NWEA Guidelines for the Safe Management of Offshore Supply and Rig Move Operations

Version 2

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Signatories to the Guidelines

These Guidelines have been recognised and endorsed by the following organisations:

Chamber of Shipping

Danish Shipowners' Association

Netherlands Oil and Gas Exploration and Production Association

Norwegian Oil Industry Association (OLF)

Norwegian Shipowners' Association

OIL and GAS UK

Document Control Sheet

Date	Issue No.	Location(s) of changes)
Feb '06	1	New Document
May 08		2.1 new text added
		2.1.1 added text
		2.2.1.1 new paragraph added
		2.2.1.4 paragraph re written
		2.2.2. paragraph re written
		2.3.1.4 added paragraph
		3.1.1 added text
		3.2.2 added text
		3.2.3.2.2 added text
		3.2.4.2 added text
		3.2.4.4 delete old regulation link
		3.2.4.5 added new text plus hyperlink
		3.2.51 new paragraph /added text
		3.3.1.1 added text
		3.3.4.3 New requirements flagged NO 6
		3.3.4.5 added text
		3.3.6.2 added text
		3.3.6.3 new paragraph
		3.3.6.4 merged bullet points 5/7
		3.3.6.5 paragraph 2 new hyperlink to NL DG tables F-2 - also added text
		3.3.7.2 delete NL5 flag and hyperlink –added text
		3.3.8 new paragraph
		Ch 4 re-written
		5.1.2 added text
Jan 09		Ch 6 Re –written and added text
		7.5 added text
		9.3.1-5 added paragraph
		10.1 new bullet point
		11.1-2 new paragraph (ISPS)
		Annex Q-1 reviewed
		Pollution Prevention: Remove text
		Technical: Remove text
		Annex F-2 added
		Annex R address changes
Jan 09		NL 4 new edition added
Jan 09		NL1 deleted
Jan09		NO 6 &7 deleted
Jan 09		Title change to document
		Annex P new diagrams added
Mar 09		Remove NO6 ,NO7
		Review definitions –enclosed space wx side working
		Replace data cards/new anchor diagrams

Using the document

1. Attention is drawn to specific sections of the text through the graphics shown below.

Attention!

Responsible organisations:

Base

Vessel

Installation

Management

National addenda:

Danish

Dutch

Irish

Norwegian

UK

2. Links from one section of the document to another are shown as Introduction. Click to go straight to the reference.

3. Links to References are shown as [36]. Click to go to the reference.

4. Links to National Addenda are indicated by the flag of that nation; this is linked directly to the document, which can be opened by Clicking the flag or link. Example is: UK1 **The information in the national addenda is always in addition to the text used in these guidelines.**

5. Click on a section heading in the table of contents to go to that section.

Abbreviations / Definitions

Abbreviations

24/7	24 hours per day, 7 days per week
AB	Able-bodied Seaman
ABS	American Bureau of Shipping
A/H	Anchor handling
ACoP	Approved Code of Practice
AHTS	Anchor Handling Tug Supply vessel
AHV	Anchor handling vessel
CoG	Centre of Gravity
CoS	Chamber of Shipping – the trade association representing owners and operators of UK-based shipping companies
COSHH	Control Of Substances Hazardous to Health
CoSWP	Code of Safe Working Practices for Merchant Seamen
DGPS	Differential Global Positioning System
DNV	Det Norske Veritas
DP	Dynamic Positioning
DSV	Diving Support Vessel
ERRV	Emergency Response & Rescue Vessel
ETA	Estimated/Expected Time of Arrival
ETD	Estimated Time of Departure
FMEA	Failure mode and effect analysis
FPSO	Floating production, storage and offloading unit
FRC	Fast Rescue Craft
GPS	Global Positioning System
HAZOP	Hazard & Operability
HSE	Health & Safety Executive
HS&E	Health, Safety and Environment
IADC	International Association of Drilling Contractors (North Sea Chapter)
ICS	International Chamber of Shipping
ILO	International Labour Organisation
ILP	Integrated Logistics Provider
IMCA	International Marine Contractors Association
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organisation
INLS	International Noxious Liquid Substances
ISM-Code	IMO International Safety Management Code
ISPS	International Security code for Port facility & ships
LR	Lloyds Register
LSA	Low Specific Activity
MARPOL	IMO International Convention for the Prevention of Pollution from ships
MBL	Minimum Breaking Load
MCA	Maritime and Coastguard Agency
MGN	Marine Guidance Note - issued by the MCA

MIN	Marine Information Note - issued by the MCA
MOB	Man Overboard Boat
MODU	Mobile Offshore Drilling Unit
MOU	Mobile Offshore Unit (including self elevating units)
MS	Merchant Shipping – mainly used in a legal context when referring to UK Statutory Instruments
MSC	Maritime Safety Committee (of the IMO)
MSDS	Material Safety Data Sheet
MSN	Merchant Shipping Notice – issued by the MCA
NLS	Noxious liquid substances
NSA	Norwegian Shipowners' Association
NMD	Norwegian Maritime Directorate
NOGEPA	Netherlands Oil and Gas Exploration and Production Association
NAUTILUS	National Union of Marine, Aviation and Shipping Transport Officers
NWEA	North West European Area
OBM	Oil Based Mud
OCES	Operators Co-operative Emergency Services
OIM	Offshore Installation Manager
OLF	Oljeindustriens Landsforening (Norwegian Oil Industry Association)
ORQ	Oil Rig Quality, chain quality designation
OSV	Offshore Support Vessel
P&A	Procedures and Arrangement manual (INLS)
PAPA	Platform Abandon Platform Alarm
PCP	Permanent Chaser Pendant
PGA	Platform General Alarm
PPE	Personal Protective Equipment
PSA	Petroleum Safety Authority
PSV	Platform Supply Vessel
PTW	Permit to Work
RA	Risk Assessment
RMP	Rig move plan
ROV	Remotely operated vehicle
SJA:	Safe job analysis
SMPEP	Shipboard Marine Pollution Emergency Plan
SOW:	Scope of Work
STCW:	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
SWL:	Safe Working Load
UHF:	Ultra high frequency
UKCS	United Kingdom Continental Shelf
VHF:	Very high frequency
VSP	Vertical Seismic Profile

Definitions

For the purposes of these guidelines the following interpretations apply:

Accident	Event resulting in death, injury or ill health
Adverse Weather	Environmental conditions requiring precautionary measures to safeguard the facility or maintain safe working.
Base	Quay facilities with logistics support dedicated to petroleum activities.
Base company	Owner or operator of a base.
Base manager	Person responsible for operations on the base
Bollard pull	The towing vessel's pull normally specified as maximum continuous pull
Bridle towing arrangement	Two wires or chains of equal length arranged as a triangle that connects the installation to the towing vessel
Catenary curves	Specification of towline and anchor line curvature for various loads
Chain tail	A short piece of chain consisting of two or more links
Cherry-picking	Selective discharge of cargo from within the stow
DP operation	Automatic positioning of a vessel or installation using a dynamic positioning system that maintains the selected position within defined movement characteristics from the centre position.
Duty Holder	In relation to a fixed installation, this is the Operator. In relation to a mobile installation it is the Owner.
Emergency Situation	A situation in which fire, explosion, blow-out, disaster or other incident occurs, or that endangers any fixed or mobile offshore installations, pipeline or vessel
Enclosed Space	An enclosed space is considered to be any area with limited access which is, or can be isolated from the surrounding atmosphere for any period of time
Flagman/Banksman	Person on installation or vessel guiding Crane Operator
Gypsy	Wheel with machined pockets for hoisting chains fitted on a winch
Hot Work	Welding, burning or flame producing operations
Incident	Undesired circumstance resulting in damage to equipment or the environment
Installation	Installation, plant and equipment for petroleum activities, excluding supply & standby vessels or ships for bulk petroleum transport. Includes pipelines and cables unless otherwise provided. A structure for exploration or exploitation of mineral resources or related purposes that is, will be, or has been used whilst standing or stationed in water, or on the foreshore or land intermittently submerged.
Interfield operations	Operations carried out by vessels between installations.
Kenter link	Device for linking two chain lengths
Logistics Company	A company that organises on behalf of its clients the delivery of cargo to offshore installations.
MASTER	Captain of ship or his designated deputy

NavTug	Navigation equipment on board an anchor handling vessel for an anchoring operation functioning as an interface with the installation's (MOU) main navigation equipment
Near-miss	Undesired circumstance with the potential to cause death, injury, ill health, damage to equipment or the environment
Nominated Manager	Nominated persons “in charge” of a specified area or task to be performed
Non-conformity / non-compliance	A circumstance where guidelines, regulation or legislation have not been followed.
North West European Area	Operations taking place throughout the North Sea but also encompassing those West of Shetland, in the Irish Sea and Liverpool Bay and those up into the Norwegian Sea
Offshore Installation	All offshore platforms (manned and unmanned), including MOUs used for drilling/support activities.
Offshore Installation Manager	OIM or his designated deputy
Offshore Support vessel	Supply vessels, and other vessels involved in offshore supply and anchor handling activities.
Operating company	Party that carries out the management of petroleum activities on behalf of licensees.
Pear link	Device for linking two different chain dimensions
Pendant	Wire hanging permanently attached to the installation used for chasing out anchors. PCP (Permanent Chain Pendant)
Pendant wire	Buoy wire; wire from the seabed up to a buoy on the surface
Permanent chaser	Ring fitted over the anchor line connected to the pendant wire. Used by anchor handling vessel when hoisting or setting the installation's anchors
Piggyback anchor	Anchor connected to primary anchor with wire or chain in case of insufficient holding power
Pigtail	Short chain or wire with open end links
Radio silence	Precautions to reduce potential induction of spurious current in detonator circuits
Recognised classification society	Classification society recognised by the International Association of Classification Societies (IACS) to supervise vessel design, construction, outfitting and operations.
Redundancy	The ability or possibility of a component or system to maintain or re-establish its function following a failure.
Risk Assessment	A process of assessing risk in any operation
Safety Delegate	Nominated representative for crew or part of crew or group of workers with regard to HS&E matters
Safety Zone	Established within a radius extending to 500 metres beyond the outline of any installation, excluding submarine pipelines.
Shark jaw	Device for connecting or disconnecting chains or wires.
Ship Owner	Those responsible for normal vessel management and operation.
Shipper	A person who, as principal or agent for another, consigns goods for carriage by sea
Socket	Cast anchoring termination on wire
Spooling gear	Arrangement to guide wire onto drum

Stern roller	Large stern roller for guiding chains, wires and anchors
Supply chain	Base or base company – vessel or Ship Owner – installation or operating company
Supply service	Supply and/or receipt of goods to or from offshore installations.
Swivel	Connecting link or device used to allow rotation without creating twists in wires or chain
Tension control	May be set to pull in or pay out at a specified tension
Toolbox Talk	A meeting of the individuals due to be involved in an imminent task to review the task, individual responsibilities, equipment required, competency of the individuals, hazards, any Safe Job Analysis or Risk Assessment and/or Permit to Work in place, simultaneous tasks ongoing which may affect the task and any other relevant subject.
Tow eye/towline guide	Arrangement for keeping towline in centre line or midship area
Towing pins/guide pins	Device for guiding towline or pennant wire.
Towing winch	Similar to a working winch, often geared differently. Newer towing winches have drums smaller than working winches.
Towline	Wire on towing winch used for towing
Transfer basket	Equipment utilised for transferring personnel by crane
Tugger winch	For pulling equipment on deck during anchor handling. Have remote control on newer vessels, or may be controlled from the bridge on some vessels
Tugger wire	Steel or fibre wire used for tugger winch
Weak link	Component designed to sacrificially fail to preserve other components in a system.
Weather criteria	Specification of maximum allowed weather (wind, waves, etc.) when performing the operation
Weather side	Side of installation where the net environmental conditions(combination of Wind ,wave and tidal current) result in a drift on situation
Weather window	Specification of maximum allowed weather (wind, waves, etc.) when performing an operation for a specific time period
Working winch	Winch for hoisting and setting anchors. Power, length, width and diameter set the application area of the working winch
Working wire	Wire in working winch including termination, for example socket

1 Introduction

1.1 Objectives

1. **To ensure and improve the safety of Supply and Rig moving operations** in the North West European Area (NWEA).
2. **To provide guidance on eliminating or reducing hazards or risks** during Supply and Rig moving operations.

1.2 Ownership

1. **Ownership of these Guidelines** belongs jointly and equally to the following organisations:

   Chamber of Shipping

   Danish Shipowners' Association

   Netherlands Oil and Gas Exploration and Production Association

   Norwegian Shipowners' Association

   Norwegian Oil Industry Association (OLF)

   Oil and Gas UK

2. To contact the Working Group On NWEA Guidelines For The Safe Management Of Offshore Supply And Rig Moving Operations please email to

   postmaster@nwea.info

3. These Guidelines reflect and replace the existing guidelines currently in use in the North Sea:

   Guidelines for the Safe Management and Operation of Offshore Support Vessels (North West European Area) Issue 1)

1.3 Document Control, Revisions and Distribution

1. These Guidelines will be reviewed every two years and amended as a result of changes in operating practices, technology, and experience at six monthly intervals.
2. Comments on the Guidelines are welcomed and should either be submitted directly to the NWEA Working Group or via safety officers, safety representatives, industry representative organisations or trade union representatives.
3. Suggestions for areas for future consideration are also welcome.

1.4 Application

1. These Guidelines incorporate best practice and procedures from North Sea operating companies, logistics companies, ship owners, shippers and

lessons from the appropriate safety forums. These Guidelines do not supersede flag and other legal requirements

2. ***They apply to all those involved in interaction between offshore installations, bases and offshore support vessels related to offshore operations in the NWEA.***
3. For the purposes of these Guidelines references to Master or OIM include their nominated representatives, where appropriate.

1.5 Applicable Legislation

1.5.1 Overview

1. In addition to the Guidelines, organisations involved in operating in the NWEA shall adhere to relevant international and national legislation. Additional information can be found at:

NO1 UK1

1.5.2 Regulatory enforcement, best practice and safety

1. All relevant operations in the NWEA will be covered by these guidelines.

Adherence to these guidelines will provide strong indication to national administrations that health and safety legislation is being met and due diligence taken. Use them unless alternative solutions meet or beat these guidelines and meet regulatory requirements.

2. Deviation from NWEA Guidelines or National Addenda should include risk assessment or safe job analysis and be accepted by parties involved.
3. Necessary resources should be provided to relay interim Safety Alerts, or best practice examples promulgated from appropriate safety forums, to relevant base, offshore and ship's staff.
4. All companies involved in relevant operations should audit their adherence to these Guidelines.
5. **Relevant authorities must be advised of accidents and incidents.**

1.5.3 Relationship between offshore and maritime regulations UK1

1. Design, outfitting and operation of offshore support vessels in the NWEA are regulated by both the vessel's flag state, classification society and the requirements laid down in these guidelines.

2. Flag states are responsible for maritime safety control and supervision of vessels, including construction, stability, watertight or weatherproof integrity, navigation safety, safe manning and associated certification.
3. Flag state requirements stem from mandatory international requirements stipulated in the IMO & ILO, supplemented by any national requirements.
4. Operating companies are responsible for safety for their own offshore activities in the NWEA. Anchor handling, loading, offloading to or from installations and similar operations are subject to maritime authorities' regulatory requirements. NO1

2 Responsibilities

2.1 General Responsibilities

1. **The Master, OIM, and Base Manager** to ensure that all staff working for them are aware of the content of these guidelines.
2. **All personnel are responsible** for both their own safety and the safety of those they work with. They must always act to prevent accidents.
3. Personnel must participate in relevant safety and working environment activities.

2.1.1 Management

1. Active involvement of management is key to safe and efficient operations. Management comprises the relevant decision makers in the Operating Company, Logistics Company, Base Company, MOU/MODU owners and Ship Owner.
2. Management must make available necessary resources to ensure safe and efficient operations, including:
   - Facilitating safe working environment and operations
   - Regular visits to workplaces (at least annually) as well as participating in annual conferences on safe and efficient operations
   - Following up to ensure measures adopted from incident and non-conformance reports are implemented, and operate as intended.

2.1.2 Workscope, Responsibilities.

Minimum safety requirements that shall be laid down are as follows:

2.1.2.1 Operating / Logistics Company

1. Clear work specification and scope of service
2. Take into account consequences of simultaneous vessel operations (e.g. tank cleaning v deck cargo work)
3. Identified hazards and acceptance criteria.
4. Notification format for non-conformances, accidents, incidents, etc.
5. Operating company's requirements for competence, training and certificates for the workscope the vessel is to perform.
6. Plan for workscope follow-up.
7. Operational manning (see Section 9.2)
8. Lines of communication

2.1.2.2 Offshore installation. For interaction between installation and vessels:

1. Clear scope of work.
2. Risk Assessment / SJA / toolbox talk of interaction between installation and vessels depending upon complexity of operation to be performed.
3. Technical systems requirements needed to prevent fluid discharges from installation (including cooling water and/or solids) drifting towards vessels working within the safety zone.
4. Mechanisms and persons responsible for notifying or reporting non-conformances etc to operating company and authorities when vessels are within safety zone.
5. Training and competence requirements of personnel responsible for or participating in loading, offloading and other coordinated operations with vessels.
6. Plan for workscope follow-up.
7. Communication between ship and offshore installation

2.1.2.3 Base Companies. Co-ordinated activities between base and vessels:

1. Clear work specification and scope of service.
2. Risk assessment / SJA of interaction between base and vessels.
3. Competence requirements of personnel, who plan, coordinate or perform loading or offloading operations.
4. Mechanism and persons responsible for notifying or reporting to the operating company, authorities, etc. for non-conformances etc.
5. Communication between ship and base

2.2 Individual Responsibilities

2.2.1 Masters of Vessels

1. Are to ensure that all officers and crew onboard are aware of the contents of these guidelines
2. **Master may delegate operational tasks to other competent vessel personnel**:-
3. Are at all times responsible for safety of their crews, vessels and cargo and marine environment protection. The Master must stop operations that threaten the safety of the vessel, crew, or the installation's integrity. Other pressures must not interfere with the Master's professional judgement and he must inform relevant parties of a serious conflict of interest arising from instructions or activities of other parties.

4. Approve loading plans before cargo (both bulk and Deck cargo) is loaded on board the vessel.
5. Review all dangerous goods declarations before any dangerous goods are loaded in port and offshore.
6. Report incidents and non-conformances.
7. Approve seafastening of cargo.
8. Must ensure all applicable field charts and relevant documentation are on board.
9. Before entering the safety zone shall obtain permission from OIM or their authorised representative for maritime operations.
10. When alongside an installation, if extended interruption of operations occurs, shall decide whether to move to a safe position pending resumption. OIM must be informed before moving away.

2.2.2 Installation OIM

1. Is responsible for:

   Installation safety, personnel on board, and any operation within the safety zone affecting installation safety and overviews of simultaneous operations.

   OIM may delegate operational tasks to other competent installation personnel:-
2. Preparation of required documentation before loading is initiated for cargo to be shipped ashore by the vessel
3. Preparation of documentation for transporting of dangerous goods before loading onto vessel.
4. Before any cargo (bulk or deck) is loaded on board the vessel:
   - Submit documentation to the vessel Master.
   - Grant the Master sufficient time to plan loading to ensure that dangerous goods are stowed according to regulatory requirements.
5. Ensures optimal turn-around time for performance of planned operations when vessels enter the safety zone.
6. Must ensure installation operations do not present a hazard to vessels alongside.

   This is especially critical where overside discharges may contact or fall on a vessel working alongside.
7. Approves commencement of an operation and has authority to stop any operation.
8. In case of an incident offshore must inform the relevant operating company and the Master of the vessel involved as soon as possible.
9. Must ensure there is a good level of communication between the vessel and the installation.

2.2.3 Ship Owner

1. Communicate the workscope to vessel
2. Manage vessel operations and manning ensuring:

A vessel is appropriately manned and equipped for the intended workscope.

An overall operational plan is prepared for all anticipated onboard operations and services provided by the vessel.

3. Prepare operational conditions for vessels (define requirements for safe operation of vessels under all conditions, and any vessel limitations due to e.g. lack of technical redundancy, etc .).
4. Ensure near-misses and incidents are recorded, assessed and handled in accordance with an established incident reporting system.
5. Must ensure an up-to-date copy of these Guidelines is kept on board and ensure they and their crew are familiar with the contents.

2.2.4 Supply Base Operators

1. **Load/offload vessels**. Before any cargo is loaded they shall:

Prepare required documentation for cargo to be shipped.

Grant the Master sufficient time to plan the loading operation, to ensure e.g. that dangerous goods are stowed according to regulatory requirements.

Issue required cargo documentation to the Master for all cargo **before** the vessel is loaded.

2. Conduct inspection of all load carriers to ensure they are in proper working order before being lifted on board vessels.
3. Provide responsible person to fill-in Cargo checklist. NL2
4. Are responsible for safety on the base.
5. Must agree procedures to be used between Vessel Master, the Port Authority and/or quay operator.

2.2.5 Operating and/or Logistics Company Manager

1. Performs overall supervision of base, vessel and installation activities.
2. Defines job performance requirements.
3. Ensures that everyone performing work on their behalf complies with requirements of the health, safety and environment regulations.
4. Manages non-conformance resolution.
5. Must ensure time is allowed to perform health and safety requirements including meetings.
6. Provides up to date documentation for the Master and Ship Owner including necessary field charts and other relevant documentation.
7. Ensure the installation keeps an up-to-date copy of these Guidelines on board and ensure all installation staff are familiar with the contents

8. Must not pressurise Masters to take or execute any decision which, in the Master's professional judgement, compromises the safety of the vessel and/or crew.

2.3 Meetings

2.3.1 General

1. Appropriate cross-party cooperation and communication throughout the contract is essential to safe and efficient operations.
2. For rapid resolution of significant issues, direct communication between parties must be established through nominated individuals. The first line of offshore communication is between vessel Master and OIM.
3. Operating companies are responsible for establishing effective cooperation and communication between supply chain parties. All involved must participate and deliver resolutions or recommendations.
4. Master to keep all relevant parties (OIM/Logistics Company/Operating Company) informed of any issues, maintenance requirements or breakdowns which may effect the operation of the vessel.
5. Onshore operations meetings

   Cooperation and communication with affected parties shall be regarded as a precondition for safe and efficient operations. Recommended cooperation and communication structure could be as follows:

Responsible:	Operating company / Logistics Company
Participants may include:	Representatives of: • Vessel; Master, Chief Officer, safety delegate • Ship Owner management • Installation; manager, crane operator, safety delegate • Base; operation manager, shipping manager, vessel coordinator, quay foreman. Operating company management • Logistics Companies
Purpose:	Teambuilding through contact and familiarity with each others' work location and tasks
Relevant topics may include:	• Communication • Experience transfer • Operational and safety issues • Accidents, Incidents or near miss reporting • Deviations from safe efficient operations • Feedback on measures taken following undesired incidents or non-conformances • Improvement projects
Frequency:	Appropriate for the length of the workscope.

3 Operations

3.1 In Port

3.1.1 Information / Planning

1. **The Master should**
   - obtain **weather restrictions** from supply base operator or harbour authority.
   - confirm **berthing arrangements** with the supply base operator and port authority prior to arrival.

2. **Base Operator and Port Authority should**:
   - plan vessel's **port movements** in advance and inform Master prior to arrival.
   - provide **water depth information** in respect of their quays and bases

3 **Port or base operators must** provide linesmen to assist with all berth movements.

Vessel crew members or base personnel must not jump between vessel and quay to moor or unmoor the vessel.

4 **A safe means of access must be provided:**
   - when alongside, **vessel is to provide** safe access to the quay;
   - when alongside another vessel, **outboard vessel is to provide** safe access to inboard vessel.

3.1.2 Shipboard Lifting Operations In Port

1. The Ship owner and vessel's Master are responsible for ensuring adequate procedures are in place to ensure compliance with relevant national or flag and operating company's requirements with regard to lifting operations. [35]

3.2 Voyage Planning

3.2.1 Vessel Routeing

Operating/Logistics Companies, Master and Offshore installation (if necessary) should agree voyage plan before loading commences. This will consist of:

- the sequence of calls at installations
- communication lines and reporting
- advice on ETA/ETD and sailing speed

3.2.2 Weather

1. Operating/Logistics companies shall provide latest weather forecast for intended destinations prior to sailing.
2. In all circumstances, the Master has ultimate responsibility to decide whether to set sail, having discussed the issues with the relevant persons in the operating/logistics company.

3.2.3 Outward Cargo Planning

3.2.3.1 General

1. **Base operator must** provide
   - a copy of the vessel load list
   - a Dangerous Goods list for each installation to be visited.
   - Planned vessel routeing.

   Within sufficient time, prior to loading, to allow proper stowage of cargo and preparation of passage plan prior to departure.
2. **The Master is responsible** for the safe stowage of cargo.

3.2.3.2 Cargo Plan

1. A cargo plan should be produced jointly by the Master and Base operator from the load list.
2. Consideration must be given to backload space requirements. Vessels should arrive at installations with 10% of useable deck space, or one bay equivalent, free for backloading. This may be reduced if all parties involved (Master, installation being visited and other installations on planned route) agree cargo can still be worked safely.
3. Free deck space must be in a single empty block suitable for deck cargo stowage, not made up of walkways or dead spaces.

3.2.4 Deck Cargo Handling & Securing

3.2.4.1 Discharging Deck Cargo

Crew must not release cargo sea fastenings until vessel is alongside, or Master advises it is safe to do so. Check all lifts for loose items before commencing operations.

Vessel's waste cargo carrying units should be checked by vessel's crew prior to discharge to confirm:

- they are correctly covered with appropriate netting or hard cover;
- there are no loose items on top;
- appropriate legislation with regards to waste segregation is complied with. UK5

3.2.4.2 Restraining of Cargo

1. **The Master must ensure cargo is secured in accordance with the vessel's cargo securing manual**.

2. Masters should consider use of pipe stanchions when tubulars are loaded.

3. **Masters on AHTS vessels should take extra care when cargo is to be loaded onto the steel deck, e.g. the use of bedding ropes and or chains should be considered to restrict cargo movement.**

3.2.4.3 Cargo loading – Shippers' responsibilities

1. **Shipper must ensure** cargo complies with relevant guidelines. UK6
2. Containers or portable tanks used for the carriage of dangerous goods must be marked in accordance with the IMDG Code. UK3 UK7

3.2.4.4 Cargo loading – Base operators' responsibilities

1. **Base operators** shall verify weights of cargo during loading operations.
2. Procedures for packing & handling of cargo should follow relevant guidelines. UK6
3. All lifting & hoisting gear and chain gear **must comply** with applicable national rules and regulations
4. Where applicable loading or offloading with **forklifts** is the base company's responsibility, including condition of forklift and forklift operator qualifications.
5. Where loading ramp is used, person responsible for loading shall ensure ramp is correctly positioned and secured before permitting forklift to start loading. The work area shall be secured if practicable with chains or barriers.
6. Gangways shall be outside forklift operations area.

3.2.4.5 Cargo loading – vessel responsibilities

4. When loading cargo a Deck Officer or crew member should be designated to oversee the condition and safe stowage of cargo units they should ensure that cargo is properly slung, all doors, lids etc. are properly secured and open skips are fitted with nets or tarpaulins and refuse to load defective lifts. UK6.

1. To ensure that all Dangerous goods are segregated in accordance with IMDG code. Cargo Segregation Table(F-1) Cargo Segregation Table (F-2)

2. Loading plan **must eliminate** the need for walking or climbing on cargo units when at the installation.
3. Areas on deck not to be used for cargo stowage should be clearly marked.
4. **The Master must refuse** to load cargoes not meeting required standards of stowage, securing, labelling, documentation and packaging.
5. Adequate safe access to the deck cargo working area for deck crew should be maintained.
6. **Entering gaps between cargo units can be extremely dangerous as unsecured cargo may move at any time. Extra care must be taken when cargo is stowed on steel decks.**
7. Multiple stacking of units as one unit is not permitted
8. Tubular cargoes should be stowed in safe bundles or singles as required by their weight.
9. Subject to above, generally stow:
   - heavier or larger lifts towards side rails where they can be secured
   - smaller lifts towards the centre where they are protected and less likely to snag in safe haven access points.

3.2.4.6 Cargo loading – joint responsibilities

1. Time should be allowed to complete cargo deck plans, check against manifest and query any discrepancies prior to departure.

3.2.5 Sailing Instructions & Cargo Documentation

3.2.5.1 Sailing Instructions

1. Sailing instructions are issued by a relevant organisation (usually operating or Logistics Company). Sent to production platforms and drilling contractors as required by operating companies.
2. Sailing instructions and routeing should be issued to the Master in sufficient time to enable a passage plan to be completed.
3. Sailing itinerary is issued to Master in writing before departure and copied to installations. This should include all voyage information including bulks allocated at each location, plus ETD, routeing and Platform data cards.
4. Sailing instructions will be issued in writing and signed for by the Master. Unless advised otherwise, vessels shall proceed at economical speed.
5. Requests to proceed at full or best speed are at Master's discretion.

3.2.5.2 Prior to Departure

1. A copy of G Deck Cargo Plan should be lodged at the base operator's office.

3.2.5.3 Cargo Documentation

1. All cargo must be accompanied by cargo manifest providing:
   - clear identification
   - contents
   - destination
   - weight
   - MSDS(where applicable)
   - COSHH (where applicable)
   - IMDG declaration(where applicable)

3.3 Approaching and at the installation (safety zone)

3.3.1 Pre-Arrival Information & Planning

Safe operating practices can be found in annex C 'Bridge Procedures at Offshore Installations'.

3.3.1.1 Pre-arrival procedure

1. Vessels **to contact** installation as soon as is convenient or at least one hour prior to arrival to agree intended operations. Channels and frequencies are as per H Installation Data Card.
2. If installations require a particular discharge/backload arrangement, **Master and Logistics Company** should be advised **before loading in port, to enable deck loading plan to be arranged to accommodate cargo requirements.**

   Cherry picking is not permitted!

3.3.2 Arrival at the Installation

1. Permission must be sought from the Offshore installation by vessels wishing to enter the safety zone. Permission cannot be granted until both parties have completed checklist.- see Annex D Checklist for OSV & Installation Ops
2. Fishing is not allowed from vessels within the safety zone at any time.

3.3.3 Communication

3.3.3.1 General

See overview - J Communication with vessels

3.3.3.2 Radio communication

1. **Maintain** listening watch on the nominated VHF/UHF Channel and/or mobile phone. *If vessel-installation radio link suffers failure or major interference vessel should stand off until restored.*
2. Confirmation of completion of pre entry checklist and that vessel is ready to enter 500m safety zone must be communicated to Installation and permission to enter received
3. During approach, Installations should keep communications with vessels to a minimum.
4. Before positioning vessel to work cargo, ensure good radio communication between vessel and required installation stations. OIMs and Masters should also have telephone numbers for vessel-installation calls if required.
5. **Adequate communications should be established between the installation, vessel deck crew and the bridge to stop operations in the event of a dangerous situation**. Personnel may use a headset. If so, any headsets worn on deck must be set at a volume which allows other sounds (waves, sea, cargo movements, warnings, etc.) to be heard.
6. The crew shall be able to communicate in the language of either the Continental shelf nation or English. Vessel's crew interacting with base or installation must be able to communicate effectively.
7. **Vessel MF or HF transmission is banned**. If this is necessary, OIMs permission is needed. If refused and the requirement is urgent enough, the Master must leave the zone to transmit.
8. All VHF Radio's should be used on low power.
9. Within 500m safety zone personal mobile phones should not be used whilst on duty on deck or the bridge.

3.3.3.3 Radio Silence

1. All vessels must have specific procedures for radio silence in place. Masters must ensure these, and any additional requirements operating companies may impose, are followed.
2. Immediately prior to imposition, OIM will instruct all vessels to withdraw to and remain outside 1000 meters from the installation, or as

advised, and to maintain listening watch on both VHF channel 16 and other channels designated for working.

3. Any vessel that for any reason does not have exemption and cannot withdraw adequately from the installation must stop all radio, radar, position reference systems and beacon transmissions, shut down all non-essential rotating electrical equipment and stop any hot work. All portable radio handsets, bleepers and mobile phones must be recalled before start of silence and kept non-operational throughout.

4. Prior to the start of radio silence, the vessel's Master must confirm to OIM that all radio silence procedures are being correctly observed.

3.3.4 Vessel Approach and Manoeuvring

3.3.4.1 Approaching the installation

1. Manoeuvre to a safe position, adjacent to the work location, outside the radius of installation's cranes and at least 50 metres off the installation. Set-up vessel on proposed heading, and assess environmental conditions and vessel's motion and behaviour over 10-15 minute period.

2. **When the Master is satisfied** vessel can safely be held in required mode and heading, ease towards the operating position. Speed on final approach should be less than 0.5 knots.

