



SIRE 2.0 – Negative Observation Module Explanation

Version 1.0

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The SIRE 2.0 Negative Observation Module and the Classification of Subject of Concern (SOC) and Nature of Concern (NOC)

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Introduction

Any deficiency, defect or non-compliance identified during a SIRE 2.0 inspection must be recorded in the Inspection Editor as a negative observation in the Negative Observation Module which is identified by this symbol:



For example, consider the case where, when answering Qu. 5.2.10

“Were the Master, officers and ratings familiar with the purpose and operation of the vessel’s deck foam system, including portable applicators, and was the system in good working order and available for immediate use, with operating instructions displayed at the control station?”

The inspector observes that:

- a) The isolating valves for the deck foam line are seized open.
- b) Although the deck foam system is included in the PMS, there are no inspection/maintenance tasks for the isolating valves.
- c) The accompanying officer does not know the location and purpose of the isolating valves.

To allow effective data mining of SIRE 2.0 inspection reports, this information must be recorded in a systematic manner.

SOC and NOC

Firstly, **what is being reported on** must be identified. This is termed the **Subject of Concern (SOC)**.

In the case of Hardware, this means the deficient vessel structure, machinery, outfitting or equipment, identified through the *standard classification coding*. (See Annex 1)

In the case of Process, this means the deficient procedure and/or document, identified through the *TMSA-based classification coding*. (See Annex 2)

For Human, this means the *rank grouping* of the Observed Person (OP) or Responsible Team (RT). (See Annex 3)

Note that the Human Response Tool requires identification of the SOC, the *rank grouping*, for all responses, not only in the Negative Response Module.

For Photograph Comparison, it means the location of the *standard photograph* (See Annex 4).

Secondly, **what has been observed** must be identified. This is termed the **Nature of Concern (NOC)**.

In the case of Hardware, this is identified through the *standard hardware cause analysis tree*. (See Annex 5)

In the case of Process, this is identified through the *standard process cause analysis tree* (see Annex 6).

For Human, this is identified by one or more *Performance Influencing Factors (PIF)* (see Annex 7).

Note that the Human Response Tool requires the identification of the NOC, i.e., one or more *PIFs*, and a supporting comment for “Exceeded Normal Expectation” and “Largely as Expected” responses, as well as in the Negative Response Module.

For Photograph Comparison, this is identified through the *standard photograph comparison cause analysis tree* (See Annex 8)

Thirdly, a negative comment should be recorded, describing **the observed conditions in detail**, amplifying the coding already entered.

Hardware

Taking the example above, the Hardware SOC would be identified as “Fire Fighting Systems – Foam”

<input checked="" type="checkbox"/> SHIP COMMON SYSTEMS	7
> Ballast / Bilge System	3
<input checked="" type="checkbox"/> Fire / Lifeboat Alarm & Fire Fighting	7
<input type="checkbox"/> Loose Firefighting Equipment & Clothing	
<input type="checkbox"/> Fire Detect, Fire & L/Boat Alarm Systems	
<input type="checkbox"/> Emergency Shutdown System	
<input type="checkbox"/> Fire/W.Down/Sprinkler Sys & Em Fire Pump	
<input type="checkbox"/> Fire Fighting System - Co2	
<input checked="" type="checkbox"/> Fire Fighting Systems - Foam	
<input type="checkbox"/> Fire Fighting Systems - Dry Powder	

The Hardware NOC would be identified as “No maintenance task developed”

Nature of Concern

- ☐ Maintenance task available – not completed
- ☐ Maintenance task available – records incompatible with condition seen
- ☒ No maintenance task developed
- ☐ Maintenance deferred – awaiting spares
- ☐ Maintenance deferred – awaiting technician
- ☐ Maintenance deferred – awaiting out of service / gas free
- ☐ Sudden failure – maintenance tasks available and up to date
- ☐ Other - text

The supporting Negative Comment would be:

“The isolating valves for the deck foam line were seized open.”

Process

The Process SOC would be identified as “4.1.1.3 Schedule of planned tasks/record of completed maintenance”.

<input checked="" type="checkbox"/> 4 - Reliability and Maintenance	6
<input checked="" type="checkbox"/> 4.1.1 - Planned maintenance system	4
<input checked="" type="checkbox"/> 4.1.1.1 - Equipment/machinery included in PMS	6
<input type="checkbox"/> 4.1.1.2 - Spare parts inventory	
<input checked="" type="checkbox"/> 4.1.1.3 - Schedule of planned tasks / record of completed maintenance	
<input type="checkbox"/> 4.1.1.4 - Guidance and training is provided for PMS	

The Process NOC would be identified as (Procedure accuracy/correctness).

Nature of Concern

- ☐ No procedure
- ☐ Procedure not present/available/accessible
- ☐ Too many/conflicting procedures
- ☐ Procedure clarity and understandability
- ☒ Procedure accuracy/correctness
- ☐ Procedure realism/feasibility/suitability
- ☐ Procedure completeness/validity/version
- ☐ Communication of procedure/practice updates
- ☐ Other - text

The supporting Negative Comment would be:

“The deck foam fire-fighting system was included in the vessel’s PMS, but there was no task created for the inspection and maintenance of the deck foam line isolating valves.”

Human

The Human SOC would be identified as appropriate from the options listed.

Please select a crew rank

Not Identified

Senior Deck Officer

Junior Deck Officer

Senior Engineer Officer

Junior Engineer Officer

Rating

The Human NOC might be recorded as 1. Recognition of safety criticality of the task or associated steps and 3. Procedures accessible, helpful, understood, and accurate for the task.

Nature of Concern

- ☒ 1. Recognition of Safety criticality of the task or associated steps
- ☐ 2. Custom and practice surrounding use of procedures
- ☒ 3. Procedures accessible, helpful, understood and accurate for task
- ☐ 4. Team dynamics, communications and coordination with others
- ☐ 5. Evidence of stress, workload, fatigue, time constraints
- ☐ 6. Factors such as morale, motivation, nervousness
- ☐ 7. Workplace ergonomics incl. signage, tools, layout, space, noise, light, heat, etc.
- ☐ 8. Human-Machine Interface (E.g.: Controls, Alarms, etc.)
- ☐ 9. Opportunity to learn or practice
- ☐ 10. Not Identified

The supporting Negative Comment would be:

“The OP was not familiar with the location or purpose of the isolating valves in the deck foam line.”

Annex 1: Hardware – Standard Classification Coding

The Standard Classification Coding is widely used in the industry to identify vessel components, for example, in planned maintenance and purchasing systems.

The SOC must be identified with one of the Level 3 Descriptions.

Level 1 Description	Level 2 Description	Level 3 Description
SHIP GENERAL	Ship General	Ship General
SHIP GENERAL	Vessel Certification	Special Survey
SHIP GENERAL	Consumable Items	Miscellaneous Consumable Items
HULL	Hull	
HULL	Tanks	Cofferdams, Voids and Misc Tanks
HULL	Tanks	Engine Room Tanks
HULL	Tanks	Cargo And Ballast Tanks
HULL	Accommodation Block	Accommodation Block
HULL	Accommodation Block	Doors And Windows
HULL	Accommodation Block	Internal Fixtures And Fittings
HULL	Hull Outfitting	External Handrails And Ladders
HULL	Hull Outfitting	Hull Fittings
HULL	Hull Outfitting	External Lifting Equipment
HULL	Hull Outfitting	Funnel Space
HULL	Material Protection - External	
HULL	Sea Water System - Antifouling	
EQUIPMENT FOR CARGO	Discharging Systems	
EQUIPMENT FOR CARGO	Gas/Vent. Systems - Cargo Holds & Tanks	Vent/Gas Freeing Systems
EQUIPMENT FOR CARGO	Gas/Vent. Systems - Cargo Holds & Tanks	Cargo System Protection Devices
EQUIPMENT FOR CARGO	Gas/Vent. Systems - Cargo Holds & Tanks	Inert Gas Systems
EQUIPMENT FOR CARGO	Auxiliary Systems & Equipment - Cargo	Cargo System Instrumentation
EQUIPMENT FOR CARGO	Auxiliary Systems & Equipment - Cargo	Cooling Water Systems For Cargo Eq.
SHIP EQUIPMENT	Manoeuvring Equipment	Rudder
SHIP EQUIPMENT	Manoeuvring Equipment	Rudder Carriers, Stocks, Bearings
SHIP EQUIPMENT	Manoeuvring Equipment	Steering Gear
SHIP EQUIPMENT	Manoeuvring Equipment	Thruster
SHIP EQUIPMENT	Navigation Equipment	Radar Plants
SHIP EQUIPMENT	Navigation Equipment	Positioning Data Equipment
SHIP EQUIPMENT	Navigation Equipment	Gyro Plants, Autopilots, Compasses
SHIP EQUIPMENT	Navigation Equipment	Echo Sounders And Logs
SHIP EQUIPMENT	Navigation Equipment	Trim & Load Indicators
SHIP EQUIPMENT	Navigation Equipment	Misc Nautical Equipment
SHIP EQUIPMENT	Navigation Equipment	Masts
SHIP EQUIPMENT	Navigation Equipment	Integrated Navigation Systems
SHIP EQUIPMENT	Communication Equipment	Mf/Hf Inc Gmdss
SHIP EQUIPMENT	Communication Equipment	Lifeboat Communication Equipment
SHIP EQUIPMENT	Communication Equipment	External Communication / Sat Comms
SHIP EQUIPMENT	Communication Equipment	Vhf/Uhf Telephones
SHIP EQUIPMENT	Communication Equipment	Internal Communication Systems
SHIP EQUIPMENT	Communication Equipment	Light, Sound & Signal Equipment
SHIP EQUIPMENT	Anchoring, Mooring & Towing Equipment	Anchor And Chains
SHIP EQUIPMENT	Anchoring, Mooring & Towing Equipment	Windlasses And Winches
SHIP EQUIPMENT	Anchoring, Mooring & Towing Equipment	Fixed Mooring Equipment
SHIP EQUIPMENT	Anchoring, Mooring & Towing Equipment	Towing Equipment
SHIP EQUIPMENT	Workshop Equipment	E/R Tools And Welding Equipment
SHIP EQUIPMENT	Workshop Equipment	Portable Tools & Equipment
SHIP EQUIPMENT	Workshop Equipment	Painting Equipment
SHIP EQUIPMENT	Workshop Equipment	Cleaning Plant / Equipment
SHIP EQUIPMENT	Workshop Equipment	Garbage Disposal Plants / Incinerators
SHIP EQUIPMENT	Lifting & Transport Equipment	Lifting Equipment - Machinery Spaces
SHIP EQUIPMENT	Special Equipment	Condition Monitoring Equipment
SHIP EQUIPMENT	Special Equipment	Vibration Cancellation Equipment
SHIP EQUIPMENT	Special Equipment	Citadel
SHIP EQUIPMENT	Special Equipment	Environmental Protection Equipment

