels below. Crane Operators at every level shall be reassessed/renewed every 2 years. Operators never having been assessed at a Shell location will not be allowed to operate until the assessment is performed. Initial 2-QO assessments must be done by an approved 3rd party assessor or an approved Specialty crane inspector (SCI). A 2QO deck supervisor may perform reassessments/renewal of Level 2-QO Qualified Operators, Deck Supervisors and Deck Operators who have passed a 2-QO assessment from a 3rd party assessor previously, but only for those who are employed by the same contractor company.

A formal assessment is not required for 2-QO changing between similar crane types who are working for the same contractor company. A formal assessment is required for 2-QO changing between dissimilar crane types. Assets with similar cranes are described below.

1. Type 1 Cranes

- Mars
- Olympus
- Appomattox
- Ursa
- Vito
- Whale
- Sparta

2. Type 2 Cranes

- Perdido
- Auger

3. Type 3 Cranes

- Enchilada
- Salsa

4. Type 4 Cranes

- Turritella

The DW-GOA Contractor/Supervisor is responsible for ensuring that the following tasks are performed by the LLFP:

- Ensure personnel performing lifts have proper training and qualification before lifting begins. Training information is forwarded to DW-GOA Training Database.

See OPS0055-PR05-TO03 Offshore Pedestal Crane Operator Authorization Level Verification Form.

24.4.3 OFFSHORE PEDESTAL CRANES LOG REQUIREMENTS

The QO shall keep a logbook to record the following information on all lifts:

- Date of lift
- Type of lift: static or dynamic

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

The QO shall also record authorization level verification records in his/her logbook to include the following:

- Date
- Signature
- Authorization level achieved

24.4.4 DSP REQUIREMENTS

All riggers attending the Offshore Pedestal Crane Rigging training will be required to:

- Fill out a history profile for experience level.
- Be given a no-prep written test to validate this level.
- Be assessed by instructor for experience level and qualifications for DSP endorsement.
- Be given an endorsement (OR NOT) for DSP subject to written and hands-on tests specific to DSP.

NOTE: Any current rigger to be used as DSP who does not have a DSP endorsement must have a DSP Competence Assessment by attending a re-qualification. Any contractor with less than 6 months service in the same job/position with their present employer will be considered a Short Service Employee (SSE). SSEs cannot act as DSPs.

24.4.5 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.

24.4.6 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 10 supervised pre-use inspections and 25 Supervised[2] Static Lifts[1]	Unsupervised up to 5 Tons, daytime lifts only	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, daytime lifts only	No	No	Pre-Use Only
1B QO	(25) 5 Ton or Less Dynamic Lifts[1]	Unsupervised up to 8 Tons	Unsupervised up to 8 Tons	No	No	Pre-Use Only
1C QO	(25) 8 Ton or Less Unsupervised Dynamic Lifts[1]	Unsupervised up to 15 Tons	Unsupervised up to 15 Tons	Yes Supervised[2]	No	Pre-Use Only and supervised Monthly
1D QO	2 supervised monthly inspections and (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 (these may be done with empty Billy Pughs to a boat if no real opportunities come)[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

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25 TOOL OPS0055-PR05-TO01: COMPETENCY MATRIX

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

					Qualified Rigger			Qualified Operator/Qualified Person													Qualified Inspector			Qual	Refr
DW-GOA-Accepted OPS0055 Courses	Course Number	Obsolete Course Number	Terminal Personnel Inspecting Cargo for Shipment	Local Lifting Focal Point	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
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
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
DW-GOA Offshore Mechanic: SPBP Level 3 Mechanic																						X		X	NA
Contractor or DW-GOA 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: Deleted

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

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26 TOOL OPS0055-PR05-TO02: TRAINING COURSE DETAILS

Details concerning DW-GOA-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 DW-GOA-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 DW-GOA-approved training provider 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 DW-GOA-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 DW-GOA-Approved (OSHA/ASME) approved training provider and entry in Training Database

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Course	Covers	Prerequisites	Target Audience	Training Delivery	Proof of Training
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 DW-GOA-approved (OSHA/ASME) approved training provider and entry in Training Database
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 DW-GOA-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 DW-GOA-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 DW-GOA-approved (OSHA/ASME) approved training provider and entry in Training Database
Local Lifting Focal Point Training	Introduction to DW-GOA Lifting and Hoisting support group Local Lifting Focal Point network Competency assessment training Detailed training on Standard Recordkeeping requirements	Min. 1D QO	Personnel selected by location to act as LLFP	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 DW-GOA-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 DW-GOA-approved training provider

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Course	Covers	Prerequisites	Target Audience	Training Delivery	Proof of Training
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 DW-GOA-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 DW-GOA-approved training provider
DW-GOA Offshore Mechanic: SPBP Level 3 Mechanic	Mechanical competencies to repair and maintain offshore pedestal cranes.		DW-GOA Mechanics	Skill Performance Base Pay (SPBP)	SPBP records
Contractor or DW-GOA Onshore Mechanics: Crane Mechanic	Mechanical competencies to repair and maintain onshore mobile cranes.		Contractor or DW-GOA Mechanics	Skill Performance Base Pay (SPBP) and contractor competency programs	SPBP records and contractor training records
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 DW-GOA-approved (OSHA/ASME) approved training provider and entry in Training Database
Local Lifting Focal Point Training	Introduction to DW-GOA Lifting and Hoisting support group Local Lifting Focal Point network Competency assessment training Detailed training on Standard Recordkeeping requirements	Min. 1D QO	Personnel selected by location to act as LLFP	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 DW-GOA-approved training provider and entry in Training Database
Terminal Cargo Inspector	Lifted equipment, accessories, OPS0055-PR02-TO12 validation, OPS0055-PR02-TO10 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 DW-GOA-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 DW-GOA-approved training provider

The controlled version of this “Business Control Document” resides online. Printed copies are UNCONTROLLED.