3. **Changing vessel's control mode (e.g. manual to joystick), and manoeuvring position (e.g. forward to aft) poses risks. After changeover, check all manoeuvring systems function properly**.

4. Surface current speed and direction may vary around an installation and differ from local current meter information. The Master must be familiar with local conditions.

5. Before coming alongside a **power assisted** installation or Vessel (e.g. FPSO, Crane Barge, Dive Support Vessel, MOU running thrusters) Masters should ascertain what propulsion units are running and if propulsion settings and heading are liable to alter:

The installation or Vessel should advise the OSV bridge team if it intends to alter propulsion arrangements or settings whilst the OSV is alongside.

Installation movement presents a significant hazard when manoeuvring alongside. Prior to manoeuvring alongside an FPSO, the Master should review I FPSO-Specific Checklist.

3.3.4.2 Manoeuvring alongside

1. **Note**:

Deep water Installations with steep chain catenaries tend to move more laterally than those with shallow catenaries.

Installation thrusters may make movement unnatural or different to vessel.

Thruster wash may affect vessel's manoeuvring.

2. If required to move away **the Master must** establish position at a safe distance.
3. **Moving between work faces** must be properly planned, accounting for prevailing conditions. Maintain safe distance. For position changes move well clear and approach a new work face cleanly including initial setup as per section 3.3.4.1.
4. **Make allowance** for visibility of under deck structure and position and volume of overboard discharges and vents when positioning.
5. **Vessel must** liaise with OIM immediately in event of:
   - equipment failure
   - problem with machinery or control room systems
   - contact being made with the installation structure
6. If required to leave the safety zone re-entry is not allowed until Master and OIM are satisfied action has been taken to prevent recurrence, and vessel is fully operational.

3.3.4.3 Vessel Technical Redundancy.

Vessels scheduled for cargo transfer operations within safety zones surrounding offshore installations shall have a satisfactory redundancy in position keeping ability. The intention is to prevent a single technical failure resulting in a hazardous situation for the installation. Vessels that do not meet the requirements of IMO MCS/Circ.645 Equipment Class 2 should agree operational limitations for weather side (as defined in page 8-1) working with the charterer.

3.3.4.4 Dynamic Positioning (DP)

Guidance on the use of DP can be found in IMO MSC/Circ 645 49 and in the industry guidance 'International guidelines for the safe operation of DP offshore supply vessels at offshore installations' published by IMCA.

3.3.4.5 DP system testing

1. Before entering safety zone, test and prepare DP and backup systems as per vessel's checklist for DP operations.
2. Before moving alongside, ensure DP system has sufficient data. The vessel must be set up at least 75m from installation in Auto mode with all reference systems enabled to allow sufficient time for the model to build up.
3. Norwegian requirements for DP use are at NO4

3.3.4.6 DP reference systems

1. If a reference system develops problems while the vessel is in DP mode, Masters or DP operators shall ensure the vessel maintains position. They may stop operations and move vessel out to a safe position to avoid risk arising to personnel, vessel or installation.
2. **For a dynamically positioned installation, or one anchored to allow limited movement (e.g. tension leg platforms) reference systems may be less reliable. The two units may also move differently due to "surging".** DP system operator must be familiar with these conditions and take the necessary precautions.
3. Installations may need to place reflectors, which require cleaning to ensure effectiveness.

3.3.5 Overboard Discharges

1. The law prohibits discharges that threaten workers' health. All non-essential overboard discharges that may hamper safe vessel operations alongside **must be shut down** before commencing cargo operations.
2. If Masters feel an overboard discharge may cause distress or risk to personnel or vessel, they should **cease operations** after notifying OIM, and to stand off until discharge ceases or conditions keep it clear of vessel. Such discharges should be reported.
3. Offshore facilities should have systems preventing their discharges drifting towards vessels operating within safety zone. Otherwise, they **must have** established procedures preventing vessel exposure during operations within safety zone.

3.3.6 Deck Cargo Operations, Inter-Field Transfers and Cargo Securing

3.3.6.1 Loading and Offloading, General

1. Installations will designate a person responsible for cargo operations.
2. PPE requirements apply as 7.5
3. **Open stern anchor handling vessels** require special care, especially with regards to freeboard. Consideration should be given to the open stern being physically barriered. Use RA or SJA to minimise crew or cargo exposure to elements, particularly working stern-to-weather.

4. **All loads above crane whipline capacity should be regarded as a heavy lift**. (refer to Installation Data Card)
5. All heavy lift operations require a RA or SJA.

3.3.6.2 Crane operations

1. Crane Operators should have adequate radio communication with vessel bridge and deck crew, as per national requirements
2. All crane operations are carried out in joint consultation with Masters, OIM and Crane Operators, any of whom can veto the operation.
3. Use of self-locking safety hooks is mandatory, open hooks should not be used when working vessels unless otherwise agreed between Master and OIM.
4. Crane operators should swing the load away from the vessel deck before lowering or hoisting to reduce risk in event of lift failure.
5. Crane Operators should have clear view of vessel's deck. Where this is impaired, a banksman should be provided; however Masters or OIM may then restrict operations. Vessel deck banksman shall wear distinctive high visibility clothing.
6. Banking hand signals: A diagram of hand signals for crane operations can be found at Annex P Hand Signals For Crane Operations.

3.3.6.3 Offloading

1. **A departure from the agreed sequence of deck cargo discharge should be avoided. The practice of "Cherry picking" is dangerous and must not be undertaken. If cargo has to be discharged out of the agreed sequence then a revised discharge plan is to be agreed with the Master and OIM after a Risk Assessment has been completed.**
2. Visually check all lifts for loose items (tools, debris, etc.) before commencing discharge or loading. If these are seen during lift, advise installation immediately. Note the unit ID number and report the incident.

3.3.6.4 Backload – Installation responsibilities

1. All backloading should be pre-planned to ensure safe operation.
2. OIM must provide load list and dangerous goods list for all installations or ports the vessel is due to visit in time to permit proper stowage for planned route. For backload the OIM is the shipper.
3. A competent person on the installation should inspect all cargo for backloading. This includes: NL2
   - Lifting equipment correctly certificated

- Lifting frames with diesel equipment have empty drip trays (to avoid pollution risk).
- Dangerous cargo labels on empty containers are removed
- Cargo within open-topped or half-height cargo carrying units is secured
- Open topped cargo carrying units (including skips) are covered **Do not overload**, particularly when carrying scrap metal or shot blasting materials. UK4
- Lifts are inspected for potential “dropped objects”

3.3.6.5 Backload – Vessel responsibilities

1. Master and OIM should liaise to ensure correct vessel backloading.
2. Vessel officers in charge of backloading should:
   - Ensure safety of the crew, vessel and cargo, and ensure sufficient area for safety zones and escape routes for those on the cargo deck.
   - Ensure no materials are loaded, especially dangerous goods, before the OIM provides the necessary documentation.
   - Ensure that Dangerous goods are stowed in accordance with segregation tables. (F1) (F2)
   - Always have full sight of all cargo operations and personnel on deck, crane wire and hook.
   - if necessary, refuse open hooks offered to vessels

Crew on deck should not attempt to position suspended lifts. Allow Crane Operator to place lift in position and take weight off the crane wire before approaching it.

3. On receipt of an improperly secured lift, Masters should immediately inform OIM and request lift return to installation for rectification, **unless doing so itself presents a safety hazard**. In the latter case, cargo shall be returned to shore, the incident recorded in the vessel’s log and a report prepared for OIM and operating or Logistics Company as soon as possible.
4. Masters should also notify OIM of any lifting gear deficiencies or cargo carrying unit damage found during backloading.
5. **Lifts without a fifth leg slinging arrangement** may require hooking or unhooking from restricted accesses. Treat as special lifts and perform a RA or SJA.

3.3.6.6 LSA

1. Master must be informed by the installation before commencement of backloading LSA. NL1

3.3.6.7 Inter-field transfers

1. Requests by installations for ad-hoc inter-field cargo transfers should be routed via the operating or logistics company representative.
2. Interfield manifests, including Dangerous Goods declaration, should be correctly prepared by the originating installation and key information given directly to the Master and receiving OIM.

3.3.6.8 Oil contaminated cargoes

1. See Annex A Good practice for the carriage of oil contaminated cargoes for transportation by offshore supply vessel .

3.3.6.9 Cargo securing

1. See general requirements of 3.2.4.2
2. Use pipe stanchions if available to restrain movement of backloaded tubulars.

3.3.7 Personnel transfers

1. If no helicopter transport is available, transport by vessel may be considered. This is voluntary and subject to RA or SJA.
2. Personnel basket may be used provided it:
   - is certified for transfer of personnel
   - is maintained in good condition
   - is inspected frequently for defects and before use
   - has a control line attached.
   - is inspected and load tested at least annually.
3. The crane must be:
   - certified for transfer of personnel
   - fitted with braking mechanism for controlled lowering in case of failure.
4. Basket use is strictly voluntary. Users must wear appropriate PPE determined by RA/SJA. Transfer maximum 4 persons at once.
5. Masters, OIM, Crane Operators and passengers shall all agree to the operation.
6. Basket transfers should only take place in sufficient light preferably in daylight and when Crane Operator can see vessel's deck.
7. During the transfer, the person in charge, Crane Operator and vessel Master must be in radio contact.
8. While transferring personnel from installation to vessel, the basket must:
   - be lifted just above installation railing
   - swung out over the water

- lowered alongside the vessel just above the railing
- swung over the vessel and lowered onto it.

Transfer of persons from vessel to installation is the reverse sequence.

9. Appropriate rescue vessel or craft must be prepared for immediate launch before using the personnel basket.

10. Vessel Masters must pay special attention to weather conditions, sea state, movement and condition of vessel, and available free deck space to ensure transfer takes place in a safe controllable manner.

11. Vessel Masters must also ensure:

No passengers are on cargo deck during loading or discharging cargo;

A competent crew member is in charge on cargo deck during personnel transfer who shall instruct passengers and Crane Operator.

3.3.8 Departure from Installation

1. The Master should manoeuvre the vessel to a safe distance from installation before changing over controls.
2. If proceeding inbound provide the following details to the Operating or Logistics Company's nominated representative:
   - ETA;
   - heavy, non-conforming or wide loads and their position on the vessel;
   - tank status, contents remaining on board and any backloaded bulks;
   - dangerous cargo;
   - specific information requested by Operating Company or Logistics Companies (see L Example Operating Company Data Card).
3. In addition, vessels should comply with the specific requirements detailed in the destination port data card (see M Example Port Data Card.)
4. Master should co-ordinate the best time for arrival with base operators in order to minimise port movements.
5. If proceeding to another location contact the installation giving the following information:
   - ETA;
   - inform the location of heavy or non-conforming lifts;
   - confirm bulk discharge plan if applicable.

3.4 *Vertical Seismic Profiling (VSP)*

1. In the absence of cross-industry standards for VSP, shipowners should follow their own internal procedures ensuring that all involved (including

operating company, Master, OIM and VSP service provider) should co-operate in a risk assessment. This should consider as a minimum:

- joint review of procedures affected by the VSP survey;
- safe deployment of the VSP array from the vessel;
- briefing of personnel including “tool box talks”;
- weather limitations on VSP operations, including limitations imposed by weather side working.

2. If vessel is to carry a mobile crane for performing a VSP survey, positioning and securing must be in accordance with relevant national legislation [38].

3. Vessel stability must be verified under all conditions in which the crane is used.

4 Bulk Cargo Operations

4.1 General Requirements

Bulk cargo transfer is potentially hazardous and must be done in a controlled manner.

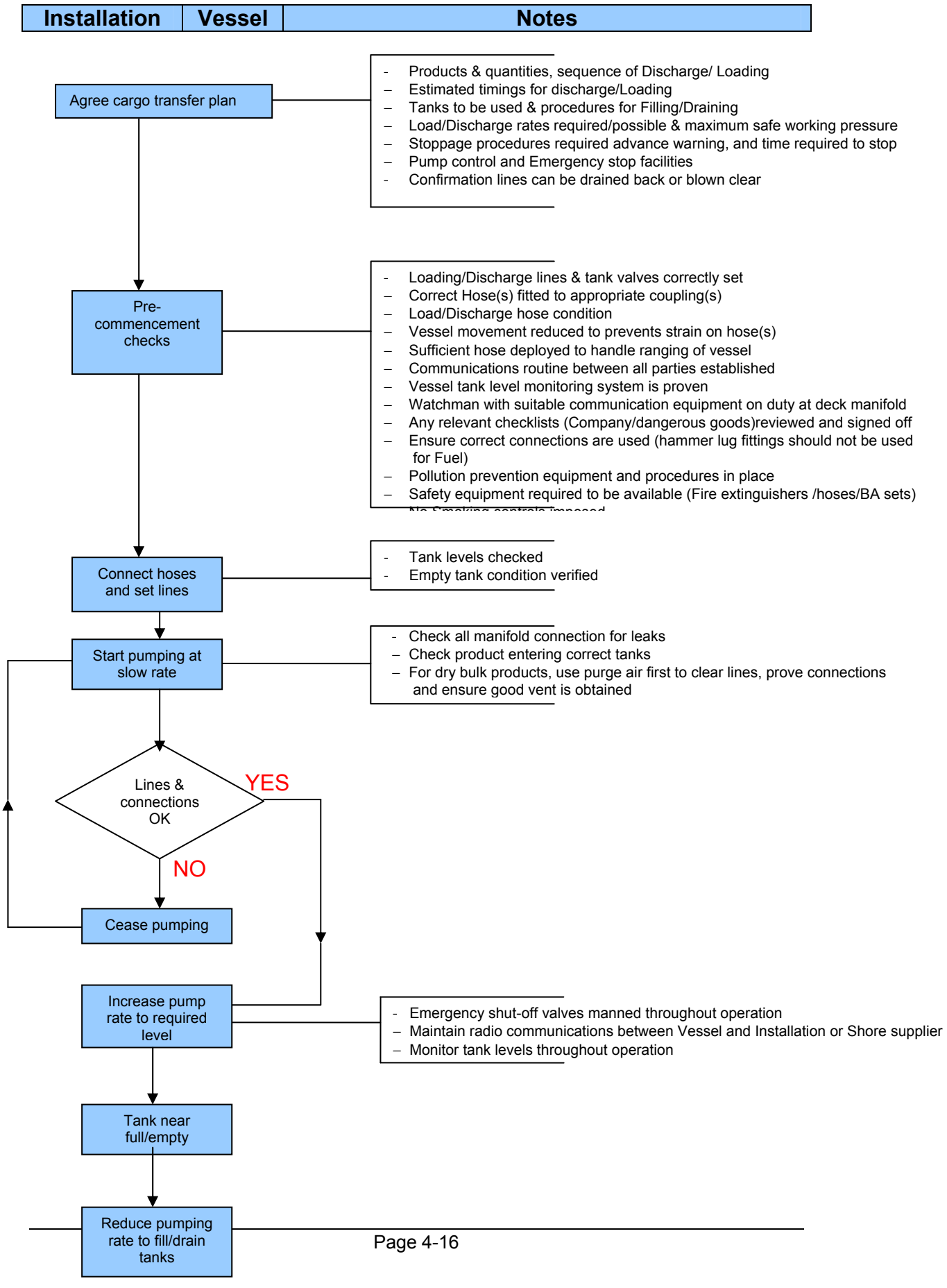
Hoses should be of sufficient length and slung in such a way to enable the hose to be landed onto the deck and crane pendant wire slackened before the deck crew secure the hose and disconnect crane pennant. Deck crews should not stand under the suspended hose/crane wire.

During bulk cargo operations observe the following:

- communication between vessel, base, installation or roadside tanker of pressure rating, to avoid overpressure.
- if at any point **vessel Master, shipper or OIM** have any **doubt** about the operation it must be terminated
- **INLS Regulation / IBC code requirements shall be followed as applicable. Masters must be given** a completed Dangerous Goods Declaration and MSDS prior to loading or backloading of dangerous goods.
- If backloading contaminated bulks a current analysis sheet is mandatory prior to approval of backload.
- **the Master or delegated Officer must ensure** they can see bulk hose(s) at all times and not be distracted away from these. The Master must pay particular attention during hydrocarbons transfers and therefore give proper consideration to potential hazards when carrying out concurrent cargo operations.
- hoses must remain afloat at all times through use of sufficient flotation devices. (Hoses and Connections – Guidance Notes) annex K
- during hours of darkness, hose and support vessel **must be adequately lit** throughout the operation. Consideration should be given to use of retro-reflective material on the hoses.
- **shipper and receiver should confirm** quantities discharged and received at regular intervals to ensure there are no leaks
- **crane driver and deck crew must** be readily available and nearby throughout transfer operations
- **each party shall give** sufficient warning prior to changing over tanks
- **do not close** valves against a cargo pump
- **do not use** compressed air to clear fuel lines or lines for low flash point liquid cargoes..
- **do not transfer any** other liquids using potable water hoses.
- **pre-use, flush** potable water lines through to clear any residues.
- **consider use** of self-sealing weak link couplings in the hose string.

- **avoid use** of heavy sections of reducers or connections at hose ends.

4.2 Bulk Transfer Operations



4.3 Hazard Overview

1. Bulk materials other than potable water can be extremely hazardous. The most common groups are all types of oil-based muds, water based muds, base oils and brine. **MSDS must be provided and consulted prior to loading / backloading.**

4.4 Bulk Transfers of Particular Concern

1. **Special care must be taken** to follow correct procedures or marine operations instructions when loading and discharging; methanol, zinc bromide or other low flashpoint cargo. See also 27. These must include RA and Permit to Work.
2. An accredited MARPOL Surveyor 26 should be in attendance where possible at the unloading of all MARPOL Annex II Category X substances and when unloading of Category Y and Z substances cannot be carried out in accordance with the ship's P&A manual.
3. All Drilling fluids (Mud's/Brines) permitted to be carried in bulk are to be included on the vessels INLS certification. These cargoes are to be loaded and discharged in accordance with the ships P&A manual.

Operating company and base operator responsibilities:

- **nominate berth** after liaising with harbour authority, fire brigade and harbour police or security;
- **ensure** sufficient cooling or drenching water is available;
- **cordon-off** area, with signs posted to indicate a hazardous area;

Vessel Master's responsibilities:

- **should complete** a ship to shore safety check with shipper;
- **must authorise** loading;
- **must ensure** a permit to work is in place before any loading/discharging operations can be conducted;
- **must ensure** vessel's restricted zone is **clear,** fire hoses are **rigged** and SMPEP equipment are ready for action before commencing loading.

Logistics or Base Company responsibilities

- shipper's **staff to be on site** throughout to advise on pumping, handling, earthing and discharge of tanks.
- shipper **to provide** appropriate fire fighting equipment.

During bulk methanol transfer, smoking and the use of ignition sources are prohibited. During electrical storms (lightning) operations should be terminated.

4. **Zinc Bromide** is a highly corrosive brine subject to "Control of Pollution by Noxious Liquid Substances in Bulk" regulations [14].

Due to the brine's very corrosive nature, protection against injury from spillage is essential. Additionally:

General responsibilities

- **check** loading/discharge hose for damage before use. Hose should have self sealing coupling to minimise spillage during connection or disconnection;
- **provide and ensure the wearing of** chemical suits for all personnel handling hoses.

Vessel responsibilities:

- **Possess** International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk (INLS) and P&A manual detailing legal and safety requirements for handling the product.
- **perform** RA or SJA before commencing operations;

Tanks for Zinc Bromide

- **only use** the tanks specifically detailed for this in the vessels INLS certificate
- tanks **cannot carry** any other product until properly cleaned and all washings disposed of as per regulations. ***If this has not been done, any cargo accidentally loaded is to be treated as special waste***;
- tanks for Zinc Bromide **must be drained** as far as possible before washing. If cargo pump cannot remove all the liquid, consider use of portable pumps to remove as much as possible;
- tank washings are special waste. Cleaning or washings discharge **must be monitored** by an approved Surveyor.

4.5 Vessel responsibilities at the installation

1. Before offloading bulk cargo confirm the following with installation:
   - volume and weight of bulk to be offloaded
   - hoses and connections, colour codes and dimensions
   - rigged hose lengths are adequate
   - procedures for venting and blowing through hoses
   - installation is ready to receive cargo; all valves and vents are open and correct tanks lined up
   - emergency shutdown procedures should be in place and crew familiar with these.
2. Ensure that:

- all pollution prevention equipment is in place, as per SMPEP;
- all manifold valves are in good condition;
- the person in charge should not be distracted from the operation.
- installation under-deck lighting is adequate;
- dry bulk vent line positions are identified.
- Master shall submit to the: operating company's logistic office
- all receipts, including meter-slips, for cargoes received;
- all meter-slips for cargoes discharged;
- records of tanks' contents.

4.6 Installation responsibilities

Ensure that:

- hoses are visually inspected, prior to use and replaced as required;
- slings and lifting points are visually checked and replaced as required;
- hoses are lifted by a certified wire strop on a certified hook eye fitting;
- under-deck lighting adequately illuminates hose and vessel.

OIMs are responsible for ensuring installation bulk loading hoses, manifolds and pipelines are fit for purpose and the correct hoses, of adequate length and with appropriate flotation collars (if required), are sent to the vessel (for details on flotation collars see Annex K Hoses and Connections – Guidance Notes)

4.7 Fuel

1. Samples are to be taken during loading of Fuel as outlined in Marpol Annex VI.
2. When discharging Fuel to offshore installations sampling from ships manifolds is not a practical option. It is therefore an acceptable practice for these samples to be taken on the installation.
3. Ships must have procedures covering the loading, discharging and transferring of fuel.
4. On some smaller installations fuel hoses have been removed. Transportable 2" fuel hoses with TODO to dry break couplings are used for these, stored in toolboxes at bases. Load this toolbox + hose when fuelling installations.

4.8 Potable Water Cargo

Specific National requirements apply:

see NL3 UK8

4.9 Hose marking and usage

Hoses and hose terminations should be product-identified via high visibility bands, tape or other means. Colour coding, sizes and couplings are detailed

in K Hoses and Connections – Guidance Notes for details of a recommended NW European standard.

Note: Manufacturers' identification or approval of hoses is often by spiral coloured bands. **Do not confuse** this with product colour markings.

5 Contractor Management

5.1.1 Project (3rd Party) Mobilisation & De-Mobilisation

5.1.1.1 General

1. **Mobilisation**: the installation of extra equipment to Operating Company's requirements by 3rd party contractors using ship's services as necessary.
   Demobilisation: the removal of extra equipment after work completed.
2. This also applies to management of routine work by 3rd party contractors, e.g. tank cleaning, repairs, and modifications. These can be complex or hazardous and performed by personnel unfamiliar with vessel.
3. Master must (2.2.1) **forbid or stop** any operation it is felt may affect the safety of vessel or personnel.
4. A single Safety Management System (SMS) must be in place; this will be the vessel's SMS, modified or adapted to suit work in hand.

5.1.1.2 Prior to Mobilisation or Demobilisation

1. Ensure a suitable berth is chosen for the work.
2. Operating Company must ensure clear procedures are provided to all involved responsible persons. These must as a minimum:

- include plan and schedule of activities
- include for RA or SJA and Hazard Identification of activities
- identify Project Manager to liaise with Master on mobilisation matters.
- provide for continuity of personnel and effective information handover
- include for provision of 3rd party liaison

3. All involved must receive clear instructions including:

- reporting of Accidents, Near Misses and Unsafe Practices
- explanation of safety initiatives (e.g. Time out for Safety (TOFS), STOP, Tool Box talks etc.
- identification of Ship's Safety Officer
- identification of ship's officer responsible for issuing of Permits to Work
- action to take on hearing ship's Fire and General Alarms
- escape routes and Muster Points
- ship's Smoking and Alcohol policy
- Raising safety concerns regarding the work

4. Meetings of key personnel should be held, preferably daily, to discuss progress, management of plan changes, problems and rescheduling.

5. Responsible ship's officer **must confirm** adequacy, isolation and safety before newly installed equipment is connected.

5.1.2 Tank Entry/Cleaning

1. **Tank cleaning operations are potentially hazardous, mainly due to the frequency of Enclosed Spaces Entry required, and associated hazards within. Careful planning must take place and tank entry/ cleaning operations only carried out when necessary and safe.** 3534

An enclosed space is considered to be any area with limited access which is, or can be, isolated from the surrounding atmosphere for any period of time. Enclosed spaces can include but are NOT limited to: cargo tanks, double bottoms, fuel tanks, ballast tanks, coffer dams, void spaces, inter-barrier spaces, chain lockers, and sewage tanks.

5.1.2.1 Preparation

1. The Base Operator and/or Operating Company is responsible for providing approved tank cleaning contractors.
2. Shipboard Tank Cleaning Operations shall be carried out and controlled by the Master using a single Permit to Work issued by the vessel. The permit shall:

- be signed by the Master or designated responsible person and tank cleaning contractors' supervisor;
- be in line with vessel's operating procedures;
- be accompanied by a Tank Cleaning Checklist (example given at annex E) and Risk Assessment;
- detail pre-entry tank atmospheric readings and record readings throughout tank entry;
- detail required precautions and risk reduction measures including an assessment of how the safety of personnel in tanks is to be monitored;
- detail safety equipment and protective clothing;
- detail machinery/appliance isolation and lock out requirements;
- detail rescue equipment and suitably trained personnel required in the event of an emergency.

3. The Base Operator shall have procedures detailing the method of product recovery, and the contingencies in place should an unplanned event occur such as a hydrocarbon discharge or major spillage
4. Personnel involved in tank cleaning must wear the appropriate PPE as identified in the risk assessment, COSHH or equivalent assessment,

Material Safety Data Sheets (MSDS) and in accordance with Tank Cleaning Checklist (annex E)

5. The following must be in place before commencing operations:

- Emergency response procedures and rescue equipment, as per Permit to Work
- Appropriately trained personnel to assist with rescue if necessary
- Risk assessments for the planned operation conducted by the tank cleaning contractor in association with vessel personnel.
- Material Safety Data Sheets (MSDS) and the analysis sheet provided in annex A for previous cargoes carried since last cleaning operations. This is to be made available to the tank-cleaning contractor by the vessel Master.
- Effective and tested communications system set up between all personnel, vessel tank cleaning, and shore.
- Area around tank entrances is as clear as possible. Unrestricted, safe access to and from entrances is provided.
- Tank entrances open for access are effectively cordoned off with physical barriers to prevent unauthorised access. Appropriate hazard signs are prominently displayed in the immediate vicinity and quayside. Tanks opened for ventilation are fitted with secure open grating.
- For quayside equipment controls to be in place to prevent unauthorised entry.
- Appliances in tanks to be entered are mechanically and/or electrically isolated / locked off by use of tag out system or similar. Status noted on permit to work.
- Where tank access is via engine room, a specific risk assessment should be conducted to take account of the hazards associated with running machinery, ignition sources, and routeing of hoses (N.B. Only continuous hoses should be used in machinery spaces) etc. All non-vital machinery should be switched off and isolated. The outcome of the risk assessment and the actions required to mitigate the risks should be covered on the Permit to Work and highlighted at the Toolbox Talk.
- All actual/potential worksite ignition sources are isolated, particularly in the vicinity of tanks and hoses containing recovered product.
- Tanks to be cleaned are isolated from any tanks that still contain bulk liquids.
- Tank atmosphere is tested for oxygen content and free from toxic and/or explosive gases by competent vessel and tank cleaning contractor personnel or chemist with properly calibrated equipment. The result of the atmosphere test should be recorded on the permit or other agreed document.
- Tanks are adequately illuminated by intrinsically safe lighting.

6. A Toolbox Talk must be conducted in association with all relevant parties. As a minimum the Toolbox Talk must:

- Highlight conditions of Permit to Work

- Review the control measures and requirements of the Tank Cleaning Checklist
- Highlight actions required to minimize risks identified on Risk Assessment
- Identify all applicable hazards
- Highlight any other permits in place that could impact on operation i.e. conflicting activities
- Identify ongoing quayside and shipboard operations
- Identify location of permit to work on board vessel
- Designate duties of all personnel
- Be recorded and signed by all parties present
- Promote 'Stop the Job'/'halting unsafe operations' culture
- Highlight all emergency actions and exits routes on the vessel

7. Under MARPOL, some substances mentioned on a vessel's Noxious Liquid Substances certificate require approved surveyors in attendance during tank cleaning, e.g. zinc bromide, methanol.

5.1.2.2 Tank Cleaning Operations

1. Although the tank cleaning operation is conducted by a contractor under control of the contractor's supervisor the safety of the operation remains the responsibility of the Master. The operation should be continuously monitored by a designated responsible vessel person who should stop any operation that he considers unsafe.
2. The tank-cleaning contractor must station a standby person at each tank as per assessment in 5.1.2.1. The stand by person should be competent and trained to take the necessary action in the event of an emergency. Communication system between all personnel within tank and at access must be agreed and tested.
3. Personnel working in the tank shall wear the appropriate PPE as identified in the risk assessment, COSHH or equivalent assessment and MSDS.
4. Regular tank atmosphere testing by competent personnel from both the vessel and tank-cleaning contractor must be conducted throughout the tank entry at the frequency identified at toolbox talk and/or Risk Assessment. The results of the atmosphere testing should be recorded on the permit or other agreed document.
5. Effective means of ship/ship and ship/shore communication shall be established and maintained throughout the tank cleaning operation.
6. Where simultaneous tank cleaning and other operations i.e. cargo operations, are undertaken then suitable safety precautions must be in place. Interfaces between vessel's officers, tank cleaning and quay supervisors must be kept open and active during the tank cleaning operation.

7. Hand over between shifts of vessel's and tank-cleaning personnel must be carefully controlled to ensure continuity. Consideration must be given to holding a further tool box talk.

5.1.2.3 Completion of Tank Cleaning

1. On completion of tank cleaning operation the Master must carry out an inspection together with the tank cleaning contractor supervisor to ensure that the tanks have been properly cleaned and lines and pumps are thoroughly flushed. If these parties disagree an independent surveyor will carry out an inspection.
2. The tank inspection should confirm that the tanks have been cleaned to the following appropriate standard:

Brine Standard
Cargo lines and pumps are flushed through with clean water and lines drained. Tank bottoms and internal structure (stringers, frames, etc.) are clear of mud solids, semi-solids and all evidence of previous cargo. The tank may require cleaning with detergent to achieve the highest standard of cleanliness possible. All traces of water and detergent removed from tank.

Water Based Mud Standard
Cargo lines and pumps are flushed through with clean water and lines drained. Tank bottoms and internal structure (stringers, frames, etc.) are clear of mud solids, semi-solids and all evidence of previous cargo. The tank may require cleaning with detergent to achieve the highest standard of cleanliness possible. All traces of water and detergent removed from tank.

Oil Based Mud Standard
Tank bottoms and internal structure (stringers, frames, etc.) are clear of mud solids and semi-solids. Cargo lines are flushed through with clean water and lines drained. Pump suctions are checked and clean. Tank must be empty and clear of all water / mud mixtures.

Pump out Standard
Pump out residues from tank and wipe tank floor using rubber mops or equivalent. Check suction pipes to ensure they are clear. No requirement for washing.

Dry Bulk Tanks

Tanks to be brushed down and residues removed by vacuum tanker, eductor system or equivalent. Slides to be checked for dryness and condition and 'elephant foot' suction checked to be clear.

3. On successful completion of the tank inspection, the Master should:

- Ensure that a Clean Tank Certificate has been issued by Operating Company/Independent surveyor when hazardous material has been cleaned.

- Visually check the integrity of tank coating
- Record tank status in the deck log book
- Confirm the tank hatch covers are replaced and secured
- Ensure the work area has been left in a safe and tidy condition
- Close Permit to Work/Tank Entry Permit.