EQUIPMENT FOR CREW AND PASSENGERS	Lifesaving, Protection & Medical Equip	Safety Training
EQUIPMENT FOR CREW AND PASSENGERS	Lifesaving, Protection & Medical Equip	Lifeboats & Equipment
EQUIPMENT FOR CREW AND PASSENGERS	Lifesaving, Protection & Medical Equip	Liferafts & Equipment
EQUIPMENT FOR CREW AND PASSENGERS	Lifesaving, Protection & Medical Equip	Lifesaving, Safety & Emergency Equipment
EQUIPMENT FOR CREW AND PASSENGERS	Lifesaving, Protection & Medical Equip	Medical Equipment
EQUIPMENT FOR CREW AND PASSENGERS	Sports / Entertainment Equipment	
EQUIPMENT FOR CREW AND PASSENGERS	Galley/Pantry Eq, Prov Plants, Laundry	Galley Equipment
EQUIPMENT FOR CREW AND PASSENGERS	Galley/Pantry Eq, Prov Plants, Laundry	Freezing/Refrig Systems - Provisions
EQUIPMENT FOR CREW AND PASSENGERS	Galley/Pantry Eq, Prov Plants, Laundry	Laundry, Ironing & Drying Equipment
EQUIPMENT FOR CREW AND PASSENGERS	Transport Equip - Crew & Prov	Personnel Lifts
EQUIPMENT FOR CREW AND PASSENGERS	Transport Equip - Crew & Prov	Helipad And Associated Equipment
EQUIPMENT FOR CREW AND PASSENGERS	Ventilation, A/C & Heating Systems	Air-Conditioning Systems
EQUIPMENT FOR CREW AND PASSENGERS	Ventilation, A/C & Heating Systems	Fans - Machinery Spaces
EQUIPMENT FOR CREW AND PASSENGERS	Ventilation, A/C & Heating Systems	Fans - Other Spaces
EQUIPMENT FOR CREW AND PASSENGERS	Fresh Water And Sanitary Systems	Fresh Water Supply Systems
EQUIPMENT FOR CREW AND PASSENGERS	Fresh Water And Sanitary Systems	Sanitary Systems
EQUIPMENT FOR CREW AND PASSENGERS	Fresh Water And Sanitary Systems	Bathroom Fixtures & Fittings
MACHINERY MAIN COMPONENTS	Diesel Engines For Propulsion	
MACHINERY MAIN COMPONENTS	Shafting / Propellers	Hydraulic Coupling
MACHINERY MAIN COMPONENTS	Shafting / Propellers	Shafting / Propellers
MACHINERY MAIN COMPONENTS	Boilers, Steam & Gas Generators	Auxiliary Boilers
MACHINERY MAIN COMPONENTS	Boilers, Steam & Gas Generators	Exhaust Gas Boilers
MACHINERY MAIN COMPONENTS	Main Electricity Power Production	Diesel Generators
MACHINERY MAIN COMPONENTS	Other Generators	
SYSTEMS FOR MACHINERY MAIN COMPONENT	Fuel Systems	Fuel General
SYSTEMS FOR MACHINERY MAIN COMPONENT	Fuel Systems	Fuel Oil Transfer Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Fuel Systems	Fuel Oil Purification Plants
SYSTEMS FOR MACHINERY MAIN COMPONENT	Fuel Systems	Fuel Oil Supply Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Fuel Systems	Fuel Gas System
SYSTEMS FOR MACHINERY MAIN COMPONENT	Lube Oil Systems	Lube Oil General
SYSTEMS FOR MACHINERY MAIN COMPONENT	Lube Oil Systems	Lube Oil Transfer Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Lube Oil Systems	Lube Oil Purification Plants
SYSTEMS FOR MACHINERY MAIN COMPONENT	Lube Oil Systems	Lube Oil Systems - Propulsion Machinery
SYSTEMS FOR MACHINERY MAIN COMPONENT	Cooling Systems	Sea Water Cooling Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Cooling Systems	Fresh Water Cooling Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Compressed Air Systems	Starting Air Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Compressed Air Systems	Low Pressure Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Compressed Air Systems	Nitrogen Generation Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Exhaust Systems	Exhaust Gas Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Steam, Condensate & Feed Water Systems	Chemical Dosing Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Steam, Condensate & Feed Water Systems	Steam Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Steam, Condensate & Feed Water Systems	Condensate Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Steam, Condensate & Feed Water Systems	Feed Water Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Fresh Water Production	
SYSTEMS FOR MACHINERY MAIN COMPONENT	Automation Systems	Integrated Automation System (Ias)
SYSTEMS FOR MACHINERY MAIN COMPONENT	Automation Systems	Automation Equipment - Alarm Systems
SYSTEMS FOR MACHINERY MAIN COMPONENT	Automation Systems	Automation Equipment - Propulsion
SYSTEMS FOR MACHINERY MAIN COMPONENT	Automation Systems	Automation Equipment - Boilers
SYSTEMS FOR MACHINERY MAIN COMPONENT	Automation Systems	Automation Equipment - Power Generation
SYSTEMS FOR MACHINERY MAIN COMPONENT	Automation Systems	Control Valves
SYSTEMS FOR MACHINERY MAIN COMPONENT	Automation Systems	Automation Equipment - Other Machinery

SHIP COMMON SYSTEMS	Ballast / Bilge System	Ballast System
SHIP COMMON SYSTEMS	Ballast / Bilge System	Bilge Systems
SHIP COMMON SYSTEMS	Ballast / Bilge System	Condensate Drain System
SHIP COMMON SYSTEMS	Fire / Lifeboat Alarm & Fire Fighting	Loose Firefighting Equipment & Clothing
SHIP COMMON SYSTEMS	Fire / Lifeboat Alarm & Fire Fighting	Fire Detect, Fire & L/Boat Alarm Systems
SHIP COMMON SYSTEMS	Fire / Lifeboat Alarm & Fire Fighting	Emergency Shutdown System
SHIP COMMON SYSTEMS	Fire / Lifeboat Alarm & Fire Fighting	Fire/W.Down/Sprinkler Sys & Em Fire Pump
SHIP COMMON SYSTEMS	Fire / Lifeboat Alarm & Fire Fighting	Fire Fighting System - Co2
SHIP COMMON SYSTEMS	Fire / Lifeboat Alarm & Fire Fighting	Fire Fighting Systems - Foam
SHIP COMMON SYSTEMS	Fire / Lifeboat Alarm & Fire Fighting	Fire Fighting Systems - Dry Powder
SHIP COMMON SYSTEMS	IT Computer Systems	Surveillance Equipment
SHIP COMMON SYSTEMS	IT Computer Systems	Common Computer Systems
SHIP COMMON SYSTEMS	Electric Power Supply	Auto Voltage Regulator (A.V.R.)
SHIP COMMON SYSTEMS	Electric Power Supply	Transformers
SHIP COMMON SYSTEMS	Electric Power Supply	Batteries & Chargers
SHIP COMMON SYSTEMS	Electric Power Supply	Rectifiers & Converters
SHIP COMMON SYSTEMS	Electric Power Supply	Shore Supply System
SHIP COMMON SYSTEMS	Common Electric Distribution Systems	Common Electric Distribution Systems
SHIP COMMON SYSTEMS	Common Electric Distribution Systems	Switchboards
SHIP COMMON SYSTEMS	Common Electric Distribution Systems	Emergency Switchboards
SHIP COMMON SYSTEMS	Common Electric Distribution Systems	Starters
SHIP COMMON SYSTEMS	Common Electric Distribution Systems	Distribution Panels & Boards
SHIP COMMON SYSTEMS	Electric Cable Installation	
SHIP COMMON SYSTEMS	Lighting	Lighting - Machinery Spaces
SHIP COMMON SYSTEMS	Lighting	Lighting - Accommodation
SHIP COMMON SYSTEMS	Lighting	Lighting - Deck
SHIP COMMON SYSTEMS	Lighting	Emergency Lighting
SHIP COMMON SYSTEMS	Lighting	Electric Motors
CONSUMABLES	CONSUMABLES	LUBRICANTS
CONSUMABLES	CONSUMABLES	PAINTS
CONSUMABLES	CONSUMABLES	CHEMICALS
CONSUMABLES	CONSUMABLES	SAFETY
CONSUMABLES	CONSUMABLES	MEDICINE
CONSUMABLES	LOOSE LIFTING EQUIPMENT	LOOSE LIFTING EQUIPMENT

Annex 2: Process – TMSA-based classification coding

The TMSA-based classification coding has been developed specifically for SIRE 2.0 to allow a connection to be made between SIRE 2.0 observations and TMSA KPIs for data analysis purposes.

The classification coding is based on TMSA KPIs and BPG which may be pertinent to the physical ship inspection process. 4B: Machinery Space Management is a construct for the SIRE 2.0 process and is not included in TMSA3.

The SOC must be selected from the appropriate Level 2, 3 or 4 options.

