



eCMID Vessel Inspection ($\geq 500\text{gt}$)

IMCA M149 Issue 14
February 2025

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Vessel name:	
IMO number	
Date inspected:	
Date uploaded:	



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IMCA's mission is to improve performance in the marine contracting industry. Our value proposition is to influence our industry in key technical, contractual, policy and regulatory matters that are in the collective best interest of the marine contracting industry.

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IMCA M149 Issue 14

Document designation: This document is categorised as **Recommended Practice**

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Information on this page is not included in reports generated by the eCMID database

Legend

- **Question risk classification:**
3.1 High-risk question | 3.3 Other question
- **Answer settings:**
ANSWER resulting in findings | ANSWER requiring comment
- **Guidance notes:**
Inspector Notes – elements for the inspector to review and respond to. These are displayed in the eCMID Inspection App and are available to vessel operators when reviewing the report.
Reader Notes – a summary for the final inspection report of the aspects considered by the inspector. These are shown in the downloadable PDF report and are available to vessel operators when reviewing the report.
References are included in both versions of the guidance notes.

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Version History

Date	Reason	Revision
February 2025	High risk question rating and categorised findings introduced. Updated inspector guidance notes in app. New reader notes in PDF. General review and update of questions and references. Print format of review copy updated to match latest IMCA template Renamed eCMID Vessel Inspection (aligned with change to M189)	Issue 14
August 2023	Updated closing meeting guidance, new pilot ladder questions, minor edits	Issue 13.2
December 2022	Minor updates to certain questions, guidance and references. New 'additional images' appendix available.	Issue 13.1
June 2022	New supplements added for hybrid battery systems for DP vessels and battery propulsion systems for non-DP vessels	Issue 13
May 2021	Machinery space section rewritten, new supplements on the High Speed Craft (HSC) Code and on Walk-to-Work, minor editorial changes	Issue 12
April 2020	Additional guidance added to DP supplement questions, minor edits	Issue 11.1
September 2018	General update, new questions on cyber security and MLC 2006 Addition of reactivation supplement	Issue 11

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Report Overview**Inspection Details**

Vessel name				
Date of inspection	Start date	Start time	End date	End time
Place of inspection	Place of inspection		Country	
Vessel operation at time of inspection	(e.g. mobilising, loading, discharging, bunkering, repairs or idle)			

Inspection company	Company name		
Client	Company who has commissioned and receives the report		
Inspector	Inspector's name	AVI number	
Supervisor (if applicable)	Supervisor's name	Supervisor's AVI number	
Audited by (if applicable)	Auditor's name		
Company disclaimer			

Inspection Summary

		
Report summary seen and discussed with	Name	Position <input type="checkbox"/> Master <input type="checkbox"/> Delegated representative

Inspection Findings

An automatically generated list of findings appears here, showing the question, answer, inspector's comments and any responses from the vessel operator.

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Additional Comments

An automatically generated list of questions with additional vessel operator comments appears here, showing the question, answer, inspector's comments and vessel operator's response.

Closing Meeting

A closing meeting must be held to present the inspection findings and conclusions.

The closing meeting should be chaired by the inspector and attended by the vessel master and the appropriate heads of department, in addition to other interested parties as determined by the master, e.g. Chief Officer, Chief Engineer, Chief Steward etc.

The closing meeting should be formal and minutes, including records of attendance, should be completed and submitted with the final inspection report. This can be entered in the eCMID Inspection App, Summary section, as text. Alternatively, a template is available in the same location which can be downloaded, completed then uploaded as an image file.

As appropriate, the following should be explained to the closing meeting attendees:

- i) advising that the inspection evidence collected was based on a sample of the information available and is not necessarily fully representative of the overall effectiveness of the vessel's processes;
- ii) the method in which the report will become available, i.e. eCMID database;
- iii) presentation of the inspection findings and conclusions in such a manner that they are understood and acknowledged by the vessel's management;

Any diverging opinions regarding the inspection findings or conclusions between the inspector and the vessel management team should be discussed and, if possible, resolved. If not resolved, this should be recorded in the closing meeting minutes. All such information must be documented factually with no subjectivity.

The inspector should note that the closing meeting is not a forum to accept or agree on any corrective actions or responses to the findings. The inspector should advise the vessel master that the responses or corrective actions to inspection findings are to be managed as per the vessel's safety management system. The vessel operator should provide responses on the eCMID database as appropriate.

For further information on closing meetings refer to ISO 19011.

Was a closing meeting held?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Enter or upload the closing meeting report here	

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Distribution List for Reports

A written copy summarising the findings should be left on the vessel.

The final report, when uploaded to the eCMID database provides access to the report for the following:

- 1) vessel owner
- 2) the party who commissioned the inspection, if not the vessel owner, such as a company client or charterer
- 3) any other eCMID database user who has been assigned access by the vessel operator.

Further information on the eCMID processes can be found in IMCA M167 – *Guidance on the IMCA eCMID system* – available via www.ecmid.com with user guides to the eCMID website and software.

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1 Vessel Particulars

All fields must be completed prior to uploading. Those which may be set as ‘not applicable’ are marked NA in the right column. Where data is required in a certain format, this too is indicated.