6 Rig Moving

6.1 Agreed Procedures and Responsibilities

1. **Rig Moving operations and towing are potentially hazardous. Installation personnel should appreciate vessels' operational limitations, including power and freeboard. Safety of vessel and crew is paramount.**
2. **The guidance in this section applies equally to all types of MOUs.**
3. **To avoid any conflict of interest the Tow Masters and Operators Marine representatives should be sourced from independent contractors.**

6.1.1 Responsibilities of the Operating Company

The operating company is responsible for obtaining the information needed to anchor a MOU in a field. The operating company shall:

- Obtain an overview of infrastructure on the seabed ,sea bottom conditions and any obstructions Provide charts with positions both hard copies and electronic versions.
- The operator shall specify minimum horizontal and vertical distances to infrastructure and pipelines on the seabed for anchors and anchor lines.
- Is responsible for ensuring adequate planning (including contingencies)and risk assessment of the entire anchor handling and towing operation
- Provide weather, wave and tidal stream data.
- Organise rig move meeting well in advance (two weeks) of the start-up Written procedures for MOU move should be agreed upon with all relevant parties. These should identify key roles and responsibilities
- Obtain or determine who is to obtain vessels and mobilise according to plans
- the rig move plan(including maximum calculated loads) is to be issued to enable nominated ship owners to confirm that a suitable vessel has been selected
- To provide Vessel owner and vessels, details of maximum calculated loads for the operation.
- Organise inspection of selected vessels to verify suitability (eg.MSF AHTS Safety inspection Checklist)
- The operating company should when possible make all the vessels available for a common briefing in port prior to mobilization. This briefing should be attended by Master\mates and deck crew of vessels along with rig representatives.
- Obtain positioning equipment and positioning personnel
- Determine logistics needs (deck cargo, bulk)

- Inform vessel and MOU about the status of the operation at all times
- Any proposed crew changes during period to be conducted to allow sufficient time for a briefing on work scope and experience transfer to be completed
- After completion of MOU move Data cards and information charts to be updated

6.1.2 Responsibilities of the MOU Owner

The owner of the MOU shall:

- Prepare a work specification or "Rig Move Plan" that covers the entire anchor handling or towing operation. The work specification shall be in English unless otherwise agreed.
  Depending on local requirements rig move procedures may be prepared by the Operator.
- Supervise the operation in the field
- Communicate any changes of the work specification to all the parties involved
- Ensure that the RMP has been reviewed and is understood by vessels and key personnel that participate in the operation, and verify that Risk Analysis and Safe Job Analysis have been performed
- Ensure that satisfactory anchoring/mooring analyses have been prepared in compliance with national /industry requirements where relevant.
- Notify authorities of MOU departure and arrival in accordance with local requirements.
- Ensure all anchor handling equipment used and permanent equipment is certified
- Obtain necessary anchoring equipment in accordance with the anchor handling work specification,
- Ensure MOU is adequately manned by competent personnel taking into account hours of rest requirements and the scope of work. Obtain extra personnel as required to cover 24/7 operation.
- Identify potential backload prior to MOU move.

6.1.3 Responsibilities of the OIM :

- The OIM has overall responsibility for the safety of the installation and personnel at all times as per statutory requirements and MOU owners' policy. However he may delegate some of the rig move operational tasks to a suitably qualified person such as the Towmaster who should also consult with vessel Masters in the process.
- Provide information of the last updated Rig move plan
- Decides when it is safe and practicable to commence operations within the limitations of the MOU operating manual, having consulted with the Operators representative.

- Responsible for ensuring that a meeting is held with all relevant personnel (including AHTS Masters) on board prior to rig move and minuted accordingly, with an appropriate entry in the log book to that effect.
- Having procedures in place to monitor vessels operation, Provide status of the operation and weather report
- Ensure fully functional communication between all involved parties
- Sole point of contact through which all rig move notifications and exterior communications will pass. Ensures that all relevant authorities are kept informed of the rig move status, as required
- Liaises and communicates with the Operating Company representative on all matters concerned with the rig move operation and any deviation from the proposed rig move procedures.

6.1.4 Responsibilities of the Ship Owner

Shipowners are responsible for ensuring vessels and equipment used in all operations are:

- in operational order and complies with relevant legislation.
- To confirm that the vessel is suitable for the scope of work supplied
- adequately manned by competent personnel taking into account hours of rest requirements and scope of work including possibility of 24/7 working.
- Any proposed crew changes during period to be relayed to operator and any changes must be conducted to allow sufficient time for a briefing on work scope and experience transfer to be completed.
- Ensure that the vessel is able to calculate and monitor stability information for all stages of the received rig move plan.

It is recommended that all Ship owners provide each AHTS with a ship specific anchor handling manual. 11

Shipowners should complete the MSF Template of data to verify the details above when requested by charterer. 9

6.1.5 Responsibilities of the A/H vessel Master

The Master of the AHTS is responsible for:

- Ensuring that the manning on board is sufficient based on working hour provisions, anchoring description and that the crew is rested
- Ensuring that all AH equipment is in good condition and certificated and meets the work specification
- Reporting of any defects or non conformities to the anchor/mooring equipment found during the operation.
- Ensuring that a Risk Analysis has been performed in accordance with the specific work scope,
- Ensure that RMP is communicated to all crew members involved in operation.

- The stability of the ship must be calculated for each step in the work scope including expected dynamic loads
- Safety of crew and equipment on board the A/H or towing vessel at all times. The Master shall stop operations that may put vessel or crew at risk.
- Having sufficient bunkers for the planned operation
- Lead towing vessel Master is responsible for navigation of the towing operation, compliance with prepared plans, shall issue appropriate navigational warnings at regular intervals and ensure other towing vessels follow the stipulated plans.

6.2 Rig move meeting

- The operating company should arrange a rig move meeting, preferably a minimum of two weeks before the operation starts. The Rig Move Plan should be distributed to participants in sufficient time for review prior to the meeting.

The following are the recommended participants of the rig move meeting:

- OIM/ Towmaster (preferably the ones on board during the operation) and Representative from MOU owner operations department (and MOU Safety Delegate in Norway)
- Onshore and/or Offshore drilling supervisor for operating company
- Onshore logistics representative from operating company
- Person responsible for navigation company/contractor
- Marine Representative for operating company
- Representative from owner/operator of pipeline/other installation if relevant.
- Additional specialist personnel as required.

The rig move meeting shall have the following agenda (as a minimum):

- Review of R/A and HAZOP for anchor handling operation and transfer of experience
- Weather limitations and definition of operational criteria
- Charts
- ROV inspection requirements
- Anchoring/mooring analysis, anchor pattern and work specification (RMP) including maximum calculated loads and dynamic tensions.
- Pre-installation of anchors
- Vessel requirements; manning, quantity and technical specifications
- Drawings and sketches of anchoring equipment in the sea
- Manning on MOU
- Safe job input for vessels and MOU
- Schedules and drilling operation
- Contingency plans
- Equipment lists for AH equipment (including weights and COG)for the individual vessels
- Sea bottom conditions

- Communication lines (VHF channels, telephone nos.).

6.3 Rig move plan

A work specification shall be prepared that provides the necessary background information on the rig move operation and describes the operation at the required level of detail. The purpose of the work specification is as follows:

- Ensure a safe operation for personnel and the environment
- Provide common guidelines for standardising the relocation of the MOU and anchor handling
- Anchoring/mooring analysis, anchor pattern and work specification (RMP) including maximum calculated loads and dynamic tensions.
- Identify and set trigger points which determine operation start /stop or R/A
- Provide an brief outline of the topics to be covered
- Must outline framework conditions, use images and diagrams where possible.
- Is intended for use during the planning, execution, verification and demobilisation during relocation of the AHTS/MOU
- Shall be in English, unless otherwise agreed.

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A management of change process should be agreed with all parties involved. Any deviation from the work specification shall only be permitted in accordance with this agreed management of change.

6.4 Equipment

6.4.1 General

1. To maintain vessel's and MOU's safe working environment the following should be in place:
   - all equipment operation and maintenance should be according to manufacturer's instructions;
   - a maintenance system for AH equipment retained on board
   - cutting gear available
   - a safe and effective method of stoppering wire pennants, recognising likely loads on the wire and the load-bearing capacity of wire termination employed. *Note: soft eye pennants wear more quickly than hard eye pennants and require frequent inspection*.
   - Alloy ferrule terminations should not be used.

- monitoring, with regular inspection and maintenance, of roller fairleads on vessels' deck or crash barrier to ensure that uplift by e.g. a tugger wire will not dislodge them
- suitable lifesaving appliances must be available and immediately accessible

2. Secure all AH equipment until required; see Deck_Cargo_Handling 3.2.4.2

Care must be taken when opening wire coils, in particular pendant wires. Turntables should be used (if available) as coils springing open following release of securing bands may cause injury

6.4.2 Anchor / Mooring Equipment

1. An example of recommended good practice for the following systems can be found in Annex N:

Permanent Chaser Pendant (PCP)

Pendant Buoy System

Vessel Working Wire Chaser Termination On Vessel

Piggy Back Systems

Due consideration should be given to the anchor manufacturers guidelines.

6.5 *The Rig Moving Operation*

Must be according to the rig move plan,

6.5.1 Risk Assessment

1. MOU and all vessels involved shall perform SJA before operation starts, in conjunction with the R/A

2. **If an operation has changed from the original plan for which the RA was performed, personnel must review the new hazards and risks of the changed operation as part of the management of change process.**
This requires a **time-out** and review with personnel involved, performed at the workplace.

6.5.2 Reporting

Where required the MOU Owner, in cooperation with vessels and Marine Representative or Towmaster, should report to the appropriate National Authorities as per the national requirements

6.5.3 Anchor securing on deck

1. When running or recovering anchors over subsea obstructions, anchors must be decked and double secured or disconnected to prevent the anchor dropping uncontrollably off the stern.

6.5.4 Bollard Pull

1. **Maximum Bollard pull utilised should not exceed the minimum breaking load of the MOU's towing arrangement**. Use vessel's tension gauge to monitor.

Reference should be made to the vessel's bollard pull reduction curves.

6.6 The Towing Operation

6.6.1 Operation Planning

1. See 6.1 for responsibilities.
2. The passage plan must be carefully developed with regard to water depth, other offshore and subsea installations, and emergency position.
3. Close attention should be paid to the length and catenary of the tow wire and its relation to the water depth and weather conditions.
4. Route must keep safe distance from any other installations. Pass on the side that best assures tow will drift away from the installation in case of black-out or towline failure.
5. **The passage plan shall not use installations as way points**. Vessels apparently on collision course may result in installation crew having to go to muster stations.
6. Obtain regular weather reports.
7. Specify communication lines: see 3.3.3.2
8. Assess what support vessels are required. Support vessels' tasks include, but are not limited to:
   - Monitoring and plotting ship traffic along the towing route.
   - Intercepting vessels that approach tow too closely.
   - Checking emergency anchoring/jacking location is clear and unobstructed before MOU arrival.
   - Functioning as back-up towing vessel, especially in winter months.

9. Identify the MOU's secondary emergency towing system, establish a readily available retrieval method for main towing gear, and agree a safe procedure for passing the secondary towing system in all weather conditions.
10. Ensure MOU personnel are aware of the time that may be required to rig spare towing wire. If an additional vessel is available as reserve towing vessel on passage, this should be rigged for towing.

6.6.2 General Towing Rules

1. **Pay close attention to:**
   - towline, particularly prevention of any chafing or friction. Either use fibre protection, or regularly adjust wire length.
   - towing speed and heading. Make changes very slowly and in a controlled way.
   - heaving in or paying out towline. When doing so, reduce engine thrust correspondingly to avoid damage to towline.
2. If towing MOU on anchor chains a good catenary is ensured if MOU pays out an agreed length of anchor chain.
3. Towing vessels should issue regular navigational warnings.
4. During towing, any other deck work should be risk assessed.
5. In adverse weather the Master to consider if a gog wire may be used to control the towline.
6. Towing in adverse weather, dynamic forces are significant. Exercise great caution, particularly when waves come in astern.

6.6.3 Pendant Return to MOU

1. Returning a chasing pendant to a MOU after chasing collar has been stripped back will normally cause a snatch load on the MOU crane. To avoid this, crane fall must be vertically above vessel's stern roller when the chasing pendant is released.
2. To achieve this safely and without endangering vessel personnel:

see procedure in annex N-7

6.7 Anchor Handling Operations (300m +)

1. **Anchor handling operations in deeper water carry significant additional hazards and these may be location specific**. Prior to commencing deep water A/H operations, consider the following in addition to normal anchor handling operations:

- Suitability of vessel for location specific operations taking into account environmental and other variables
- to minimise damage to work wire from joining shackles use longer continuous lengths of work wire;
- all wires to be spooled under tension;
- use work wire swivels to avoid twisting damage from the inherent high loads of deep water A/H - de-tension after use.
- use chain connecting links in the shark jaws.
- buoys should be launched under controlled tension to avoid shock load damage;
- method of deploying chain from a locker. Modern vessels can ensure approximately 75% cable-gypsy engagement and adequate power availability. On other vessels, lead chain from the gypsy as normal, then pass it down the deck around one or more towing pins to give a lead back up the deck to the opposite gypsy. Then pass chain under and over gypsy to lead back down the deck and over the stern roller. This method provides a length of chain on deck that relieves tension on the first gypsy and eliminates risk of the chain jumping under tension.

7 Risk Management

7.1 Overview

1. Good risk management is a key component to successful safety management. All parties involved in an operation have a duty to ensure it is carried out properly. The key components are: risk assessment, safe-job analysis and Permit to Work (PTW).

   If the risks or hazards cannot be controlled the job should not be carried out.

2. Management of change is an important tool in preventing incidents and near misses. In the event an operation changes whilst it is ongoing consideration must be given to stopping it and reviewing the appropriateness of the RA or SJA.

7.2 Risk Assessment & Safe Job Analysis (RA & SJA)

1. The objective of RA and SJA is to eliminate or minimise to a controllable level hazards and risks.
2. In some sectors of the NWEA the RA for a limited operation is known as a SJA. SJA may replace a comprehensive RA where, for instance, there are no existing procedures that describe how the task is to be handled with defined safety precautions, or if someone on board has uncovered a hazard or potential hazard during the operation, or where there is no procedure describing how to tackle a task with defined safety precautions.
3. Each party involved in an operation must have in place a procedure for carrying out RAs. Personnel must receive appropriate RA training.

   Ship owners, operating companies, logistics companies and base companies are responsible for ensuring: they have appropriate RA procedures in place, RAs are carried out with respect to operations within their organisations, there is good liaison between relevant parties where required and where necessary be involved in the RA process.

   OIMs are responsible for ensuring that RAs are carried out for operations onboard their installation and liaising with vessels over RAs involving vessels.

   Masters are responsible for ensuring that RAs are carried out for operations onboard their vessel and liaising with installations and bases over RAs involving installations and bases.

   Base managers are responsible for ensuring that RAs are carried out for operations on their bases and liaising with vessels over RAs involving vessels.
4. The relevance of a PTW must be considered during the RA or SJA process.

7.3 Permit to Work (PTW)

1. PTWs are required in the NWEA for installation or base in accordance with their safety management systems and for vessels, in accordance with the ISM code.

Permits should be used for, (but not limited to), these tasks:-.

- Enclosed space entry
- Working aloft or overside
- Electrical isolation
- Hot work

Examples of PTW can be found in COSWP. 34

A vessel's permit to work system must be used for 3rd party work on board.

2 In port, **the base operator and port authority may need to authorise** in advance work taking place on board that requires a PTW under the vessel, base or port safety management system and will ensure that a permit to work is issued and closed out when necessary.

The Master must ensure that the base operator or port authority is advised once the PTW is completed.

3 **The Master must also ensure** that:

- A toolbox talk is held, attended by appropriate personnel, prior to any work being carried out on board requiring a PTW and recorded.
- all conditions applicable to an issued PTW are monitored and adhered to. All enclosed entry work must be carried out under permit, safety precautions and procedures for such work can be found in COSWP 34

  All HOT WORK must be carried out under a PTW. Due to the hazardous nature of HOT WORK, particular care must be taken. If relevant, base and port regulations are to be taken into account.

7.4 Toolbox Talks

1. Prior to the task being carried out crew members should carry out a toolbox talk. This should include (but not limited to):
   - Individual roles
   - Tools, methods and procedures to be used
   - Review of RA or SJA and PTW

7.5 Personal Protective Equipment (PPE)

1. **All personnel must use PPE** as directed by Owner or Operator. and may include:-
   - Hi Vis Boiler suits
   - Certified hard hats
   - Eye protection
   - Hearing Protection
   - Safety gloves (Hand Protection)
   - Safety boots
   - Hi Vis Rainwear as needed
2. It is the individual's responsibility to:
   - **Use** PPE according to manufacturers guidelines
   - **Look after** PPE properly
   - Get PPE **checked, maintained or replaced** as appropriate
3. Where personnel's duties change, e.g Handling Chemicals their PPE requirements must be reviewed and PPE updated as necessary.

7.6 Accident, Incident, Near Miss, Non-conformance Reporting

1. **All near misses, accidents and incidents are to be reported**. **Certain accidents or incidents must be reported under statutory legislation.**
2. The objective of reporting is to establish whether further investigation should take place to determine immediate and root causes of the occurrence.
3. Investigations should seek to identify and implement actions to prevent recurrence. Findings should be communicated to the parties involved and industry.
4. All vessel accidents or incidents within the safety zone **shall be reported** as soon as possible to the OIM and operating company, in addition to statutory requirements.
5. All accidents or incidents on board a vessel outside the safety zone shall be reported in accordance with applicable regulations, Owner's and Operating/Logistics company procedures, and statutory requirements.
6. **All polluting incidents must be reported to appropriate regulatory bodies as per national requirements.**

7.7 Vessel Operational Limits

1. **Operating companies must be informed** of any vessel operational limitations.

2. **The Master is responsible** for continuously evaluating safety of any ongoing operation. The Master shall at all times operate the vessel within safe operational limits and if necessary stop the operation in good time (2.2.1) advising the OIM immediately.

Additional precautions should be taken during adverse weather conditions.

8 Collision Risk Avoidance

8.1 Collision Risk Avoidance

8.1.1 Overview

1. 98% of collisions with installations involve visiting vessels. This section addresses safe conduct of vessel operation in the vicinity of installations. 43
2. To reduce the risk whenever vessel is alongside or near installation:
   - minimise number and duration of visits
   - avoid working weather side where possible.
   - do not undertake any operation without risk assessment
3. Vessel Master or officers must never be pressured to carry out operations where safety of vessel, installation or personnel is prejudiced.
4. Vessels **should have** adequate contingency plans for potential problems near offshore installations, particularly various mechanical or control systems failure modes. These should be regularly exercised.
5. **Key points for consideration in voyage planning** are:
   - obtain confirmation of installation readiness for operations prior to vessel approach and set-up to minimise time alongside
   - perform risk assessment against 8.1.2.2
   - communicate with installation and confirm agreement to commence operations. Vessel Master or OIM or Crane Operator have right of veto during operations.
   - Vessel Master, Crane Operator and OIM **continually review** conditions and actual operation as an ongoing risk assessment.

8.1.2 Adverse Weather Working

8.1.2.1 Working Parameters

1. When alongside, prevailing and forecast weather conditions should be continually compared to Adverse Weather Working Guidelines 8.1.3. UK2
2. If weather requires change of position or heading, promptly inform installation. If it becomes difficult to maintain position or see installation, inform installation and move vessel away.

3. Consider vessel motion in deteriorating weather. Safety of crew on deck is paramount; prevention of damage to cargo and vessel is important. Consider also the risk of lifts becoming snagged under the cargo rail.
4. If necessary, advise Crane Operator of safe cargo landing position. Should conditions become unsafe for operations, inform installation and move away and wait until sea state and vessel motion improves.
5. Weather criteria must be discussed and agreed before starting heavy lift operations, and may cause other operations to be suspended. Use of tag lines for heavy or large lifts is subject to the Master's agreement and risk assessment.
6. OIM and Masters must allow time for vessels to seek shelter in event of adverse forecast.

8.1.2.2 Weather Side Working – Risk Assessment

1. It is preferable for an OSV to work on the lee side (opposite side to the weather side) of any installation when working cargo. A decision to work weather side should only be taken after RA and in consultation with the installation.
2. Weather side should be considered as that side at which the net environmental forces (see definition) will cause the vessel to move toward the installation.
3. When planning weather-side operations the vessel must analyse impact of failure in propulsion, manoeuvring or positioning systems within the safety zone. Situations that may lead to vessel starting to drift shall be identified and operational limitations defined in the operations manual. The Ship Owner shall inform operating /Logistics Company of such limitations.
4. When working weather side, Masters must use their judgement, experience and knowledge of the vessel, plus any specific weather policy of the operating/Logistics Company or installation, to set their own weather limits; i.e. they must perform risk assessment before agreeing to come alongside.
5. Risk assessment should include:
   - Master's and relevant officers' experience;
   - weather and sea state;
   - adverse weather-induced fatigue;
   - anticipated tidal effect;
   - forecast weather and impact on wind speed, direction or sea state;
   - vessel's power management configuration, and station keeping ability in event of loss of one main propulsion unit;
   - peak loads on position-keeping power generation capacity;
   - impact on vessel of deck cargo layout and cargo to be discharged and associated hazards to deck crew;

- free surface effect of slack tanks;
- position or reach of installation crane(s), hose lengths, platform lighting
- time vessel is expected to remain alongside;
- continuous hours worked previously by Master and crew.

6. Masters have final decision on whether to work weather side.

8.1.2.3 Weather Side Working – Practice

1. All requirements of 3.3.4.1 apply. If vessel power requirement to maintain station exceeds 45 % of main propulsion or any thrusters, including shaft alternator power, the Master must cease operations. This critical limit also applies to diesel electric propelled vessels.

8.1.3 Adverse Weather Working Guidelines

Leeside Working

Trigger	Precaution
Wind Unfavourable Wind Direction	No installation overboard venting or discharges whilst working supply vessels, unless previously agreed with vessel Master.
20 kts mean wind speed at 10m level	Secure loose items and advise greater caution to prevent injury to personnel and damage to equipment.
20 - 25 knots Mean Wind Speed at 10m level	OIM, Crane Operator and Master should evaluate the weather conditions and forecast. If necessary, a risk assessment should be carried out before commencing / continuing the operation. Consider vessel motion and potential cargo damage when reviewing prevailing weather conditions and immediate forecast.
25-40 knots mean wind speed at 10m level	Any operations in this range must only be carried out with full agreement of OIM, Crane Operator and Master. Weather conditions should be continuously monitored. NO7.
Sea State 3m - 4m Significant Wave Height	OIM, Crane Operator and Master should assess the situation on positioning and cargo handling before arrival within safety zone. Account for vessel motion, any awkward lifts, potential cargo damage due to heave and potential effects of sea on hose work.
Tidal Streams Strong Currents or Tides	Consider delaying discharging until slack tides if vessel cannot hold station satisfactorily (propeller and/or thruster utilisation below 50%) against tide
Visibility Poor visibility	Cease cargo operations if crane operator is unable to see vessel deck crew clearly.
Visibility <250m	Remain outside safety zone of installation to avoid collision with installation or other vessels. Maintain radar watch.
Vessel and Equipment Vessel rolling heavily	Master may cease operations at lower wave heights than those above if rolling starts to affect station keeping or crew safety.
Vessel moving violently	If vessel motion adversely affects vessel's station-keeping equipment Master will cease operations and clear installation.
Forecast for vessel's specific criteria to be exceeded	Consider making for sheltered waters or port to avoid risk to personnel or equipment or cargo.
Hose Operations	**Continue hose operations at Master's discretion. If station keeping requires in excess of 45% of propeller and/or thruster utilisation consider ceasing hose operations.**

Weather Side Working

20 - 25 knots Mean Wind Speed at 10m level Above 25 knots at 10m level	Secure loose items and advise greater caution to prevent injury to personnel and damage to equipment. Operations cease. When on Norwegian Continental Shelf see **NO8**.
Sea State 3m - 4m Significant Wave Height Above 4m	OIM, Crane Operator and Master should assess the situation on positioning and cargo handling before arrival within safety zone. Account for vessel motion, any awkward lifts, potential cargo damage due to heave and potential effects of sea on hose work. Operations cease. When on Norwegian Continental Shelf see **NO8**.
Tidal Streams Strong Currents or Tides	Consider delaying discharging until slack tides if vessel cannot hold station satisfactorily (propeller and/or thruster utilisation below 50%) against tide
Visibility Poor visibility Visibility <250m	Cease cargo operations if crane operator is unable to see vessel deck crew clearly. Remain outside safety zone of installation to avoid collision with installation or other vessels. Maintain radar watch.
Vessel and Equipment Vessel rolling heavily Vessel moving violently Forecast for vessel's specific criteria to be exceeded	Master may cease operations at lower wave heights than those above if rolling starts to affect station keeping or crew safety. If vessel motion adversely affects vessel's station-keeping equipment Master will cease operations and clear installation. Consider making for sheltered waters or port to avoid risk to personnel or equipment or cargo.
Thruster and propeller Utilisation	**If vessel thruster or propeller use exceeds 45% of propeller and/or thruster utilisation Master will cease operations**.

9 Training , Competency & Manning.

When considering standards of training and competency, it should be recognised that appropriate simulator training is a valuable tool in attaining and maintaining relevant competencies.

Recommended competencies for all roles are detailed below.

9.1.1 Role Specific Requirements

1. A matrix of role specific competency requirements for Norwegian operations is appended. NO5

9.1.2 Trainee Personnel

1. Trainee personnel should always be accompanied by suitably experienced qualified personnel.

9.1.3 Regional emergency preparedness

1. Special qualification requirements may apply in areas with regional emergency preparedness. These requirements must be contractually defined, and Ship Owners must ensure that crews always meet them.

9.1.4. Anchor handling

1. Due to the nature of A/H operations participating personnel must additionally be familiar with all aspects of such operations as follows:
2. **Masters**:

Require relevant expertise and be experienced on the vessel class or design he is aboard. Masters with no previous A/H experience should perform at least 5 rig moves accompanied by an A/H experienced Master, or a suitable combination of rig moves and simulator training, before they may command an A/H assignment. Ship Owner shall document Master's compliance with this. A/H experience gained in a chief officer role is acceptable.

Masters having previous A/H experience as Master or chief officer, but where this is more than 5 years ago, should have an overlap period of at least 14 days with an A/H experienced Master. At least one A/H operation must be performed during this period.

3. Tow Masters

Actively participated in the execution of at least five rig move operations on a similar MOU type or a suitable combination of rig moves and simulator training. (This should be documented.)

Extensive knowledge of all relevant rules and regulations.

Extensive knowledge of the Rig move plan.

English language capabilities

Participated in the execution of, at least three rig move operations onboard an anchor handling vessel, or previous experience as AHTS Master or relevant marine experience.

4. **Officers**:

Officers require relevant expertise. They shall be familiar with A/H operational guidelines on safety, and with safe use and limitations of equipment.

Chief Officers or officers in charge of the watch should have previous A/H operations experience of at least 5 rig moves or a suitable combination of rig moves and simulator training. Ship Owner shall document the officer's compliance with this requirement.

If supervising A/H work on deck, the officer must have A/H experience and be competent in A/H procedures and guidelines, A/H equipment set-up and function, and be familiar with associated hazards and risks.

Officers working on the bridge during A/H and have tasks that may affect the safety of those working on deck shall be familiar with A/H deck work operations and the associated hazards and risks.

5. **Winch operators**:

Must be competent in the winch operation and safety systems, functions and limitations. Vessel and MOU Owners shall be able to demonstrate necessary training has been given to Winch Operators. A certificate should be issued

6. **Vessel Deck crew**:

Personnel assigned independent work on deck during A/H operations shall be familiar with guidelines and procedures for this, and A/H safety. They should also be familiar with the use of UHF/VHF radio. Able-bodied seamen with no previous A/H experience must be trained in guidelines, procedures and safe equipment use before assignment to independent A/H work on deck. Document training

7. Operating Company personnel:

Company Marine Representative

- Actively participated in the execution of at least five rig move operations on a similar MOU type or a suitable combination of rig moves and simulator training. This should be documented.
- Extensive knowledge of all relevant rules and regulations,
- Extensive knowledge of the rig move plan.
- English language capabilities
- Knowledge of Operators internal reporting routines and operating procedures.

- Participated in the execution of at least three rig move operations onboard an anchor handling vessel or previous experience as AHTS Master or relevant marine experience.

Any Additional Personnel, such as those listed below, should have relevant experience in role:-

Positioning quality controller /Survey Rep.

Positioning Engineer

Mooring Engineer

Marine Equipment Supplier Rep.

8 **Crane operators** (In addition to Industry certification)

Should have:-

- Experience with crane operation from participation in at least 3 rig moves.
- English language capabilities.
- Knowledge of the Rig move plan for the operation

9.1.5 DP competence requirements:

1. If DP operations are to be carried out within safety zone Masters and mates on board DP-equipped vessels shall possess necessary competence, experience and certificates for the vessel's certified equipment class, as specified by its class notation. At all times at least one DP operator on the bridge shall have deck officer certificate of competence.

2. If a non-DP-certificated person is to operate the DP system they should be supervised by a competent DP operator. They should have completed the basic introduction course in system functions and DP system use at an approved training centre.

9.1.6 Non (Class I and II) DP systems (Enhanced Joystick)

1. Ship owners must provide training giving Deck Officers good working systems knowledge, as a minimum covering:
   - procedures for system operation, especially approaching and setting-up on location.
   - description of the manoeuvring systems (propulsion, joystick and reference systems).
   - engaging or disengaging enhanced joystick facility

- selecting appropriate settings for joystick and reference input according to the conditions
- recovery in event of failure
- limitations of the facility (a capability footprint is a useful aid).

2. Records of training should be maintained.

9.2 Manning

9.2.1 General

1. The operating company must describe the framework and work scope for the service. Vessel manning is determined from this.
2. Sailing periods for vessel crew members shall be agreed between shipping organisations and crew's organisations.
3. Crew size must meet flag state's safety manning regulations. Ship Owner shall also ensure manning levels comply with the requirements of the sovereign state of the continental shelf (coastal state) for rest and working hours throughout the assignment.
4. Vessels must be manned sufficiently to meet manning and rest requirements to ensure 24 hour operation, where necessary
5. Engine room to be manned at all times when vessel is operating inside 500m safety zone
6. Possession and use of alcohol and drugs on board OSVs is strictly prohibited.

9.2.2 Supply vessels within the Safety Zone

1. Crew size should always enable two people to be on the bridge during loading or offloading operations within safety zone. One must be an experienced ship handler and the other a bridge watch duty-certified crew member. This must not lead to working hour regulations being exceeded.
2. A Cadet with a watchkeeping certificate may replace the number 2 person on bridge watch duty.
3. There should be at least 2 qualified seamen on deck during loading or offloading operations within safety zone.

9.2.3 Anchor handling vessels

1. Two Deck officers, one of whom is the Master or Chief Officer, shall be on the bridge throughout anchor handling operations or any other operation within safety zone. There must be at least two qualified seamen on deck or in immediate vicinity.

10 Emergencies

10.1 Installation Emergency

1. Any emergency will be handled in accordance with the Emergency Preparedness Procedures.

1. When installation emergency alarms sound OIM will issue instructions to all vessels:

2. On hearing the alarm the Master shall contact the installation and await instructions. If connected by hoses, cease pumping and await instructions.

3. All Work Permits are automatically withdrawn.

10.2 Port Emergency

1. Shipowner and vessel's Master are responsible for ensuring provision of adequate internal emergency procedure covering their own vessel as well as ensuring sufficient familiarization with relevant procedures from Port Authority and base company in this respect.

10.3 Operators Co-operative Emergency Service

1. In their respective sectors of the NWEA the operating companies have formed National Associations to represent their member companies and promote co-operation. The Associations are:
   - Oil & Gas UK
   - Norwegian Oil Industry Association (OLF)
   - North Sea Operators Committee Denmark (NSOC-D)
   - Netherlands Oil and Gas Exploration and Production Association (NOGEPA)
   - Irish Offshore Operators Association (IOOA)
   - Wirtschaftverband Erdoel- und Erdgasgewinnung eV (WEG-Germany)

2. In its 1979 Joint Declaration, the Offshore Petroleum Industry agreed to provide mutual aid in an emergency situation, irrespective of national boundaries, within the scope of a "Code of Practice" issued by each National Association and ratified by its member companies. The Declaration and national Codes of Practice applied to both production and exploration or appraisal activities, and committed each member to:

Provide each installation with the capability to deal with an emergency

Upon request, provide mutual aid to another operator in an emergency, provided their own operational safety is not at risk

Release resources (e.g. vessels, aircraft etc.) to assist

Co-operate in establishing and maintaining arrangements to provide mutual aid promptly.

3. The Emergency Assistance Code, agreed by the national associations, sets out the principles and arrangements between members for provision and receipt of aid in an emergency.
4. The code is secondary to the statutory rights and duties of operating companies, OIMs, Masters of vessels or others.
5. The code encourages operating companies to contractually provide for the necessary commercial arrangements to facilitate provision of assistance to another operator by a contacted unit. It does not replace such contractual arrangements between a member and its provider.
6. The code is embodied in six points:

Joint declaration of the national associations regarding the provision of mutual assistance

Distress call situation

Emergency situation

Provision for the giving and receiving of assistance in emergency situations

Confidentiality

Definitions

10.4 Search & Rescue

In case of an emergency within the NWEA, the Coastguard or the Radio Station appointed as RCC (Rescue Coordination Centre) will co-ordinate all Search and Rescue activities. If requested by the Coastguard or RCC or as demanded by statutory obligation, Masters of OSVs will offer their assistance in rescue attempts.

11 Security

11.1 In Port

1. The vessel is to be manned, and watches set, with sufficient staff able to cope with all likely situations. Unless specific permission has been granted, the Master should ensure that his vessel is kept in a state of readiness to be able to sail within one hour of notification or as required by the Port Authority or Operating Company.
2. ISPS-compliance to be maintained at all times.