Level 1 Description	Level 2 Description	Level 3 Description	Level 4 Description
1A - Safety management system	1A.1.1 - Policy and procedures cover all activities	1A.1.1.1 - Safety and environment protection	
1A - Safety management system	1A.1.1 - Policy and procedures cover all activities	1A.1.1.2 - Security	
1A - Safety management system	1A.1.1 - Policy and procedures cover all activities	1A.1.1.3 - Health and welfare, including D & A	
1A - Safety management system	1A.1.1 - Policy and procedures cover all activities	1A.1.1.4 - Social responsibility	
1A - Safety management system	1A.1.3 - Procedures in plain language and detailed	1A.1.3.1 - Procedures in working language of vessel	
1A - Safety management system	1A.1.3 - Procedures in plain language and detailed	1A.1.3.2 - Instructions are logical and identify steps	
1A - Safety management system	1A.1.4 - Procedures and instructions are accessible	1A.1.4.3 - On board vessels	
1A - Safety management system	1A.1.5 - Formal document control system	1A.1.5.1 - Index of numbered revisions including date	
1A - Safety management system	1A.1.5 - Formal document control system	1A.1.5.2 - Disposal of obsolete documents	
1A - Safety management system	1A.1.5 - Formal document control system	1A.1.5.3 - Management of uncontrolled documents	
1A - Safety management system	1A.2.3 - Reference documents are provided	1A.2.3.1 - Regulatory publications and industry guidelines	
1A - Safety management system	1A.2.3 - Reference documents are provided	1A.2.3.2 - Maintaining up to date editions	
3 - Management of Vessel Personnel	3.1.3 - Procedures identify mandatory training	3.1.3.1.1 - Training matrix shows mandatory training	
3 - Management of Vessel Personnel	3.1.3 - Procedures identify mandatory training	3.1.3.1.2 - Records of training are maintained	
3 - Management of Vessel Personnel	3.1.4 - Formal familiarisation procedures in place	3.1.4.1.1 - Procedures include familiarisation with onboard HSSE requirements	
3 - Management of Vessel Personnel	3.1.4 - Formal familiarisation procedures in place	3.1.4.1.2 - Procedures include familiarisation with the company SMS	
3 - Management of Vessel Personnel	3.1.4 - Formal familiarisation procedures in place	3.1.4.1.3 - Procedures include familiarisation with vessel specific operations and equipment	
3 - Management of Vessel Personnel	3.1.4 - Formal familiarisation procedures in place	3.1.4.1.4 - Procedures include familiarisation with roles and responsibilities	
3 - Management of Vessel Personnel	3.1.4 - Formal familiarisation procedures in place	3.1.4.2 - Records of familiarisation are maintained	
3 - Management of Vessel Personnel	3.1.5 - Handover procedures for key personnel	3.1.5.1 - Company defines key personnel	
3 - Management of Vessel Personnel	3.1.5 - Handover procedures for key personnel	3.1.5.2 - Scope and depth of handover	
3 - Management of Vessel Personnel	3.2.2 Company additional training	3.2.2.1.1 - May include the type of training	
3 - Management of Vessel Personnel	3.2.2 Company additional training	3.2.2.1.2 - May include frequency of refresher training	
3 - Management of Vessel Personnel	3.2.2 Company additional training	3.2.2.1.3 - May include records of training	
3 - Management of Vessel Personnel	3.2.2 Company additional training	3.2.2.1.4 - May include a rank specific matrix	
3A - Wellbeing of Vessel Personnel	3A.1.1 - Vessel is appropriately manned	3A.1.1.1 - Manning levels are adequate	
3A - Wellbeing of Vessel Personnel	3A.1.1 - Vessel is appropriately manned	3A.1.1.2.1 - May include Flag State and/or national requirements	
3A - Wellbeing of Vessel Personnel	3A.1.1 - Vessel is appropriately manned	3A.1.1.2.2 - May include vessel type	
3A - Wellbeing of Vessel Personnel	3A.1.1 - Vessel is appropriately manned	3A.1.1.2.3 - May include vessel trading pattern	
3A - Wellbeing of Vessel Personnel	3A.1.1 - Vessel is appropriately manned	3A.1.1.2.4 - May include security requirements	
3A - Wellbeing of Vessel Personnel	3A.1.1 - Vessel is appropriately manned	3A.1.1.2.5 - Operational requirements such as STS or operations in ice	
3A - Wellbeing of Vessel Personnel	3A.1.3 - Work and rest hours in line with STCW/Flag requirements	3A.1.3.1 - Complying with STCW and relevant authority requirements	
3A - Wellbeing of Vessel Personnel	3A.1.3 - Work and rest hours in line with STCW/Flag requirements	3A.1.3.2 - Non-compliance and corrective action	
3A - Wellbeing of Vessel Personnel	3A.1.3 - Work and rest hours in line with STCW/Flag requirements	3A.1.3.3 - Provides, where required, additional manning	
3A - Wellbeing of Vessel Personnel	3A.1.3 - Work and rest hours in line with STCW/Flag requirements	3A.1.3.4 - Procedures address potential fatigue issues	
3A - Wellbeing of Vessel Personnel	3A.1.4 - A formal D&A policy is implemented	3A.1.4.1 - The policy complies with OCIMF guidelines	

3A - Wellbeing of Vessel Personnel	3A.1.4 - A formal D&A policy is implemented	3A.1.4.2 - The frequency and type of testing is defined	
3A - Wellbeing of Vessel Personnel	3A.2.3 - Procedures ensure high standards of hygiene	3A.2.3.1.1 - Procedures may include hygiene in public areas	
3A - Wellbeing of Vessel Personnel	3A.2.3 - Procedures ensure high standards of hygiene	3A.2.3.1.2 - Procedures may include requirements for documented inspections	
3A - Wellbeing of Vessel Personnel	3A.2.3 - Procedures ensure high standards of hygiene	3A.2.3.1.3 - Procedures may include addressing of identified deficiencies	
4 - Reliability and Maintenance	4.1.1 - Planned maintenance system	4.1.1.1 - Equipment/machinery included in PMS	4.1.1.1.1 - Navigating equipment
4 - Reliability and Maintenance	4.1.1 - Planned maintenance system	4.1.1.1 - Equipment/machinery included in PMS	4.1.1.1.2 - Engine machinery
4 - Reliability and Maintenance	4.1.1 - Planned maintenance system	4.1.1.1 - Equipment/machinery included in PMS	4.1.1.1.3 - Deck machinery
4 - Reliability and Maintenance	4.1.1 - Planned maintenance system	4.1.1.1 - Equipment/machinery included in PMS	4.1.1.1.4 - Cargo handling machinery/equipment
4 - Reliability and Maintenance	4.1.1 - Planned maintenance system	4.1.1.1 - Equipment/machinery included in PMS	4.1.1.1.5 - Hull structure
4 - Reliability and Maintenance	4.1.1 - Planned maintenance system	4.1.1.1 - Equipment/machinery included in PMS	4.1.1.1.6 - Electronic equipment
4 - Reliability and Maintenance	4.1.1 - Planned maintenance system	4.1.1.2 - Spare parts inventory	
4 - Reliability and Maintenance	4.1.1 - Planned maintenance system	4.1.1.3 - Schedule of planned tasks / record of completed maintenance	
4 - Reliability and Maintenance	4.1.1 - Planned maintenance system	4.1.1.4 - Guidance and training is provided for PMS	
4 - Reliability and Maintenance	4.1.2 - Defect reporting system	4.1.2.1 - Covers all onboard equipment and includes CoC	
4 - Reliability and Maintenance	4.1.2 - Defect reporting system	4.1.2.2 - Correct conditions of class without delay	
4 - Reliability and Maintenance	4.1.2 - Defect reporting system	4.1.2.3.1 - The defect reporting system includes the nature of defects that are covered and reported	
4 - Reliability and Maintenance	4.1.2 - Defect reporting system	4.1.2.3.2 - The defect reporting system includes the recording of any equipment failures or breakdowns	
4 - Reliability and Maintenance	4.1.2 - Defect reporting system	4.1.2.3.3 - The defect reporting system includes reporting defects to shore management	
4 - Reliability and Maintenance	4.1.2 - Defect reporting system	4.1.2.3.4 - The defect reporting system includes tracking of defects from failure to repair	
4 - Reliability and Maintenance	4.1.3 - Company reviews status of fleet maintenance	4.1.3.1.2 - The review process includes number and nature of any outstanding maintenance tasks	
4 - Reliability and Maintenance	4.1.3 - Company reviews status of fleet maintenance	4.1.3.1.3 - The review process includes the reason for tasks being outstanding	
4 - Reliability and Maintenance	4.1.3 - Company reviews status of fleet maintenance	4.1.3.1.4 - The review process includes identification assistance/parts/technicians required	
4 - Reliability and Maintenance	4.1.3 - Company reviews status of fleet maintenance	4.1.3.2 - Procedures for rescheduling maintenance by exception	4.1.3.2.1 - Risk assessment / manufacturer's recommendations
4 - Reliability and Maintenance	4.1.3 - Company reviews status of fleet maintenance	4.1.3.2 - Procedures for rescheduling maintenance by exception	4.1.3.2.2 - Approval at an appropriate level
4 - Reliability and Maintenance	4.1.3 - Company reviews status of fleet maintenance	4.1.3.2 - Procedures for rescheduling maintenance by exception	4.1.3.2.3 - Completion within a specified time frame
4 - Reliability and Maintenance	4.2.1 - Validity and accuracy of statutory and/or Class certificates	4.2.1.1.1 - The procedure addresses Class status reports	
4 - Reliability and Maintenance	4.2.1 - Validity and accuracy of statutory and/or Class certificates	4.2.1.1.2 - The procedure addresses planning for surveys	
4 - Reliability and Maintenance	4.2.1 - Validity and accuracy of statutory and/or Class certificates	4.2.1.1.3 - The procedure addresses extensions	
4 - Reliability and Maintenance	4.2.1 - Validity and accuracy of statutory and/or Class certificates	4.2.1.1.4 - The procedure addresses dispensations and exemptions	
4 - Reliability and Maintenance	4.2.1 - Validity and accuracy of statutory and/or Class certificates	4.2.1.2 - Verification is performed both ashore and onboard	
4 - Reliability and Maintenance	4.2.2 - Cargo, void and ballast spaces are inspected	4.2.2.1 - Frequency of inspections is determined	
4 - Reliability and Maintenance	4.2.2 - Cargo, void and ballast spaces are inspected	4.2.2.2 - Guidance for inspection of compartments	
4 - Reliability and Maintenance	4.2.2 - Cargo, void and ballast spaces are inspected	4.2.2.3 - Records are compartment specific / standard format	
4 - Reliability and Maintenance	4.2.3 - Superintendents verify maintenance and defect records	4.2.3.1 - Superintendents visit/sail on vessels to confirm maintenance	4.2.3.1.1 - The procedure may include scope of visit
4 - Reliability and Maintenance	4.2.3 - Superintendents verify maintenance and defect records	4.2.3.1 - Superintendents visit/sail on vessels to confirm maintenance	4.2.3.1.2 - The procedure may include frequency of visits
4 - Reliability and Maintenance	4.2.3 - Superintendents verify maintenance and defect records	4.2.3.1 - Superintendents visit/sail on vessels to confirm maintenance	4.2.3.1.3 - The procedure may include the report format including photographic records
4 - Reliability and Maintenance	4.2.3 - Superintendents verify maintenance and defect records	4.2.3.1 - Superintendents visit/sail on vessels to confirm maintenance	4.2.3.1.4 - The procedure may include records of visit
4 - Reliability and Maintenance	4.2.3 - Superintendents verify maintenance and defect records	4.2.3.2.1 - During the visit, superintendents verify that maintenance has been carried out	
4 - Reliability and Maintenance	4.2.3 - Superintendents verify maintenance and defect records	4.2.3.2.2 - During the visit, superintendents observe engineering practices / management standards	
4 - Reliability and Maintenance	4.2.3 - Superintendents verify maintenance and defect records	4.2.3.2.3 - During the visit, superintendents verify defects have been recorded / reported	