	Requested information
Name of vessel	
Type of vessel	
<i>(include detail of any special features)</i>	LONGTEXT
Previous name(s)	NA
Vessel owner	
Name:	
Address:	LONGTEXT
Tel:	
E-mail:	EMAIL
Vessel operator (if not owner)	NA
Name:	
Address:	LONGTEXT NA
Tel:	NA
E-mail:	EMAIL NA
Ship or vessel superintendent/manager	
Name:	
Address:	LONGTEXT
Tel:	
E-mail:	EMAIL
Date current vessel operator assumed responsibility for vessel	DATE
Manning agent	NA
Name:	
Address:	LONGTEXT NA
Tel:	NA
E-mail:	EMAIL NA
Flag	SELECT
<i>(if the vessel has changed flag within the past six months, report date of change)</i>	DATE NA
<i>(if the vessel has changed flag within the past six months, report previous flag)</i>	SELECT NA
Port of registry	
Classification society	SELECT

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	Requested information
<i>(if the vessel has changed class within the past six months, report date of change)</i>	DATE <input type="text" value="NA"/>
<i>(if the vessel has changed class within the past six months, report previous classification society)</i>	SELECT <input type="text" value="NA"/>
Class ID number	
Additional comments <i>(include any additional specialised equipment vessel has onboard)</i>	LONGTEXT <input type="text" value="NA"/>
Hull type <i>(e.g. double hull, semi-submersible, catamaran)</i>	
Length overall (LOA) – in metres	NUMBER
Beam	NUMBER
Maximum draught – in metres	NUMBER
Deadweight tonnage – in tonnes	NUMBER
Gross tonnage	NUMBER
Main engine manufacturer	
Main engine horsepower – in kW	NUMBER
Number of engines	NUMBER
Number of main propellers	NUMBER
Type of main propellers	
Number of rudders	NUMBER
Number of generators	NUMBER
Kort nozzles fitted?	CHECKBOX
Number of bow thrusters fitted	NUMBER
Type of bow thrusters	<input type="text" value="NA"/>
Capacity of bow thrusters – in kW	NUMBER <input type="text" value="NA"/>
Number of stern thrusters fitted	NUMBER
Type of stern thrusters	<input type="text" value="NA"/>
Capacity of stern thrusters – in kW	NUMBER <input type="text" value="NA"/>
Number of other propulsors	NUMBER
Type of other propulsors	<input type="text" value="NA"/>
Capacity of other propulsors – in kW	NUMBER
Rated bollard pull (as applicable) – in tonnes	NUMBER
Type of bunkers	
Bunker capacity – in metres³	NUMBER
Daily fuel consumption – in metres³ per day	NUMBER
Can vessel make potable water?	CHECKBOX

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	Requested information
Potable water capacity – in metres ³	NUMBER
Inmarsat number	<input type="text" value="NA"/>
V-Sat number	<input type="text" value="NA"/>
Vessel mobile phone number	<input type="text" value="NA"/>
Vessel email address	EMAIL <input type="text" value="NA"/>
Call sign	
Date of last owner's/operator's superintendent's visit to vessel	DATE
Name of the vessel's P&I club	SELECT
Date of last port state inspection (see question 2.2)	DATE <input type="text" value="NA"/>
Name and contact details for designated person ashore (DPA)	LONGTEXT
Date of last dry docking or in water survey	DATE <input type="text" value="NA"/>
Location of last dry docking or in water survey	<input type="text" value="NA"/>

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2 Previous Inspections

2.1	Has the vessel had an eCMID inspection carried out within the past 12 months?	<u>Yes</u>	No	NA		
-----	---	------------	-----------	----	--	--

Verify:

That appropriate corrective action has been taken on any findings. Actions not closed out are to be carried forward to this report under the original date.

Comment:

- and select ‘NA’ when the vessel is a new build or been in lay-up and select ‘No’ if an eCMID inspection has not been carried out

Provide:

- Date and location of previous inspection

When answering the above, the AVI will verify:

- That appropriate corrective action has been taken on any findings
- Date and location of previous inspection

(Ref IMCA M204 – Vessel assurance)

2.2	Has the vessel been subject to a port state inspection within the past 12 months?	<u>Yes</u>	No	NA	NS	
-----	---	------------	----	----	----	--

Verify that:

- Appropriate corrective action was taken on any findings. Actions not closed out are to be carried forward to this report under the original date
- A copy of the inspection report is held onboard

Comment:

- And select ‘NA’ when the vessel is a new build, been in lay-up or not subject to a port state inspection
- And select ‘No’ if a port state inspection has not been carried out, this does not generate a finding
- If the vessel was detained, or deficiencies were listed, record the reason for detention or nature of those deficiencies

Provide:

- Date and location of inspection.

When answering the above, the AVI will verify that:

- Appropriate corrective action was taken on any findings. Actions not closed out are to be carried forward to this report under the original date
- A copy of the inspection report is held onboard
- Date and location of inspection

(Ref ISM Code Chapter 9)

2.3	Has the vessel been subject to a P&I club or other type of inspection since the previous eCMID inspection?	<u>Yes</u>	No	NA	NS	
-----	--	------------	----	----	----	--

A ‘No’ does not generate a finding.

Verify:

- That appropriate corrective action was taken on any findings. Actions not closed out are to be carried forward to this report under the original date.

Comment:

- And select ‘NA’ when the vessel is a new build, been in lay-up or not subject to a P&I club or other type of inspection
- And select ‘No’ if a P&I inspection or other type of inspection has not been carried out

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Provide:

- Date and location of inspection

A 'No' does not generate a finding.

When answering the above, the AVI will verify that:

- Appropriate corrective action was taken on any findings. Actions not closed out are to be carried forward to this report under the original date.
- Date and location of inspection

(Ref ISM Code Chapter 9)

2.4	Additional Section 2 comments?	Yes	No			
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3 Certification and Publications

3.1	Is the vessel clear of conditions of class and any safety related memoranda?	Yes	No	NA	NS	
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Provide:

- Details of outstanding conditions of class
- Any safety related memoranda

When answering the above, the AVI will verify:

- Details of outstanding conditions of class
- Any safety related memoranda

3.2	Are all the statutory and class certificates in date?	Yes	No	NA	NS	
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Provide:

- Details of any short term or interim certificates.
- Details of any limitations noted in appendix to class certificate

When answering the above, the AVI will verify:

- Details of any short term or interim certificates.
- Details of any limitations noted in appendix to class certificate

(Ref FAL.2/Circ.131 MEPC.1/Circ.873 MSC.1/Circ.1586 LEG.2/Circ.3)

3.3	Does the vessel maintain a library of the mandatory procedures and publications?	Yes	No	NA	NS	
------------	--	-----	-----------	----	----	--

Review documents carried to ensure all correct documents, including consolidated publications, are available. Publications may be in soft copy.