11.2 At the Installation

1. The owner and vessel's Master are responsible for internal procedures with regard to the safety of their own vessel and crew, as well operating in accordance with current ISPS code requirements if required by installation, vessel or state in whose territorial waters the installation is situated. Operating Company and OIM on offshore installations are responsible for providing any common area procedure for operations within safety zone.

11.3 Ship – Ship Interface

1. The Shipowner and vessel's Master are responsible for adequate procedures to ensure compliance with ISPS code requirements, flag or coastal state interpretations and any national and flag and operating company's area requirements in this respect.

A Good practice for the carriage of oil contaminated cargoes for transportation by offshore supply vessel

1.0 OBJECTIVE

To provide specific advice for the safe transportation, offshore handling, tank cleaning, onshore handling and onshore disposal or treatment of wet bulk back loads contaminated during drilling and other operations. This guidance is aimed at offshore installations, Offshore Supply Vessels and appropriate onshore staff (e.g. Surveyors, Tank Cleaners, Base Operators, and Waste Processors). **In particular, analytical tests should be carried out and made available to the Ship's Master prior to back loading, confirming that Flash point exceeds 60°C and that there is no trace of Hydrogen Sulphide in the product mass.**

2.0 BACKGROUND

Industry, in conjunction with the Chamber of Shipping and the Marine Safety Forum has produced this Good Practice document to assist operators in better describing the wet bulk back load cargoes they wish to transfer to shore for processing, using the bulk mud tanks on Offshore Supply Vessels (OSVs).

In the course of well operations, water based fluids such as seawater, brine or water based mud may become contaminated, commonly with oil based mud or base oil from oil based mud, (herein after called wet bulk waste) which cannot be legally discharged to the marine environment. These contaminated fluids are returned to shore for treatment or disposal.

Operations giving rise to such fluids include:

- Well bore cleanup operations where oil base mud is displaced from the wellbore to seawater or completion brine.
- Operations where water base mud becomes contaminated with oil base mud during displacements.
- Cementing operations with associated spacers.
- Pit cleaning operations.
- Drilling operations where wellbore fluids are contaminated with oil based mud, crude oil, or condensate.
- Other tank cleaning operations where fluid chemical components cannot be discharged because of the Offshore Chemical Regulations.
- Rig floor drains where the fluid is oil contaminated.
- Any of the above fluids may also be contaminated with hydrogen sulphide (H_2S), typically from sulphate reducing bacteria (SRB) activity

When fluids are severely contaminated and of small volume, then general industry practice is to transport to shore in Tote tanks or similar type carrying units. For fluids that are “lightly” contaminated, general industry practice has been to back load to the mud tanks on the OSVs. It is this latter practice in particular that has raised grave concerns for the following reasons.

a) It is difficult to accurately describe the chemical make up of the fluid and hence provide a Material Safety Data Sheet (MSDS) sheet that adequately describes the material.
b) Gas testing on OSVs returning to shore with this cargo has found on a significant number of occasions, high levels of H_2S in the atmosphere above the cargo. Lower

Explosive Limit (LEL) tests also revealed an explosive atmosphere in excess of that which the OSV has the capability to safely transport.

c) **The mud tanks on the OSVs are not designed or classified to contain and transport wet bulk cargo with a flash point of less than 60°C. The pump rooms and pumping systems for the discharge of the product tanks are not intrinsically safe. This classification is only found onboard specialist type OSVs.**

The reason for the very high LEL % values that have been recorded is contamination with crude oil and condensate. The bulk mud tanks on OSVs are not designed for this purpose and under **NO CIRCUMSTANCES** should fluids contaminated with the mentioned products be back loaded to an OSV's mud tanks.

Recognising the relatively complex nature of the cargo, this **Good Practice** document has addressed the issue by recognising that a series of tests should be undertaken on the material intended for back load to provide an indicative view of the constituent make up and reactive qualities of the material. It must be recognised that because of the segregation issues described in section 3.0 below, these tests can only be indicative.

The tests can be performed either on the rig or onshore. The rate at which these fluids are generated during certain operations on the rig may preclude sending samples to shore for testing necessitating rig based testing. In either case, the results of the tests must be made available to the Master of the OSV prior to the back loading hose connection taking place. Once tests have been carried out no more fluid should be added to the intended cargo on the offshore installation. If any further additions are made a further test will be required.

The results of these tests will allow the Master, through confirmation with the attached checklist, to establish if the back load is acceptable for carriage onboard the OSV. Acceptance is based on the reported analytical information and the measured physical properties, the known nature of the chemical make up and the previous cargo carried in the OSV's tanks. A generic risk assessment will be available onboard the OSV and updated when new, improved or different information and circumstances become apparent. Offshore installation staff should be aware that in certain circumstances the Master of the OSV may require advice from the OSV's onshore technical advisors and that a response from onshore may take time to progress. **If there is any doubt regarding results repeat the tests and review.**

The back load hose should not be sent to the OSV and connected up unless there is agreement between the OSV Master and the Installation OIM that the back load is acceptable for transportation.

3.0 COMPOSITION OF THE WET BULK WASTE

The final wet bulk waste may contain components and formulated mixtures including:

- Water (both seawater and potable water)
- Oil base mud
- Base oil
- Water base mud
- Well bore cleanup detergents
- Completion brine (including corrosion inhibitors, biocide etc)
- Cement spacers
- Rig wash
- Brines containing various salts.

The major component is normally seawater. The proportions of the other constituents are variable. The wet bulk waste is likely to be heterogeneous in that oil mud will separate to the bottom, base oil to the top, with seawater in between. OSV motion will not normally be sufficient to mix and stabilise the cargo to a homogeneous form.

The components and formulated mixtures may arise from different wellbore operations. The volumes of each component are normally known, although the degree of volumetric accuracy is variable depending on how and where this material is stored on the rig prior to back loading to the OSV.

During discharge to onshore storage tanks and road tankers the make up of the initial discharge may be different in composition to that discharged later due to separation of components during transportation. This may result in higher concentrations of an individual component being transported in road tankers.

Example

Oil based mud or contaminated wet bulk waste containing:

Seawater	75% (volumes)
Mineral oil base mud	10%
Cement spacer with surfactants	10%
Base oil	5%

The above mixture will separate, leaving the base oil on the surface, the seawater below this and the mineral oil mud on the bottom. The cement spacer will mix with the seawater although the surfactants will also mix with base oil and oil mud.

During transfer operations from the OSV to road tankers the initial fluid comprises the heavy oil mud, followed by the lighter seawater and finally the base oil. In the event of a hose rupture or spillage, all component fluids should be treated as oil contaminated and should be contained, preventing discharge to the sea.

4.0 TESTING PRIOR TO BACK LOAD

A wet bulk waste may contain a significant number of chemicals for which Material Safety Data Sheets (MSDS) are available offshore. It is not practicable, however, to develop a description of the wet bulk waste from such an array of documents. Although MSDS will be available for formulated mixtures, there may still be uncertainty in describing the properties of the wet bulk waste. As a precaution the following tests should be carried out, prior to back loading, in order to assist confirmation of the potential hazards:

- pH — Numerical range 0 - 14
- Chlorides — mg/l
- Retort — Oil content volume %; Water content volume %; Solids content volume %
- Flash point (closed cup) °C
- Noxious gases — LEL Explosive gases, H_2S, Oxygen
- Bulk density — Specific gravity

As described in section 2.0, tests may be carried out offshore on the installation by trained personnel or samples sent onshore for analysis by the Waste Processor or other competent laboratory

The analysis should be carried out in a timely fashion on representative samples of each wet bulk waste intended for back loading to an OSV. If back loading is delayed for any reason, such as bad weather, it should be noted on the Appendix II analysis form. If there is any doubt regarding results repeat the tests and review.

Results of the tests should be entered on the Appendix II analysis form and attached to the appropriate Waste Consignment Note e.g. SEPA C note.

5.0 KEY TEST RESULTS RANKED

Test	Indicator	Range of results	Interpretation.
Flash point	Potential for explosion	> 60°C	Should be > 60° C to back load,. If the flash point is low (<70° C) then an explanation should be provided.
LEL	Potential for explosion	Ideally zero. Meter alarm typically set to 10 - 20% LEL	Consistent with Flash point above - for transport only. If measurable LEL, repeat test and review explanation.
H_2S	Poisonous gas	Ideally zero	Indication of bacterial activity
pH	Measure of acidity or alkalinity	4 - 11	COSHH Personnel Protection Equipment and personnel exposure
Oil % volume	The major component requiring back load	Agrees with components in Appendix II	Confirm retort agrees with Appendix II and Waste consignment note
Solids % content	Potential need for tank cleaning	Agrees with components in Appendix II	Confirm retort agrees with Appendix II components and Waste consignment note. Tank residue could form a source of SRB and H_2S over time.

More detailed Procedures are provided in Appendix I (attached). Test results should be consistent with the information on the Appendix II analysis form.

6.0 FURTHER TESTING ON THE OFFSHORE OSV

There is no onus on the OSV to carry out further tests. Tank hatches cannot be removed offshore because of safety.

Tests on board OSV at the time of back loading are only possible if sampling ports are available. Consideration should be given to installing suitable sampling ports onboard OSV's to allow the use of the LEL/ H_2S meter. (Usually this can be dropped from the vent system using the extended sniffer hose). If testing has not been carried out the waste processor handling the back load in harbour should be advised and the material condition should be deemed fit for transportation onshore prior to that occurring.

Loading on top of product already in ships tanks should be avoided, however when the back load is to a dirty tank (containing material from a previous oil contaminated back load for example) the previous documentation should be reviewed. The potential for biological activity resulting in H_2S in the dead volume and sludge must be determined. Should the overall pH be reduced through mixing of the fluids H_2S breakout could occur.

Back loads should be discharged from the OSV as soon as possible. The need to clean the tanks should be reviewed on each trip to minimise the risk of biological activity and H_2S build up from any solid residue.

7.0 TESTING IN THE HARBOUR PRIOR TO OFFLOAD

A gas test for LEL and H_2S must always be performed on the OSV tanks containing the back loaded material prior to offloading in port as a matter of standard procedure.

Waste Processors should also check Appendix II analysis form parameters onshore. Prior to discharge, the ullage air space in the tank will be sampled by the Waste Processor, preferably in conjunction with the Surveyor, for LEL and H2S, to confirm that no change of condition has occurred. Undertaking these tests will confirm that the properties of the wet bulk waste are properly described in shipping documentation. In the event that there is a significant divergence between offshore analysis and onshore analysis, the Waste Processor should raise a non-conformance. If there is any doubt regarding results repeat the tests and review. The Offshore Operator, the Offshore location, the Ship's Master, Base Operator, Surveyor, and Tank Cleaners should be advised accordingly.

Note.
If the wet bulk waste is back loaded into tanks already containing oil based mud residues as can be the case, then the onshore test results will be different to those measured on the rig.

Test results should be also be provided to tank cleaning companies in the event tank cleaning is required.

8.0 DOCUMENTION AND REPORTING REQUIREMENTS

Material Safety Data Sheets (MSDS) documentation of the components and mixtures must be made available to the OSV Master. IMDG manuals are carried on the OSV for all types of chemical materials shipped.

A Waste consignment note EA or SEPA C is normally generated to accompany the wet bulk waste being back loaded. This should reference the attached Appendix II analysis form.

The completed Appendix II analysis form is reviewed by the Installation OIM to confirm the back load is safe to transfer.

The Waste Consignment note and Appendix II analysis form is to be made available to the Ship's Master prior to back load operations for review and comment.

Once it is agreed to back load, a copy is forwarded to the Waste Processor onshore by the offshore Installation.

A dangerous goods certificate must be provided by the Offshore Installation based on the requirements of the individual component MSDS.

The Waste Processor checks the samples drawn onshore, comparing the analytical results to those obtained from the per back load offshore samples. In the event of a discrepancy the Waste Processor advises the Operator, Offshore location and OSV Master.

Test results should be also be provided to tank cleaning companies in the event tank cleaning is required

Whilst every effort has been made to ensure the accuracy of the information contained in this document and Appendices, neither, the Chamber of Shipping nor the Marine Safety Forum nor any of their member companies will assume liability for any use made thereof.

APPENDIX I

Flash Point

The minimum acceptable flash Point (Pensky Martin Closed Cup or equivalent) of 60°C is applicable to wet bulk wastes and will determine whether the material is safe for transportation via the OSV's tanks. SOLAS regulations determine that materials with a flash point below 60°C cannot be back loaded to a OSVs mud tanks unless the OSV is certified for carriage where additional systems of inerting the environment onboard the OSV will be in place. Generally, OSVs do not have the intrinsically safe systems required for the carriage of produced or unrefined hydrocarbons.

Sampling should be set up to detect the worst case situation, particularly where there is potential for crude oil or condensate contamination where the oil will rise to the surface of the tank. Drilling rigs will normally have robust ventilation in the area used to store oil contaminated fluids and this may mask the condition experienced onboard an OSV when carrying hydrocarbon contaminated product. OSV storage tanks are not normally vented. Air sampling from above the drilling rig mud pits may understate explosive gases.

Sampling should reflect the conditions in the OSV tanks i.e. no agitation. Base oils typically have flash points in the range 70 - 100°C. If the only oil component in a bulk waste is base oil then the flash point cannot be lower than that of the base oil itself. If the flash point is relatively low (60 - 70°C) an explanation must be provided on the Appendix II before the form is presented to the OSV Master. Prior to sampling, the installation pit should be left without agitation for at least 30 minutes and then surface sampled. If there is any doubt regarding results repeat the tests and review.

This sample can then be split and one part used for Flash Point testing and the other for Noxious gases. Flash point is tested as per Closed cup Flash Point equipment manufacturers instructions.

Lower Explosive Limit (LEL)

The LEL gas detector will confirm potential flash point problems. Note that the LEL meter (which also serves as an H_2S meter) is used in harbour to check vapour condition in the ullage air space above the tank prior to discharge. The test carried out prior to back loading should reflect the conditions in the ships tanks i.e. there will be no agitation and no forced ventilation unless it is specifically required or requested (unlike rig mud pits).

The Noxious gas test is modified to simulate the unvented ships tanks. The sample is placed in a closed container with a sampling port on top and left to equilibrate for 30 minutes. A tube is then connected from the port to the gas analyser and the sample analysed. This method simulates the unvented ships tank. The above Procedure has been agreed with gas analyser manufacturers and Service companies carrying out the test offshore. So far this adaptation has been available through BW Technologies - Gas Alert Max equipment. Other manufacturers are able to offer alternatives.

The flash point and LEL results should be consistent with each other. LEL gas meters are normally set so that the alarm goes off in the range 10 - 20% LEL methane equivalent. Any number above 25% would be considered high. Other gases potentially present can have a different LEL range than methane. If there is any doubt regarding results repeat the tests and review.

Hydrogen Sulphide (H_2S)

Hydrogen sulphide may be detected. H_2S can occur in wellbore fluids but this source would normally be identified by rig equipment, and appropriate measures taken to neutralise and remove the H_2S.

In surface tanks and facilities H_2S most commonly arises from the activity of sulphate reducing bacteria (SRB). SRB will become active provided there is a "food" source and low oxygen conditions. This would be typical of stagnant oil contaminated fluid stored for a long time (several weeks). This environment can arise on both installations and OSVs in tanks and manifolds. Disturbing stagnant fluids or mixing low pH fluid into a high pH fluid containing H_2S could cause the release of H_2S into the void space above the tank.

Hydrogen Sulphide is a heavier than air and an extremely poisonous gas. Maximum exposure limit is 10 ppm over an 8 hour period. The LEL gas meters currently being used also tests for the presence of H_2S. H_2S is a known danger during drilling operations. Offshore sensors and routine offshore analysis methods will detect if H_2S is a potential problem in bulk waste back loads. In the event of a positive test another sample should be collected to confirm the result. If this second result is positive further work may be required to determine the source of the H_2S. A test using a Garrett Gas train will determine the levels of H_2S dissolved in the liquid. As a precaution treatment of the material may be required.

The SRB organisms thrive in a pH range of 5.5 - 8.0. The lower the pH the greater the breakout of H_2S. The back load can be treated on the installation to prevent breakout of H_2S in the OSV tanks. Biocides kill the bacteria but do not remove dissolved H_2S. H_2S scavengers will remove dissolved H_2S but do not stop biological activity. Caustic soda will raise the pH and prevent H_2S gas breakout

In the event H_2S is detected, tests should be carried out offshore to determine the best treatment prior to back loading. After treatment a final H_2S test should be carried out to confirm zero H_2S and noted on the Appendix II analysis form before the hose is connected to the OSV for back load.

Example Procedure for LEL% and H_2S meter only

Collection of Sample

The sample should be taken from below the surface of the unagitated tank to simulate the unagitated OSV tank. Most oil will be in the top layer and will give a worst case oil content.

1. Leave tank or pit unagitated for 30 minutes before taking a 2.5 litre sample.
2. Fill the sample into container provided, up to the marked line and replace screw cap lid
3. If a magnetic stirred is available, mix for 1 hour before proceeding to gas detection. Two large magnetic fleas included in kit.

Gas Detection (% LEL value, combustible gases)

1. Ensure batteries have been fully charged. If not, place in charger and allow charging for 12 hours.
2. Switch instrument on in a clean air environment
3. The detector will beep and run a set of self-checks once these are complete the screen will display 3 levels on the screen
   H_2S: 000 ppm
   O_2 : 20.9 %
   LEL: 000 %
4. The pump automatically starts and continues to run until the unit is switched off.
5. Remove the plugs in the sample container lid and place the sampling hose into the head space
6. Any combustible gas will be registered on the LEL monitor.
7. After 5 minutes remove the hose and switch detector off by holding down the on/off button for 5 seconds; (the unit will beep 4 times before switching off)
8. Any gases detected should be reported on the Appendix II.

Calibration

1. O_2 sensor is automatically calibrated each time the unit is switched on.
2. LEL sensor is factory calibrated to Methane and can be calibrated using a calibration gas supplied by BW Technologies.
3. H_2S sensor is factory calibrated but subsequent calibrations can be done using a calibration gas supplied by BW Technologies.
4. It is recommended that the LEL and H_2S sensors be calibrated every three months or when the unit is on shore using the appropriate mixed calibration gas from BW Technologies.

pH

Seawater pH is typically 8.3. Oil mud is alkaline and could raise the pH slightly. Cement contaminant is highly alkaline. In general alkaline pH (above 7) protects from corrosion. Highly alkaline materials can be caustic and require care in handling. Cement and sodium silicate can lead to high pH. Low pH (less than 4) is highly acidic and an explanation should be provided on the Appendix II analysis form. Acids such as citric acid or acidizing chemicals such as hydrochloric acid can lead to low pH.

Note that low pH means any H_2S will already have broken out as a gas.

Salinity - Chlorides

Seawater is typically 20500 mg/l chlorides. Oil mud contains some calcium chloride increasing this level slightly. Sodium chloride brine can contain up to 189000 mg/l. Results should agree with the composition.

Retort analysis (solids, water, oil volume %)

This should match the estimated composition (volume %) on the Appendix II analysis form. Note; that it may be difficult to get representative samples if the liquid tends to separate. Some divergence is expected e g. if oil is noted as 5%, the range could be 3 - 10%. If separation is likely a range is preferred e.g. 5 - 10%. The solids component can form a residue in the OSV tank and a potential location for SRB activity and H_2S.

Specific Gravity - S.G.

Common water based fluids cover the range 1.03 (seawater), sodium chloride (1.2), and calcium chloride (1.33). Rarely used brines such as caesium formate can reach 2.2. Oil mud is typically 1.1 - 1.5 but can exceed 2.0. Mixtures will have intermediate values, most tending to 1.03 as seawater is the major component. Note that if mixtures separate the top half can be a different density than the bottom half.

Appearance

General description confirming if cloudy, clear and colour. Should be consistent with Waste Consignment Note description.

Odour

Slight versus strong odour, consistent with description.

Conclusions

Should demonstrate the various parameters measured are in agreement with one another.

CHECK LIST REVIEW WET BULKS BACKLOADS

	Operation	Offshore Installation	Offshore Supply Vessel	Waste Processor	Tank Cleaner
1	Ensure MSDS of components and formulated mixtures are available	**X**	**X**	**X**	**X**
2	If test to dispatch period is greater than 48 hours explanation is on Appendix II analysis form	**X**	**X**		
3	Check if Dangerous Goods note required	**X**	**X**		
4	No back loading without completed Appendix II form	**X**	**X**		
5	Data provided in all boxes (no boxes marked N/A)	**X**	**X**	**X**	**X**
6	No additions to the backload cargo after the analysis is carried out	**X**			
7	No Crude oil contamination in back load.	**X**			
8	Flash point significantly higher than 60°C	**X**	**X**	**X**	**X**
9	Base oil flash point noted	**X**	**X**	**X**	**X**
10	Flash point of any other low flash chemical entered on Appendix II analysis form.	**X**			
11	Lower explosive limits consistent with flash point	**X**	**X**	**X**	**X**
12	Hydrogen sulphide (H2S) concentration zero	**X**	**X**	**X**	**X**
13	pH within range 4 - 11, if outwith explanation provided on Appendix II analysis form	**X**	**X**	**X**	**X**
14	Salinity mg/l chlorides - consistent with description	**X**	**X**	**X**	**X**
15	Retort oil/water/solids % volume - consistent with Waste Consignment Note description % or bbl of components	**X**	**X**	**X**	**X**
16	Specific gravity - in expected range of description	**X**	**X**	**X**	**X**
17	Note if any heterogeneity and separation expected.	**X**	**X**	**X**	**X**
18	Waste Consignment Note and Appendix II analysis form consistent	**X**	**X**	**X**	**X**
19	Appendix II analysis form signed	**X**	**X**	**X**	**X**
20	Information reviewed on Installation and results within limits for OSV transportation	**X**			
21	Waste Consignment Note and Appendix II analysis form to ship's Master before back loading confirming that the material is safe for carriage onboard the OSV	**X**	**X**		

22	Master to check dirty tanks previous back load information prior to loading		**X**		
23	Master to confirm to installation that cargo can be back loaded before operation commences		**X**		
24	Onshore test before discharge or tank entry with Waste Consignment Note and Appendix II checked		**X**	**X**	**X**
25	Waste Processor onshore tests and where a significant difference in result is obtained a non conformance raised			**X**	**X**
26	Non Conformance to the Operator, Offshore Installation, Ship's Master, Base Operator Surveyor, and Tank Cleaner.	**X**	**X**	**X**	**X**

Good Practice - Oil Contaminated Cargoes for Transportation by OSV

TO BE COMPLETED AND PROVIDED TO OSV MASTER PRIOR TO BACK LOADING.

APPENDIX II ANALYSIS FORM

Sample Description				
Sample Reference				
Vessel		**Date**		
Offshore Asset		**Producer**		
Total number of Barrels		**Waste Note**		
Component name	**Value**	**Units**	**Method**	**MSDS Available**
		% volume	N/A	
		% volume	N/A	
		% volume	N/A	
		% volume	N/A	
		% volume	N/A	
		% volume	N/A	
		% volume	N/A	
		% volume	N/A	
pH			pH Meter	
Salinity (Chloride) (mg/l)		**mg/l**	Titration	
Flash Point (Oil Fraction)		**°C**	Closed Cup Flash Point	>60°C
Base Oil Flash Point		**°C**	Closed Cup Flash Point	From MSDS
Other low Flash point chemical		**°C**	Closed Cup Flash Point	From MSDS
Gas Test (H2S)		**Mg/l**	Gas Meter	Zero mg/l
Gas Test (LEL)		**%**		<25%
Gas Test (Oxygen)		**%**		
Water		**% volume**	Retort	
Oil Content		**% volume**	Retort	
Solids		**% volume**	Retort	
Bulk Specific Gravity		**S. G.**		<2.5
Appearance				
Odour				
Conclusions				

Analyst (print name)		Issue 2
Analyst signature		May 19 2004
Date		

B Bulk Transfer Checklist

WET BULK TRANSFER CHECK LIST

Pre-Start Check List PORT	
Type & quantity of product(s) to be transferred, confirmed and MSDS available	
Allocate tanks to product	
Confirm transfer rate and max. allowable rate per product	
Topping off procedure agreed	
Emergency stop procedure agreed	
Hose(s) confirmed as fit for purpose and of sufficient length	
Hose(s) connected to correct coupling(s)	
Vessel springs tensioned to limit ranging	
Communications procedure established for transfer, including agreement on central control point, i.e. bridge	
Appropriate pollution prevention equipment deployed as SMPEP	
Scuppers plugged if hydrocarbons to be transferred	
All Hot Work Permits withdrawn if hydrocarbons to be transferred.	
Self sealing couplings to be used if fuel to be transferred	
Lines set ready for cargo transfer	
Tank monitoring system proven	
Watch established on manifold with suitable communications in place	

Pre-Start Check List OFFSHORE	
Type & quantity of product(s) to be transferred, confirmed and MSDS available	
Order of discharge confirmed, if more than one	
Confirm transfer rate and maximum allowable rate per product	
Emergency stop procedure agreed	
Tank changeover/topping off procedure agreed	
Confirm notice required to stop cargo	
Confirm whether vessel or installation stop	
Slings and lifting arrangement satisfactory	
Hose(s) visually inspected and found suitable	
Hose(s) connected to correct coupling(s)	
Communications procedure established and agreed for transfer	
Appropriate pollution prevention equipment deployed as per SMPEP	
Underdeck lighting adequate for task in hand	
One person appointed to sight hose(s) and advise Master of position	
Lines set ready for transfer	
Crane Operator and both installation and vessel deck crews close at hand	

Transfer Check List PORT	
All communications to be routed via control point which should be vessel bridge	
Start transfer slowly until cargo confirmed as entering correct tank(s)	
volume checks conducted at regular intervals with receiver/provider	
All personnel involved in transfer in regular contact	
Adequate warning given of tank changeover	
Rate reduced for topping off	

Transfer Check List OFFSHORE	
Start transfer slowly until cargo confirmed as entering correct tank(s)	
If fuel to be transferred, line checked for leaks at start up	
Volume checks conducted at regular intervals with receiver	
Cargo Officer can see bulk hose(s) throughout	
Adequate warning given of tank changeover etc.	

DRY BULK TRANSFER CHECK LIST

Pre-Start Check List LOADING	
1. No residue remaining from previous cargo and tank (s) dry	
2. Tank air distribution slides are in good condition	
3. Tank access seals are in good condition	
4. Type and quantity of product(s) to be loaded confirmed and MSDS available	
5. Tank(s) allocated to product	
6. Order of loading confirmed, if more than one product to be loaded	
7. Proper vent line connected to vessel	
8. Confirm loading rate and max. allowable rate per product	
9. Emergency stop procedure agreed	
10. Notice required to stop, agreed	
11. Confirm whether cargo will be stopped by vessel or provider	
12. Confirm tank(s) and lines are vented to atmospheric pressure	
13. Confirm Lines set for cargo	
14. Hose(s) connected to correct coupling(s)	
15. Hose(s) inspected and fit for purpose.	
16. Moorings tensioned sufficiently, particularly springs, to limit ranging	
17. Communications procedure established for transfer, including agreement on central control point, i.e. Bridge	
18. Watch established on manifold with suitable communications in place	

Pre-Start Check List DISCHARGING	
1. Vessel settled in position and ready to receive hose(s)	
2. Type and quantity of product(s) to be transferred confirmed and MSDS available	
3. Appropriate tankage on vessel lined up and ready for discharge	
4. Confirm transfer rate and max. allowable per product	
5. Emergency stop procedure agreed	
6. Notice required to stop agreed	
7. Confirm whether cargo will be stopped by vessel or receiver	
8. Hose Lifting arrangement satisfactory	
9. Hose(s) visually inspected and found fit for purpose	
10. System de-pressurised, ready for hose(s)	
11. Hose(s) connected to correct coupling(s)	
12. Communications procedure established and agreed for transfer	
13. Underdeck lighting adequate task in hand	
14. Vent position(s) identified	
15. Cargo Officer appointed to watch hose(s) relative to vessel's stern	
16. Crane Operator and both installation and vessel deck crews close at hand	

LOADING Check List	
1. All communications to be routed via control point which should be vessel bridge	
2. Good vent obtained on start up	
3. Bulk hose(s) and vent checked throughout operation for blockages	
4. Contact with loading personnel maintained throughout	
5. Lines cleared back to vessel	
6. System de-pressurised on completion, before disconnection	

DISCHARGING Check List	
1. Good vent obtained from receiver before commencing discharge of cargo	
2. Good watch maintained on hose(s) in case of blockage	
3. Contact with receiver's personnel maintained throughout	
4. Lines blown clear to receiver on completion of cargo	
5. System de-pressurised before hose disconnection	
6. Blank cap(s) fitted to hose end(s) before passing back to receiver	

C Offshore Support Vessel Bridge Procedures at Offshore Installations

Introduction and Purpose

Safe operations alongside offshore installations are critical. Vessels and installations, the staff onboard both and the environment are potentially at risk. Individuals at all levels must recognise this and act accordingly. The impact of failures can be serious.

The purpose of this procedure is to ensure the safety of the vessel, installation, those onboard both and the environment during operations within the safety zone of the installation. It applies primarily to offshore support vessels intending to perform cargo and anchor handling operations at the installation.

This procedure deals primarily with the shiphandling aspects of the operation. Cargo and anchor handling operations are dealt with elsewhere within these guidelines.

Installation staff will not apply pressure on shiphandlers to come alongside or carry out operations which the shiphandler considers to be unsafe.

Prior to safety zone entry

See annex D 'Checklist for OSV and Installation Ops'

Prior to entry within the safety zone:

- The vessel will have assessed the appropriateness of the weather, tidal and sea conditions for the intended operations over the anticipated period alongside. This may require a Risk Assessment or at least a Safe Job Analysis according to the identified hazards.
- Contact will have been established with the installation and the following items discussed: the above assessment, the intended operations, concurrent operations (e.g. helicopter flights) and other relevant items (e.g. FPSO checklist).
- Request by the vessel to enter the safety zone, if appropriate, following the above communication of information.
- Functional test by the vessel of propulsion units and controls thereof.
- Completion of the attached checklist
- The role of the shiphandler and assistant will be agreed prior to coming alongside

In the event the vessel is required to wait outside of the safety zone the vessel should do so down-weather of the installation. Waiting time can be used to test the operation of joystick and if possible DP. If appropriate, training of trainee shiphandlers should also be considered.

Entry into the safety zone and installation approach

A safe and proper approach to an installation can be a complex task. It is amongst the most critical of the tasks demanded of the vessels. To minimise the risk of an incident it must be carefully planned.
During the planning stages and during the approach all non-essential tasks should be stopped, delegated etc. Other crew members should be reminded not to interfere during the planning or the approach unless it is essential.

Planning of Installation Approach

Good planning will assist greatly during the approach and during cargo operations. At least the following factors that should be taken into account:-

- Machinery tests
- Type of installation: Platform, jack-up rig, semi-submersible, FPSO, FPU etc
- Direction of approach to installation
- Position of other vessels or installations in the vicinity i.e. standby or dive vessels, rigs
- Changeover from forward to aft console position.
- Location of crane(s) on installation
- Direction of and prevailing weather conditions
- Tidal conditions - *this is particularly important in the Southern North Sea and how the tidal conditions will alter during the anticipated period that the vessel will be alongside.*
- Orientation of installation i.e. if mobile unit, FPSO or FPU
- Cateneries of anchor wires if mobile unit.
- Planned cargo operations - *i.e. deck or hose operations. Anticipated changes in weather conditions should be taken into account and cargo operations planned accordingly.*
- Location of cargo on deck.
- Location of bulk discharges.
- A contingency plan in the event the approach does not happen as planned.

Approaches are to be planned such that:-
- the vessel does not have to steer forward directly for the installation
- the vessel does not have to turn in towards the installation
- if the changeover from forward to aft control does not occur as anticipated there is space for the shiphandler to regain control of the vessel without risk of the vessel contacting the installation.

Approaches in the Southern North Sea can be particularly awkward due to the strength and direction of the tides. It is important to pay attention to this aspect of the approach plan. Use of a tide vector card or similar should be used to assist the planning process.

Check the plan prior to executing it

The approach

1. Two persons should be on the bridge during the approach
2. Approach to the installation should be done at a safe speed.
3. Changeover of control from forward to aft console is to occur at a safe position. Main engines are to be brought to idle all thrusters are to be brought to idle rudders and propulsion units are to be brought to midships position.
4. Vessel is to be backed up to and brought beam on to the installation at a safe speed into the “set-up position”, at least 50M from the installation.
5. Vessel to be settled in the “set-up position” to allow the vessel Master to ascertain and become attuned to the weather, tidal and sea conditions.
6. Once the Master is satisfied that the intended operations can be carried out safely the vessel should approach the installation.