4A - Critical Equipment	4A.1.1 - Critical equipment and systems are identified/listed	4A.1.1.1 - Sudden operational failure harm to personnel/environment/assets	
4A - Critical Equipment	4A.1.1 - Critical equipment and systems are identified/listed	4A.1.1.2 - Risk assessments are used to identify critical equipment/systems	
4A - Critical Equipment	4A.1.1 - Critical equipment and systems are identified/listed	4A.1.1.3.1 - May include primary and auxiliary power systems	
4A - Critical Equipment	4A.1.1 - Critical equipment and systems are identified/listed	4A.1.1.3.2 - May include main engine, including control and monitoring system	
4A - Critical Equipment	4A.1.1 - Critical equipment and systems are identified/listed	4A.1.1.3.3 - May include steering gear	
4A - Critical Equipment	4A.1.1 - Critical equipment and systems are identified/listed	4A.1.1.3.4 - May include navigation systems	
4A - Critical Equipment	4A.1.1 - Critical equipment and systems are identified/listed	4A.1.1.3.5 - May include principal life-saving and fire-fighting equipment	
4A - Critical Equipment	4A.1.1 - Critical equipment and systems are identified/listed	4A.1.1.3.6 - May include alarms and sensors	
4A - Critical Equipment	4A.1.2 - Procedure to manage planned maintenance of critical equipment /systems	4A.1.2.1 - Company informed when taken out of / returned to service	
4A - Critical Equipment	4A.1.2 - Procedure to manage planned maintenance of critical equipment /systems	4A.1.2.2 - Risk assessment/ snr management approval for deferral of maintenance	
4A - Critical Equipment	4A.1.3 - Shore management informed when critical equipment/system defective		
4A - Critical Equipment	4A.1.4 - Testing of critical equipment and systems not in continuous use	4A.1.4.1 - Performed in accordance with requirements and recommendations	
4B - Machinery space management	4B.1.1 - Procedures to ensure effective machinery space management	4B.1.1.1.1 - Frequency of machinery space rounds by responsible officer	
4B - Machinery space management	4B.1.1 - Procedures to ensure effective machinery space management	4B.1.1.1.2 - Checks and inspections that must be performed	
4B - Machinery space management	4B.1.1 - Procedures to ensure effective machinery space management	4B.1.1.1.3 - Records that must be maintained	
4B - Machinery space management	4B.1.1 - Procedures to ensure effective machinery space management	4B.1.1.2.1 - Circumstances under which unmanned mode is permitted	
4B - Machinery space management	4B.1.1 - Procedures to ensure effective machinery space management	4B.1.1.2.2 - Circumstances under which unmanned mode is prohibited	
4B - Machinery space management	4B.1.1 - Procedures to ensure effective machinery space management	4B.1.1.2.3 - Maximum permitted period of continuously unmanned mode	
4B - Machinery space management	4B.1.1 - Procedures to ensure effective machinery space management	4B.1.1.2.4 - Checks and inspections before unmanned period	
4B - Machinery space management	4B.1.1 - Procedures to ensure effective machinery space management	4B.1.1.2.5 - Records that must be maintained	
4B - Machinery space management	4B.1.1 - Procedures to ensure effective machinery space management	4B.1.1.2.6 - Communications with the deck department before/during UMS periods	
4B - Machinery space management	4B.1.1 - Procedures to ensure effective machinery space management	4B.1.1.3 - Chief Engineer's standing and daily orders	
4B - Machinery space management	4B.1.2 - Machinery space resource management	4B.1.2.1 - Machinery manning levels	
4B - Machinery space management	4B.1.2 - Machinery space resource management	4B.1.2.2 - Calling the Chief Engineer	
4B - Machinery space management	4B.1.2 - Machinery space resource management	4B.1.2.3 - Handovers	
4B - Machinery space management	4B.1.2 - Machinery space resource management	4B.1.2.4 - Lengthy periods with increased machinery space manning	
4B - Machinery space management	4B.1.3 - Pre-operational tests of manoeuvring/cargo machinery	4B.1.3.1 - Equipment that must be tested	
4B - Machinery space management	4B.1.3 - Pre-operational tests of manoeuvring/cargo machinery	4B.1.3.2 - Records that must be maintained	
4B - Machinery space management	4B.1.3 - Pre-operational tests of manoeuvring/cargo machinery	4B.1.3.3 - Communications with other departments during testing	
4B - Machinery space management	4B.1.3 - Pre-operational tests of manoeuvring/cargo machinery	4B.1.3.4 - Testing main propulsion units before departing a berth	
4B - Machinery space management	4B.1.4 - Planning large scale overhaul of machinery while in service	4B.1.4.1 - Restrictions around machinery maintenance while in service	4B.1.4.1.1 - That restrict ability to move under own power
4B - Machinery space management	4B.1.4 - Planning large scale overhaul of machinery while in service	4B.1.4.1 - Restrictions around machinery maintenance while in service	4B.1.4.1.2 - That reduces power generation capacity
4B - Machinery space management	4B.1.4 - Planning large scale overhaul of machinery while in service	4B.1.4.1 - Restrictions around machinery maintenance while in service	4B.1.4.1.3 - That reduces the cargo loading/discharging capabilities
4B - Machinery space management	4B.1.5 - Contingency plans for breakdowns of manoeuvring machinery	4B.1.5.1 - Isolating a single unit within the main engine	
4B - Machinery space management	4B.1.5 - Contingency plans for breakdowns of manoeuvring machinery	4B.1.5.2 - Immobilising the propeller shaft	
4B - Machinery space management	4B.1.5 - Contingency plans for breakdowns of manoeuvring machinery	4B.1.5.3 - Operating with reduced power or manoeuvrability	
4B - Machinery space management	4B.1.6 - Minimum machinery that must be in operation and on standby	4B.1.6.1 - Machinery to be considered propulsion/steering/power/thrusters	4B.1.6.1.1 - During open ocean passages
4B - Machinery space management	4B.1.6 - Minimum machinery that must be in operation and on standby	4B.1.6.1 - Machinery to be considered propulsion/steering/power/thrusters	4B.1.6.1.2 - During coastal navigation
4B - Machinery space management	4B.1.6 - Minimum machinery that must be in operation and on standby	4B.1.6.1 - Machinery to be considered propulsion/steering/power/thrusters	4B.1.6.1.3 - During port entry
4B - Machinery space management	4B.1.6 - Minimum machinery that must be in operation and on standby	4B.1.6.1 - Machinery to be considered propulsion/steering/power/thrusters	4B.1.6.1.4 - During manoeuvring alongside
4B - Machinery space management	4B.1.6 - Minimum machinery that must be in operation and on standby	4B.1.6.1 - Machinery to be considered propulsion/steering/power/thrusters	4B.1.6.1.5 - During mooring operations (until all fast)
4B - Machinery space management	4B.1.6 - Minimum machinery that must be in operation and on standby	4B.1.6.2 - Propulsion machinery notice periods	4B.1.6.2.1.1 - Notice period for activation agreed with bridge for routine activation
4B - Machinery space management	4B.1.6 - Minimum machinery that must be in operation and on standby	4B.1.6.2 - Propulsion machinery notice periods	4B.1.6.2.1.2 - Notice period for activation agreed with bridge for emergency activation
4B - Machinery space management	4B.1.7 - Procedures are in place for machinery space alarms	4B.1.7.1 - Engineer's call alarm	
4B - Machinery space management	4B.1.7 - Procedures are in place for machinery space alarms	4B.1.7.2 - Machinery alarm	
4B - Machinery space management	4B.1.7 - Procedures are in place for machinery space alarms	4B.1.7.3 - Personnel (deadman) alarm	

4B - Machinery space management	4B.2.1 - Workshop management	
4B - Machinery space management	4B.2.2 - Spare parts storage and management	
4B - Machinery space management	4B.2.3 - Fuel management and grade change	
5 - Navigational Safety	5.1.2 - Procedures for safe navigation	5.1.2.1.1 - Procedures may include charts and publications management
5 - Navigational Safety	5.1.2 - Procedures for safe navigation	5.1.2.1.2 - Procedures may include berth-to-berth passage planning
5 - Navigational Safety	5.1.2 - Procedures for safe navigation	5.1.2.1.3 - Procedures may include under keel clearance requirements
5 - Navigational Safety	5.1.2 - Procedures for safe navigation	5.1.2.1.4 - Procedures may include electronic aids to navigation
5 - Navigational Safety	5.1.2 - Procedures for safe navigation	5.1.2.1.5 - Procedures may include actions upon equipment failure
5 - Navigational Safety	5.1.2 - Procedures for safe navigation	5.1.2.1.6 - Procedures may include adverse weather, restricted visibility or ice
5 - Navigational Safety	5.1.2 - Procedures for safe navigation	5.1.2.1.7 - Procedures may include supporting checklists
5 - Navigational Safety	5.1.3 - Bridge resource management	5.1.3.1.1 - Procedures may include bridge manning levels
5 - Navigational Safety	5.1.3 - Bridge resource management	5.1.3.1.2 - Procedures may include calling the Master
5 - Navigational Safety	5.1.3 - Bridge resource management	5.1.3.1.3 - Procedures may include handovers
5 - Navigational Safety	5.1.3 - Bridge resource management	5.1.3.1.4 - Procedures may include navigating with a pilot onboard
5 - Navigational Safety	5.1.3 - Bridge resource management	5.1.3.1.5 - Procedures may include navigating in heavy weather/restricted visibility/ice
5 - Navigational Safety	5.1.3 - Bridge resource management	5.1.3.1.6 - Procedures may include lengthy periods with increased bridge manning
5 - Navigational Safety	5.1.3 - Bridge resource management	5.1.3.1.7 - Procedures may include hazardous navigational transits
5 - Navigational Safety	5.1.3 - Bridge resource management	5.1.3.1.8 - Procedures may include use of BNWAS
5 - Navigational Safety	5.2.2 - Navigational verification assessments	5.2.2.1 - Review of passage plans, charts, records & equipment
5 - Navigational Safety	5.2.2 - Navigational verification assessments	5.2.2.2 - At intervals not exceeding 12 months
5 - Navigational Safety	5.2.2 - Navigational verification assessments	5.2.2.3 - Report where identified corrective actions are assigned
5 - Navigational Safety	5.3.2 - Ship-handling training before promotion or reassignment	5.3.2.1 - Training under supervision on board 5.3.2.1.1 - Manned models and/or simulator training
5 - Navigational Safety	5.3.2 - Ship-handling training before promotion or reassignment	5.3.2.1 - Training under supervision on board 5.3.2.1.2 - Specialist training, ice, DP
5 - Navigational Safety	5.3.3 - Navigational audits on passage by company representative	5.3.3.1.1 - Purpose of the audit is to confirm that bridge practices are in compliance
5 - Navigational Safety	5.3.3 - Navigational audits on passage by company representative	5.3.3.1.2 - Purpose of the audit is to assess the skills and proficiency of the bridge team members
5 - Navigational Safety	5.3.3 - Navigational audits on passage by company representative	5.3.3.1.3 - Purpose of the audit is to evaluate the effective functioning of the bridge team
5 - Navigational Safety	5.3.3 - Navigational audits on passage by company representative	5.3.3.1.4 - Purpose of the audit is to promote robust navigational practices
5 - Navigational Safety	5.3.3 - Navigational audits on passage by company representative	5.3.3.1.5 - Purpose of the audit is to identify any additional training needs
5 - Navigational Safety	5.3.3 - Navigational audits on passage by company representative	5.3.3.1.6 - Purpose of the audit is to verify adequate supervision of Junior Officers
5 - Navigational Safety	5.3.3 - Navigational audits on passage by company representative	5.3.3.1.7 - Purpose of the audit is to verify that accurate logs are kept
5 - Navigational Safety	5.3.3 - Navigational audits on passage by company representative	5.3.3.2 - The audit is followed by a debrief
5 - Navigational Safety	5.3.3 - Navigational audits on passage by company representative	5.3.3.3 - A report identifies corrective actions
5 - Navigational Safety	5.3.3 - Navigational audits on passage by company representative	5.3.3.4 - Vessels are audited at intervals not exceeding two years
5 - Navigational Safety	5.4.1 - Navigational audits on passage by a suitably qualified person	5.4.1.1.2 - The audit may be a navigational audit by specialist contractor
5 - Navigational Safety	5.4.1 - Navigational audits on passage by a suitably qualified person	5.4.1.3 - Unannounced remote audit
5 - Navigational Safety	5.4.1 - Navigational audits on passage by a suitably qualified person	5.4.1.4 - Vessels are audited at intervals not exceeding 12 months
5 - Navigational Safety	5.4.4 - Refresher bridge resource management simulator training	5.4.4.1 - All navigation officers at a specified frequency
5 - Navigational Safety	5.4.4 - Refresher bridge resource management simulator training	5.4.4.2 - Team composition reflects bridge teams in the fleet
5 - Navigational Safety	5.4.4 - Refresher bridge resource management simulator training	5.4.4.3 - Used to enhance the dynamics within bridge team members
5 - Navigational Safety	5.4.4 - Refresher bridge resource management simulator training	5.4.4.4 - Modules and role play to address human factors