Verify the following:

- the SMS contains a library of required publications
- the vessel complies with Flag State publications requirements.
- available publications are the current versions

Publications may be in soft copy.

When answering the above, the AVI will verify:

- the SMS contains a library of required publications
- the vessel complies with Flag State publications requirements.
- available publications are the current versions

(Ref ISM Code Chapter 11.3)

3.4	Additional Section 3 comments?	Yes	No			
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4 Safety Management System

4.1	Does the vessel have a valid International Safety Management (ISM) certificate?	<u>Yes</u>	No	NA	NS	
-----	---	------------	-----------	----	----	--

Verify the vessel's ISM document of compliance (DOC) reflects the vessel type(s) and correct company details.

Comment on whether it is within its five-year validity period and if an intermediate audit has been completed between years 2 and 3.

Provide the safety management certificate date of issue.

When answering the above, the AVI will verify that:

- The vessel's ISM document of compliance (DOC) reflects the vessel type(s) and correct company details
- It is within its five-year validity period and if an intermediate audit has been completed between years 2 and 3
- The safety management certificate date of issue

(Ref ISM Code Chapter 13 , SOLAS Chapter IX Reg 3)

4.2	Are the designated person ashore (DPA) details available?	Yes	No	NA	NS	
-----	---	-----	-----------	----	----	--

Verify that the correct details of designated person ashore (DPA) are displayed prominently.

When answering the above, the AVI will verify that the correct details of designated person ashore (DPA) are displayed prominently.

(Ref ISM Code Chapter 4, MSC-MEPC.7/Circ.6)

4.3	Does the vessel display current health, safety and environment policies signed by management?	<u>Yes</u>	No	NA	NS	
-----	---	------------	-----------	----	----	--

Verify:

- Workforce/marine crew are aware of current health, safety and environmental policies by random check
- The policies are the most recent revision.

Comment on whether key personnel have knowledge of the safety management system appropriate to their duties.

When answering the above, the AVI will verify that:

- Key personnel have knowledge of the safety management system appropriate to their duties.
- Workforce/marine crew are aware of current health, safety and environmental policies by random check
- The policies are the most recent revision

(Ref ISM Code Chapter 2)

4.4	Is there a system in place for reporting non-conformances to the vessel operator?	<u>Yes</u>	No	NA	NS	
-----	---	------------	-----------	----	----	--

Comment on:

- The type of system and its use onboard.
- Any outstanding non-conformances and responses to non-conformances raised.

...

(Ref ISM Code Chapter IX)

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4.5	Does the system ensure that non-conformances are closed out in an agreed period?	Yes	No	NA	NS	
-----	--	-----	-----------	----	----	--

Review the most recent internal audit, the system should include provision for feedback on action on any non-conformances from the vessel’s shore management.

Verify that any proposed corrective actions have been implemented.

Comment on:

- The timeframe specified in the system to have close outs completed
- How feedback is provided

When answering the above, the AVI will review the most recent internal audit and verify that any proposed corrective actions have been implemented.

(Ref ISM Code Chapter IX, MSC-MEPC.7/Circ.8 Para 6)


4.6	Is there a common language spoken onboard?	Yes	No	NA		
-----	--	-----	-----------	----	--	--

Verify the language in use and where this is recorded

SOLAS Chapter V -reg 14 – Ships manning

When answering the above, the AVI will verify the language in use and where this is recorded

(Ref ISM Code Chapter I.2, I.4)

4.7	Are arrangements in hand to ensure efficient communication between personnel on the vessel and third parties?	Yes	No	NA		
-----	---	-----	-----------	----	--	--

Where a common language is not spoken by all, arrangements should be made to ensure that orders and information can be transferred efficiently and without ambiguity, e.g. provision of a liaison master.

Verify that signs and warning notices are in language(s) understood by all.

Where a common language is not spoken by all, arrangements should be made to ensure that orders and information can be transferred efficiently and without ambiguity, e.g. provision of a liaison master.

When answering the above, the AVI will verify that signs and warning notices are in language(s) understood by all.

(Ref ISM Code Chapter I.2, I.4)

4.8	Does the vessel operator have a drug and alcohol policy?	Yes	No	NA	NS	
-----	--	-----	-----------	----	----	--

The policies should be displayed on public notice boards.

Comment on:

- How the operation of the policy is monitored and managed
- The evidence to prove compliance with the policy

The policies should be displayed on public notice boards.

When answering the above, the AVI will verify:

- How the operation of the policy is monitored and managed
- Evidence to prove compliance with the policy

(Ref STCW Convention Regulation VIII/1, paragraph 2 and Code section A-VIII/1, paragraph 10, IMCA HSS040 – Guidance on drug & alcohol policies and testing)

4.9	Is there evidence that the workforce/marine crew is fully involved in safety management?	Yes	No	NA	NS	
-----	--	-----	-----------	----	----	--

Comment on who attends the safety meetings.

Provide:

- The stated frequency of the meetings and verify by reference to the minutes

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- An example of evidence demonstrating active workforce/marine crew involvement
- Evidence of issues being identified and closed.

When answering the above, the AVI will verify:

- Who attends the safety meetings.
- The stated frequency of the meetings and verify by reference to the minutes
- An example of evidence demonstrating active workforce/marine crew involvement
- Evidence of issues being identified and closed

(Ref MSC-MEPC.7/Circ.8 para 3, ISM Code Chapter 1.4, UK SI 1743/2012, Code of Safe Working Practices for Merchant Seaman)

4.10	Has a technical inspection been conducted by the vessel operator?	Yes	No	NA	NS	
------	---	-----	-----------	----	----	--

ISM Code Chapter 10 requires companies to ensure the vessel is maintained in accordance with relevant rules, regulations and company requirements. This should include inspections at appropriate intervals, reporting of defects, appropriate corrective action and records kept of this process. This includes technical systems and equipment and testing of stand-by arrangements.