Operations Alongside

Once alongside the shiphandler and his assistant should continue to monitor:

1. the weather, tidal and sea conditions
2. visually, the position of the vessel in relation to the installation.

In the event of deteriorating conditions termination of operations must be considered and the installation advised accordingly.

The shiphandler must be ready at all times to change modes of operation e.g. from DP to joystick, joystick to manual in the event of an equipment failure.

The assistant should be ready to take over the shiphandling of the vessel in the event of the shiphandler having to be relieved (comfort breaks, illness etc).

The assistant will normally: co-ordinate communications with installation and vessel deck, note load or discharge of deck cargo, documentation.

Handover between the shiphandler and assistant should be carefully co-ordinated.

In the event of an emergency the senior shiphandler should take over control of the vessel. Termination of operations must be considered and the installation advised.

At watch changeover times the oncoming watch must allow themselves time to become accustomised with the operations in hand and the weather, tidal and sea conditions.

Moving from one position to another at the installation

The vessel may be required to move from one position to another at the installation for a number of different reasons: location of cargo on deck, location of where cargo is to placed on installation, location of hoses on installation, changes in weather, tidal and sea conditions, etc

When moving from one position to another, particularly if changing the aspect of the vessel to the installation or the weather, tidal and sea conditions, shiphandlers need to repeat the initial setup and consider, at least, the following:

- the intended route and potential hazards (anchor wires, installation propulsion units, etc)
- whether to transfer from dp/joystick into manual and back again and the hazards associated thereto
- the tidal, weather and sea conditions at the new intended location and the affects this will have on the vessel

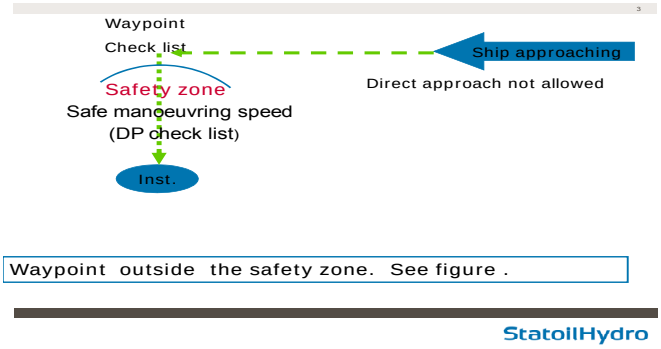
Change of management

Near Misses and Incidents often occur where an agreed plan is deviated from. It is essential that the impact of so doing is considered carefully before agreeing to the changes. This may necessitate reviewing the risk assessment or having a Safe Job Analysis.

Pressure must not be applied on shiphandlers to deviate from agreed plans and time allowed for them to consider the requested deviations.

See Annex D 'Checklist for OSV and Installation Ops'

D Checklist for OSV and Installation Ops



Vessel		
Field installation		
Date/time	Date:	Time:

	CHECKS TO BE CARRIED OUT BEFORE ENTERING 500 M SAFETY ZONE	Status Yes/No		*Comments*
1	Sea/weather conditions acceptable for a safe operation			
2	Limitations due to sea/weather condition			
3	Safe direction of approach towards installation evaluated			
4	Bridge (2 man) and Engine room(1man) manned at all times inside 500m			
5	Communication established			
6	No hot work/smoking on deck within 500 m zone			
7	Auto Pilot off			
8	All manoeuvring and steering gear systems tested including changeover between control positions and manoeuvring modes.			
9	Emergency manoeuvring system tested			
10	Working side confirmed with installation – if weather side RA to be performed			
11	Load operations (cargo, bulk, fluid) confirmed with installation *(CHERRY PICKING is not permitted)			
12	Installation to confirm readiness for vessel arrival and operation (inclusive no overboard discharge)			
13	Manoeuvring mode during the operation to be agreed. If DP mode DP checklist to be used in addition.			
14	On-going and/or planned activities within 500 m zone confirmed between installation, vessel and ERRV (if in attendance)			
15	Permission for entering the safety zone obtained			Date: Time:

	CHECKS TO BE CARRIED OUT BEFORE DEPARTING INSTALLATION	**Status Yes/No**		*Comments*
1	Vessel to be manoeuvred to a safe position clear of Installation before changing mode			
2	All controls set to neutral position before changing mode			

E Tank Cleaning Checklist

TANK CLEANING CHECKLIST	Checklist No:	
	Vessel Name:	
	Vessel Permit No:	

Reason for Entry	
Tank No's	
Confined Space Contents	

SAFETY CHECKS

1	**Has enclosed space been thoroughly:**	**Yes**	**N/A**
1.1	Depressurised		
1.2	Ventilated (by natural/mechanical means)		
1.3	Drained		
1.4	Isolated by - Blanking		
	- Disconnecting		
	- Valves		
1.5	Steamed		
1.6	Water Flushed		
1.7	Inert Gas Purged		
1.8	Tank Appliances Electrically Isolated and Locked		
1.9	Opened tank hatches guarded		
2	**Tank Prime Mover has been:**	**Yes**	**N/A**
2.1.1	Electrically isolated and locked (All stations, wheelhouse engine room etc.)		
2.1.2	Mechanical motive power isolated and locked (All stations, wheelhouse engine room etc.)		
3	**Vessel Machinery – Main Engines, Shafts Generators etc.**	**Yes**	**N/A**
3.1	Agreed isolation of vessel machinery (All stations, wheelhouse engine room etc.)		
3.2	Agreed change of status, start-up procedure		
4	**Other Considerations:**	**Yes**	**N/A**
4.1	Material Safety Data Sheets available		
4.2	Annex A Analysis Sheet		
4.3	Suitable Access / Egress provided		
4.4	Standby Personnel detailed		
4.5	Lifeline / Safety Harnesses / Rescue Hoist		
4.6	Breathing Apparatus		
4.7	Means of communications tested OK		
4.8	Area free of flammable materials		
4.9	Area free of Ignition sources		
4.10	Work time / Fatigue		
4.11	Clear working area		
4.12	Illuminations		
4.13	Visibility of Hoses		
4.14	Other work that could cause hazard		
5	**Tool Box Talk:**	**Yes**	**N/A**
5.1	TBT conducted with ALL applicable personnel		
5.2	Special Training / Briefing required		
5.3	Other		

	Hazards:	**Yes**	**N/A**
7.1	Noise		
7.2	Toxic		
7.3	Chemical		
7.4	Corrosive		
7.5	Explosive		
7.6	Flammable		
7.7	Electrical		
7.8	Static Electricity		
7.9	Fall from Height		
7.10	Overhead Hazards		
7.11	Potential Dropped Objects		
7.12	Entrapment		
7.13	High Pressure Jetting		
7.14	Suction		
7.15	Trip Hazards (Specify)		
7.16	Hot Surfaces		
7.17	Other		
8	**Protective Equipment:**	**Yes**	**N/A**
8.1	Eye Protection (Specify)		
8.2	Face Shields		
8.3	Respirator		
8.4	PVC Gloves		
8.5	Safety Boots		
8.6	High Pressure Jetting Boots		
8.7	Wet Suit		
8.8	Full Chemical Protective Clothing		
8.9	Breathing Apparatus		
8.10	Head Protection		
8.11	Ear Protection		
8.12	Other		
9	**Emergency Procedures:**	**Yes**	**N/A**
9.1	Muster Points Identified		
9.2	Escape Routes Identified		
9.3	Alarms Understood		
9.4	Location of fire-fighting and first aid equipment		
9.5	**Contact No's.**		

6	**Plant Required:**						Emergency Services	
6.1	Compressor		6.2	Safety Barriers/Signs			Vessel Bridge	
6.3	Pressure Washers		6.4	Lighting			Base Operator	
6.5	Vacuum Tankers		6.6	Air Driven Pumps			Tank Cleaning Contractor	
6.7	Jetting Lance Baffles		6.8	Others (Specify):				

10.	Other Requirements / Limitations:

11.1	Ongoing Gas Monitoring Required:	Yes		No		11.3	Competent Analyst(s) required)	Yes		No	

11.2	Frequency of Ongoing Monitoring	30 minutes		1 hour		2 hours		Other - specify	

Declaration
I have personally checked the above conditions and consider it safe to enter provided that the conditions laid down are adhered to:

Tank Cleaning Contractor	Signed		Print Name		Date	
Client/Vessel Master (or Designate)	Signed		Print Name		Date	

F Cargo Segregation Table

OFFSHORE SUPPORT VESSEL - WEATHER DECK STOWAGE-
CLOSED OFFSHORE CONTAINERS - SINGLE LAYER STOWAGE
Segregation Table Volume 1 IMDG Code and MGN 205

IMDG CODE CLASS	1.1 1.2 1.5	1.3 1.6	1.4	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	6.2	7	8	9
EXPLOSIVES 1.1 1.2 1.5	*	*	*	C	B	B	C	C	C	C	C	C	B	C	B	C	X
EXPLOSIVES 1.3 1.6	*	*	*	C	B	B	C	C	C	C	C	C	B	C	B	B	X
EXPLOSIVES 1.4	*	*	*	B	A	A	B	B	B	B	B	B	X	C	B	B	X
FLAMMABLE GASES 2.1	C	C	B	X	X	X	B	A	B	X	B	B	X	C	B	A	X
NON FLAMMABLE GASES 2.2	B	B	A	X	X	X	A	X	A	X	X	A	X	B	A	X	X
TOXIC GASES 2.3	B	B	A	X	X	X	B	X	B	X	X	B	X	B	A	X	X
FLAMMABLE LIQUIDS 3	C	C	B	B	A	B	X	X	B	A	B	B	X	C	B	X	X
FLAMMABLE SOLIDS 4.1	C	C	B	A	X	X	X	X	A	X	A	B	X	C	B	A	X
SPONTANEOUSLY COMBUSTIBLE 4.2	C	C	B	B	A	B	B	A	X	A	B	B	A	C	B	A	X
DANGEROUS WHEN WET 4.3	C	C	B	X	X	X	A	X	A	X	B	B	X	B	B	A	X
OXIDIZING SUBSTANCES 5.1	C	C	B	B	X	X	B	A	B	B	X	B	A	C	A	B	X
ORGANIC PEROXIDES 5.2	C	C	B	B	A	B	B	B	B	B	B	X	A	C	B	B	X
TOXIC SUBSTANCES 6.1	B	B	X	X	X	X	X	X	A	X	A	A	X	A	X	X	X
INFECTIOUS SUBSTANCES 6.2	C	C	C	C	B	B	C	C	C	B	C	C	A	X	C	C	X
RADIOACTIVE MATERIALS 7	B	B	B	B	A	A	B	B	B	B	A	B	X	C	X	B	X
CORROSIVES 8	C	B	B	A	X	X	X	A	A	A	B	B	X	C	B	X	X
MISCELLANEOUS 9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

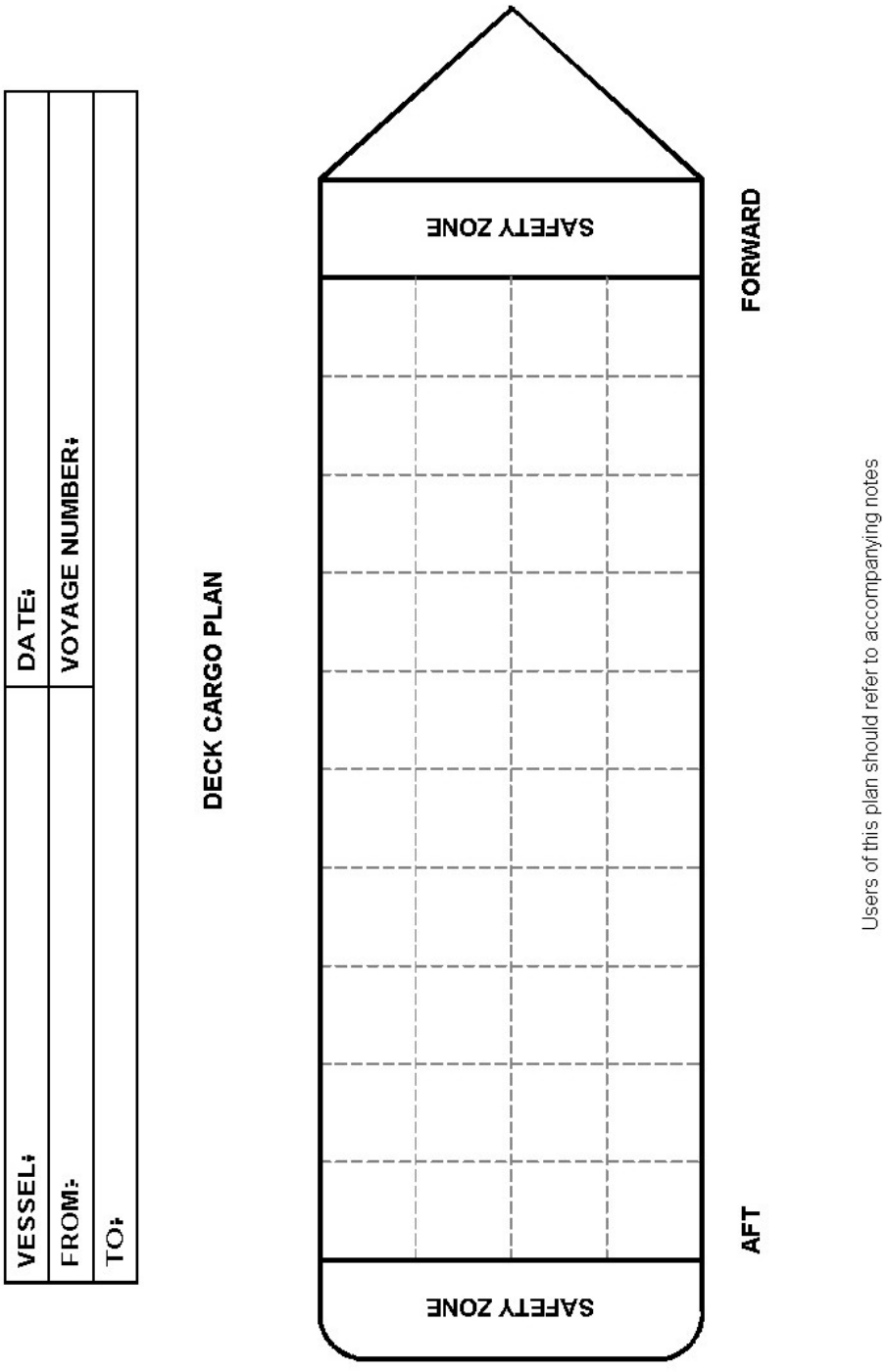
X	NO SEGREGATION REQUIRED
A	AWAY FROM: 1 MINI
B	SEPARATED FROM: 2 MINI
C	SEPARATED BY COMPLETE COMPARTMENT - SEPARATED LONGITUDINALLY BY COMPLETE COMPARTMENT 3 MINI
*	SEE INTRODUCTION OF CLASS 1 FOR SEGREGATIONS WITHIN GROUP
MINI CONTAINER SIZE	MINIMUM DIMENSIONS – 6ft x 6ft x 8 ft OR METRIC EQUIVALENT
FOOD CONTAINERS SEPARATION	1 MINI – Class 2.3 6.1 + 8 ‖ 2 MINI - Class 7 ‖ 3 MINI – Class 6.2
CLASS 1, 6.2, 7	STOWED AS FAR AWAY AS POSSIBLE FROM ACCOMMODATION SPACES
CLASS 1	STOWED AS FAR AWAY AS POSSIBLE FROM MACHINERY SPACES

F-2 NL SEGREGATION TABLE.

Class	1.1	1.3	1.4	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	6.2	7	8	9
	1.2	1.6															
	1.5																
1.1-1.2-1.5	*	*	*	4	2	2	4	4	4	4	4	4	2	4	2	4	X
1.3-1.6	*	*	*	4	2	2	4	3	3	4	4	4	2	4	2	2	X
1.4	*	*	*	2	1	1	2	2	2	2	2	2	X	4	2	2	X
2.1	4	4	2	X	X	X	2	1	2	X	2	2	X	4	2	1	X
2.2	2	2	1	X	X	X	1	X	1	X	X	1	X	2	1	X	X
2.3	2	2	1	X	X	X	2	X	2	X	X	2	X	2	1	X	X
3	4	4	2	2	1	2	X	X	2	1	2	2	X	3	2	X	X
4.1	4	3	2	1	X	X	X	X	1	X	1	2	X	3	2	1	X
4.2	4	3	2	2	1	2	2	1	X	1	2	2	1	3	2	1	X
4.3	4	4	2	X	X	X	1	X	1	X	2	2	X	2	2	1	X
5.1	4	4	2	2	X	X	2	1	2	2	X	2	1	3	1	2	X
5.2	4	4	2	2	1	2	2	2	2	2	2	X	1	3	2	2	X
6.1	2	2	X	X	X	X	X	X	1	X	1	1	X	1	X	X	X
6.2	4	4	4	4	2	2	3	3	3	B	3	3	1	X	3	3	X
7	2	2	2	2	1	1	2	2	2	2	1	2	X	3	X	2	X
8	4	2	2	1	X	X	X	1	1	1	2	2	X	3	2	X	X
9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Food container	X	X	X	X	X	1	X	X	X	X	X	X	1	3	2	1	X

X	No segregation See however individual schedules IMDG code
1	1 x 5ft.distance and not within same container
2	2 x 5ft.distance and not within same container
3	3 x 5ft.distance and not within same container
4	24 mtr.distance and not within same container

G Deck Cargo Plan



Notes

1. Plans indicate general position of cargo on deck of vessel, but are not to scale.
2. Safety zones are required for vessel operations and should not be used for stowage of cargo.
3. Dashed lines are for ease of reference only and may not relate to physical features on vessels deck. Each sub-division represents approximately 2.5% of useable deck space.
4. When supporting several installations where possible cargo for each to be stowed together. Boundaries of each stow to be clearly marked.
5. Dangerous goods, cargo notified as “urgent”, items requiring special handling or heavy lifts (definition may be location specific) to be clearly indicated.
6. Where relevant, separate cargo plan(s) for bulk commodities to be prepared.

Copies of cargo plan(s) shall be forwarded to base operator prior to departure.

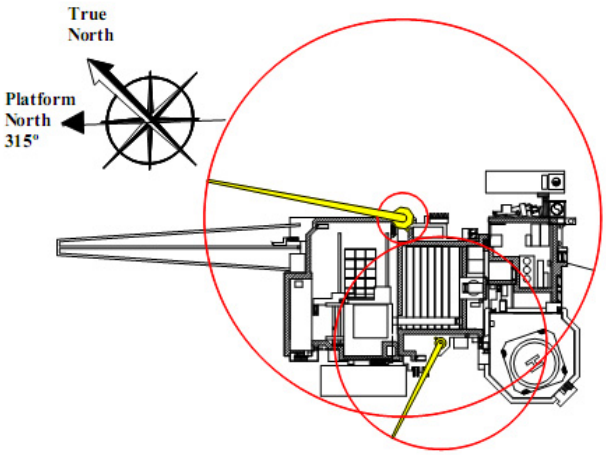
H Installation Data Card

Example:

Chevron

Alba North
UKCS 16 / 26
PSV / AHV Data Card

Location	Alba Field 16 / 26
Latitude	58° 03' 31" N
Longitude	01° 04' 53" E
Heading	315° (T)
Water Depth	138 metres 453 feet
Call Sign	MPTK4



Specific Marine Hazards

- Various pipelines, umbilicals etc.
- Overboard discharges
- Field activities e.g. shuttle tanker
- Tidal information
- Installation ongoing operations

Communications	General	Emergency
VHF	Ch. 108 (P1) Ch. 50 (P2) Ch. 8 & 12	Ch. 16
Telephone	01224 334000	00 870 764 804 677
Fax (Radio Room)	01224 335680	N/A

Helicopters	Bristows
Log Traffic Emergency	126.400 MHz 123.550 MHz 121.500 MHz
Telephone Tel. (out of hours)	01224 756214 01224 756321
Fax	01224 756348

East Crane	Approx. SWL	Radius	Sea SWH	West Crane
Whip Line	15 Tonne	23 m	1.6 m	The west crane is not normally used for Marine op's due to lack of visibility. Priority lifts that do not exceed 5 Tonnes at max. radius and min. sea state can be carried out with the permission of the OIM.
Whip Line	5.2 Tonne	40 m	3.9 m	
2 Fall	24 Tonne	18 m	1.6 m	
2 Fall	16.6 Tonne	22 m	2.8 m	
2 Fall	12.6 Tonne	40 m	3.9 m	

Nearby Installations			Shore Distances	
Alba FSU	(Chevron)	248° (T) x 1.6 mls.	Aberdeen	241° (T) x 115 mls.
Britannia	(Britannia)	108° (T) x 1.9 mls.	Peterhead	250° (T) x 97 mls.
Andrew	(BP)	094° (T) x 10.3 mls.	Wick	280° (T) x 134 mls
Balmoral	(AGIP)	005° (T) x 10.3 mls.	Sumburgh	326° (T) x 130 mls.

Rig Alarms	Fire & Emergency	Abandon Rig	Toxic Gas
Sound	Intermittent	Continuous Variable Tone	Continuous Steady Tone
Light	Flashing Yellow	Flashing Yellow	Flashing Red

Before Arrival

Before arrival at the installation the Master and Bridge Officers should read and understand the relevant sections of the Guidelines for the Safe Management of Offshore Supply and Anchor Handling Operations (NW European Area).

Pre-entry Check to be completed in conjunction with Alba North prior to entering 500 m safety zone	
PSV / AHV to confirm to the Installation	**Check**
That the Master & Bridge Officers are fully aware of the procedures for vessel entry. (Steering offset course, speed, manoeuvring, communication points, physical layout of the installation etc.)	
Masters & Bridge Officers of vessels operating on DP are to comply with the International Guidelines for the Safe Operation of Dynamically Positioned Offshore Supply Vessels & the Guidance to Vessel Masters manual.	
Whilst within the 500 m zone the bridge will be manned with a minimum of two competent personnel.	
Main Engines / Thrusters : Fully tested & confirmed to be functional and in satisfactory operating condition.	
Steering Gear : Function tested (main and emergency) and confirmed to be fully operational.	
Joystick : Function tested and confirmed to be fully operational.	
Communications : VHF sets and two-way comms. established with Control Room, Deck Foreman, Cranes and Vessel Deck Crew.	
Master and crew are sufficiently rested and deck crew have been briefed of the proposed operation.	
Assessment of prevailing conditions in 'set up' position a minimum of 50 metres from the proposed working location will be performed.	
Wearing of 'hi-vis' PPE by vessel deck crew whilst working alongside.	
The weather conditions are suitable for the proposed operations.	
Master to record completion of checks in Vessel Deck Log Book and formally request permission to enter.	
Installation to confirm to the Vessel	**Check**
Deck, Crane and Control Room communications have been tested satisfactorily.	
Correct communication channels are being utilised.	
Inform Master of name of ERRV and names of other vessels working at or close to the installation. Also inform Master of other attendant vessels radio working channels.	
Confirm to the attendant ERRV that PSV / AHV operations are about to commence.	
Confirm the side of the installation to be worked and inform of any hazards on that or adjoining faces.	
Installation facilities are ready to receive the specified cargoes and time alongside will be kept to a minimum.	
Information on any specific installation operations which may affect vessel operations alongside, including any helicopter movements.	
All non-essential overboard discharges have been turned off and installation personnel have been made aware of the fact that a vessel is coming alongside.	
Control room to record completion of checklist in installation Deck Log Book.	

Hoses & Connections (East Crane)	
Grade	**Connection**
Diesel	4" Avery Hardol
Pot Water	4" Weco
Drill Water	4" Weco
Cement	4" Weco
Barite / Bent.	4" Weco
Liquid Mud	4" Avery Hardol
Brine	4" Avery Hardol

Cargo Transfer Operations
▶ Agree product & quantity to be transferred
▶ Ensure agreed pump pressures / rates before discharge commences
▶ Confirm who will decide the routine halting of the operation
▶ Cargo transfer should commence slowly to check integrity of system
▶ Rates should only be increased when integrity of hose proved
▶ Confirm regularly with Control Room the amount of cargo transferred

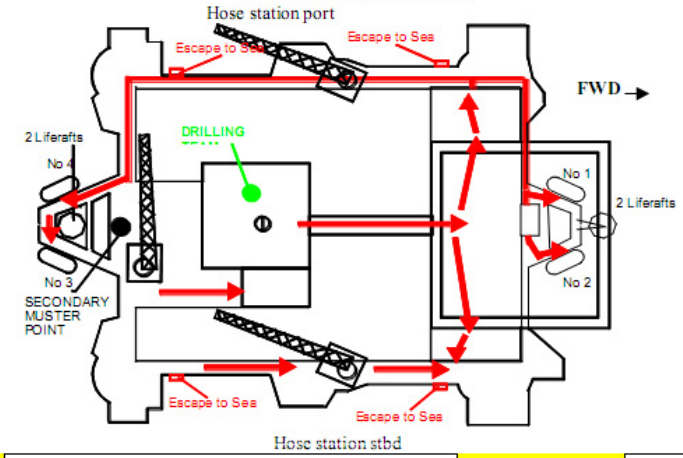
Vessel Co-ordination

The co-ordination of Marine Operations will be as per the Master's Instructions issued to the vessel by Team Marine prior to departure from port. Daily reporting requirements are detailed within these instructions.

When in field area report :	**Upon leaving the field report :**
Name of vessel	Name of vessel
Arrival at the installation	Location and time of departure
Departure from the installation	ROB bulk products
Upon being sent to standby	Fuel and water requirements
Upon ceasing operations due to weather	ETA at port or next installation
	Deck area utilisation (e.g. 80%)
	Liquid tank status

CUE-AN-509-001 **Sept. 2008 Rev. 2**

MOU DATA CARD



Block No.		**Call Sign**	
Latitude:		**Rig Heading:**	
Longitude:		**Water Depth:**	

Anchors	Bearing (T)	Scope of Chain/Cable	Touch Down Point	Anchor Dist From Rig (FT)
1	336	3683 feet of 3" chain	1531 ft @ 205 kips	3588
2	022	3935 feet of 3" chain	1531 ft @ 205 kips	3601
3	067	3695 feet of 3" chain	1531 ft @ 205 kips	3603
4	113	4025 feet of 3" chain	1531 ft @ 205 kips	3637
5	171	3986 feet of 3" chain	1531 ft @ 205 kips	3513
6	206	3915 feet of 3" chain	1531 ft @ 205 kips	3596
7	248	3946 feet of 3" chain	1531 ft @ 205 kips	3586
8	293	3637 feet of 3" chain	1531 ft @ 205 kips	3512

Communications	General	Emergency	Helicopters	Scotia
VHF	Channel 6	Channel 16	123.55 Traffic / 126.40 Log	
Telephone	01224 427171 (0700 – 1900)	00 871 (or 874) 1516537	01224 722819 (Operations)	
Other	01224 427173 (1900 – 0700)			

Cranes	Port SWL/Radius		Stbd & Aft SWL/Radius
Whip	5.0 at any radius 123 to 35ft		4.5 mt at any radius 103 to 24ft
Main Block	49.759 mt at 27ft 9,4mt at 120 ft		42.99 mt at 25ft 6.48 mt at 103 ft

General Information			
Type of rig	Semi submersible drilling rig.		
Other Installation/s in area with relative position.			
Installation Alarms	General Alarm H2S / Toxic Gas Alarm Prepare to Abandon Alarm	Intermittent alarm Continuous alarm steady tone Continuous alarm variable tone	Flashing yellow lights Flashing red lights Flashing yellow lights

Hose size and connections					
Fuel Oil	4" Avery Hardoll	Cement	5" Weco	Pot Water	4" Weco
Drill Water	4" Weco	Bar/Bent	5" Weco	OBM	4" Avery Hardoll

MOU DATA CARD

Before Arrival
Before arrival at the installation the Master and Watch Keeping Mates should read and understand the relevant sections of the "NWEA Guidelines".

Pre-arrival Checks		
Supply Vessel / AHTS to confirm to the Installation	**Yes/No**	**Comments**
That Master & Watch Keeping Mates are fully aware of the procedures for vessel entry. (Steering offset course, speed, manouvering etc.)		
Main engines: tested ahead and astern		
Steering Gear: fully functional, (both main & emergency) and confirmed to be fully operational.		
Thrusters: All thrusters running and confirmed to be fully functional.		
Joystick: function tested and confirmed to be fully functional.		
Communications: VHF sets and deck speakers tested and two way comms. established with Control Room, Deck and Cranes.		
FRC's, Daughter Craft, mechanical recovery equipment and all other rescue equipment are in good working order.		
The weather conditions are suitable for the proposed operation.		
Vessel Master to record completion of checks in Deck Log Book.		
Installation to confirm to the Supply Vessel	**Yes/No**	**Comments**
Deck, Crane, Control Room comms have been tested satisfactorily		
Correct communication channels being used.		
Confirm to the SBV that Supply vessel or Anchor handling Operations are about to commence.		
The rig is ready to receive cargo or commence anchor handling operations.		
Rig to record in log book time checklist completed and by whom.		Time Date Name

Marine Hazards
⇒ There is a 500 metre safety zone

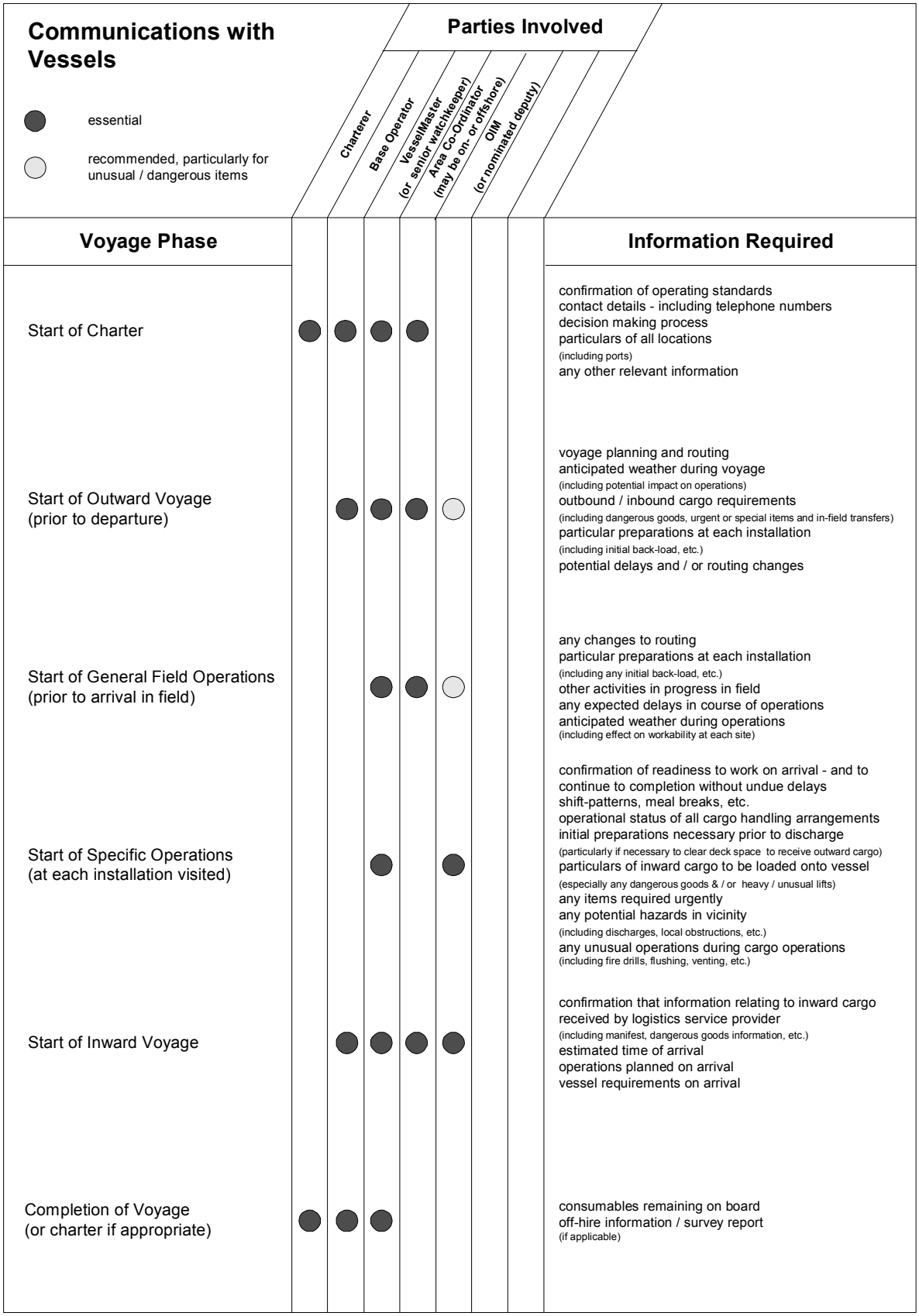
Bulk Cargo Transfer/ Anchor Handling
Prior to and during operations:
Establish Comms between vessel/s and the platform
Pressure test all hoses which have a potential to harm the environment – TSF Policies & procedures.
Confirm that the crew are able to work in present weather conditions
Confirm there is adequate lighting for the operation in hand
Confirm that the vessels tanks/handling equipment are prepared for the proposed operation
Confirm the crew are briefed fully on the operation/s to take place (Product to transfer/cargo to handle/anchor operation)
Agree quantities/product/rates of discharge/pressures/ **OR** anchor/pennant/chain/wire/buoy number
Confirm hose length available
Confirm who will stop cargo transfer at agreed quantities
The hose must be visible to the master at all times during transfer. If not a crew member will act standby man with suitable comms.
All transfers must begin slowly and only increase in rate once integrity has been proved.
Confirm on a regular basis quantities and progress of any operation with the vessel.