6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.1.1 - Cargo, ballast, tank cleaning and bunkering procedures include roles and responsibilities	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.1.2 - Cargo, ballast, tank cleaning and bunkering procedures include planning	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.1.3 - Cargo, ballast, tank cleaning and bunkering procedures include cargo and ballast handling	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.1.4 - Cargo, ballast, tank cleaning and bunkering procedures include safe tank atmospheres	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.1.5 - Cargo, ballast, tank cleaning and bunkering procedures include tank cleaning	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.1.6 - Cargo, ballast, tank cleaning and bunkering procedures include bunkering	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.1.7 - Cargo, ballast, tank cleaning and bunkering procedures include record keeping	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.2.1 - Procedures for pre-operational tests and checks of cargo bunkering equipment are in place for line and valve setting	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.2.2 - Procedures for pre-operational tests and checks of cargo bunkering equipment are in place for ESD system operation	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.2.3 - Procedures for pre-operational tests and checks of cargo bunkering equipment are in place for cargo/bunker line pressure testing	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.2.4 - Procedures for pre-operational tests and checks of cargo bunkering equipment are in place for alarms and trips	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.2.5 - Procedures for pre-operational tests and checks of cargo bunkering equipment are in place for IGS and venting systems	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.2.6 - Procedures for pre-operational tests and checks of cargo bunkering equipment are in place for loading computer or calculations	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.2.7 - Procedures for pre-operational tests and checks of cargo bunkering equipment are in place for cargo and ballast pump tests	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.2.8 - Procedures for pre-operational tests and checks of cargo bunkering equipment are in place for gas monitoring equipment	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.2.9 - Procedures for pre-operational tests and checks of cargo bunkering equipment are in place for tank gauging equipment	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.2.10 - Procedures for pre-operational tests and checks of cargo bunkering equipment are in place for prevention of freezing	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.4 - Procedures for cargo specific hazards	6.1.4.1.1 - Aromatic hydrocarbons
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.4 - Procedures for cargo specific hazards	6.1.4.1.2 - Toxic cargoes
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.4 - Procedures for cargo specific hazards	6.1.4.1.3 - Incompatible cargoes
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.4 - Procedures for cargo specific hazards	6.1.4.1.4 - High vapour pressure cargoes
6 - Cargo, ballast, tank cleaning and bunkering operations	6.1.4 - Procedures for cargo specific hazards	6.1.4.1.5 - Cargoes containing mercaptans and/or H ₂ S
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.1 - Roles and responsibilities
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.2 - Stability, stress, draught and trim calculations
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.3 - Free surface effect restrictions
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.4 - Limitations on slack tanks
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.5 - Stowage, segregation, pipeline, heating, final ullage
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.6 - Ballast and bunkering operations
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.7 - Tanks cleaning including crude oil washing
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.8 - Gas and chemical specific operations
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.9 - Initial, bulk and final loading/discharging rates
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.10 - Management of tank atmospheres
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.11 - Static precautions
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.12 - Cold weather precautions
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.13 - cargo data and hazards of particular cargoes
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.1 - Comprehensive plans for cargo, ballast and bunkering	6.2.1.1.14 - Ship/shore interface and communications
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.1 - Pre-arrival checks

6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.2 - Cargo hose/arm connection	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.3 - Ship/shore safety checklist	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.4 - Cargo survey and sampling	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.5 - Pre-operational checks /verification of line setting	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.6 - Gas and chemical specific operational procedures	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.7 - Starting cargo transfer / static precautions	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.8 - Bulk loading	6.2.2.1.8.1 - Ship/shore cross checks
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.8 - Bulk loading	6.2.2.1.8.2 - Monitoring static tanks
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.8 - Bulk loading	6.2.2.1.8.3 - Stability trim and stress checks
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.8 - Bulk loading	6.2.2.1.8.4 - Remote ullage gauge cross checks and verification
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.8 - Bulk loading	6.2.2.1.8.5 - Tank pressure and atmosphere monitoring
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.9 - Topping off/stripping	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.10 - Draining/blowing lines and disconnecting hoses	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.2 - Comprehensive procedures for cargo transfer operations	6.2.2.1.11 - Cargo care in transit	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.3 - Comprehensive procedures for ballast handling	6.2.3.1 - Ballasting and deballasting operations	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.3 - Comprehensive procedures for ballast handling	6.2.3.2 - Free surface effect restrictions	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.3 - Comprehensive procedures for ballast handling	6.2.3.3 - Ballast water exchange	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.3 - Comprehensive procedures for ballast handling	6.2.3.4 - Ballast water treatment	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.3 - Comprehensive procedures for ballast handling	6.2.3.5 - Heavy weather ballasting	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.3 - Comprehensive procedures for ballast handling	6.2.3.6 - Ballast operations in sub-zero temperatures	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.3 - Comprehensive procedures for ballast handling	6.2.3.7 - Shore line flushing	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.3 - Comprehensive procedures for ballast handling	6.2.3.8 - Ballasting for inspection and/or survey	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.1 - Cargo grade change	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.2 - Tank inspection and/or repair	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.3 - Drydock preparation	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.4 - Minimum MARPOL requirements	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.5 - Planning and approval	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.6 - Tank atmosphere control and monitoring	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.7 - Tank cleaning methods including	6.2.4.7.1 - Fixed and portable equipment
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.7 - Tank cleaning methods including	6.2.4.7.2 - Crude oil washing
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.7 - Tank cleaning methods including	6.2.4.7.3 - Manual cleaning e.g., mopping
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.7 - Tank cleaning methods including	6.2.4.7.4 - Steaming
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.7 - Tank cleaning methods including	6.2.4.7.5 - Use of chemicals, acids and solvents
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.7 - Tank cleaning methods including	6.2.4.7.6 - Hot washing
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.8 - Storage and handling of residues	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.9 - Where applicable, supervision of third party contractors	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.4 - Comprehensive tanks cleaning procedures	6.2.4.10 - Tank inspection and testing for quality, e.g. wall wash tests	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.1.1 - Terminal pipeline	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.1.2 - Bunker barge alongside/at anchor	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.1.3 - Road tankers	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.1.4 - LNG bunkering	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.1.5 - STS offshore bunkering	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.1.6 - Packaged lubricants	

6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.2.1 - Operation procedures address pre-arrival checks
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.2.2 - Operation procedures address pipeline/hose connection & supervision
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.2.3 - Operation procedures address bunker safety checklist and communications
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.2.4 - Operation procedures address bunker tank gauging
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.2.5 - Operation procedures address initial bulk transfer and topping off rates
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.2.6 - Operation procedures address draining/blowing lines and disconnection of hoses
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.2.7 - Operation procedures address bunker sample analysis
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.2.8 - Operation procedures address monitoring for hydrocarbon gas, benzene and H2S
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.3.1 - Specific guidance is provided for minimum stock levels
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.3.2 - Specific guidance is provided for co-mingling of bunker supply with existing stock
6 - Cargo, ballast, tank cleaning and bunkering operations	6.2.5 - Comprehensive bunkering procedures	6.2.5.3.3 - Specific guidance is provided for use of new bunkers before receipt of analysis results
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.1 - Standardised templates for cargo planning/record keeping	
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.2 - Tank atmospheres maintained within defined limits	6.3.2.1.1 - Vessels fitted with an IGS, IGS is used appropriately at all stages of the voyage
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.2 - Tank atmospheres maintained within defined limits	6.3.2.1.2 - Vessels fitted with an IGS, procedures clearly set out the actions to be taken in the event of a failure of the IGS
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.2 - Tank atmospheres maintained within defined limits	6.3.2.1.3 - Vessels fitted with an IGS, procedures, based on risk assessment, are developed for the carriage of specific cargoes without the use of inert gas, where this is required due to cargo characteristics
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.2 - Tank atmospheres maintained within defined limits	6.3.2.2.1 - For vessels not fitted with an IGS, flammable cargoes assessment / industry guidance
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.3 - Non-routine or specialised cargo and ballast operations	6.3.3.1 - STS operations
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.3 - Non-routine or specialised cargo and ballast operations	6.3.3.2 - Bow loading operations
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.3 - Non-routine or specialised cargo and ballast operations	6.3.3.3 - Co-mingling and/or blending
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.3 - Non-routine or specialised cargo and ballast operations	6.3.3.4 - SPM, CBM & tandem operations including line flushing
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.3 - Non-routine or specialised cargo and ballast operations	6.3.3.5 - Heavy weather ballast
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.3 - Non-routine or specialised cargo and ballast operations	6.3.3.6 - Vapour return and vapour balancing
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.3 - Non-routine or specialised cargo and ballast operations	6.3.3.7 - Heated, high viscosity and cold cargoes
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.3 - Non-routine or specialised cargo and ballast operations	6.3.3.8 - Inhibited cargoes
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.3 - Non-routine or specialised cargo and ballast operations	6.3.3.9 - Cargoes requiring padding or blanketing
6 - Cargo, ballast, tank cleaning and bunkering operations	6.3.3 - Non-routine or specialised cargo and ballast operations	6.3.3.10 - Cargo dosing (dyes, additives)
6 - Cargo, ballast, tank cleaning and bunkering operations	6.4.1 - Shore-based simulator courses	6.4.1.2 - Procedures specify the time frame for initial and refresher training
6 - Cargo, ballast, tank cleaning and bunkering operations	6.4.2 - Comprehensive audits are completed by a suitably qualified and experience company representative	6.4.2.1.1 - The Audit may look at operational practices and compliance with industry guidelines and company procedures
6 - Cargo, ballast, tank cleaning and bunkering operations	6.4.2 - Comprehensive audits are completed by a suitably qualified and experience company representative	6.4.2.1.2 - The Audit may look at skills and proficiency levels of the personnel
6 - Cargo, ballast, tank cleaning and bunkering operations	6.4.2 - Comprehensive audits are completed by a suitably qualified and experience company representative	6.4.2.1.3 - The Audit may look at the effectiveness of the team during all stages of the operations
6 - Cargo, ballast, tank cleaning and bunkering operations	6.4.2 - Comprehensive audits are completed by a suitably qualified and experience company representative	6.4.2.1.4 - The Audit may look at the opportunity to promote robust practices
6 - Cargo, ballast, tank cleaning and bunkering operations	6.4.2 - Comprehensive audits are completed by a suitably qualified and experience company representative	6.4.2.1.5 - The Audit may look at identifying additional training needs
6 - Cargo, ballast, tank cleaning and bunkering operations	6.4.2 - Comprehensive audits are completed by a suitably qualified and experience company representative	6.4.2.1.6 - The Audit may look at supervision of Junior Officers and training of cadets
6 - Cargo, ballast, tank cleaning and bunkering operations	6.4.2 - Comprehensive audits are completed by a suitably qualified and experience company representative	6.4.2.1.7 - The Audit may look at record keeping
6 - Cargo, ballast, tank cleaning and bunkering operations	6.4.2 - Comprehensive audits are completed by a suitably qualified and experience company representative	6.4.2.2 - Corrective actions are assigned, verified and closed out in a specified time period