Verify:

- That this inspection process is integrated in the vessel's operational maintenance routine.
- If the vessel is not subject to ISM Code, technical inspections are necessary on any vessel, so the AVI should check they are being carried out.

ISM Code Chapter 10 requires companies to ensure the vessel is maintained in accordance with relevant rules, regulations and company requirements. This should include inspections at appropriate intervals, reporting of defects, appropriate corrective action and records kept of this process. This includes technical systems and equipment and testing of stand-by arrangements.

When answering the above, the AVI will verify:


- That this inspection process is integrated in the vessel's operational maintenance routine.
- If the vessel is not subject to ISM Code, technical inspections are necessary on any vessel, so the AVI should check they are being carried out.

4.11	Additional Section 4 comments?	Yes	No			
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5 Health, Safety and Environment (HSE)

5.1	Is there evidence of full compliance with the company’s HSE management system?	<u>Yes</u>	<u>No</u>	NS	
------------	--	------------	-----------	----	---

Verify:

- All loose gear on and below deck is safely secured.
- Smoking regulations are in place and complied with.
- Safety signs and relevant safety information is prominently displayed.

Comment on whether there are sufficient crew trained to handle emergency situations onboard at the time of inspection and that procedures address minimum manning requirements in port.

Provide the date of the last internal audit of the vessel’s SMS by the company’s safety management organisation and confirm any findings have been appropriately addressed.

When answering the above, the AVI will verify:

- All loose gear on and below deck is safely secured.
- Smoking regulations are in place and complied with.
- Safety signs and relevant safety information is prominently displayed.
- That there are sufficient crew trained to handle emergency situations onboard at the time of inspection and that procedures address minimum manning requirements in port
- The date of the last internal audit of the vessel’s SMS by the company’s safety management organisation and confirm any findings have been appropriately addressed.

(Ref MSC-MEPC.7/Circ.8, ISM Code Chapter 2, Chapter 12)

5.2	Is there a company personal protective equipment policy?	<u>Yes</u>	<u>No</u>		
------------	--	------------	-----------	--	--

Verify:

- The policy is displayed
- Evidence of compliance.

When answering the above, the AVI will verify:

- The policy is displayed
- Evidence of compliance

(Ref UK The Personal Protective Equipment Regulations 2002 and the Personal Protective Equipment at Work Regulations 1992, Code of Safe Working Practices of Merchant Seamen, IMCA safety flash archives)

5.3	Are personnel joining/visiting the vessel given an appropriate safety induction?	<u>Yes</u>	<u>No</u>	NS	
------------	--	------------	-----------	----	--

Verify:

- That safety rules are prominently displayed
- Evidence of previous crew and contractor inductions
- The induction includes:
 - awareness of the vessel type, operation and structure
 - a question on medical conditions and medication taken
 - a safety tour for personnel joining

Comment on arrangements for briefing/managing the safety of visitors.

When answering the above, the AVI will verify:

- That safety rules are prominently displayed
- Evidence of previous crew and contractor inductions
- The induction includes:
 - awareness of the vessel type, operation and structure
 - a question on medical conditions and medication taken

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- a safety tour for personnel joining
- Arrangements for briefing/managing the safety of visitors.

(Ref UK Management of Health and Safety at Work Regulations 1999, ISM Code Chapter 6.3, IMCA HSS007 – Basic safety training and vessel induction for non-marine personnel working offshore, IMCA HSS003 – Guidance for the initial and refresher familiarisation of vessel crews)

5.4	Is there a bridging document or equivalent between vessel owners and external companies for contractors’ employees working onboard to ensure responsibilities for health and safety are clearly defined and safety management systems aligned?	Yes	No	NA	NS	
-----	--	-----	----	----	----	--

Comment on any anomalies regarding the following:

- The arrangements for briefing/managing the safety of contractors?
- Whether any differences in safety rules and reporting are understood by all concerned and where necessary prominently displayed or accessible?

When answering the above, the AVI will verify:

- The arrangements for briefing/managing the safety of contractors?
- Whether any differences in safety rules and reporting are understood by all concerned and where necessary prominently displayed or accessible?

(Ref IMCA HSS001 – Guidelines for Management of Change – Rev. 1.1 August 2020 Section 3.3, IOGP 423, BSEE SEMS – API RP 75)

5.5	Does the vessel have a system for reporting and recording incidents, accidents and near misses?	Yes	No		NS	
-----	---	-----	----	--	----	--

Comment on the below to show evidence that the reporting system is being used:

- Whether reporting of near misses is encouraged.
- Whether the responsibility for conducting investigations is identified.
- The investigation process and whether onboard personnel are familiar with it.
- The system that identifies root cause during investigations.
- Whether results and findings are promulgated both within and outside the company.

When answering the above, the AVI will verify evidence that the reporting system is being used.

(Ref ISM Code Chapter IX, IMCA SEL 016 – Guidance on the investigation and reporting of incidents)

5.6	Do vessel specific emergency procedures exist covering, for example, fire, explosion, grounding, pollution?	Yes	No	NA	NS	
-----	---	-----	----	----	----	--

Comment on any anomalies regarding the following:

- The familiarity of officers and crew with the procedures
- Whether drills are routinely conducted
- Whether the vessel has access to shoreside specialist support
- Whether the procedures take account of new/change of crew

When answering the above, the AVI will verify:

- The familiarity of officers and crew with the procedures
- Whether drills are routinely conducted
- Whether the vessel has access to shoreside specialist support
- Whether the procedures take account of new/change of crew

(Ref ISM Code Chapter VIII)

5.7	Are risk assessments conducted onboard?	Yes	No		NS	
-----	---	-----	----	--	----	--

Review recent risk assessments including for an operation presently underway and comment on whether they are generic and/or task based.