I FPSO-Specific Checklist

This checklist details checks and exchange of information to be carried out by the Master of the supply vessel (OSV) and the OIM (or his representative) of the FPSO. The list is in addition to any other checklists completed prior to entry into the safety zone.

No	Check	Completed Yes / No
1	**Risk Assessment of complex operations is to be carried out prior to operations commencing. To be completed by the Vessel Master, OIM and Crane Operator. Otherwise generic risk assessment is sufficient.**	
2	FPSO to confirm its heading and that the heading will not alter or be altered during supply vessel operations	
3	OIM to confirm motion of the FPSO in current conditions, e.g.: FPSO Roll – Degrees FPSO Roll – Period FPSO Pitch – Degrees FPSO Heave – Metres	
4	A general exchange of information regarding the disposition of cargo to be offloaded to the FPSO and back loaded cargo to be received by the vessel.	
5	A general exchange of information regarding “hose work” to be conducted. This will include the method of lowering the hose to the vessel and available space for this to be carried out safely. Where practicable sufficient deck space must be available or be cleared so that the vessel crew have a safe area in which to handle the hose.	
6	Confirmation from the Master to the crane operator of the location of the vessel’s “safe havens” and where the deck crew will be working.	
7	Information from the OIM as to any particular limitations on crane operations or special conditions affecting normal operation of the crane.	

J Communication with vessels



K Hoses and Connections – Guidance Notes

These notes are intended to provide a quick reference guide to the supply, storage and use of Bulk Loading Hoses. They reflect the latest equipment specifications and, with 'best practice' input from various offshore areas, should be considered the minimum standard for offshore bulk loading hoses.

GUIDELINES

Mobile rigs and installations are recommended to order "Type Approved Bulk Loading Hoses to UKOOA Colour Coding". This will assure use of a quality product to the recognised standard and colour coding.

1. Hose uses

Hoses are supplied for the bulk transfer of the following fluids:

Potable Water	Diesel	Brine
Oil Based Mud	Base oil	Baryte
Drill Water	Cement	Specialist Chemicals

Note: The potable water hoses are lined with synthetic rubber and have British Water Research Council Approval.

2. Hose sizes

The majority of hoses are supplied in 4" diameter, with the exception of the cement and baryte hoses that tend to be supplied in 5" diameter.

3. Hose construction and length

The standard hoses are of softwall construction, however hardwall and heavy duty hardwall hoses are also available for a number of fluids hoses. The hose assemblies are normally supplied in 18.3m lengths but can be manufactured to other lengths as required. The actual make-up of each 'platform to vessel hose' will consist of the most appropriate combination of section lengths, which is covered in Section 13 of this guideline.

4. Colour coding

A colour chart giving details is shown at the end of this Appendix.

5. Hose quality and identification

All hose assemblies should be supplied 'Type Approved'. Each individual hose assembly should have a unique identifier number stamped on the end connection, giving the following information: manufacturer's logo, hose type, month and year of assembly, working pressure in barg and unique serial number.

6. Hose lifters

Hose Lifters are supplied as items of certified lifting equipment. There are various types on the market, however the lightest and easiest to handle are recommended.

7. Unions

Hammer lug unions are generally used to join hose sections together. It is important that the union size and pressure rating is suitable for the hose service.

8. Flotation

Flotation Collars can be of the 'lace-on-jacket-type' or made from polystyrene moulded section. The latter are banded onto the hose and all collars have a highly visible colour. The minimum number of floats per 18.3m hose section are given below:

Hose Service	Hose Size	Floats Per Hose Section
Diesel	3" 4"	4 4
Potable and Drill Water	3" 4"	4 4
Oil Based Mud	3" 4"	10 9
Dry Cement	4" 5"	7 8
Dry Baryte	4" 5"	10 13

Lace-on collars should be secured using manila rope rather than man made fibre to avoid slippage. The rope should be secured to the hose, threaded through the jacket eyelets and finally tied off on the hose at the other end.

Self floating hoses do not require to be fitted with floatation collars.

9. Self-Sealing

Quick Release, Self-Sealing Couplings are available for hydrocarbon based products. These couplings are either of Avery Hardoll or TODO manufacture and should be used on all hydrocarbon based product hoses, to avoid spillage during connection or disconnection. This type of coupling should also be used on brines where the product is corrosive and injurious to health.

10. Weak Link

Weak Link, Self-Sealing Couplings (Breakaway Couplings) are also available for 4" hoses. The function of these items is to avoid over-tensioning or even breaking the hose and therefore having to discard the complete length of hose string. Spills from this type of assembly are avoided by the self-sealing action of the coupling.

11. Hose Testing and Dispatch

All hose sections should be hydro-tested to at least 1.5 x Working Pressure on assembly, to ensure that hose assembly is tight and does not leak.

12. New and Unused Hose Storage

On delivery, hoses are rolled up tightly with one end connection in the middle, then shrink wrapped and laid flat. Wherever possible, hoses should be stored flat, out of direct sunlight and minimising any contact with water. Ultra violet radiation and kinking during storage will shorten the projected life of a hose considerably.

13. Hose String Assembly

New hose assemblies should be made up on deck rather than by hanging from a crane and should be made up as per manufacturers procedures/guidelines When a section of hose is to be replaced, it should be inserted and couplings secured whilst free from tension. After couplings are fully tightened the assembly should be leak tested. If satisfactory, the couplings should then be marked with a paint line to indicate any subsequent movement during a visual inspection.

14. Bulk Operations

Any bulk transfer operations should only take place after all personnel involved are clear on their roles and responsibilities, in particular those persons monitoring tank levels and setting lines. In any event, ALL bulk transfer operations should follow the procedures laid out in the checklists, contained in Appendix 9 of this manual.

15. In Service Inspection

During operations, inspection of hoses is primarily by ‘close visual inspection’ of the entire hose length, paying particular attention to the end terminations.

Close visual inspection means a visual check of the entire external area of the flexible hose assembly paying particular attention to blisters, deep lacerations or abrasions exposing inner core or fabric, unravelling of the outer cover, surface cracking and misalignment of coupling paint marks. Flotation collars should be secure and in the correct position (see Table in Section 8 of this Appendix).

16. In Service Leak Testing

Leak testing should be carried out whenever a component of the assembly is changed to confirm the integrity of the connections. Potable water should be used to carry out leak tests wherever possible. Leak testing should be conducted on the complete hose assembly wherever possible and should consist of:

- hose assembly hung off or laid on deck;
- blank end cap fitted at one end;
- hose filled with water;
- pressurise to circa five (5) bar sufficient to indicate a leak;
- hold for five minutes and visually inspect complete length;
- if all okay, drain assembly to oily drains system;
- repair or replace as needed, re-test and return to service.

The use of compressed gas such as air or nitrogen for any form of leak or pressure test is not permissible because:

large volumes of pressurised gases are dangerous;

hoses are not designed for pressurised gas;

leaks in hydrocarbon hoses can produce a flammable mist;

pinhole leaks are not always detected.

17. In Service Hose Hanging Arrangements and Deployment

To avoid hand injuries all hoses should be suspended in arrangements that avoid all sharp bends and protrusions wherever possible. Slings used for hanging off bulk hoses should be connected to hard couplings thus avoiding cutting into the body of the hose. Hose lifters are available for fitting at hose connection points. Hoses should be left hanging clear of the sea to avoid undue movement in stormy or poor weather conditions and immersion in seawater, which degrades the hose fabric. Potable water hoses must have an end cap fitted to prevent seawater contamination of the hose when stowed.

Before deploying hoses the end caps, where fitted, should be removed by the installation and retained there.

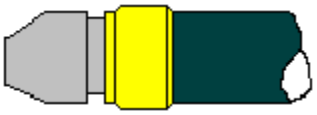
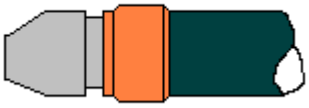
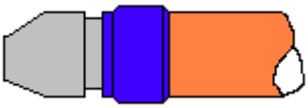
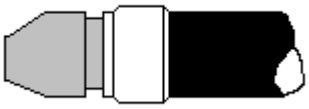
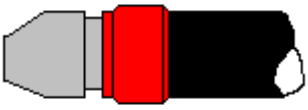
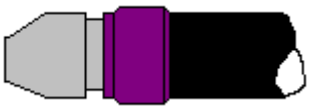
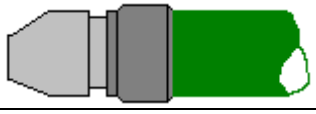
18. Supply Vessels etc.

The supply vessel should position itself ready to receive the hose. The installation Crane Operator must then lower the hose to the vessel, holding the hose against the ship's side and at a height that allows the crew to catch and secure the hose to the vessel's side rail, keeping the hose end clear of the crews' heads. Once secure, the hose end is lowered inboard of the rail and the crew disconnects the crane hook. When clear, the crew will connect the hose to the appropriate connection on the ship's manifold. Uncoupling is the reverse of the above procedure.

Vessel crews should be reminded that hose couplings should, whenever possible, avoid contact with the ship's structure and to monitor the integrity of the couplings by visual inspection of the painted line on the couplings, where applied. Note that in marginal weather greater care than normal is needed by the vessel to avoid over running

the hose especially if deck cargo is also being worked. Consideration should be given to working bulk only at this time.

Below is the colour coding to be used for the Hose End Coupling (colour refers to coupling and not hose) which is passed to the supply vessel.

Hose Application	**Coupling Colour**	**Connection**	
Dry Cement	Yellow	5” hammer lug union	
Dry Barytes	Orange	5” hammer lug union	
Potable Water	Blue	4” hammer lug or quick release self-sealing coupling	
Diesel / Fuel	Brown	4” quick release self-sealing coupling	
Base Oil	White	4” quick release self-sealing coupling	
Drill Water	Green	4” hammer lug or quick release self-sealing coupling	
Oil Based Mud	Black	4” hammer lug or quick release self-sealing coupling	
Brine	Red	4” hammer lug or quick release self-sealing coupling	
Glycol	Purple	4” hammer lug or quick release self-sealing coupling	
Scale Inhibitor	No colour	4” quick release self-sealing coupling	

L Example Operating Company Data Card

PETERHEAD INFORMATION SHEET

BASE RULES
Vessel to be adequately manned at all times.

All personnel must wear appropriate PPE & High Viz at all times when outside of vessel's accommodation, including when transiting the base.

A safe means of access must be provided by vessel.

Moorings and Gangway to be properly tended.

It is the Master's responsibility to ensure that there is sufficient water depth under the keel.

Weather forecasts are available from
on Ch 11.

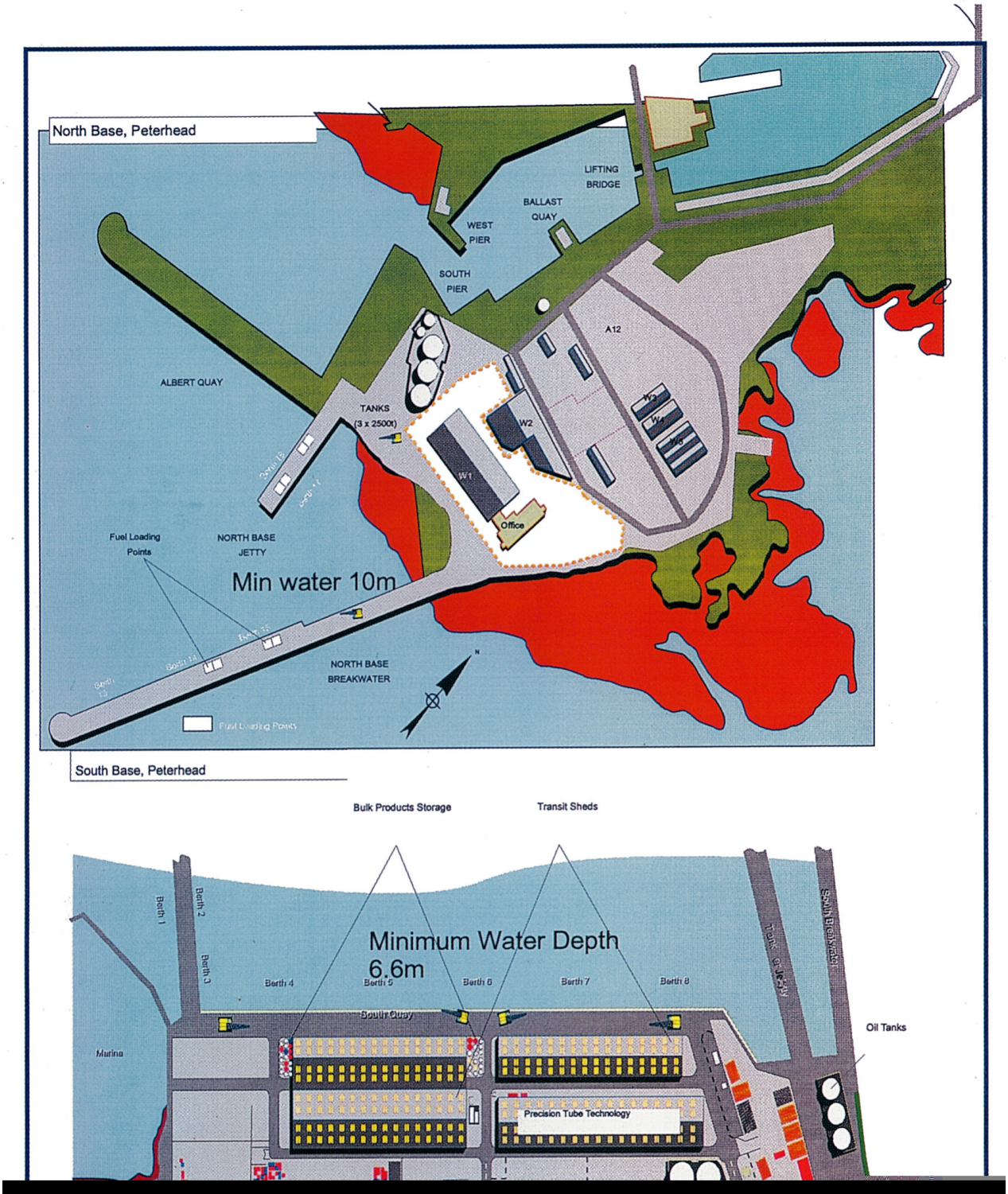
The Master and Mates should read North Sea
Section

PRIOR TO ARRIVAL AT
CONTACT PORT CONTROL ON CH 16 & CH 14.
CONTACT BASE ON CH 11 1 HOUR PRIOR TO ARRIVAL AND AT 1 MILE FROM THE BREAKWATER.

Station	Frequency & Telephone No
* Harbours	Ch 16 & Ch 14
* Base	Ch 11

NAME	FUNCTION	CONTACT NO
*	Marine Operations Supervisor - In charge of the day to day running of the Supply Vessel Fleet.	* or through Operations Desk
*	Marine Co-ordinator - Responsible for scheduling of vessels. Main point of contact for vessels on charter to *	* or through Operations Desk
*	Assistant Marine Co-ordinator. Back-up to *	* or through Operations Desk
Operations Desk	Responsible for berthing of vessels, organising fuel, water, skips, labour, craneage. Boatmen. Main point of contact for vessels not chartered to *	* or through Operations Desk
*	Marine Technical Manager - Responsible for ensuring vessels are fit for purpose, incident/accident investigations, answering any queries of a technical nature.	* or through Operations Desk
*	Assistant Marine Technical Manager - Responsible for running the Stand By Vessel fleet and providing technical back up to the Marine Technical Manager.	* or through Operations Desk
*	* Department	* or through Operations Desk
*	* Surveyors, carry out tank inspections and verify liquid bulks loaded.	* or through Operations Desk
*	Environmental Chemist - will give advice on any chemicals being carried or requiring disposal.	*
*	Marine Operations Manager - Responsible for Anchor Handlers.	*

M Example Port Data Card

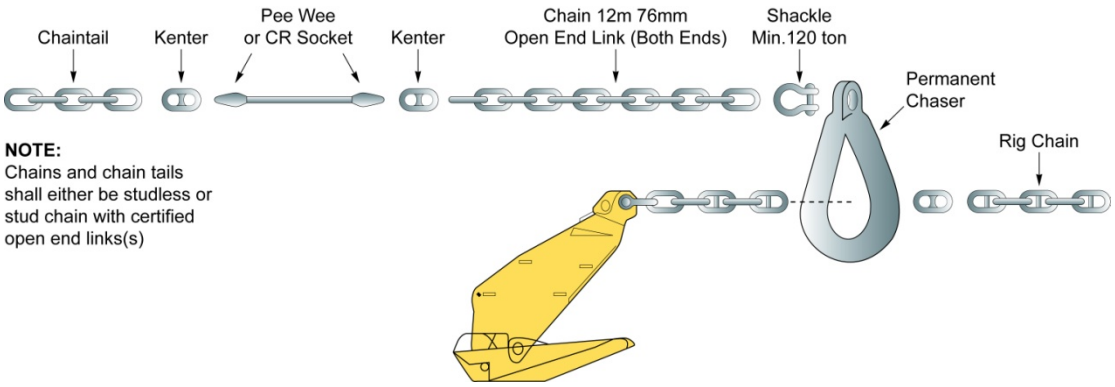


[redacted]

N Anchor Handling Set Up Systems

1. Permanent chaser pendant (PCP)

1. The diagrams below apply to PCP components. In general a swivel should not be used in the pendant system, only on the working wire. Illustrated below are PCP's, alone and with anchor.



2. Requirements related to chaser: certification, recertification, repairs, discarding:

The original chaser certificate shall be on board and any repairs documented

Periodic inspection will be performed, focussed on dimensions and wear.

Requirements related to shackles between chain tail and chaser:

Minimum of 110 tonnes (corresponds to super green pin).

3. Chain tail requirements:

Minimum ORQ and 400-tonne breaking load

Chain shall be certified

Minimum length 40' / 12 metres

Dimension 3" / 76 mm

Open common link at both ends.

4. Requirements related to shackles between chain tail and pendant wire:

Minimum of 120 tonnes.

5. Pendant wire requirements:

The wire to be minimum 3" / 76 mm

The length of the pendant wire shall be a minimum of 200' / 61 metres. Some operations may require longer pendants.

The wire shall be galvanized and quality certified.

Eye towards chaser shall be socketed with an option for connecting a minimum 3" / 76mm connecting link

Eye towards vessel/shark jaw shall be socketed with an option for connecting a minimum 3" / 76mm connecting link. It is recommended a 3" / 76mm chain

tail is attached; to ensure the shark jaw on board grabs the chain tail to avoid damage to the pendant wire.

6. Connector requirements (connecting link or pear link)

To be minimum of four links, for example: connecting link with a minimum of four links with stud and one open common link

To be to ORQ quality standard as a minimum

Minimum dimension 3" / 76 mm

Certified.

7. Recommended system length (from piggyback to pigtail) should be water depth plus 60 metres. Recommended maximum length is water depth plus 75 metres.

8. Buoy requirements:

Able to withstand collision with a vessel

Load bearing capacity based on water depth and equipment weight

Shall have sufficient buoyancy related to weight

Marked in accordance with applicable regulatory requirements

Fixed pigtail

Shackle rated to a minimum of 85 tonnes

Pigtail length 20' / 6 metres with minimum dimension 2 ¾" / 70mm

An open common link is recommended for eyes at bottom end of pigtail

Pigtail is connected to a connecting link at the bottom

9. Connecting link requirements:

Minimum ORQ quality 3" / 76mm

10. Shackle requirements:

Minimum 85 tonnes.

11. Buoy pennant wire:

Colour code markings (e.g. splice socket) based on length

Use metric measuring units

Hard eye or socket with a chain tail of four chain links (3" / 76mm).

12. Chain tail on anchor may be piggyback or primary anchor, but if piggyback then:

40' / 12 metre chain tail at both ends (towards primary anchor and towards buoy or piggyback)

Certified chain tails 3" / 76 mm

Minimum requirement ORQ certified chain, breaking load approx. 400 tonnes

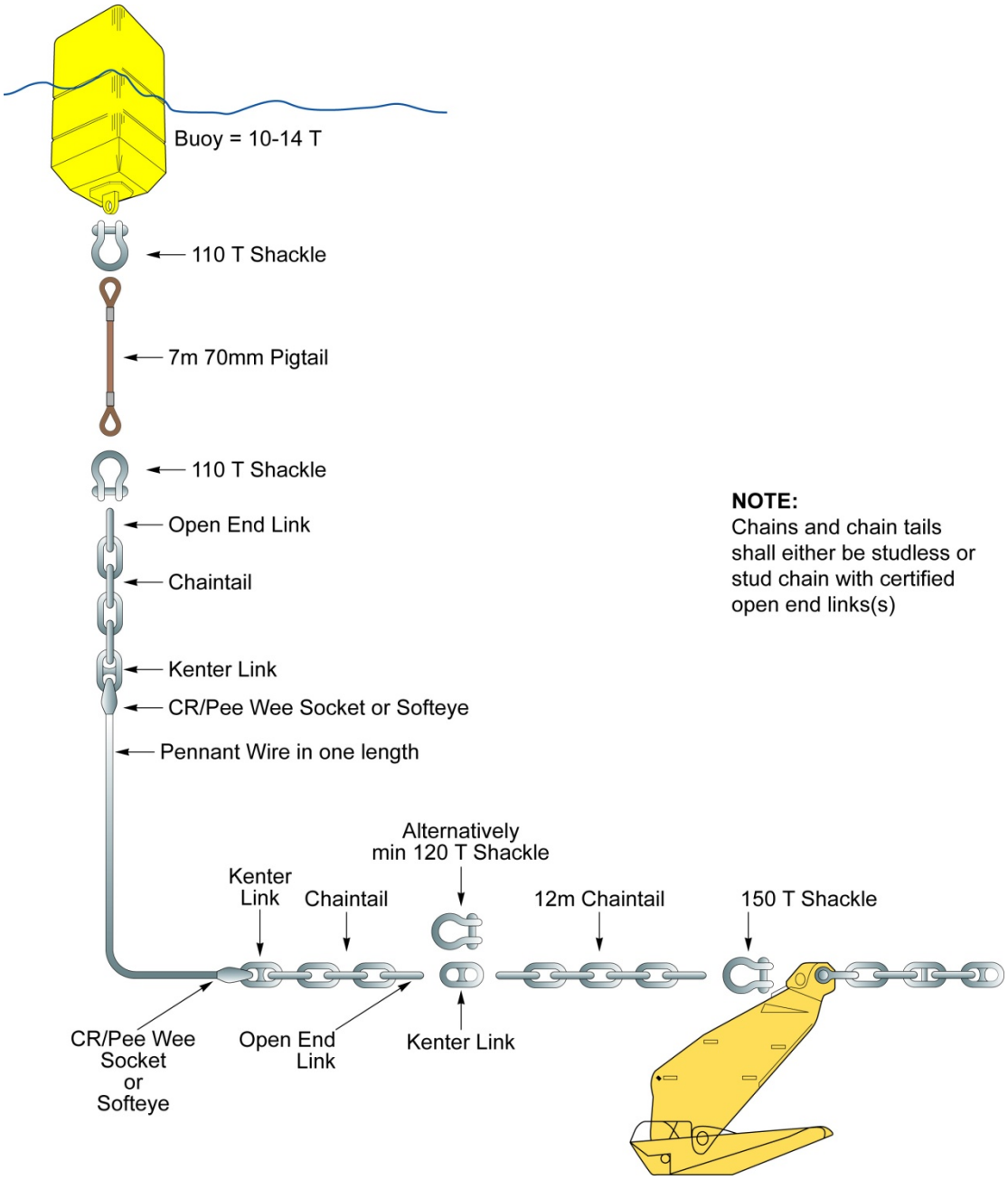
Open common link at both ends

Piggyback lifting yoke shall follow the piggyback anchor.

Either a connecting link or 120-tonne shackle may be used in the system, provided shackle is placed so it cannot enter winch on A/H vessel.

2. Pendant Buoy system

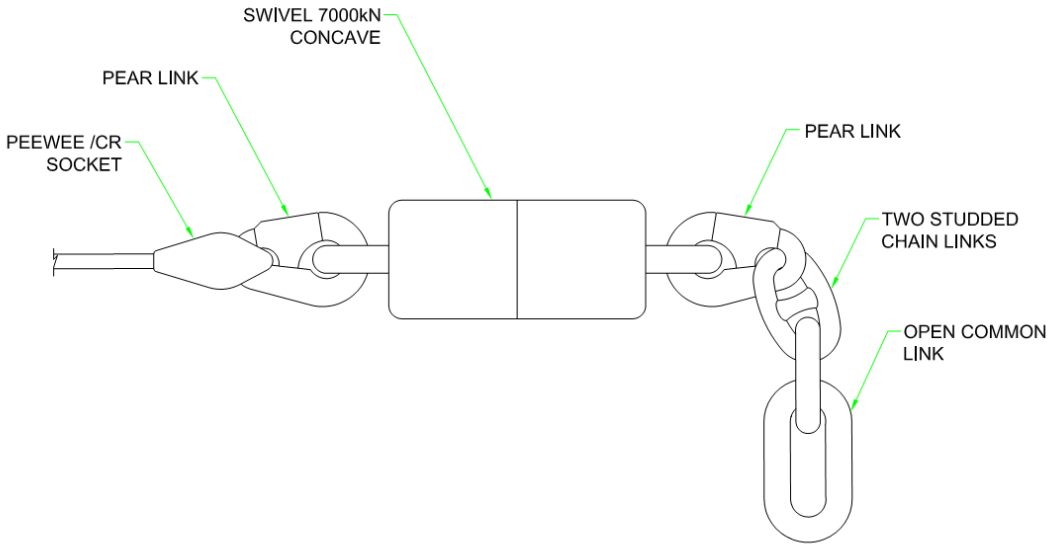
Recommended design of a pendant buoy system with associated equipment: soft eye or socket.
NOTE: Open end link here means open common link.



3. Working wire/chaser termination on vessel

1. Use an appropriate rated swivel in the working wire to prevent wire spinning.
2. A closed socket termination PeeWee/CR type is recommended for the working wire, Spelter sockets should not be used .
3. Minimum thickness of the working wire should be sized to the winch.
4. Use a pear link of an approved make
5. Use correct wire length for the water depth, i.e. 1 ½ times water depth

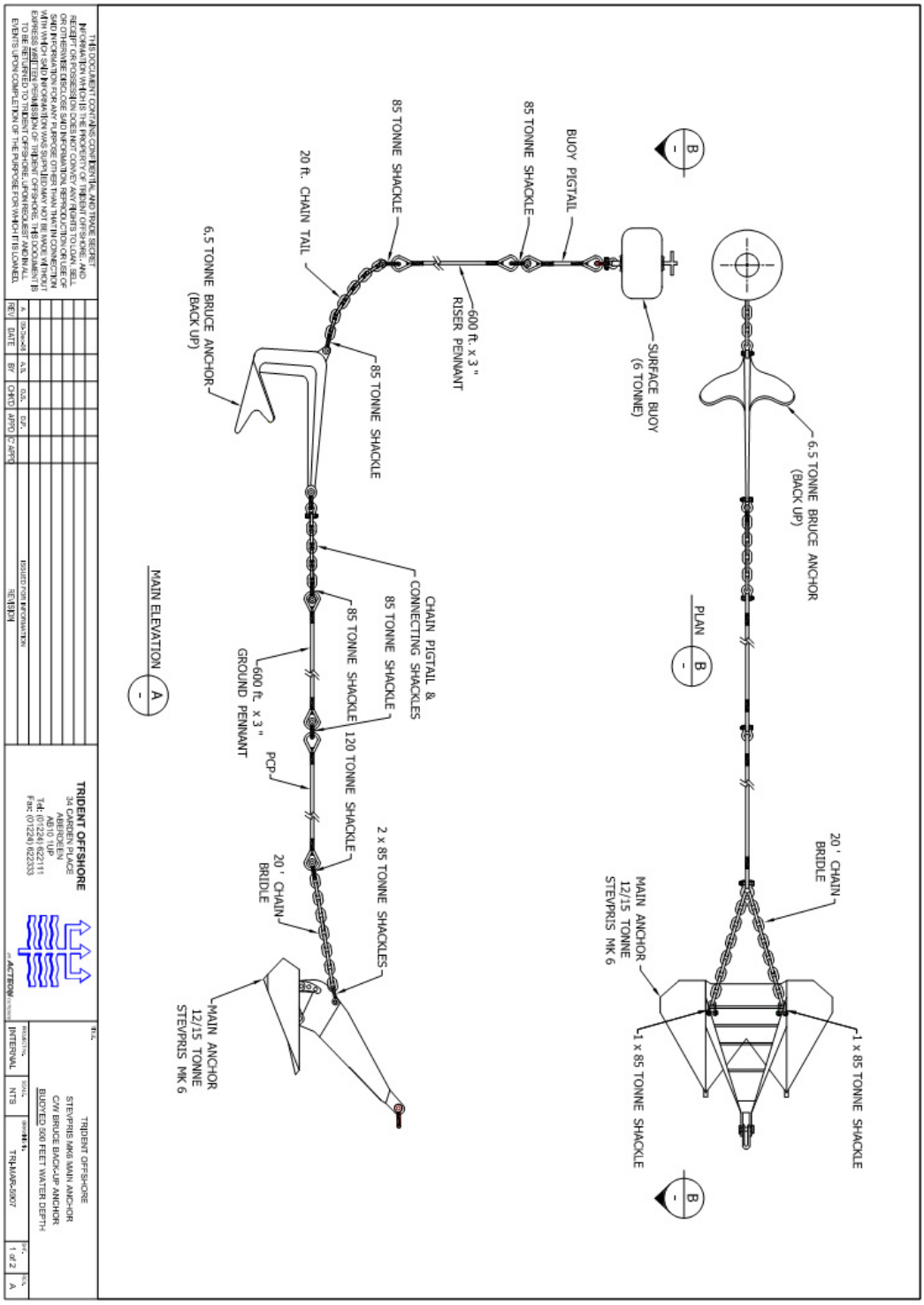
Recommended design is below.



4. Piggyback system

Recommended design of piggyback system - with associated equipment- for a Bouyed and Laydown arrangement.

NOTE: Open end link here means open common link. The wire breaking load between piggyback anchor and primary anchor shall be a minimum of 70% of the holding tension of the primary anchor. The wire between the piggyback and primary anchor shall be fastened to pad eye or bridle. Piggyback anchor shall be appropriate to sea bottom conditions based on the site survey.