6A - Mooring and Anchoring Operations	6A.1.1 - Procedures for mooring and anchoring operations	6A.1.1.1.1 - The procedures include roles and responsibilities	
6A - Mooring and Anchoring Operations	6A.1.1 - Procedures for mooring and anchoring operations	6A.1.1.1.2 - The procedures include requirements for risk assessments	
6A - Mooring and Anchoring Operations	6A.1.1 - Procedures for mooring and anchoring operations	6A.1.1.1.3 - The procedures include mooring arrangements and layout	
6A - Mooring and Anchoring Operations	6A.1.1 - Procedures for mooring and anchoring operations	6A.1.1.1.4 - The procedures include anchoring methods	
6A - Mooring and Anchoring Operations	6A.1.1 - Procedures for mooring and anchoring operations	6A.1.1.1.5 - The procedures include use of main engine (and thrusters if fitted)	
6A - Mooring and Anchoring Operations	6A.1.1 - Procedures for mooring and anchoring operations	6A.1.1.2 - Guidance ensures protection of personnel and safe operation	
6A - Mooring and Anchoring Operations	6A.1.2 - mooring and anchoring equipment included in PMS	6A.1.2.1 - PMS covers all mooring equipment	6A.1.2.1.1 - Winches and windlasses
6A - Mooring and Anchoring Operations	6A.1.2 - mooring and anchoring equipment included in PMS	6A.1.2.1 - PMS covers all mooring equipment	6A.1.2.1.2 - Roller fairleads, panamas, bow chain stoppers
6A - Mooring and Anchoring Operations	6A.1.2 - mooring and anchoring equipment included in PMS	6A.1.2.1 - PMS covers all mooring equipment	6A.1.2.1.3 - Hydraulic, steam, or electrical drive systems
6A - Mooring and Anchoring Operations	6A.1.2 - mooring and anchoring equipment included in PMS	6A.1.2.1 - PMS covers all mooring equipment	6A.1.2.1.4 - Emergency towing systems
6A - Mooring and Anchoring Operations	6A.1.2 - mooring and anchoring equipment included in PMS	6A.1.2.2 - Winch and windlass brake testing	
6A - Mooring and Anchoring Operations	6A.1.3 - Condition of mooring ropes, wires, tails and shackles	6A.1.3.1.1 - Procedures may include instructions for care and stowage	
6A - Mooring and Anchoring Operations	6A.1.3 - Condition of mooring ropes, wires, tails and shackles	6A.1.3.1.2 - Procedures may include required inspection intervals and records	
6A - Mooring and Anchoring Operations	6A.1.4 - Procedures that address the use of tugs	6A.1.4.1.1 - Procedures may include the safe handling of ships' lines or tug lines	
6A - Mooring and Anchoring Operations	6A.1.4 - Procedures that address the use of tugs	6A.1.4.1.2 - Procedures may include strong points for making tugs fast / designated push points	
6A - Mooring and Anchoring Operations	6A.2.1 - Detailed procedures that address different types of mooring operation	6A.2.1.1.1 - Conventional berths	
6A - Mooring and Anchoring Operations	6A.2.1 - Detailed procedures that address different types of mooring operation	6A.2.1.1.2 - Conventional buoy mooring, SPMS	
6A - Mooring and Anchoring Operations	6A.2.1 - Detailed procedures that address different types of mooring operation	6A.2.1.1.3 - Tandem mooring to F(P)SO	
6A - Mooring and Anchoring Operations	6A.2.1 - Detailed procedures that address different types of mooring operation	6A.2.1.1.4 - Double-banking at berths	
6A - Mooring and Anchoring Operations	6A.2.1 - Detailed procedures that address different types of mooring operation	6A.2.1.1.5 - STS operations (including reverse STS)	
6A - Mooring and Anchoring Operations	6A.2.1 - Detailed procedures that address different types of mooring operation	6A.2.1.1.6 - DP operations	
6A - Mooring and Anchoring Operations	6A.2.2 - Procedures address all aspects of anchoring operations	6A.2.2.1.1 - Selecting the anchoring position	
6A - Mooring and Anchoring Operations	6A.2.2 - Procedures address all aspects of anchoring operations	6A.2.2.1.2 - Methods of anchoring	
6A - Mooring and Anchoring Operations	6A.2.2 - Procedures address all aspects of anchoring operations	6A.2.2.1.3 - Equipment design limitations and characteristics	
6A - Mooring and Anchoring Operations	6A.2.2 - Procedures address all aspects of anchoring operations	6A.2.2.1.4 - Emergency anchoring	
6A - Mooring and Anchoring Operations	6A.2.2 - Procedures address all aspects of anchoring operations	6A.2.2.1.5 - Actions when dragging / onset of bad weather	
6A - Mooring and Anchoring Operations	6A.2.2 - Procedures address all aspects of anchoring operations	6A.2.2.1.6 - Emergency departure from an anchorage	
6A - Mooring and Anchoring Operations	6A.2.3 - Procedures ensure that vessels remain safely moored at all times	6A.2.3.1.1 - Sufficient personnel onboard to tend moorings	
6A - Mooring and Anchoring Operations	6A.2.3 - Procedures ensure that vessels remain safely moored at all times	6A.2.3.1.2 - Weather forecasts/warnings are obtained	
6A - Mooring and Anchoring Operations	6A.2.3 - Procedures ensure that vessels remain safely moored at all times	6A.2.3.1.3 - Changes to environmental conditions are monitored	
6A - Mooring and Anchoring Operations	6A.2.3 - Procedures ensure that vessels remain safely moored at all times	6A.2.3.1.4 - Passing traffic is monitored	
6A - Mooring and Anchoring Operations	6A.2.3 - Procedures ensure that vessels remain safely moored at all times	6A.2.3.2 - Vessel cannot remain safely moored, actions may include	6A.2.3.2.1 - Deployment of additional moorings
6A - Mooring and Anchoring Operations	6A.2.3 - Procedures ensure that vessels remain safely moored at all times	6A.2.3.2 - Vessel cannot remain safely moored, actions may include	6A.2.3.2.2 - Engaging tugs to remain alongside
6A - Mooring and Anchoring Operations	6A.2.3 - Procedures ensure that vessels remain safely moored at all times	6A.2.3.2 - Vessel cannot remain safely moored, actions may include	6A.2.3.2.3 - Preparations for emergency departure
6A - Mooring and Anchoring Operations	6A.2.4 - Procedures are in place for the inspection, maintenance and replacement of wires, ropes, tails and ancillary equipment	6A.2.4.1.1 - The procedures may include inspection methods and frequency	
6A - Mooring and Anchoring Operations	6A.2.4 - Procedures are in place for the inspection, maintenance and replacement of wires, ropes, tails and ancillary equipment	6A.2.4.1.2 - The procedures may include maintenance requirements	
6A - Mooring and Anchoring Operations	6A.2.4 - Procedures are in place for the inspection, maintenance and replacement of wires, ropes, tails and ancillary equipment	6A.2.4.1.3 - The procedures may include retirement criteria	
6A - Mooring and Anchoring Operations	6A.2.4 - Procedures are in place for the inspection, maintenance and replacement of wires, ropes, tails and ancillary equipment	6A.2.4.1.4 - The procedures may include minimum spares	
6A - Mooring and Anchoring Operations	6A.2.4 - Procedures are in place for the inspection, maintenance and replacement of wires, ropes, tails and ancillary equipment	6A.2.4.1.5 - The procedures may include stowage requirements	
6A - Mooring and Anchoring Operations	6A.2.4 - Procedures are in place for the inspection, maintenance and replacement of wires, ropes, tails and ancillary equipment	6A.2.4.1.6 - The procedures may include record keeping	