Comment on any anomalies regarding the following:

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- Do the workforce/crew have an input in the process
- The review process for new and existing tasks including shoreside management involvement for high-risk activities
- Whether risk assessment reviews are copied to company management ashore
- Whether there is a process to stop work for safety concerns
- Whether identified hazard mitigation has been implemented.
- Whether a system of pre/post-task safety meetings/toolbox talks is in place.
- How post-task feedback is managed

When answering the above, the AVI will verify whether:

- Recent risk assessments including for an operation presently underway are generic and/or task based
- The workforce/crew have an input in the process
- The review process for new and existing tasks including shoreside management involvement for high-risk activities
- Risk assessment reviews are copied to company management ashore
- There is a process to stop work for safety concerns
- Identified hazard mitigation has been implemented.
- A system of pre/post-task safety meetings/toolbox talks is in place.
- How post-task feedback is managed

(Ref ISM Code Chapter VII , IMCA HSS021 – Risk assessment, Code of Safe Working Practices of Merchant Seafarers, RA 50 – Steam Ship Mutual)

5.8	Is risk assessment training provided to personnel onboard?	Yes	No		NS	
-----	--	-----	-----------	--	----	--

The risk assessment training should provide an understanding of the company’s risk assessment policy.

When answering the above, the AVI will verify that risk assessment training provides an understanding of the company’s risk assessment policy.

(Ref STCW Code A I/14)

5.9	Is there a formal management of change policy in place?	Yes	No		NS	
-----	---	-----	-----------	--	----	--

Comment:

- on the process that exists
- the apparent level of use.
- the level of risk assessment required by the process

When answering the above, the AVI will verify:

- The apparent level of use.
- The level of risk assessment required by the process.

(Ref IMCA HSS001 – Guidelines for management of change)

5.10	Is a permit to work (PTW) system in use onboard?	Yes	No		NS	
------	--	-----	-----------	--	----	--

Verify that personnel have received formal training in the PTW system

Comment:

- On how risk assessments are linked to the permit system.
- On the types of tasks covered by permits. For example:
 - working at height
 - diving (including divers engaged in underwater ship husbandry)
 - hot work
 - radiation/electrical hazards
 - fuelling/bunkering
 - enclosed space access

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- stored energy, e.g. pressurised systems, tensioned lifting systems.

When answering the above, the AVI will verify:

- Personnel have received formal training in the PTW system
- The types of tasks covered by permits.
- How risk assessments are linked to the permit system.

(Ref Code of safe working practices for merchant seafarers, UK HSE HSG 250, “Guidance on permit-to-work systems”)

5.11	Is the permit system effectively applied onboard?	Yes	No		NS	
------	---	-----	----	--	----	---

Verify that there is demonstrable evidence of permit controls at the worksite by examining permit records.

Comment on the number of tasks managed by permit at the time of inspection.

When answering the above, the AVI will verify that there is demonstrable evidence of permit controls at the worksite by examining permit records.

(Ref Code of safe working practices for merchant seafarers, UK HSE HSG 250, Guidance on permit-to-work systems)

5.12	Is entry into enclosed spaces controlled?	Yes	No		NS	
------	---	-----	----	--	----	---

Verify:

- that the entry permit system in use includes testing of atmosphere for oxygen and toxic gases with records sighted.
- that the PTW details all the safety equipment and procedures required.
- that records are fully completed and signed off when work completed.
- that enclosed spaces are identified and labelled with procedures in place for entry
- vent fans are available and operated in extraction mode when in use
- what type of breathing apparatus is available and if there are limitations on its use, confirm there is a process for ensuring staff are aware of these limitations

Comment:


- on the availability of atmosphere measuring instrumentation and its calibration.
- on the rescue equipment that is made available for use, and where will it be located.

Provide the date of last enclosed space rescue drill.

When answering the above, the AVI will verify:

- that the entry permit system in use includes testing of atmosphere for oxygen and toxic gases with records sighted.
- that the PTW details all the safety equipment and procedures required.
- that records are fully completed and signed off when work completed.
- that enclosed spaces are identified and labelled with procedures in place for entry
- vent fans are available and operated in extraction mode when in use
- what type of breathing apparatus is available and if there are limitations on its use, confirm there is a process for ensuring staff are aware of these limitations
- the date of last enclosed space rescue drill

(Ref IMO Resolution A.1050(27), ISM Code Chapter VII, Code of safe working practices for merchant seafarers)

5.13	Are specific procedures used for hot work?	Yes	No		NS	
------	--	-----	----	--	----	---

Verify:

- That the required PPE is available for use.
- That all records are fully completed and signed off when work completed.

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- That there is a requirement for a fire sentry system to monitor adjacent spaces and compartments included in the procedure.

Comment:

- On the system in use.
- On requirements for PPE

When answering the above, the AVI will verify:

- The required PPE is available for use.
- All records are fully completed and signed off when work completed.
- There is a requirement for a fire sentry system to monitor adjacent spaces and compartments included in the procedure.

(Ref IMO Circular MSC/Circ. 1084, ISM Code Chapter VII, Code of safe working practices for merchant seafarers)

5.14	Is all hot work equipment in good order?	Yes	No		NS	
------	--	-----	-----------	--	----	---

Electric and gas welding equipment, including hard piping, should be routinely inspected with documented inspection records and safety guidelines available.

Verify:


- That flashback arrestors are fitted to gas and oxygen bottles.
- That spare gas and oxygen bottles are stored apart in dedicated storage lockers that are clearly marked and in a well-ventilated position outside accommodation and engine room.
- That cylinders are appropriately colour coded.

Comment on the type of hot work equipment onboard.

Electric and gas welding equipment, including hard piping, should be routinely inspected with documented inspection records and safety guidelines available.