6.5 TONNE BRUCE ANCHOR (BACK UP)
20 ' CHAIN BRIDLE
1 x 85 TONNE SHACKLE
MAIN ANCHOR 12/15 TONNE STEVPRIS MK 6
1 x 85 TONNE SHACKLE
PLAN
B
-
SURFACE BUOY (6 TONNE)
BUOY PIGTAIL
85 TONNE SHACKLE
600 ft. x 3 " RISER PENNANT
85 TONNE SHACKLE
20 ft. CHAIN TAIL
85 TONNE SHACKLE
6.5 TONNE BRUCE ANCHOR (BACK UP)
CHAIN PIGTAIL & CONNECTING SHACKLES
85 TONNE SHACKLE
85 TONNE SHACKLE
600 ft. x 3 " GROUND PENNANT
PCP
120 TONNE SHACKLE
2 x 85 TONNE SHACKLES
20 ' CHAIN BRIDLE
MAIN ANCHOR 12/15 TONNE STEVPRIS MK 6
MAIN ELEVATION
A
-
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REV
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BY
CHKD
APPD
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09-Dec-09
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Tel: (01224) 622111
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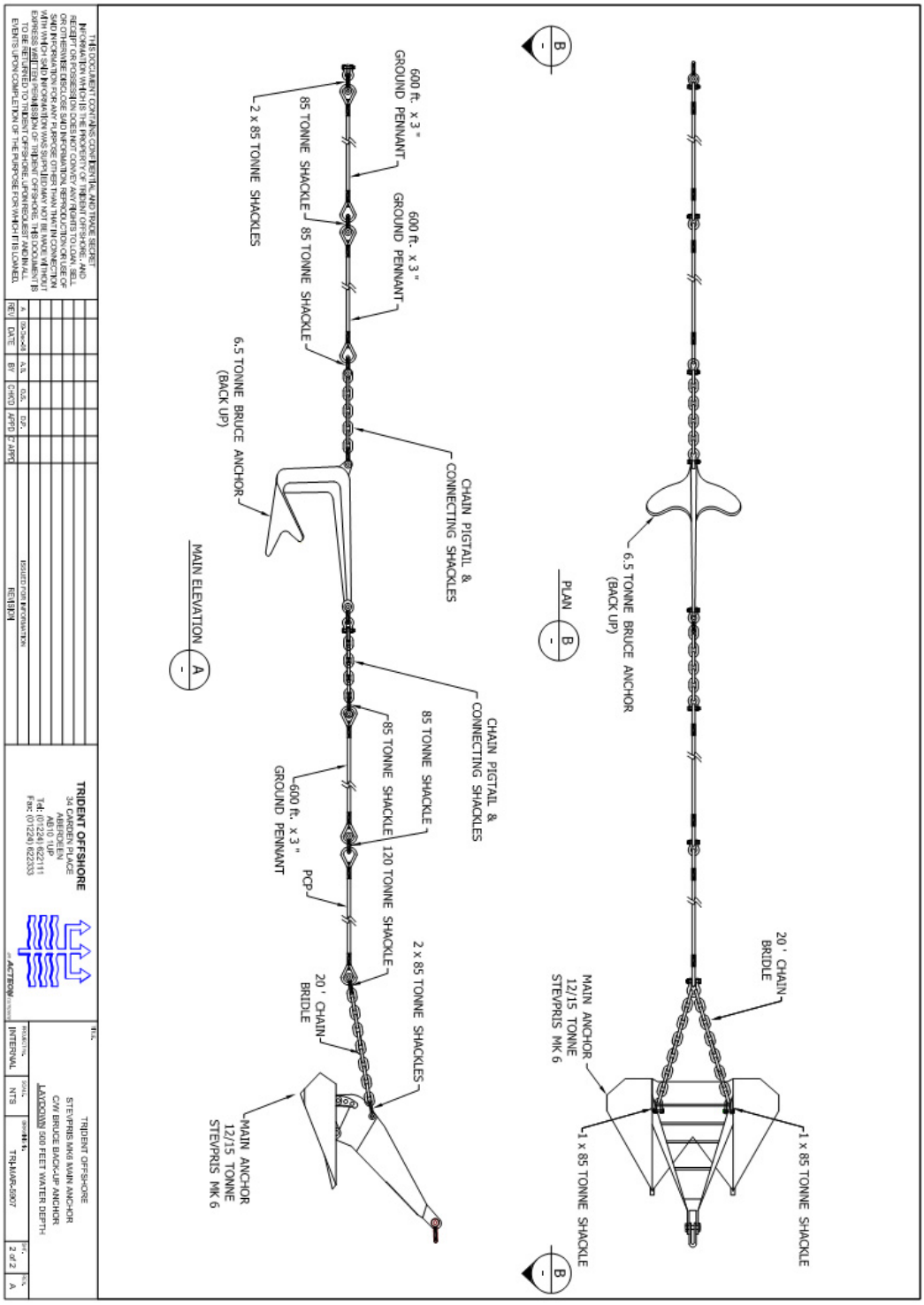
ACTROW
TITLE
TRIDENT OFFSHORE
STEVPRIS MK6 MAIN ANCHOR
C/W BRUCE BACK-UP ANCHOR
BUOYED 500 FEET WATER DEPTH
SCALE
NTS
DRAWING No.
TRI-MAR-0007
SHT.
1 of 2
REV.
A
INTERVAL


PLAN
B
-
1 x 85 TONNE SHACKLE
20 ' CHAIN BRIDLE
MAIN ANCHOR 12/15 TONNE STEVPRIS MK 6
6.5 TONNE BRUCE ANCHOR (BACK UP)
MAIN ELEVATION
A
-
600 ft. x 3 " GROUND PENNANT
85 TONNE SHACKLE
2 x 85 TONNE SHACKLES
CHAIN PIGTAIL & CONNECTING SHACKLES
120 TONNE SHACKLE
PCP
2 x 85 TONNE SHACKLES
TRIDENT OFFSHORE
34 CHARLESTON ROAD
ABERDEEN
AB10 1UP
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Fax: (01224) 622333
TRIDENT OFFSHORE
STEVPRIS MK6 MAIN ANCHOR
C/W BRUCE BACK-UP ANCHOR
LAYDOWN 500 FEET WATER DEPTH
TRI-MAR-5007
2 of 2
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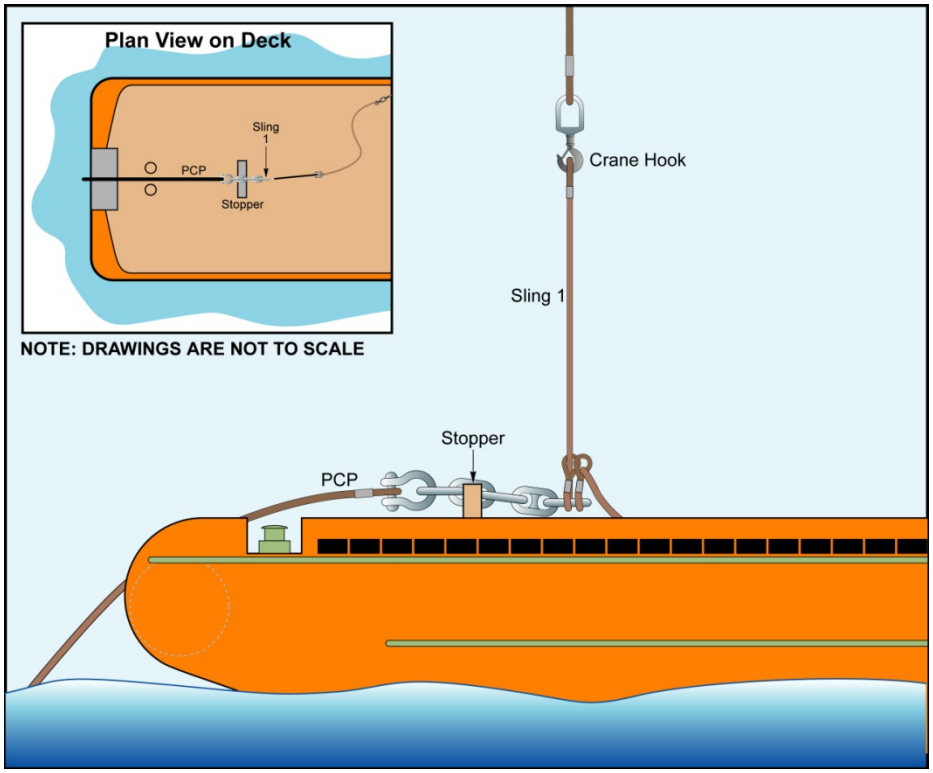
INTERVAL
NTS
REV
DATE
BY
CHKD
APPD
ISSUED FOR INFORMATION

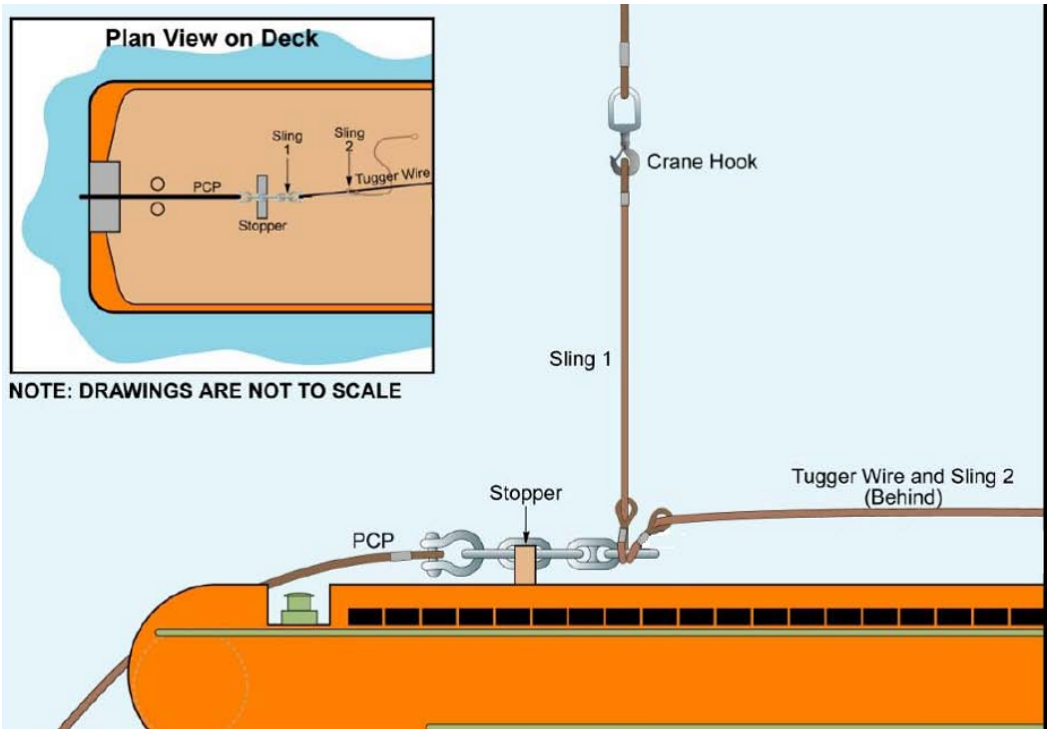
5. Chasing Pendant

5.1 Connecting Chasing Pendant



5.2 Releasing Chasing Pendant

- Equip chasing pendant with a short, pre-measured pendant with hard eye each end, of the same length as the distance between outboard end of stern roller and inboard end of mechanical stopper.
- Insert the short pendant between pendant and Tugger wire when pendant is in the stopper.
- Attach crane hook to the chasing pendant. Take the weight on the Tugger wire and release pendant from the stopper.
- Ease back on the Tugger wire to gently lower pendant, crane hook and short pendant to the roller, until the inboard eye of the short pendant can be secured in the stopper.
- With short pendant stopped off, disconnect Tugger wire and release the stopper.
- MOU crane then makes a clean vertical lift on the chasing pendant.


Plan View on Deck
Sling 1
Sling 2
Tugger Wire
PCP
Stopper
NOTE: DRAWINGS ARE NOT TO SCALE
Crane Hook
Sling 1
Tugger Wire and Sling 2
(Behind)
Stopper
PCP

O Bulk Cargo Hazard Overview

Although a COSHH assessment and material Safety Data Sheet must be in place prior to any operations, the following summarises the hazards of the most frequently shipped products. Although there are many kinds of oil-based mud, water based mud, base oil and brine the summary covers the general hazards of all.

Base Oil

Base oil has a hazard category of Harmful. Contact with skin or eyes should be avoided and breathing vapour, fumes or spray is harmful and will cause lung and respiratory damage. Hand, eye and skin protection should be in place and an approved respirator worn when entering a confined space that has contained Base Oil.
Base oil flash point ranges from >65ºC with an auto ignition range of >230ºC and should be shielded/protected from all ignition sources.
If spillage occurs it must be prevented from polluting environment by using pollution control equipment eg granules, mats, booms etc The COSHH assessment and Material Safety Data Sheet should always be consulted.

Oil Based Mud

Oil based mud does not have a hazard category as such but each individual component has a hazard category. Nausea and headaches can occur if excessive exposure occurs. Contact with skin or eyes should be avoided and do not breathe vapour, fumes or spray. Hand, eye and skin protection must be in place and an approved respirator utilised.
The flash point of oil based mud is dependent on the base oil used but will be >65ºC and should be shielded/protected from all ignition sources.
If spillage occurs it must be prevented from polluting environment by using pollution control equipment eg granules, mats, booms etc. The COSHH assessment and Material Safety Data Sheet should always be consulted.

Silicate Liquor

Silicate Liquor is considered to be of limited harm although proper PPE should be worn when in contact with the product. Contact with skin or eyes should be avoided and do not breathe vapours, fumes or spray. As the liquid is not flammable there is no danger from ignition sources,. The COSHH assessment and Material Safety Data Sheet should always be consulted.

Brine (NaCl, KCL, CaCl, CaBr)

Brine in general has a hazard category of Xi – irritant. It is advised to avoid contact with skin or eyes and do not breathe vapours, fumes or spray. NaCl, KCL, CaCl based Brines are considered to be of low/medium risk. Calcium Bromide (CaBr) and fluids containing Bromides are extremely harmful should they make contact with skin or eyes. Appropriate PPE should be worn at all times when working with Bromide based fluids.
Brine is non-flammable with a non-determined flash point.
If spillage occurs it must be prevented from polluting environment by using pollution control equipment eg granules, mats, booms etc. The COSHH assessment and Material Safety Data Sheet should always be consulted.

P Hand Signals for Crane Operations

Start operations

Stop

Emergency stop

Hoist

Inch the load

Lower

Lower slowly

Jib down

Jib up

Extend jib

Retract jib

Slew left

Slew right

Travel left

Travel right

Travel to me

travel from me

Cease operations

Q References

General

Anchor Handling & Towing

1. OLF/NSA Guidelines for Safety and Emergency Preparedness Training
2. OLF/NSA Acceptance Criteria for Offshore Service Vessels
3. UKOOA Guidelines for Anchor Handling in the Vicinity of UKCS Installations, Pipelines and Their Subsea Equipment
4. Norwegian Maritime Directorate's rules for passenger and cargo vessels, etc.
5. Norwegian Maritime Directorate's rules for mobile installations (most recent edition)
6. NMD's Circ. 7-2007 of 07.09.07: Guidelines for revision of ISM-manuals on supply ships and tugs used for anchor handling regarding the immediate measures issued by NMD
7. OLF/NSA 061 Guidelines for Safe Operation of Offshore Service Vessels
8. DNV Rules for Planning and Execution of Marine Operations
9. MSF Template of Data for AHV's
10. MSF Guidelines for the content of Rig move procedures
11. MSF Anchor Handling Manual Template

Accident Reporting

12. Merchant Shipping (Accident Reporting & Investigation) Regulations 1999 SI 1999/2567
13. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) SI 1995/3163 (plus associated HSE leaflet)

Bulk Transfers

14. IMO Resolution A.673 (16) – "Guidelines for the Transport and Handling of Limited Amounts of Hazardous and Noxious Liquid Substances in Bulk in Offshore Support Vessels"

Cargoes

15. MSN 1231 – "Safe Cargo Handling Operations on Offshore Supply Vessels"

Dutch Labour Act, leaflet A1-17

Cargo carrying units/Containers

16. IMO "Guidelines for the Approval of Containers Handled in Open Sea" 1998 MSC/Circ 860.
17. EN-12079 (for offshore containers built after 01-04-2000)
18. Nogepa Industry Guideline no. 2 (for offshore containers built before 01-04-2000)

Dangerous Goods

19. MSN 1705 – Portable Tanks, Road Tank Vehicles and Rail Tank Wagons for the Carriage by Sea of Liquid Dangerous Goods and Liquefied Gases
20. Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 SI 1997/2367
21. MSN 1806 - The Carriage of Dangerous Goods and Marine Pollutants in Packaged Form on ships in accordance with Amendment 33.06 to the International Maritime Dangerous Goods (IMDG) Code
22. Dangerous Substances in Harbour Areas Regulations SI 1987/37
23. MGN 282 – Dangerous Goods - Guidance in the Carriage of Packaged Dangerous Goods on Offshore Supply Vessels.
24. MSN 1458 - Offshore Support Vessels Carrying Hazardous or Noxious Liquid Substances in Bulk

25. MGN 1817 – Reporting Requirements for Ships Carrying Dangerous or Polluting Goods
26. MIN 285 – The Merchant Shipping (Dangerous or Noxious Liquid Substances in Bulk) Regulations 1996 – List of Current MARPOL Surveyors
27. Marine Guidance Note MGN 283(M), "Dangerous Goods - Guidance on the Back Loading of Contaminated Bulk Liquids from Offshore Installations to Offshore Supply/Support Vessels"

Gangways etc.

28. MS (Means of Access) Regulations 1988 (SI 1988/1637)

Health & Safety

29. The Health & Safety at Work etc. Act 1974
30. Management of Health and Safety at Work Regulations SI 1999/3242)
31. Merchant Shipping and Fishing (Health and Safety at Work) Regulations 1997 SI 1997/2962
32. MGN 20 – Merchant Shipping and Fishing Vessel (Manual Handling Operations) Regulations 1998 SI 2857.
33. Docks Regulations SI 1988/1655 and ACoP
34. Code of Safe Working Practices for Merchant Seamen – MCA: 1998 edition amendment 02.
35. Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).
36. Merchant Shipping (Lifting Operations and Lifting Equipment) Regulations 2006 SI 2184
37. OLF Guidelines for Safety and Emergency Preparedness Training
38. OLF Guidelines for Safety Requirements for Hired Equipment
39. HSE Safety Notice 10/80
40. DNV-RP-H101 Risk Management in Marine and Subsea operations

Hours of Work/STCW

41. Merchant Shipping (Safe Manning, Hours of Work and Watchkeeping) Regulations SI 1320 as amended by 1997 SI 1911 and 2000 SI 484 and also by the Merchant Shipping (Hours of Work) Regulations 2002 SI 2125.
42. MSN 1767 Hours of Work, Safe Manning and Watchkeeping

Interface between Installation and Vessel

43. Offshore Installations and Pipeline Works (Management and Administration) (MAR) Regulations 1995/738, reg 8: Co-operation
44. UKOOA Guidance on Ship/Installation Collision Avoidance
45. HSE Offshore Technology Report (OTO 1999 052) “Effective Collision Risk Management for Offshore Installations”

International

46. IMO Resolution A.469 (12) – as amended – “Guidelines for the Design and Construction of Offshore Supply Vessels”
47. IMO Resolution A.741 (18) – ISM Guidelines & SOLAS Chapter IX (Management for the safe operation of ships)
48. IMO Resolution A.863 (20) – Code of Safe Practice for the carriage of cargoes and persons by Offshore Supply Vessels
49. IMO MCS/Circ.645 - Guidelines for vessels with DP operating systems

Manning

50. MSN 1767 – Hours of Work, Safe Manning and Watchkeeping.

Masters Responsibility

51. SOLAS ch V Reg 10-1 invoked by reg 4 of Merchant Shipping (Safety of Navigation) Regulations 2002 SI 1473.

Merchant Shipping Legislation – General

52. Merchant Shipping Act 1995.

Pollution Prevention

53. MS (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998 SI 1056 amended by 2001 SI 1639.
54. International Chamber of Shipping – "Shipping and the Environment: A Code of Practice" 1999.

Regulatory Authorities – Demarcation

55. Maritime and Coastguard Agency/Health and Safety Executive Memorandum of Understanding : April 1999

Stowage & Securing

56. IMO resolution A.714 (17) – Code of Safe Practice for Cargo Stowage and Securing (CSS Code) and IMO Guidelines for the preparation of the Cargo Securing manual to MSC/Circ. 745 and the IMO/ILO/ECE Guidelines for Packaging of Cargo Transport Units (CTUs) (MSC/Circ.787)
57. Merchant Shipping (Carriage of Cargoes) Regulations 1999 SI 336.

Technical

58. OLF Guidelines for Acceptance Criteria for Offshore Service Vessels (No. 072)

Training

59. MS (Training and Certification) Regulation 1997 (SI 1997 NO 348 and subsequent correction, 1911)
60. IMCA M182 Guidelines for Safe Operation of Dynamically positioned Offshore Supply Vessels

Transfer & Towing

61. NMD Regulations of 17 December 1986 relating to transfer and towing of mobile installations as well as towing arrangement and mooring of supply vessels on such installations (w/associated guidelines and notices).

R Contacts

MARITIME AND COASTGUARD AGENCY
Bay 1/18
Spring Place
105 Commercial Road
Southampton SO15 1EG
Tel: 02380 329 122
Fax: 02380 329 161
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NORWEGIAN SHIPOWNERS' ASSOCIATION
Raadhusgt. 25
P.O.Box 1452 Vika
NO-0116 Oslo
Tel: +47 22401500
Fax: +47 22401515
Web: http://www.rederi.no

HEALTH & SAFETY EXECUTIVE
Hazardous Installations Directorate
Offshore Division
Redgrave Court
Merton Road
Bootle
Merseyside
L20 7HS
Tel: 0151 951 4000
Web: http://www.hse.gov.uk

CHAMBER OF SHIPPING
Secretary, OSV Issues Committee
Carthusian Court
12 Carthusian St
London EC1M 6EZ
Tel: 020 7417 2827
Fax: 020 7600 1534
Web: http://www.british-shipping.org

Oil & Gas UK
Director, Operational & Technical Affairs
Oil & Gas UK
3rd Floor
The Exchange 2
62 Market Street
Aberdeen AB11 5PJ
Tel: 01224 626652
Fax: 01224 626503
Web: http://www.oilandgas.org.uk

BROA
Manager
British Rig Owner's Association
Carthusian Court
12 Carthusian St
London EC1M 6EZ
Tel: 020 7417 2827
Fax: 020 7600 1534
Web: http://www.broa.org

IADC
Director - European Offshore Affairs
International Association of Drilling Contractors
Wood International Centre
Craigshaw Drive
West Tullos
Aberdeen AB12 3AG
Tel: 01224 874800
Fax: 01224 875600
Web: http://www.iadc.org

NAUTILUS
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Fax: 020 8530 1015
NAUTILUS (Dutch Branch)
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3000 AN
Rotterdam
Web: http://www.numast.org

RMT
General Secretary
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London NW1 2BL
Tel: 020 7387 4771
Fax: 020 7387 4123
Web: http://www.rmt.org.uk

STEP CHANGE IN SAFETY
3rd Floor
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Fax: 01224 577251
Web: http://www.stepchangeinsafety.net

MARINE SAFETY FORUM
Tel: +44 (0) 7969 497580
Email secretary@marinesafetyforum.org
Web: http://www.marinesafetyforum.org

OLF
Oljeindustriens Landsforening
Hovedkontor, Forus
Postboks 8065, 4068 Stavanger
Vassbotnen 1, 4313 Sandnes
Norway

NOGEPA

Netherlands Oil and Gas Exploration and Production Association
Bezuidenhoutseweg 27-29
P.O. Box 1729
2502 AS The Hague
Tel: +31 70 347 88 71
Fax: +31 70 385 12 31
Web: http://www.nogepa.nl/

DSA
Danish Shipowners' Association
Amaliegade 33
P.O. Box 3037
DK-1256 Copenhagen K
Denmark

National Addenda

NL1

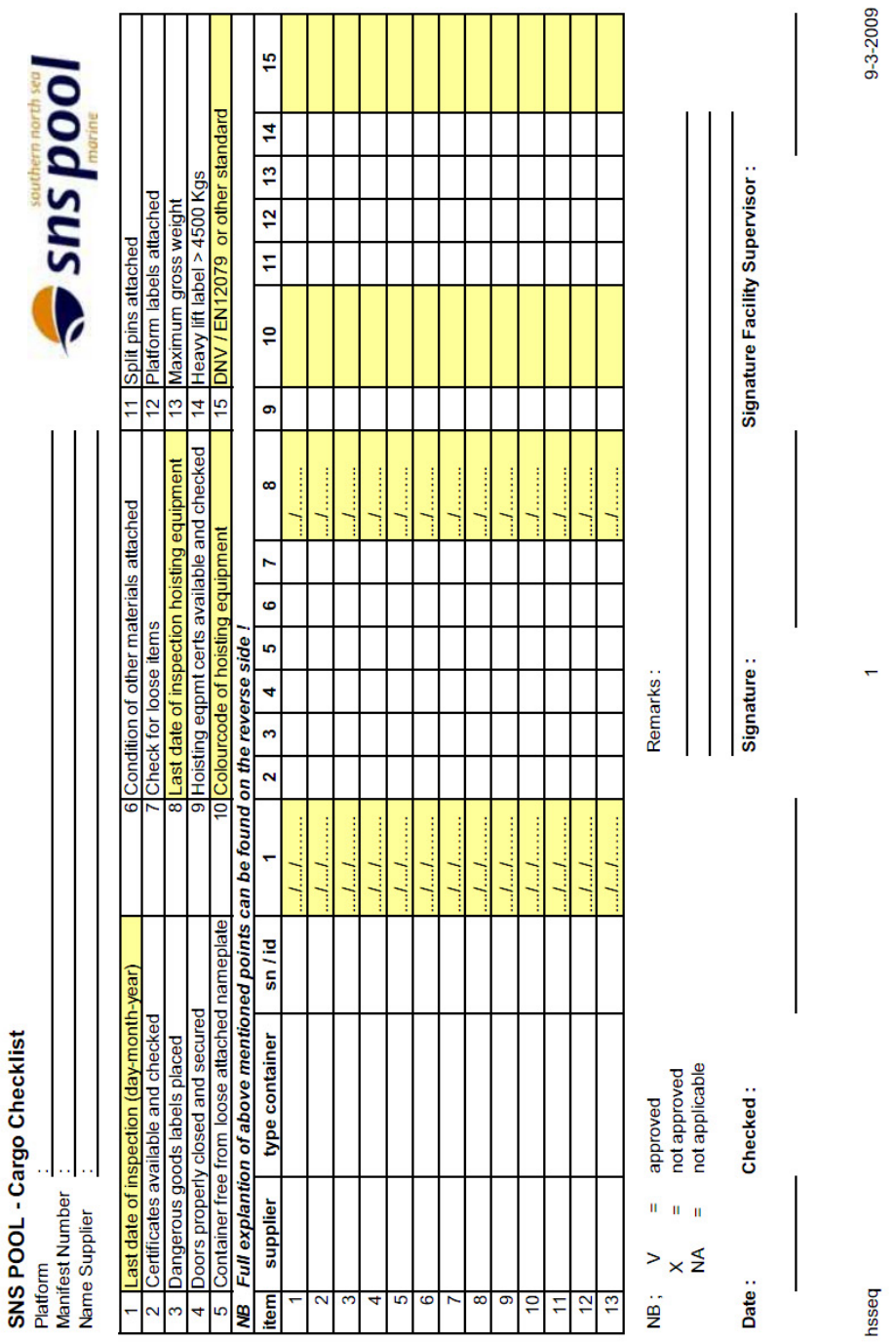
Title:	**Radioactive material including LSA**
Issue:	1
Related documents:	• Radioactive Handling Procedure • NORM procedure

1. **Shipment of LSA materials shall always be conducted in accordance with the Radioactive Handling Procedure and the Import permit, which limits the import of LSA material to the location only as stated in the permit of the relevant operating company**
2. Further requirements are laid down in the NORM procedure. This procedure is available on the Southern North Sea Pool website: www.snspool.com.

Authorised by:	

NL2

Title:	Cargo Checklist
Issue:	2
Related documents:	



SNS POOL - Cargo Checklist

Platform :
Manifest Number :
Name Supplier :

| | | |

Instructions for completion of a cargo checklist

General

- A visual check on the state of transport unit and contents can only be done on location. The checklist should be used and filled in on the spot.
- Tick boxes 2 through 7, 9 en 11 through 14 after checking with the mark as indicated on the front (V, X, of NVT)

1. Last date of inspection:

There are three types of inspection:

- Visual inspection: Marked with date and suffix V
  Validity: 12mths
- Visual/MPI inspection: Marked with date and suffix VN
  Validity: 24mths
- Loadless/MPI * Marked with date and suffix T
  Validity: N.A..

This loadless/MPI * inspection will be carried out when new, repair or revaluation. The inspecting body has the authority to carry out a loadless/MPI inspection when deemed necessary. After the execution of a loadless/MPI inspection the container shall be included again in the regular inspection schedule.

2. Certificates availability and checked:

There are several types of certificates. Check whether the description on the certificates matches with the inspected items. Check whether the identification plate matches with the certificates.

3. Dangerous Goods labels applied:

Dangerous goods labels must be applied for transport, in conformity with the IMDG-Code.

4. Doors properly closed and bolted:

All doors of container are to be closed and secured prior to loading.

5. Containers freed loosely attached name plate i.e. commercial text:

Names should only be marked by means of labels and paint.

6. Condition of other materials attached:

For instance: cross-overs, document holders etc.

7. Check for loose items:

Check whether all loose items have been fixed or secured correctly.

8. Last inspection date hoisting and lifting equipment:

There are two different types of inspection:

- Visual inspection: Marked with date (mth-yr) and suffix V
  Validity: 12mths
- Testing: Marked with date (mth –yr)and suffix T
  Validity: 24mths

9. Hoisting and lifting equipment certificates available and checked:

See point 2 above.

10. Colour coding sling:

Colour codes of the sling are important when determining the year in which the inspection took place. The codes are determined by IMO (International Maritime Organisation).

Brown	2004	2010
Blue	2005	2011
Yellow	2006	2012
Orange	2007	2013
Black	2008	2014
Green	2009	2015

11. Split pins applied: (no hair pins)

Check whether the split pins are applied, whether they have the correct dimensions and have not corroded and/or damaged.

12. Platform labels applied:

Each unit must be supplied with a label stating the destination e.g. Platform and/or Supply Base.

13. Working Load Limit:

Check whether this gross weight is within the limits as indicated on the identification plate (Working Load Limit).

14. Heavy-lift labels applied:

Weights equal to or exceeding 4500 kg should be supplied with a heavy-lift label.

15. Standard information:

Description of type of standard which is applicable e.g.
DNV / EN 12079 or other standard.

Authorised by:	

NL3

Title:	**Potable water**
Issue:	2
Related documents:	

Potable water and drillwater

Attendance of potable water

The Waterleidingswet en Drinkwaterbesluit (Water-works legislation and Drinking water decree) is to be adhered to, because of past experiences regarding the quality of water. It is mandatory to adhere to the following procedures regarding the loading, transporting, discharging and quality control of potable water:

Storage of potable water onboard vessel should be reserved solely for that purpose and the storage tanks must be constructed of material that does not support microbiological growth.

Potable water tank inspection procedures.

Every 6 months, or at the start of a contract, an independent surveyor conducts a cleanliness /coating condition survey of the potable water tanks;

Prior to an inspection the tanks have to be emptied. If possible, remaining water has to be pumped into the drill water tanks.

When inspection of the inside of a tank reveals it is not suitable for transport of potable water, the tank has to be cleaned or repaired by a specialised company, in case of recoating a certified paint must be used, the independent surveyor will return hereafter to perform a final inspection;

The cost for these repairs are for the vessel owner's account;

After inspection, cleaning and / or repairs, the tank has to be disinfected; The master of the vessel is responsible for proper disinfection of a potable water tank;

10 hours after application of the disinfectant (1 litre Hadex: 5 m³ potable water), this disinfectant should be discharged overboard. It is not allowed to transfer this disinfectant liquid into the drillwater tanks;

Tank has to be rinsed until the water at the tap meets the standard of 0.5 mg maximum free active chlorine per litre. If the water sample contains less than

0.5 mg free active chlorine per litre, extra free active chlorine is to be added to meet the standard. *(Use the Hadex Calculator)*.

Note: after tank coating repair, aromatic potable water samples has to been taken to establish that the water is free of dangerous aromatic's, after the laboratory approves this analysis, potable water may be used for consumption again. In order to determine the amount of free active chlorine in potable water, a Hach kit has to be used.

Performance verification of this pocket colorimeter must be tested each month with a Chlorine standard kit.

On board of each vessel such a kit is available for testing (English and Dutch manual is included). For implementation of the Hach kit, this manual is to be consulted.

Periodical (potable water) investigation
Water quality is monitored by measuring microbiological, chemical and indicator parameters.

Daily chlorine counts and temperature measurements of each potable water tank must be noted in the water logbook on board the vessel.

Every month samples need to be taken by a independent laboratory for bacteriological analysis of each potable water discharge tank.

6 times a year legionella samples *of the vessel's potable water tanks has* to be taken by a independent laboratory.

Period: First, second and last quarter (1 sample each quarter). Third quarter July, August and September each month.

All laboratory results are quarterly reported to the operators by the SNS pool manager.

Direct actions to be carried out on receiving microbiological results.
When an official laboratory establishes that a high colony count, Coli or Legionella is present in samples taken from tanks this water must be discharged of said tanks to the drill water tanks. These tanks then have to be filled with fresh water and disinfected with Hadex (1 litre: 5m³ potable water). After no less than 10 hours after application of the disinfectant, this liquid should be discharged pumped out. It is not allowed to transfer this disinfectant liquid to the drillwater tanks.
When Coli or Legionella etc. is present the pool fleet manager will inform the operational management of the operator directly by phone and email, complete with a list of locations, dates, and the amount of potable water which was delivered over the last 10 day's at their locations.