6A - Mooring and Anchoring Operations	6A.2.4 - Procedures are in place for the inspection, maintenance and replacement of wires, ropes, tails and ancillary equipment	6A.2.4.2.1 - The records may include date of bringing rope/wires into service
6A - Mooring and Anchoring Operations	6A.2.4 - Procedures are in place for the inspection, maintenance and replacement of wires, ropes, tails and ancillary equipment	6A.2.4.2.2 - The records may include identification and tagging of all equipment
6A - Mooring and Anchoring Operations	6A.2.4 - Procedures are in place for the inspection, maintenance and replacement of wires, ropes, tails and ancillary equipment	6A.2.4.2.3 - The records may include certification for all ropes/wires/tails/joining shackles
6A - Mooring and Anchoring Operations	6A.2.4 - Procedures are in place for the inspection, maintenance and replacement of wires, ropes, tails and ancillary equipment	6A.2.4.2.4 - The records may include dates of end for ending
6A - Mooring and Anchoring Operations	6A.3.1 - Requirements for personnel involved in mooring operations	6A.3.1.1.1 - The requirements may include designated person in charge at each location
6A - Mooring and Anchoring Operations	6A.3.1 - Requirements for personnel involved in mooring operations	6A.3.1.1.2 - The requirements may include minimum numbers of personnel required at each location
6A - Mooring and Anchoring Operations	6A.3.1 - Requirements for personnel involved in mooring operations	6A.3.1.1.3 - The requirements may include toolbox talk prior to mooring operations
6A - Mooring and Anchoring Operations	6A.3.1 - Requirements for personnel involved in mooring operations	6A.3.1.1.4 - The requirements may include minimum training and experience requirements
6A - Mooring and Anchoring Operations	6A.3.1 - Requirements for personnel involved in mooring operations	6A.3.1.1.5 - The requirements may include supervision of third party personnel
6A - Mooring and Anchoring Operations	6A.4.3 - Comprehensive audit uses observation of mooring operations	6A.4.3.1 - All fleet vessels are audited annually
6A - Mooring and Anchoring Operations	6A.4.3 - Comprehensive audit uses observation of mooring operations	6A.4.3.3 - The audit is followed by a report
7 - Management of change	7.1.1 - Documented procedure for MOC	7.1.1.1 - Addresses permanent and temporary changes
7 - Management of change	7.1.1 - Documented procedure for MOC	7.1.1.2.1 - These may include installation of new and modification of existing equipment
7 - Management of change	7.1.1 - Documented procedure for MOC	7.1.1.2.2 - These may include temporary isolation and reactivation of alarms
7 - Management of change	7.1.1 - Documented procedure for MOC	7.1.1.2.3 - These may include changes and/or upgrades to software
8 - Incident Reporting, Investigation and Analysis	8.1.1 - Prompt reporting and investigation of incidents	8.1.1.1.1 - Procedures may include definitions of reportable incidents
8 - Incident Reporting, Investigation and Analysis	8.1.1 - Prompt reporting and investigation of incidents	8.1.1.1.2 - Procedures may include person/department responsible for investigation
8 - Incident Reporting, Investigation and Analysis	8.1.1 - Prompt reporting and investigation of incidents	8.1.1.1.3 - Procedures may include description of the investigation process
8 - Incident Reporting, Investigation and Analysis	8.1.2 - Mandatory notifications are carried out	8.1.2.1.1 - Mandatory reports include notifications to company DPA/CSO
8 - Incident Reporting, Investigation and Analysis	8.1.2 - Mandatory notifications are carried out	8.1.2.1.2 - Mandatory reports include notifications to Flag State
8 - Incident Reporting, Investigation and Analysis	8.1.2 - Mandatory notifications are carried out	8.1.2.1.3 - Mandatory reports include notifications to Coastal Authorities and/or Port State
8 - Incident Reporting, Investigation and Analysis	8.1.2 - Mandatory notifications are carried out	8.1.2.1.4 - Mandatory reports include notifications to Classification Society
8 - Incident Reporting, Investigation and Analysis	8.1.2 - Mandatory notifications are carried out	8.1.2.1.5 - Mandatory reports include notifications to Qualified Individual, if applicable
8 - Incident Reporting, Investigation and Analysis	8.1.4 - Incidents are investigated and analysed	8.1.4.1 - Corrective and preventative actions are identified
8 - Incident Reporting, Investigation and Analysis	8.1.4 - Incidents are investigated and analysed	8.1.4.2 - Investigation and analysis accurately establish the root causes
9 - Safety Management - Shore	9.1.3 - Documented risk assessment system	9.1.3.1 - Identify hazards and assess risk levels arising from work
9 - Safety Management - Shore	9.1.4 - Permit to work system	9.1.4.1 - Permit to work is used to control risks associated with hazardous tasks
9 - Safety Management - Shore	9.1.4 - Permit to work system	9.1.4.2 - Management approval for higher risk activities
9 - Safety Management - Shore	9.2.1 - Risk assessments are used to develop safe working procedures	9.2.1.1 - All risk mitigation measures incorporated into the safe working procedures
9 - Safety Management - Shore	9.2.1 - Risk assessments are used to develop safe working procedures	9.2.1.2 - Industry organisations referred to when compiling risk assessments
9 - Safety Management - Shore	9.2.1 - Risk assessments are used to develop safe working procedures	9.2.1.3 - Risk assessments are reviewed and updated
9 - Safety Management - Shore	9.2.2 - Risk assessing new, non-routine and unplanned tasks	9.2.2.1 - Where no safe work procedure, risk assessment carried out and approved
9 - Safety Management - Shore	9.2.2 - Risk assessing new, non-routine and unplanned tasks	9.2.2.2 - Alternative methods of work considered and documented
9 - Safety Management - Shore	9.2.3 - Risk assessments for new, non-routine and unplanned tasks are available	9.2.3.1 - Risk assessments are assessed by shore-based personnel
9 - Safety Management - Shore	9.2.3 - Risk assessments for new, non-routine and unplanned tasks are available	9.2.3.2 - Personnel are familiarised with content of risk assessments

9 - Safety Management - Shore	9.2.4 - All mitigation measures completed prior work	9.2.4.1.1 - Procedures may include permit to work system for both planned and unplanned tasks
9 - Safety Management - Shore	9.2.4 - All mitigation measures completed prior work	9.2.4.1.2 - Procedures may include risk assessment form to confirm implementation
9 - Safety Management - Shore	9.2.4 - All mitigation measures completed prior work	9.2.4.2 - Final approval subject to implementation of mitigation measures
9 - Safety Management - Shore	9.2.5 - Procedures manage the safety of contractors	9.2.5.1 - Define and identify contractors
9 - Safety Management - Shore	9.2.5 - Procedures manage the safety of contractors	9.2.5.2 - Establish responsibilities between contractors and vessel
9 - Safety Management - Shore	9.2.5 - Procedures manage the safety of contractors	9.2.5.3 - Safety inductions are conducted with contractors
9 - Safety Management - Shore	9.2.5 - Procedures manage the safety of contractors	9.2.5.4 - Establish work management process
9 - Safety Management - Shore	9.2.5 - Procedures manage the safety of contractors	9.2.5.5 - Ensure compliance with company HSSE policies
9 - Safety Management - Shore	9.3.2 - Propriety safety tools are used to encourage hazard identification	9.3.2.1.1 - Such tools may include Unsafe Act Awareness programmes
9 - Safety Management - Shore	9.3.2 - Propriety safety tools are used to encourage hazard identification	9.3.2.1.2 - Such tools may include behaviour-based safety system.
9 - Safety Management - Shore	9.3.2 - Propriety safety tools are used to encourage hazard identification	9.3.2.1.3 - Such tools may include concentrated safety awareness campaigns
9 - Safety Management - Shore	9.3.2 - Propriety safety tools are used to encourage hazard identification	9.3.2.2 - Campaigns encourage a strong safety culture
9A - Safety Management - Fleet	9A.1.1 - Safety inspections by the designated safety officer	9A.1.1.1.1 - Identify hazards and potential hazards
9A - Safety Management - Fleet	9A.1.1 - Safety inspections by the designated safety officer	9A.1.1.1.2 - Include all accessible areas of the vessel
9A - Safety Management - Fleet	9A.1.1 - Safety inspections by the designated safety officer	9A.1.1.1.3 - Recorded and reviewed at the monthly safety meeting
9A - Safety Management - Fleet	9A.1.1 - Safety inspections by the designated safety officer	9A.1.1.2 - Frequency and format of the inspections
9A - Safety Management - Fleet	9A.1.1 - Safety inspections by the designated safety officer	9A.1.1.3 - Safety officer is suitably experienced and trained
9A - Safety Management - Fleet	9A.1.2 - All personnel identify, report, (address) hazards	9A.1.2.1 - Any identified hazards are addressed
9A - Safety Management - Fleet	9A.1.3 - Safety meetings are held at least monthly	9A.1.3.1 - Attended by all available personnel and minutes recorded
9A - Safety Management - Fleet	9A.1.3 - Safety meetings are held at least monthly	9A.1.3.2 - Forum which encourages personnel to actively participate
9A - Safety Management - Fleet	9A.1.3 - Safety meetings are held at least monthly	9A.1.3.3.1 - The safety meeting is used to raise safety awareness
9A - Safety Management - Fleet	9A.1.3 - Safety meetings are held at least monthly	9A.1.3.3.2 - The safety meeting is used to voice safety concerns and identify remedial actions
9A - Safety Management - Fleet	9A.1.3 - Safety meetings are held at least monthly	9A.1.3.3.3 - The safety meeting is used to promulgate lessons learnt
9A - Safety Management - Fleet	9A.1.3 - Safety meetings are held at least monthly	9A.1.3.4 - Company reviews and responds to safety meeting minutes
9A - Safety Management - Fleet	9A.1.4 - Procedures require daily work planning meetings	9A.1.4.1.1 - Work planning agrees the scope of the work to be undertaken
9A - Safety Management - Fleet	9A.1.4 - Procedures require daily work planning meetings	9A.1.4.1.2 - Work planning identifies any operational or departmental conflict
9A - Safety Management - Fleet	9A.1.4 - Procedures require daily work planning meetings	9A.1.4.1.3 - Work planning identifies personnel requirements
9A - Safety Management - Fleet	9A.1.4 - Procedures require daily work planning meetings	9A.1.4.1.4 - Work planning identifies tools and equipment required
9A - Safety Management - Fleet	9A.1.4 - Procedures require daily work planning meetings	9A.1.4.1.5 - Work planning establishes appropriate PPE requirements
9A - Safety Management - Fleet	9A.1.4 - Procedures require daily work planning meetings	9A.1.4.1.6 - Work planning ensures compliance with work and rest hours
9A - Safety Management - Fleet	9A.2.1 - Intervention to prevent unsafe acts and unsafe conditions	9A.2.1.1.1 - Safety intervention techniques used may include unsafe Act Awareness and intervention
9A - Safety Management - Fleet	9A.2.1 - Intervention to prevent unsafe acts and unsafe conditions	9A.2.1.1.2 - Safety intervention techniques used may include stop work authority
9A - Safety Management - Fleet	9A.2.1 - Intervention to prevent unsafe acts and unsafe conditions	9A.2.1.1.3 - Safety intervention techniques used may include tool box talks
9A - Safety Management - Fleet	9A.2.1 - Intervention to prevent unsafe acts and unsafe conditions	9A.2.1.1.4 - Safety intervention techniques used may include safety observations
9A - Safety Management - Fleet	9A.2.1 - Intervention to prevent unsafe acts and unsafe conditions	9A.2.1.1.5 - Safety intervention techniques used may include progress is reviewed at monthly safety meetings
9A - Safety Management - Fleet	9A.2.2 - Training in hazard identification is provided to vessel personnel	9A.2.2.1 - Various levels of training are provided