Course	Covers	Prerequisites	Target Audience	Training Delivery	Proof of Training
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 DW-GOA-approved training provider
DW-GOA Offshore Mechanic: SPBP Level 3 Mechanic	Mechanical competencies to repair and maintain offshore pedestal cranes.		DW-GOA Mechanics	Skill Performance Base Pay (SPBP)	SPBP records
Contractor or DW-GOA Onshore Mechanics: Crane Mechanic	Mechanical competencies to repair and maintain onshore mobile cranes.		Contractor or DW-GOA Mechanics	Skill Performance Base Pay (SPBP) and contractor competency programs	SPBP records and contractor training records

27 TOOL OPS0055-PR05-TO03: OFFSHORE PEDESTAL CRANE OPERATOR AUTHORIZATION LEVEL VERIFICATION FORM

OPS0055-PR05-TO03.pdf

28 TOOL OPS0055-PR05-TO04: START WORK CHECKS: MECHANICAL LIFTING

OPS0055-PR05-TO04.pdf

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29 TOOL OPS0055-PR05-TO05: DW-GOA MASTERLINK CHEATSHEET

Shell Masterlink Inspection Cheatsheet (2018) | **Updated on: *2/16/2018***

This is subject to change. I made this to help everyone have a better understanding on what to look for whan checking Lifting equipment. This is only a guideline, if you still are unsure then ask Safety or Warehouseman for more clairfication.

Remember ALL Slings need to have been Load Tested within a year of it being used for Offshore Lifting. This is not required by most of the approved standards but is required by Shell.

As new Procedures are passed along I will update as needed. All Info taken from:

CertificationTag Examples:

DNV 2.7-1 (June 2013) EN 12079 (2006) ABS API-2CCU (August 2017)

Master Link Identification
OPS-0055 Supplement
Shell C-Port 2 | V 5.1 | Updated 2/16/18

Manufactor of Master Link Name:	*Required Certification Tyoe: Accepted or Rejected* DNV	EN	ABS	API	*Further Information:*	*Idenification Marks if Applicable:*
Skookum	*Accepted*	*Accepted*	*Accepted*	*Accepted*	All Make, Models, and sizes are Accepted.	Skookum Raised on Link, May also be stamped.
Crosby 7/8 and Larger	*Accepted*	*Accepted*	*Accepted*	*Accepted*	Crosby 7/8 and larger are Accepted.	Crosby Raised on link, may also be stamped.
Crosby Smaller than7/8	*Reject*	*Reject*	*Reject*	*Reject*	Crosby smaller than 7/8 shall be Rejected.	Crosby Raised on link, may also be stamped.
Williams Hackett	*Accepted*	*Accepted*	*Accepted*	*Accepted*	These are accepted like a Skookum. All Make, Models, and sizes are Accepted. If Unsure have someone check the Certs.	Will have HA followed by 2 digits(size in MM) then MS, MLS, QA markings.
Gunnebo Johnson "Arctic"	*Accepted*	*Accepted*	*Accepted*	*Accepted*	Arctic Type links Only!! "OS"	These are Marked with an OS or O-S on the Link itself.
Gunnebo Johnson "Non-Arctic"	*Reject*	*Reject*	*Reject*	*Reject*	These Links are NOT made for Offshore Operations. Be aware that I have found some with 05 on the link.	No OS in link (if questionable ask for cert)
Columbus Mckinnon	*Reject*	*Reject*	*Reject*	*Reject*	These Links are NOT made for Offshore Operations.	These will have CM or Herc Alloy on the Link.
Letellier Material Handling Equipment "LMHE"	*Reject*	*Reject*	*Reject*	*Reject*	These Links are NOT made for Offshore Operations.	LMHE stamped on link. Sometime hard to see due to use.
Hale	*Reject*	*Reject*	*Reject*	*Reject*	These Links are NOT made for Offshore Operations. They may look like Skookum! Same Manufacturer (Ulven) Different build materials.	Will have HALE on Mater Link
Apex	*Reject*	*Reject*	*Reject*	*Reject*	Not Accepted in Shell Operations	Mostly Green, USA A4 on link (Not all will have these type Markings)
Taylor	*Reject*	*Reject*	*Reject*	*Reject*	Not Accepted in Shell Operations	Taylor or TA on link
IWA "Italy"	*Reject*	*Reject*	*Reject*	*Reject*	Not Accepted in Shell Operations	This doesn't mean all links from Italy are rejected, only IWA links

Pictures of links Below in same order as Manufacturer. May not line up correctly due to size.

SKOOKUM CROSBY

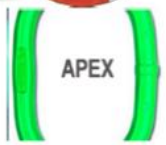
WILLAMS HACKETT MARKINGS

GUNNEBO Arctic

NON-ARTIC NOT APPROVED!!

COLUMBUS MCKINNON

HALE



TAYLOR

ITALY IWA