A copy of this email will be send to the other pool partners.

Bacteriological Quality Guidance

Parameter	KVE	Action
Colony Count	>1000	KVE/ML Dump, disinfect.
Coli forms 37C	>1	KVE/100 ML Dump, disinfect, resample
Legionella SSP	>50	KVE/L Dump, disinfect, resample

As soon as possible new samples have to be taken and only after the laboratory approves this analysis, potable water may be used for consumption again.

The temperature of the water should preferably be lower than 20 degrees and it must not exceed 25 degrees. If, over a period of 2 days, the temperature exceeds 25 degrees, this potable water must be transferred to the drillwater tanks or discharged..

In order to determine the amount of free active chlorine in potable water, a Hach kit has to be used.

Performance verification of this pocket colorimeter must be tested by pool fleet manager each month with a Chlorine standard kit.

Maintenance program for UV sterilizer must be logged in vessel logbook.

The captain is responsible to hand over every week a copy of water log book to the pool planning department

For long term vessels (longer that 6 months) the pool fleet manager is responsible to have a Risk Analysis for Legionella Prevention is carried out, including a management plan for Legionella prevention.

Procedure for bunkering of water at the Paleiskade Den Helder

The master of the vessel is responsible for correct bunkering of water;
Storage tanks of potable water onboard vessels should be reserved solely for that purpose and constructed of material that does not support microbiological growth.

Stagnating water is a common breeding ground for water borne disease therefore the pool partners has decided to keep potable water not longer on board than 7 days.
Preferable the potable water has to be transferred to the drillwater tanks or discharged overboard. This action must be noted in the water logbook;

Prior to load potable water, the water level in the tank has to be determined. If

the water-level is 20% or less, this water should be transferred to the drillwater tanks or be discharged overboard;

Before loading potable water the vessel should flush the ships internal lines (inside out) for 1 minute prior to loading this action should be noted in the water log book

Be aware that potable water loaded at quay 33, 34 and 35 is automatically injected with free active chlorine between 0.3 and 0.5 mg per litre

This dose is meant for reduction of bacterial growth, algae and other microorganisms

Check if the loading point is free of dirt and fluids;

By any doubt the Pool planning must be contacted in order to get an approval for loading

Only dedicated potable water hoses should be used to load potable water, this hose may under no circumstance be used for other purposes;

Check the seals on the hydrants, if necessary the seals must be replaced by contacting the pool planning.
Hydrants must be chlorinated before use with a solution of 10mg/ltr chlorine.

(In near future hydrants will be equipped with a non return valve)

Check the water-meter and hose for damages. If damages are revealed, the pool planning must be informed immediately for loading approval ;
Note the water-meter reading (possibly build into the hydrant) and Quay number in the water logbook on board the vessel and in the Vessel Sailing Instructions Report;

(If available switch on UV sterilizer)

Open the valve and rinse for a period of 3 seconds in order to prevent possible damage by grit to the water-meter (in the hydrant);

Close the valve and connect the appropriate hydrant and hose to the main potable water connection;

Rinse the hydrant and hose on full flow for a period of no less than 1 minute and close the valve at the connection point;

Connect the hose to the destined coupling on board the vessel;

Check for any bottlenecks in the hoses, if necessary a steel saddle is to be applied to the railing of the vessel;

Open the valve completely and start bunkering water. During bunkering a

regular check of hydrant and hoses is required. Watch the volume in the water tanks and switch tanks in time;

(If available switch off UV sterilizer)

Close the valve at the connection point when bunkering of water is completed;

Disconnect the potable water hose;

Note the final water-meter reading in the water logbook and the Vessel Sailing Instruction Report;

Hydrant must be stored empty and plugged off after use at both ends.

Potable water hoses should be rolled and hung up (storz coupling facing down)

Take water samples from the loaded tanks and determine the amount of free active chlorine; the standard is 0.5 mg free active chlorine per litre. If the water sample contains less than 0.5 mg free active chlorine per litre, extra free active chlorine is to be added to meet the standard.

Test result is to be noted in the water logbook.

In order to determine the amount of free active chlorine in potable water, Hach kit and Hadex Calculator has to be used. The pool fleet manager provided this kit including Dutch and English manuals. For the usage the manual has to be consulted.

Procedure of bunker potable water from quaysides other than 33, 34 and 35

See above procedure with exception of the automatic injection of Hadex, therefore and if available a potable Chlorine dosage unit must be used. (Pre-dosed with free active chlorine between 0.3 and 0.5 mg per litre)

Procedure for discharge of potable water at offshore locations

The master of the vessel is responsible for proper discharge of potable water at an offshore location;
Take a water sample(s) and determine the temperature and the amount of free active chlorine. Inform platform/Rig at arrival about the amount of active chlorine and temperature; note this figure in the water logbook this sample should not be higher than 0.5 mg of free active chlorine per litre.

In order to determine the amount of free active chlorine in potable water, a Hach kit and Hadex calculator has to be used. The SNS pool fleet manager provides this kit including English and Dutch manual. For the uses of the Hach kit this manual is to be consulted.

Connect the destined water-hose to the connection on board the vessel;

(*If available switch on UV sterilizer)*

Note the water-meter reading figures in the water logbook on board the vessel;
Rinse the hose (in good commutation with the location full flow for a period of at least 1 minute;
Pump the requested amount of potable water to the rig / platform;
Stop pumping after discharging the requested amount of potable water.
(If available switch off the UV sterilizer)

When the hose is disconnected make sure that the crew is at safe distance at the moment that the crane lift the hose to the location. Have the deck crew stand aside at a safe distance;

Note the final water-meter reading and/or amount of potable water discharged and destined location in the water logbook and the vessel voyage report.

Procedure for discharge of Drill water at offshore locations

The master of the vessel is responsible for proper discharge of drillwater water at an offshore location;
Connect the destined water-hose to the coupling on board the vessel;
Note the water-meter reading (if available) in the water logbook on board the vessel;
Pump the requested amount of potable water to the rig / platform;
When the hose is disconnected make sure that the crew is at safe distance at the moment that the crane lift the hose to the location. Have the deck crew stand aside at a safe distance;
Note the final water-meter reading and/or amount of drill water discharged and destined location in the water logbook and the vessel voyage report.

SPOT VESSELS

A spot-charter vessel is only allowed to supply potable water to an offshore installation after a cleanliness/condition survey of their potable water tanks and a full bacteriological analysis, including Coli and Legionnaire's disease bacteria.

The pool fleet manager will provide the approval for usage and deliveries of potable water when the results of the analyse report are known.
Storage of potable water onboard vessel should be reserved solely for that purpose and constructed of material that does not support microbiological growth.

Prior to the inspection the tanks have to be emptied. If possible, remaining water has to be pumped into the drill water tanks;

When inspection of the inside of a tank reveals it is not suitable for transport of potable water, the tank has to be cleaned or repaired by a specialised company, in case of recoating a certified paint must be used, the independent inspector will return hereafter to perform a final inspection;

The cost for these repairs are for the vessel owner's account;

After inspection, cleaning and / or repairs, the tank has to be disinfected; The master of the vessel is responsible for proper disinfect ion of a potable water tank;

10 hours after application of the disinfectant (1 litre Hadex: 5 m³ potable water), this disinfectant should be pumped out. It is not allowed to transfer this disinfectant liquid to the drillwater tanks;

The tank has to be rinsed until the water at the tap meets the standard of 0.5 mg free active chlorine per litre. If the water sample contains less than 0.5 mg free active chlorine per litre, extra free active chlorine is to be added to meet the standard;
In order to determine the amount of free active chlorine in potable water, a Hach kit has to be used.
Performance verification of this pocket colorimeter must be tested each month with a Chlorine standard kit. On board of each vessel such a kit is available for testing (English and Dutch manual is included). For implementation of the Hach kit, this manual is to be consulted.

An official laboratory must establish that there is no Coli, aromats or Legionella bacteria are present in samples taken from tanks.

Only after the laboratory approves this analysis, potable water may be used for consumption.

The SNS Pool provide the vessel with the following equipment:

1 * x- over 4”weco x 2" Storz-coupling
1 * 2" standpipe (including non return valve)
2 * 20m. * 2" hose
1 set of tools for 2" Storz coupling

50 litre Hadex

MSDS Hadex

Hadex calculater

Hach kit

Waterlog sheets

NO1

Title:	PSA responsibility
Issue:	1
Related documents:	OLF 61

The Petroleum Safety Authority (PSA) is responsible for safety control and supervision of offshore activities inside the safety zone on the Norwegian Continental Shelf, including operations (functions or tasks) performed by vessels, such as standby.

This requires equipment, systems and procedures for performing the vessel's functions or tasks in the petroleum activities to comply with the PSA's requirements (see 1.5.3), in addition to any requirements stipulated by the flag state.

Authorised by:	

NO2

Title:	**Acceptance Criteria for Offshore Support Vessels**
Issue:	1
Related documents:	OLF 72

OLF Guidelines for Acceptance Criteria for Offshore Service Vessels (No. 072) shall accompany the contract.

Authorised by:	

NO3

Title:	**Operational limitations**
Issue:	
Related documents:	OLF 61

The Ship Owner is responsible for describing operational limitations for the various vessel operations for each single vessel. Operational limitations will vary according to the vessel's design, size, outfitting etc. The operating company shall be informed of any operational limitations before signing the contract, for example in the form of classification society approved DP capability plot and Environment Regularity Number (ERN).

The Ship Owner shall draft operational limitations for any vessel with insufficient technical redundancy in its propulsion, manoeuvring and positioning systems (see Chapter 8.2). The operational limitations shall describe the restrictions placed on the individual operations to be carried out by the vessel, as well as describe any compensating measures that will be initiated to ensure the operations can be carried out.

The operating company may stipulate weather limitations on a more general basis for operations on fields or facilities, such as loading or offloading operations involving a installation and vessel. This shall be communicated to the Master on board vessels arriving at the relevant installation before the vessels enter the safety zone.

The Master is responsible for continuously evaluating the safety of any ongoing operation. If one approaches the limits for safe operation, the Master shall take the necessary precautions to ensure staying within the limits. If necessary, the Master shall stop the operation (cf. Section 1.3 Responsibilities). If an ongoing operation is stopped by the Master, this shall be communicated immediately to the offshore installation manager, and the operating company or shipping manager shall be notified.

Special safety precautions shall be taken when lifting in unstable wave conditions, particularly involving heavy lifts. The crane operator is responsible for ensuring that the lifting operation is carried out in accordance with the crane's load diagram and other relevant operational limitations applicable to the installation in question.

Authorised by:	

NO4

Title:	**Operations within the safety zone using DP**
Issue:	1
Related documents:	OLF 61

1. To be allowed to operate within the safety zone using dynamic positioning (DP), vessels shall meet the requirements of equipment class 2 or 3 (cf. IMO / MSC Circular 645 of 6 June 1994) and with class notation DYN POS AUTR or DYN POS AUTRO issued by DNV or equivalent from another classification society.
2. Vessel with DP class 1 that in other respects comply with technical redundancy requirements corresponding to "Specification for redundancy in position keeping ability" with a "Declaration of Compliance", issued by a recognized classification society, will be required to obtain the operator's permission before the vessel is allowed to carry out DP operations within the safety zone. Such acceptance will normally be tied to the operating company accepting the vessel on a contract, unless the contract stipulates special conditions for DP operations.
3. DP systems shall enable transition from DP to joystick/manual mode by operation of a single key touch.

Authorised by:	

NO5

Title:	Competence requirements
Issue:	1
Related documents:	OLF 61

Role	Adequate English	IMDG Code	Lifting Equipment	Slinger course	Cargo containers	Cargo handling	Bulk materials handling	Materials management	Notes & Additional Requirements
Operation managers Shipping managers Sailing managers Vessel coordinators Logistics coordinators		X	X			X			1. Shall preferably have a maritime background (nautical studies, mate, Master) 2. The defined operation manager, shipping manager, sailing manager, vessel coordinator or logistics coordinator is responsible for coordination and follow-up of all loading or offloading operations involving offshore service vessels at a base, quay or tank installation.
Quay foremen	X	X	X		X	X			
Personnel packing goods in cargo containers		x*			X				* IMDG required if handling goods classified as dangerous goods
Crane operators			X	X					
Personnel involved in cargo loading or offloading		X		X					
Personnel involved in bulk cargo loading or offloading operations							X		1. Safe handling of bulk cargo is especially important for methanol, A and B liquids and hazardous chemicals. 2. Handling and containment of spills, and familiar with related external notification procedures
Installation Maritime operations co-ordinator						X			4. Training shall include vessel types, functioning of manoeuvring and/or positioning systems, vessels' characteristics and limitations (including weather restrictions and vessel load capacity) and maritime terminology.
Installation Loading/offloading		X							

Role	Adequate English	IMDG Code	Lifting Equipment	Slinger course	Cargo containers	Cargo handling	Bulk materials handling	Materials management	Notes & Additional Requirements
responsible person									
Storekeepers/deckhands		X	X		X			X	
Person receiving drilling fluid/cementing products for drilling and production		X							2. In-depth knowledge of installation pipework and valves for bulk handling on the installation. 3. Familiar with procedures and guidelines for handling vessels alongside offshore facilities.
Flagmen/deckhands		X	X	X					Knowledgeable in offshore service vessels' characteristics
Crane Operators	X		X			X			Possess an offshore crane operator certificate.

1. Foreign trainee contract personnel undergoing training to flag state requirements on foreign flagged vessels may work on the cargo deck, provided they work with at least one qualified able-bodied seaman.
2. Able-bodied seamen on foreign flagged vessels shall be able to document knowledge on securing cargo, work with slings and lifting equipment. Such training shall be equivalent to a slinger course. The Ship Owner shall ensure personnel can provide documentation demonstrating such training.

Anchor handling

All performing tasks on deck shall have completed a "slinger course"* at an approved training centre or equivalent.
** Seamen on board foreign flagged vessels shall be able to document knowledge on securing cargo with slings, and lifting equipment.*
Of the two people on deck during AH operations, the number two shall as a minimum comply with bridge watch duty requirements.

Authorised by:	

NO6

Title:	**Offshore Potable Water Supply**
Issue:	1
Related documents:	

Offshore units such as platforms, drilling ships and pipeline-laying vessels operating under Norwegian jurisdiction are required to have a potable water system and potable water supply in accordance with Norwegian regulations. The same applies to offshore units requesting Norwegian certificates.

The regulations concerning offshore potable water supply must be met to ensure good water quality and a system that is functioning properly regardless of how the water is supplied to the unit. The Norwegian regulations concerning potable water now include offshore units when it comes to issues not covered in special offshore regulations. One of 2 regulations are applied depending on whether the unit is defined as a mobile offshore unit or not. These regulations have the same basic requirement: "Potable water shall be available in sufficient quantities, be hygienically satisfactory and moreover be clear, without smell, flavour and colour", ref.:

- Regulations of 4. December 2001 concerning potable water (Norwegian text only)
- Regulations of 4 September 1987 No. 860 concerning potable water system and potable water supply on mobile offshore units (Norwegian text only)
- Regulations relating to health, environment and safety in the petroleum activities (HES - the framework regulations)

Authorised by:	

NO7

Title:	**Adverse Weather Working**
Issue:	1
Related documents:	

Operations in such weather conditions are only allowed for vessels which have a document of compliance in accordance to the classification note "specification for redundancy in position keeping ability" or classified in accordance with the guidelines for vessels for DP system, Equipment Class 2 or 3 (ref. IMO MSC/Circ.645)

NO8

Title:	**Special limits for Norwegian Continental Shelf**
Issue:	1
Related documents:	

It is considered that the requirement for technical redundancy when working on the weather side is in place.
When working on the Norwegian Continental shelf, the following weather limitations are to be followed:

Leeside working:
No fixed limitations. But if significant wave heights are above 5m and /or mean wind speed is above 40knts the distance between the vessel and the installation should be at least 1x vessel breadth, otherwise at least 10m

If weather condition is considered to be marginal, a special checklist to be completed for crane operations(Ref Norsok appendix K)

Weather side Working:
When mean wind speed is above 35knts, and/or significant wave heights are above 4m,the operation should be ceased.
If station keeping requires in excess of 45% of propeller and /or thruster utilisation, operations should be ceased.

Authorised by:	

UK1

Title:	**Role of the DfT, MCA and HSE on UK Continental Shelf (UKCS)**
Issue:	1
Related documents:	

1. The MCA, an Executive Agency of the DETR, is responsible for marine safety, including:
   - seaworthiness of vessels
   - matters concerning their construction and stability, equipment, carriage of dangerous goods, navigational safety, safe manning and certification,
   - prevention of pollution
   - the health, safety and welfare of seafarers.
2. Marine Surveyors of the MCA enforce Merchant Shipping legislation and administer international marine safety conventions, together with related Codes of Practice.
   They are responsible for:
   - the survey and certification of safety equipment in vessels;
   - in some cases, the survey of vessels' structures;
   - inspecting crew accommodation and related matters;
   - inspecting the arrangements on vessels for dealing with the prevention of pollution;
   - random general safety inspections of vessels, both UK and foreign;
   - random inspections of the condition, loading, stowage and securement on vessels of packaged dangerous goods, including tank containers and motor tank vehicles and includes goods offered for shipment on such vessels.
   - inspecting ship board operational arrangements for the loading and unloading of oil, chemical and gas tankers and offshore support vessels;
   - inspecting arrangements relating to the occupational health and safety of seafarers;
   - safe manning and the certification of crews;
   - ISM accreditation and auditing (including non-UK vessels).
3. The Marine Accident Investigation Branch (MAIB) must be advised of accidents, major injuries and serious injuries. MAIB recommends that hazardous incidents are reported (see MGN 115).
   - With respect to those activities on vessels operating on the UKCS to which Merchant Shipping legislation applies, compliance with these Guidelines will provide strong indication that a vessel is meeting the standards required by Merchant Shipping Legislation.

4. The Health and Safety Executive (HSE)
   - Health and safety legislation is relevant to supply vessel operations in a number of ways. Part 1 of the Health and Safety at Work etc. Act 1974 (HSWA)[1], and certain health and safety legislation, applies to dock operations, including the loading and unloading of UK and foreign flagged ships in British ports and harbours, and to dangerous substances in ports and harbours, except for normal shipboard activities carried out solely by the Master and crew.
   - Offshore, health and safety legislation applies to:

     offshore installations and any activities on or near them;

     activities carried out by vessels in connection with offshore installations (except the transport, towing or navigation of the installation; and any activity on a vessel being used as an ERRV). This applies regardless of the Flag State of the vessel from which an activity is carried out.
   - Activities in connection with an installation would be:
     - loading;
     - unloading;
     - fuelling;
     - diving operations;
     - provision of accommodation for persons who work on or from an installation (where provision of accommodation is not the main use of the vessel)
     - activities immediately preparatory to any of the above activities.
   - Such activities would not however include, for example, a supply vessel whilst on passage to or from an installation.
   - Regulations made under the HSWA – the Offshore Installations (Safety Case) Regulations SI 2005/3117 – require safety cases to be prepared for all offshore installations. These safety cases should cover all the above listed activities carried out on the installation, or in connection with it. Guidance to the regulation states that the particulars to be included by operators and owners of installations in the safety case should address as fully as necessary activities carried out on, or connection with, a vessel.
   - With respect to those activities (primarily loading and unloading) to which health and safety legislation applies, adopting the guidance on good practice set out in these Guidelines will help meet legal duties under the HSWA, and regulations made under it where indicated. These Guidelines are not an Approved Code of Practice within the meaning of the HSWA.

5. Safety cases (or equivalent risk and consequence analysis) must be prepared for offshore installations that cover all above activities performed on or in connection with the installation.

[1] The Health & Safety at Work etc. Act 1974

Authorised by:	

UK2

Title:	**Weather limitations for operations**
Issue:	1
Related documents:	

1. **Operating companies** may stipulate more general weather limitations for operations on fields or facilities, such as installation or vessel loading or offloading operations or Rig moving. Masters of vessels arriving at relevant installations **shall be advised** of these before entering the safety zone.

Authorised by:	

UK3

Title:	**Additional requirements for carriage of hazardous goods in UKCS**
Issue:	1
Related documents:	1. MSN 1705 – Portable Tanks, Road Tank Vehicles and Rail Tank Wagons for the Carriage by Sea of Liquid Dangerous Goods and Liquefied Gases 2. Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 SI 1997/2367 3. MGN 159 - The Carriage of Dangerous Goods and Marine Pollutants in Packaged Form on ships in accordance with Amendment 30-00 to the International Maritime Dangerous Goods (IMDG) Code 4. Dangerous Substances in Harbour Areas Regulations SI 1987/37 5. MGN 205– Dangerous Goods – Guidance in the Carriage of Dangerous Goods on Offshore Supply Vessels. 6. MSN 1458 - Offshore Support Vessels Carrying Hazardous or Noxious Liquid Substances in Bulk 7. MSN 1784 – Reporting Requirements for Ships Carrying Dangerous or Polluting Goods 8. MIN 285 – The Merchant Shipping (Dangerous or Noxious Liquid Substances in Bulk) Regulations 1996 – List of Current MARPOL Surveyors 9. MGN 283 – Guidance on the Back Loading of Contaminated Bulk Liquids from Offshore Installations to Offshore Supply and Support Vessels

The above list represents additional regulations applicable to UKCS. Note that for vessels operating in waters around the United Kingdom this also extends to the most recent version of the relevant guidance note.

Authorised by:	

UK4

Title:	**Waste and waste disposal**
Issue:	1
Related documents:	UKOOA Guidelines for the Safe Packing and Handling of Cargo to and from offshore Locations

The management of waste generated by offshore installations located in UKCS is described in the UKOOA Guidelines for the Safe Packing and Handling of Cargo to and from offshore Locations. This should be referred to for further information.

Authorised by:	

UK5

Title:	**Discharging waste cargo carrying units**
Issue:	1
Related documents:	10. Environmental Protection Act, Section 36 11. Special Waste Regulations 1996

Check that appropriate legislation with regards to waste segregation is complied with.

Authorised by:	

UK6

Title:	**Cargo packing and handling**
Issue:	1
Related documents:	UKOOA Guidelines for the Safe Packing and Handling of Cargo to and from Offshore Installations IMDG code

Refer to above guidelines.

Authorised by:	

UK7

Title:	**Dangerous goods & pollutants stowage**
Issue:	1
Related documents:	Dangerous Substances in Harbour Areas Regulations Relevant ACoPs

Masters of vessels must ensure all dangerous goods and pollutants are stowed, secured and segregated in accordance with IMDG Code, as modified by Dangerous Substances in Harbour Areas Regulations and relevant AcoPs.

Authorised by:	

UK 8

Title:	**Guidelines for carriage of potable water**
Issue:	1
Related documents:	MSF Guidelines

MSF Potable Water Guidelines – Issue 1 – 24th April 2006

GUIDELINES FOR THE CARRIAGE OF
POTABLE WATER FOR SUPPLY TO
OFFSHORE LOCATIONS

ISSUE 1 – 24th
APRIL 2006

1 INTRODUCTION
At present there is a myriad of legislation relating to potable water quality for shore based requirements and vessel domestic potable water. No clear guidance has been written specifically for cargo potable water delivered to offshore locations. This document is intended to give clear guidance on the requirements for cargo potable water.

2 SCOPE
These guidelines have been written to standardise cargo potable water quality delivered by vessels supporting offshore locations within the UK sector.
The guidelines do not cover the requirements for the carriage of Domestic Potable Water, potable water carried for use on board vessels.

3 AIM
The purpose of this document is to ensure the quality of cargo potable water carried on vessels for supply to offshore locations meets minimum standards. It provides ship owners and operators, offshore locations, logistics providers and others within the supply chain with an understanding of the requirements to ensure delivery of a wholesome supply of potable water to the end user.

4 LEGISLATION
EC Directive 98/83
The Water Supply (Water Quality) Regulations 2000
The Water Supply (Water Quality) (Scotland) Regulations 2001

5 GUIDANCE
Merchant Shipping Notice M1214 - Recommendations to prevent contamination of ships freshwater storage and distribution systems
MCA Leaflet MCA/13 - Legionella & Legionnaires' Disease
World Health Organization Guidelines for Drinking-water Quality Third Edition

6 DEFINITIONS
• Potable Water Water of a quality suitable for drinking and cooking
• Cargo Potable Water Potable water carried on offshore support vessels for supply to offshore locations

7 MAINTENANCE

7.1 Maintenance of Vessel Cargo Potable Water Tanks

All cargo potable water tanks on vessels should be reserved solely for that purpose. Tanks should be opened up, emptied and inspected at intervals not exceeding 12 months for inspection and maintenance. The maintenance of cargo potable water tanks should be in the vessel planned maintenance system and audited under International Safety Management (ISM) Code.

Minimum cleaning standards - should include all of the following:
• Physically clean
• Touch up coating as necessary
• Fill tank with a solution of super chlorinated water at a concentration of 50 ppm chlorine and leave for a period of not less than 4 hours. Certain operators have a requirement for this solution to be kept on board for 10 hours
• Discharge tank completely
• Flush out with clean potable water
• Discharge tank completely
• Fill with potable water
Or
Any other MCA approved method
All pumps and pipe work should be flushed through with the super chlorinated water and then with clean potable water prior to filling tanks

7.2 Maintenance of Hoses Used for the Transfer of Cargo Potable Water

Only dedicated hoses should be used for the transfer of cargo potable water. When not in use, hoses should be stored in such a way to avoid contamination.

Shore-side Hoses
Hoses and stand pipes should be treated and then flushed with potable water prior to each use in accordance with local water authority requirements.
In addition hoses should be cleaned at least every week. Hoses should be filled with super chlorinated water (50ppm) and allowed to stand for at least 10 minutes. They should then be emptied and flushed through with potable water for 2 minutes prior to being used.
Hoses should be replaced annually. If hoses are only used for occasional delivery of potable water they should be inspected annually and replaced as appropriate.

Offshore Hoses
Maintenance of offshore hoses is not covered by the scope of these guidelines and is the responsibility of the installation management.

8 SAMPLING REGIME

Vessel Tanks
Contents of cargo potable water tanks should be tested on a 3 monthly cycle to ensure that tank hygiene remains within the defined standards.

Shore-side Storage / Holding Tanks
Contents of shore side potable water storage tanks should be tested monthly.

Shore-side Stand Pipes
Fixed shore-side stand pipes should be tested every two months.
Stand pipes that are only fitted for delivery should be treated as part of the hose and maintained as detailed in Section 6.2.

9 MICROBIOLOGICAL AND CHEMICAL TEST REQUIREMENTS

Bacteriological Quality Guidance / Chemical Parameter -	Required Test Limit
Enterococci	0 /100ml
E.coli	0 /100ml
Coliforms	0 /100ml
Hydrocarbons	< 10 ppb
Chlorides	<250 mgCl/l
Coliforms/ E.Coli / Enterococci	Legislation limit is 0 counts per 100ml

These indicator organisms are used to assess the microbiological quality of water as reliable indicators are not available for many other pathogens. The use of the indicator bacteria, E.coli, Enterococci and coliforms, as a means of assessing the potential presence of water borne pathogens is paramount for checking water quality and protecting public health. Frequent testing for these faecal indicators is still the most sensitive and specific way of assessing the quality of potable water.

Hydrocarbons
Test for hydrocarbons is conducted due to the potential for cross contamination with fuel and oil.

Chlorides
Legislative limits <250 mgCl/l
Test for chlorides is conducted due to the potential for cross contamination with sea water.

10 TVC
The original guideline for acceptable levels of bacterial contamination in Mains/drinking water was laid down by the World Health Organisation (WHO) to be no more than 100 cfu/ml at 22 C and 10 cfu/ml at 37 C.

WHO now consider this to be an unrealistic restriction and suggests that the TVC trend is monitored for any abnormal change.
For an indication of the general condition of the water, a TVC at 22˚C and 37˚C check will be taken on each sample. The results should show no abnormal change.
In order to measure this, the results should be trended and analysed with reference to the historical levels achievable within that vessel, company or area, depending on the information available.

11 LEGIONELLA

Currently testing for Legionella is not a requirement for potable water.
The danger of infection caused by Legionella bacteria is caused when it gains entry to the respiratory system. This can occur from water suspended in air in the form of a fine mist as created by showers or tap sprays. Maintenance of cargo potable water tanks, pipe work, pumps and hoses as defined in these guidelines should control any contamination by Legionella in the water carried.
Should an operator require cargo potable water to be tested for Legionella the following test limit applies:
Test Limit Legionella <100 cfu/l
(cfu = colony forming units)

12 POTABLE WATER DISINFECTION

There is a requirement for vessels carrying potable water to maintain a minimum free residual chlorine level of 0.2 ppm and not more than 0.5 ppm. Where potable water is treated to another approved standard e.g. chloramination, treatment should be in compliance with that standard.
Super chlorination should be conducted as part of the cargo potable water tank maintenance. In addition, if a sample from any cargo potable water tank exceeds the test limits detailed above then the tank should be super chlorinated. Following treatment the tank should be filled, sampled and retested. This should be repeated until satisfactory results are obtained.
TREATMENTS
Chlorination: Add a chlorination solution at 0.2 ppm ratio to the quantity of potable water to be treated.
Please note that this treatment can be conducted either by the vessel supplying or the installation receiving the potable water.

Super Chlorination: Add a chlorination solution at 50 ppm ratio to tank volume and fill both tank and pipe line to capacity. When the tank and line is full leave for a minimum of 4 hours then discharge the contents overboard (DO NOT REUSE). Potable water can now be loaded and tank retested.
NOTE: When super chlorination is required due to test results exceeding the limits, cargo must not be transferred or discharged prior to receipt of satisfactory test results.

Always refer to manufacturer's instructions to achieve ratios required.
Also refer to Material Safety Data Sheets for safety and storage information.

Appendix 1 – Sampling Protocol

1.0 PURPOSE

This method presents a procedure for the collection of potable water for microbiological, chemical and hydrocarbon analysis from Offshore Support Vessels.

2.0 REFERENCES

BS EN ISO 5667-3:1996 BS 6068-6.3:1996 Water Quality Sampling Guidance on the Preservation and Handling of Samples

3.0 SUMMARY OF METHOD

A known volume of water is collected from either the bunker line or directly from storage tank sample points. Sufficient time should be allowed for adequate flushing of pipe lines and potable water tank sample points prior to sample collection. The sample should be transported to the laboratory for testing within 6 hours (or 24 hours if the samples can be stored under refrigerated conditions).

4.0 APPARATUS

- Sterile 500 ml screw top bottle containing 0.4 ml 3% thiosulphate solution
- Sodium hypochlorite solution / steri-wipes
- TCE washed 1L glass bottles
- 500ml glass chemistry sample bottle

5.0 PROCEDURE

- Prior sampling ensure that sufficient bottles have been prepared and are available for the job.
- Prior to sampling, ensure that the discharge end of the line / sample point is free from physical debris. If debris is detected, wipe around the end with a steri-wipe, alternatively use sodium hypochlorite solution if available.
- Start the pump / open the sample point and allow the water to flush through for 1 minute. If the tank being sampled is at the extremities of the vessel, allow a longer flushing time.
- If sampling from the discharge line the water will be pumped with considerable force and personnel should take up position behind the discharge line.
- Remove the cap from the sterile screw top microbiological sample bottle, taking care not to touch the inside of the cap or the neck of the bottle. Do not put the cap down.
- Fill the bottle completely, without rinsing, by holding it within the stream of water. Replace the cap tightly.
- Label the bottle, stating the location, tank number, date and time of sampling.
- Remove the top from the 1L hydrocarbon glass sample bottle and fill completely by holding it within the stream of water. Ensure that hands and sample point are free from oily residue.
- Label the bottle, stating the location, tank number, date and time of sampling.

• Remove the top from the 500 ml chemistry sample bottle and fill completely by holding it within the stream of water.
• Label the bottle, stating the location, tank number, date and time of sampling.
• During the sampling procedure, check for particulate material, discolouration and discernible odours and report any observations on the sampling record sheet.
• Collect information regarding maintenance to the potable water tanks i.e. have they been painted recently, contaminated etc. This information should be recorded on the sampling record sheet.
• When collecting samples from tanks due consideration should be given to the pumping rate and the length of the pipe line being flushed between each tank.
• The samples along with the sampling record sheet should be transported to the laboratory for testing within 6 hours (or 24 hours if the samples can be stored under refrigerated conditions).

6.0 HEALTH AND SAFETY

• Unknown Samples: Unknown samples should be handled as though they contained potentially pathogenic bacteria.
• Sodium Hypochlorite solution: Refer to the MSDS for handling instructions.
• Personal protective equipment must be worn for the duration of the sampling (high visibility waterproof trousers and jacket, hard hat, safety glasses and waterproof boots).