When answering the above, the AVI will verify that:

- Flashback arrestors are fitted to gas and oxygen bottles.
- Spare gas and oxygen bottles are stored apart in dedicated storage lockers that are clearly marked and in a well-ventilated position outside accommodation and engine room.
- Cylinders are appropriately colour coded.

5.15	Is there a lock-out/tag-out policy in place?	Yes	No		NS	
------	--	-----	-----------	--	----	---

Verify evidence of consistent application of the lock-out/tag-out policy in a relevant PTW.

Comment on how equipment isolations are identified and managed, including any long-term isolation and reinstatement.

When answering the above, the AVI will verify:

- Evidence of consistent application of the lock-out/tag-out policy in a relevant PTW
- How equipment isolations are identified and managed, including any long-term isolation and reinstatement.

(Ref Code of safe working practices for merchant seafarers)

5.16	Is there an asbestos management system?	Yes	No	NA	NS	
------	---	-----	-----------	----	----	--

Verify that the vessel is built in accordance to SOLAS II-1 Part A Reg 3-5 and in compliance with IMO MSC.1/Circ 1374 with regard to asbestos.

If there is a requirement for an asbestos management plan (any asbestos identified onboard).

Verify:

- the vessel has an Inventory of Hazardous Materials (IHM) manual (if required)
- that warning signs are displayed and an asbestos log maintained.

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Comment on the basic details of the management plan in place and availability of general arrangement plans.

If there is no management system onboard comment on why, i.e. if there is an asbestos free certificate.

Ships built before 1 July 2002 are allowed to have Asbestos Containing Material (ACMs) onboard. However, the ACMs are only allowed as long as they do not pose a risk to the crew's health.

The 2009 Amendments to SOLAS (resolution MSC.282(86)), further amended the text to prohibit all new installation of asbestos on board ships. These came into force on 1 January 2011;

When answering the above, the AVI will verify that the vessel is built in accordance to SOLAS II-1 Part A Reg 3-5 and in compliance with IMO MSC.1/Circ 1374 with regard to asbestos.

If there is a requirement for an asbestos management plan (any asbestos identified onboard).

The AVI will verify:


- the vessel has an Inventory of Hazardous Materials (IHM) manual (if required)
- that warning signs are displayed and an asbestos log maintained.

If there is no management system onboard the AVI will verify why, ie if there is an asbestos free certificate.

Ships built before 1 July 2002 are allowed to have Asbestos Containing Material (ACMs) onboard. However, the ACMs are only allowed as long as they do not pose a risk to the crew's health.

The 2009 Amendments to SOLAS (resolution MSC.282(86)), further amended the text to prohibit all new installation of asbestos on board ships. These came into force on 1 January 2011.

(Ref MSC 1. /Circ 1045, EU Directive 2009/148/EC, MEPC.197 (62))

5.17	Are procedures for control, stowage and handling of chemicals and flammable/combustible materials in place and being consistently applied?	Yes	No	NA	NS	
-------------	--	-----	----	----	----	---

Chemicals should be stowed away from ropes or other materials that might be contaminated in the event of spillage.

Verify:

- There are copies of material safety data sheets appropriate to the chemicals onboard at the storage locations.
- That risk assessments have been conducted.
- Warning notices are prominently displayed.
- Stowage locations are suitable and secure.
- That the vessel maintains an inventory of chemicals carried onboard.
- That material safety data sheets (MSDS) are available?
- That incompatible chemicals have separate stowage.
- That chemical/toxic material spillage procedures are in place and appropriate equipment (including PPE) available?

Comment on the availability of personal safety equipment with locations clearly defined.

Chemicals should be stowed away from ropes or other materials that might be contaminated in the event of spillage.

When answering the above, the AVI will verify:


- There are copies of material safety data sheets appropriate to the chemicals onboard at the storage locations.
- That risk assessments have been conducted.
- Warning notices are prominently displayed.
- Stowage locations are suitable and secure.
- That the vessel maintains an inventory of chemicals carried onboard.
- That MSDS are available?

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- That incompatible chemicals have separate stowage.
- That chemical/toxic material spillage procedures are in place and appropriate equipment (including PPE) available?
- The availability of personal safety equipment with locations clearly defined

(Ref Control of Substances Hazardous to Health Regulations 2002 UK, MLC Reg 4.3, Code of safe working practices for merchant seafarer)

5.18	Is the vessel provided with its own safe means of access?	Yes	No		NS	
------	---	-----	----	--	----	---

Note: A certified gangway should be available for use, free from defect and, when in use, should be properly rigged and attended with a safety net and a life buoy with lifeline placed near the gangway or accommodation ladder. Over-side accommodation ladders should be available for use, free from defect and properly rigged.

Verify gangways and over-side accommodation ladders are certified and evidence of load testing is available.

Note: A certified gangway should be available for use, free from defect and, when in use, should be properly rigged and attended with a safety net and a life buoy with lifeline placed near the gangway or accommodation ladder. Over-side accommodation ladders should be available for use, free from defect and properly rigged.

When answering the above, the AVI will verify that gangways and over-side accommodation ladders are certified and evidence of load testing is available.

(Ref MSC.1/Circ.1331 – Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation)


5.19	Is a culture of safety promoted onboard and ashore with the company?	Yes	No		NS	
------	--	-----	----	--	----	--

This may take the form of a safety campaign, safety alerts, bulletins, result of an incident internal/external or other means of raising safety awareness, e.g. slips, trips and falls.

Comment on the system and recent relevant campaign.

This may take the form of a safety campaign, safety alerts, bulletins, result of an incident internal/external or other means of raising safety awareness, e.g. slips, trips and falls.

(Ref ISM Code Chapter 2, ICS paper on Implementing an effective safety culture – 2013)

5.20	Have measures been taken to prevent personnel being exposed to noise levels that exceed 80dB (A)?	Yes	No	NA	NS	
------	---	-----	----	----	----	---

Comment on the provision of ear defenders and the appropriate signage to areas greater than 80dB (A).