10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.1 - Sources could include funnel emissions (CO ₂ , NO _x , SO _x , particulate matter)
10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.2 - Sources could include greenhouse gases
10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.3 - Sources could include garbage
10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.4 - Sources could include Volatile Organic Compounds (VOC)
10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.5 - Sources could include cargo residues
10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.6 - Sources could include oil emissions (stern tube lube oil, bilge, sludge)
10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.7 - Sources could include effluent discharges (IGS discharge, grey water)
10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.8 - Sources could include ballast water
10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.9 - Sources could include sewage
10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.10 - Sources could include antifouling paints
10 - Environmental and Energy Management	10.1.2 - Sources of emissions attributable to vessel identified	10.1.2.1.11 - Sources could include noise, including underwater disturbance
10 - Environmental and Energy Management	10.1.3 - Emissions are always within permitted levels	10.1.3.1.1 - Procedures may include methods of minimising emissions
10 - Environmental and Energy Management	10.1.3 - Emissions are always within permitted levels	10.1.3.1.2 - Procedures may include identification of applicable regulations
10 - Environmental and Energy Management	10.1.3 - Emissions are always within permitted levels	10.1.3.1.3 - Procedures may include environmentally responsible disposal methods
10 - Environmental and Energy Management	10.1.3 - Emissions are always within permitted levels	10.1.3.1.4 - Procedures may include emissions monitoring
10 - Environmental and Energy Management	10.1.3 - Emissions are always within permitted levels	10.1.3.1.5 - Procedures may include fuel analysis
10 - Environmental and Energy Management	10.1.3 - Emissions are always within permitted levels	10.1.3.1.6 - Procedures may include VOC management
11 - Emergency Preparedness	11.1.1 - Vessel emergency response plans cover all credible scenarios	11.1.1.1 - Emergency response plans are reviewed at least annually
11 - Emergency Preparedness	11.1.1 - Vessel emergency response plans cover all credible scenarios	11.1.1.2 - Reviewed following any incident or drill
12 - Inspections	12.1.1 - Specific format used for reporting vessel inspections	12.1.1.1 - The format is used as basis for all inspections
12 - Inspections	12.1.1 - Specific format used for reporting vessel inspections	12.1.1.2 - The format covers all areas of the vessel and equipment
12 - Inspections	12.1.1 - Specific format used for reporting vessel inspections	12.1.1.3 - The format is controlled
12 - Inspections	12.1.2 - At least two inspections of each vessel a year	12.1.2.1 - Conducted by suitably experienced superintendent(s)
12 - Inspections	12.1.2 - At least two inspections of each vessel a year	12.1.2.2 - A report is reviewed/signed off by shore management
12 - Inspections	12.1.2 - At least two inspections of each vessel a year	12.1.2.3 - Provides management with comprehensive overview
12 - Inspections	12.1.2 - At least two inspections of each vessel a year	12.1.2.4 - Records are kept of the inspections and reviews
12 - Inspections	12.2.1 - Format is at least equivalent to OCIMF, CDI or EBIS	12.2.1.1 - Format in addition incorporates
12 - Inspections	12.2.1 - Format is at least equivalent to OCIMF, CDI or EBIS	12.2.1.2 - Company specific items
12 - Inspections	12.2.1 - Format is at least equivalent to OCIMF, CDI or EBIS	12.2.1.3 - Areas identified from lessons learnt
12 - Inspections	12.2.1 - Format is at least equivalent to OCIMF, CDI or EBIS	12.2.1.4 - Company and industry best practice
12 - Inspections	12.2.1 - Format is at least equivalent to OCIMF, CDI or EBIS	12.2.1.5 - Where applicable, vessel type specific items
12 - Inspections	12.2.2 - Deficiencies tracked through to close out	12.2.2.1 - Deficiencies tracked to close out within specified time frame
12 - Inspections	12.2.2 - Deficiencies tracked through to close out	12.2.2.2 - Regular checks are made on the status of open items
12 - Inspections	12.2.2 - Deficiencies tracked through to close out	12.2.2.3 - A summary is provided to management on a quarterly basis
12A - Audits	12A.1.1 - Documented audit procedures and standard audit format	12A.1.1.1 - Formats designed for ISM, the ISPS, ISO and company internal audits
12A - Audits	12A.3.1 - Non-conformities are closed out within the prescribed time frame	12A.3.1.1 - Non-conformities are tracked through to completion
12A - Audits	12A.3.1 - Non-conformities are closed out within the prescribed time frame	12A.3.1.2 - Audit status report reported to senior management
12A - Audits	12A.3.1 - Non-conformities are closed out within the prescribed time frame	12A.3.1.3 - Non-conformities that cannot be closed out within the original time frame

13 - Maritime Security	13.1.1 - Documented security plans are in place	13.1.1.2.2 - The plans cover all aspects of activities including vessels	
13 - Maritime Security	13.1.1 - Documented security plans are in place	13.1.1.2.3 - The plans cover all aspects of activities including personnel	
13 - Maritime Security	13.1.2 - The plans cover all aspects of activities including personnel responsible for security related matters are identified		
13 - Maritime Security	13.1.3 - Measures developed to mitigate / respond to all identified threats to vessels	13.1.3.1.1 - Mitigating measures may include access control	
13 - Maritime Security	13.1.3 - Measures developed to mitigate / respond to all identified threats to vessels	13.1.3.1.2 - Mitigating measures may include physical security measures	
13 - Maritime Security	13.1.3 - Measures developed to mitigate / respond to all identified threats to vessels	13.1.3.1.3 - Mitigating measures may include drills and training	
13 - Maritime Security	13.1.3 - Measures developed to mitigate / respond to all identified threats to vessels	13.1.3.1.4 - Mitigating measures may include security patrols	
13 - Maritime Security	13.1.3 - Measures developed to mitigate / respond to all identified threats to vessels	13.1.3.1.5 - Mitigating measures may include searches	
13 - Maritime Security	13.1.3 - Measures developed to mitigate / respond to all identified threats to vessels	13.1.3.2 - Contingency plans are in place to respond to any potential breaches of security	
13 - Maritime Security	13.2.3 - Policy and procedures include cyber security	13.2.3.1.1 - Risks to IT systems may include deliberate and unauthorised breaches	
13 - Maritime Security	13.2.3 - Policy and procedures include cyber security	13.2.3.1.2 - Risks to IT systems may include unintentional or accidental breaches	
13 - Maritime Security	13.2.3 - Policy and procedures include cyber security	13.2.3.1.3 - Risks to IT systems may include inadequate system integrity, such as firewalls and/or virus protection	
13 - Maritime Security	13.2.3 - Policy and procedures include cyber security	13.2.3.2 - Systems with direct or indirect communication links are identified	13.2.3.2.1 - Navigation systems
13 - Maritime Security	13.2.3 - Policy and procedures include cyber security	13.2.3.2 - Systems with direct or indirect communication links are identified	13.2.3.2.2 - Engineering systems
13 - Maritime Security	13.2.3 - Policy and procedures include cyber security	13.2.3.2 - Systems with direct or indirect communication links are identified	13.2.3.2.3 - Control systems
13 - Maritime Security	13.2.3 - Policy and procedures include cyber security	13.2.3.2 - Systems with direct or indirect communication links are identified	13.2.3.2.4 - Communication systems
13 - Maritime Security	13.2.3 - Policy and procedures include cyber security	13.2.3.3 - Procedures, may refer to relevant current industry guidance	
13 - Maritime Security	13.2.4 - The company actively promotes cyber security awareness	13.2.4.1.1 - Awareness includes the locking of unattended work stations	
13 - Maritime Security	13.2.4 - The company actively promotes cyber security awareness	13.2.4.1.2 - Awareness includes the safeguarding of passwords	
13 - Maritime Security	13.2.4 - The company actively promotes cyber security awareness	13.2.4.1.3 - Awareness includes no use of unauthorised software	
13 - Maritime Security	13.2.4 - The company actively promotes cyber security awareness	13.2.4.1.4 - Awareness includes management of phishing emails	
13 - Maritime Security	13.2.4 - The company actively promotes cyber security awareness	13.2.4.1.5 - Awareness includes the responsible use of social media	
13 - Maritime Security	13.2.4 - The company actively promotes cyber security awareness	13.2.4.1.6 - Awareness includes the prevention of misuse of portable storage and memory sticks	

Annex 3: Human – Rank grouping

A means of recording the seniority of an Observed Person (OP) without identifying their actual rank within either the Subject of Concern (SOC) or a supporting comment/negative comment.

Please select a crew rank

Not Identified

Senior Deck Officer

Junior Deck Officer

Senior Engineer Officer

Junior Engineer Officer

Rating

Deck team task - historical

Engine room team task - historical

Annex 4: Standard photograph locations

	<i>All Tankers</i>
1	Bow area from dead ahead
2	Hull forward end starboard side
3	Hull forward end port side
4	Hull aft end starboard side
5	Hull aft end port side
6	Transom from right astern
7	Forecastle port side looking towards fairleads
8	Forecastle starboard side looking towards fairleads
9	Port or starboard windlass
10	Forward main deck showing condition of deck (and external framing)
11	Forward main deck showing condition of pipe rack
12	One mooring winch including the brake setting arrangement
13	One hose crane with an overall view
14	One hose crane showing hoisting winch, stowed wire and limit switches.
15	Starboard manifold looking from aft to forward
16	Starboard manifold looking forward to aft
17	Aft main deck showing condition of deck (and external framing)
18	Aft main deck showing condition of pipe rack
19	Poop deck looking from midships to starboard including fairleads
20	Aft emergency towing equipment storage arrangement
21	Aft emergency towing equipment deployment system
22	Lifeboat and davit
23	The emergency generator or accumulator batteries
24	Engine room general view showing top of main engine
25	One generator engine
26	The oil filtering equipment
27	The incinerator
28	One boiler from the front
29	One boiler from the top showing control equipment
30	Purifier room general view
31	Main engine side showing local control station
32	Steering gear room general view showing access
33	Main steering gear
	<i>Crude/Product/Chemical tankers/OBO</i>
40	IG system pressure/vacuum-breaking (P/V) device
41	IG system first non-return device (deck seal or double block and bleed arrangement)
42	One main cargo pump and, if in pump room, including bilges
	<i>LNG Membrane Type</i>
50	Cargo tank liquid dome including load and discharge valve
51	Electric motors for deepwell pumps
52	Compressor/motor room
	<i>LNG Moss Type</i>
60	Cargo tank liquid dome including load and discharge valve
61	Electric motors for deepwell pumps
62	Electric motors for deepwell pumps
	<i>LPG Pressurised</i>
70	Cargo tank liquid dome including load and discharge valve
71	Cargo tank vapour dome including cargo system relief valves
72	Compressor house, internal view

	<i>LPG Refrigerated</i>
80	Cargo tank liquid dome including load and discharge valve
81	General view of one Moss sphere
82	Compressor house internal view
	<i>Shuttle Tanker</i>
90	Bow mooring arrangement from forward looking aft showing chain stopper
91	Bow mooring arrangement from aft looking forward showing winch
92	General view of hose connection area
93	Hose coupling arrangement
94	General view forward bow thruster room
95	Forward bow thruster room showing one azimuth thruster

Annex 5: Hardware – Standard cause analysis tree

Nature of Concern

- ☐ Maintenance task available – not completed
- ☐ Maintenance task available – records incompatible with condition seen
- ☐ No maintenance task developed
- ☐ Maintenance deferred – awaiting spares
- ☐ Maintenance deferred – awaiting technician
- ☐ Maintenance deferred – awaiting out of service / gas free
- ☐ Sudden failure – maintenance tasks available and up to date
- ☐ Other - text

Annex 6: Process – Standard cause analysis tree

Nature of Concern

- ☐ No procedure
- ☒ Procedure not present/available/accessible
- ☐ Too many/conflicting procedures
- ☐ Procedure clarity and understandability
- ☐ Procedure accuracy/correctness
- ☐ Procedure realism/feasibility/suitability
- ☐ Procedure completeness/validity/version
- ☐ Communication of procedure/practice updates
- ☐ Other - text

Annex 7: Human – Performance Influencing Factors (PIF)

Nature of Concern

- ☐ 1. Recognition of Safety criticality of the task or associated steps
- ☐ 2. Custom and practice surrounding use of procedures
- ☐ 3. Procedures accessible, helpful, understood and accurate for task
- ☐ 4. Team dynamics, communications and coordination with others
- ☐ 5. Evidence of stress, workload, fatigue, time constraints
- ☐ 6. Factors such as morale, motivation, nervousness
- ☐ 7. Workplace ergonomics incl. signage, tools, layout, space, noise, light, heat, etc.
- ☐ 8. Human-Machine Interface (E.g.: Controls, Alarms, etc.)
- ☐ 9. Opportunity to learn or practice
- ☐ 10. Not Identified

Annex 8: Photograph comparison – Standard cause analysis tree

Nature of Concern

- ☐ Area/item shown recently upgraded – maintenance programme in progress
- ☐ Area/item shown recently upgraded – no evidence of on-going maintenance plan
- ☐ Area/item shown not representative of the overall condition
- ☐ Other - Text



Our vision

A global marine industry that causes no harm to people or the environment

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