...

(Ref IMO Resolution A.468(XII) (1981) – Code on noise levels on-board ships – which became mandatory for new ships on 1 July 2014)

5.21	Does the vessel have a systematic approach to dropped object prevention in place?	Yes	No		NS	
------	---	-----	----	--	----	--

Verify:

- That there are regular and documented checks of working at height areas undertaken to check for loose items and objects.
- That the hazards of dropped objects are considered in onboard risk assessments where appropriate

When answering the above, the AVI will verify:

- That there are regular and documented checks of working at height areas undertaken to check for loose items and objects.

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- That the hazards of dropped objects are considered in onboard risk assessments where appropriate

(Ref ISM Code 1.2.2, VII, Dropped Object Prevention Scheme DROPS)

5.22	Does the pilot ladder have a valid certificate onboard?	Yes	No		NS	
------	---	-----	----	--	----	--

Note: As per SOLAS Ch.1 regulation 8, pilot ladders are part of the safety equipment onboard of cargo ships over 500 GT, They are therefore mentioned in the Cargo Ship Safety Equipment Certificate. Pilot ladders over 30 months old must have a certificate of strength testing as per ISO 799-1.

Note: As per SOLAS Ch.1 regulation 8, pilot ladders are part of the safety equipment onboard of cargo ships over 500 GT, They are therefore mentioned in the Cargo Ship Safety Equipment Certificate. Pilot ladders over 30 months old must have a certificate of strength testing as per ISO 799-1.

(Ref IMO resolution A.1045 (27), SOLAS Chapter V, regulation 23 (Safety of navigation), IMO/IMPA bridge poster "Required Boarding Arrangement for Pilot")

5.23	Are there records which show that the pilot ladder has been inspected before every use in addition to inspections as per the ships planned maintenance system?	Yes	No		NS	
------	--	-----	----	--	----	--

Note: Pilot ladders are to be regularly inspected for wear and tear of side ropes, missing wedges, and damages on the steps. The steps should never be painted and should be kept clean, free from oil and grease. All the steps should be equally spaced between the side ropes and the distance between two steps should be uniform. Steps should be always horizontal. Any faulty steps found should be replaced immediately. The side ropes are made of manila rope. They should be continuous and free from ties and joints below the first step of the pilot ladder. The shackles used to secure the pilot ladder should have equal strength and durability same as that of side ropes used.

Pilot ladders that fail an inspection, or are over 30 months old and have no strength testing certificate, should never be used.

Note: Pilot ladders are to be regularly inspected for wear and tear of side ropes, missing wedges, and damages on the steps. The steps should never be painted and should be kept clean, free from oil and grease. All the steps should be equally spaced between the side ropes and the distance between two steps should be uniform. Steps should be always horizontal. Any faulty steps found should be replaced immediately. The side ropes are made of manila rope. They should be continuous and free from ties and joints below the first step of the pilot ladder. The shackles used to secure the pilot ladder should have equal strength and durability same as that of side ropes used.

Pilot ladders that fail an inspection, or are over 30 months old and have no strength testing certificate, should never be used.

(Ref ISM Code, the International Safety Management Code (Resolution A.741(18) – section 10))

5.24	Additional Section 5 comments?	Yes	No			
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6 Maritime Labour Convention 2006

6.1	Is a copy of the MLC 2006 available onboard?	Yes	No	NA		
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...
...

6.2	Are the crew provided with onboard complaint procedure?	Yes	No	NA		
-----	---	-----	-----------	----	--	--

Note: Crew complaint procedure, which includes record of crew complaints, to be maintained onboard. Complaint procedure guide, with port state and flag state address, also to be displayed where applicable and should be available for crew. Seafarers should have the right to lodge a complaint directly with the master and also with appropriate external authorities when necessary.

Note: Crew complaint procedure, which includes record of crew complaints, to be maintained onboard. Complaint procedure guide, with port state and flag state address, also to be displayed where applicable and should be available for crew. Seafarers should have the right to lodge a complaint directly with the master and also with appropriate external authorities when necessary.

(Ref MLC 2006 Regulation 5.1.5)

6.3	Is a signed copy of the seafarer employment agreement provided to all seafarers?	Yes	No	NA	NS	
-----	--	-----	-----------	----	----	--

Note: Seafarer employment agreement (SEA) should be in accordance with MLC 2006. Breakdown of wages, deductions in wages, extension clause in case of a crew extending his/her contract, collective bargaining agreement (CBA) if applicable, crew complaint procedure etc. are to be mentioned properly as these are main areas where SEA can be asked to be revised.

Note: Seafarer employment agreement (SEA) should be in accordance with MLC 2006. Breakdown of wages, deductions in wages, extension clause in case of a crew extending his/her contract, collective bargaining agreement (CBA) if applicable, crew complaint procedure etc. are to be mentioned properly as these are main areas where SEA can be asked to be revised.

(Ref MLC Standard A2.1)

6.4	Is the collective bargain agreement (CBA) or equivalent available onboard?	Yes	No	NA	NS	
-----	--	-----	-----------	----	----	--

Note: Collective bargain agreement, when referenced on the seafarer employment agreement, is one of the most important documents which has to be retained onboard and should be available to all crew mentioned on SEA. This is the document which details all the terms and conditions of the crew employed on the ship. It specifies entitlements such as pay (in the form of a wage scale), working hours, etc.

Note: Collective bargain agreement, when referenced on the seafarer employment agreement, is one of the most important documents which has to be retained onboard and should be available to all crew mentioned on SEA. This is the document which details all the terms and conditions of the crew employed on the ship. It specifies entitlements such as pay (in the form of a wage scale), working hours, etc.

(Ref MLC Standard A2.1)

6.5	Is there evidence of an established committee(s) for occupational safety and health protection and accident prevention with meetings conducted regularly?	Yes	No		NS	
-----	---	-----	-----------	--	----	--

Note: As per MLC-2006 every vessel should have a safety committee on-board and meetings are to be conducted on regular intervals for occupational safety and health protection and accident prevention.

Verify:

- that records are maintained of such meetings and are available for inspection

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Note: As per MLC-2006 every vessel should have a safety committee on-board and meetings are to be conducted on regular intervals for occupational safety and health protection and accident prevention.

When answering the above, the AVI will verify that records are maintained of such meetings and are available for inspection

(Ref MLC 2006 Guideline B4.3.7)

6.6	Are the certificates of qualification and training of cooks and catering staff in order?	Yes	No	NA	NS	
-----	--	-----	-----------	----	----	--

Note: Cook qualification, MLC requires that the person who is designated as cook onboard, should be a person who has attended a training course approved or recognised by the competent authority, which covers practical cookery, food and personal hygiene, food storage, stock control, and environmental protection and catering health and safety.

Note: Cook qualification, MLC requires that the person who is designated as cook onboard, should be a person who has attended a training course approved or recognised by the competent authority, which covers practical cookery, food and personal hygiene, food storage, stock control, and environmental protection and catering health and safety.

(Ref MLC 2006 Regulation 3.2, Standard A 3.2 Para 3 & Para 4)

6.7	Is a copy of recruitment and placement service certificate available onboard?	Yes	No	NA	NS	
-----	---	-----	-----------	----	----	--


Note: As per MLC a copy of the agreement between the owner and RPS company should be available onboard and the manning agency should follow the guidelines of MLC-2006 and national labour laws for recruitment.

In case of ownership employment, a licensed manning agency is not required, provided that the owner has to recruit as per MLC-2006 and national labour laws recommendations.

Note: As per MLC a copy of the agreement between the owner and RPS company should be available onboard and the manning agency should follow the guidelines of MLC-2006 and national labour laws for recruitment.

In case of ownership employment, a licensed manning agency is not required, provided that the owner has to recruit as per MLC-2006 and national labour laws recommendations.

(Ref MLC 2006 Reg 1.4)

6.8	Are there systems and procedures in place to ensure the proper housekeeping and cleanliness of accommodation, galley and messroom?	Yes	No	NA	NS	
-----	--	-----	-----------	----	----	---

Note: Inspection of housekeeping and hygiene, galley, mess room, dry and perishable provision stores, reefers, cabins and common toilets should be made by the AVI. All these places should be neat, tidy and hygienic. The AVI should also ask regarding recreation facilities available onboard.

Verify:

- That toilet flushes and lights work in cabins and in accommodation areas by random check, this could result in a non-conformity if these items are faulty.
- That medical supplies are onboard for medical care of seafarers and that the person responsible for medical care is properly trained.

Note: Inspection of housekeeping and hygiene, galley, mess room, dry and perishable provision stores, reefers, cabins and common toilets should be made by the AVI. All these places should be neat, tidy and hygienic. The AVI should also ask regarding recreation facilities available onboard.

When answering the above, the AVI will verify:

- That toilet flushes and lights work in cabins and in accommodation areas by random check, this could result in a non-conformity if these items are faulty.

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- That medical supplies are onboard for medical care of seafarers and that the person responsible for medical care is properly trained.

(Ref MLC 2006 Standard A 3.1 & 3.2)

6.9	Is the vessel's fresh water supply tested regularly for legionella and other bacteria?	Yes	No	NA	NS	
-----	--	-----	----	----	----	--

Provide:

- Type and date of last test.

When answering the above, the AVI will verify the type and date of last test

(Ref MLC 2006 Standard A3.2 – Food and Catering, paragraph 7)

6.10	Are there sufficient medical supplies onboard for the medical care of seafarers?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

Verify:

- That there is a third-party check of medical supplies.

When answering the above, the AVI will verify that there is a third-party check of medical supplies.

(Ref MLC 2006 Standard A 4.1 para 4a)

6.11	Is there a formalised company system for recording work and rest hours?	Yes	No	NA	NS	
------	---	-----	----	----	----	--

Note: This should be in accordance with STCW Code Section A-VIII/1; MLC; Seafarer's Hours of Work and Manning of Ships Convention 1996. IMO guidelines.

Verify:

- That the system is universally applied

Comment:

- On the type of system in use

Note: This should be in accordance with STCW Code Section A-VIII/1; MLC; Seafarer's Hours of Work and Manning of Ships Convention 1996. IMO guidelines.

When answering the above, the AVI will verify that the system is universally applied

(Ref STCW Code Section A VIII/1, MSN 1842(M) UK MCA, MLC 2006 Standard A2.3)

6.12	Additional Section 6 comments?	Yes	No			
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7 Ship and Cyber Security

7.1	If the vessel is required to have an approved ship security plan that meets ISPS requirements, is it held onboard?	<u>Yes</u>	<u>No</u>	NA	NS	
------------	--	------------	-----------	----	----	--

Note: AVIs are not authorised to see individual ship security plans and should not request to view them.

ISPS Code applies to the following types of ships engaged on international voyages:

- passenger ships, including high speed passenger craft
- cargo ships, including high-speed craft, of 500 gross tonnes and upwards
- mobile offshore drilling units.

If no, go to question 7.2 only; if yes go to question 7.3 onwards.

Verify:

- That a valid International Ship Security Certificate is being carried onboard.
- That the ship security plan is held onboard
- That an onboard security review has been conducted in the last twelve months by the company security officer and the ship security officer to ensure that the plan is aligned with operational requirements in the area of vessel operation.

Note: AVIs are not authorised to see individual ship security plans and should not request to view them.

ISPS Code applies to the following types of ships engaged on international voyages:

- passenger ships, including high speed passenger craft
- cargo ships, including high-speed craft, of 500 gross tonnes and upwards
- mobile offshore drilling units.

If no, go to question 7.2 only; if yes go to question 7.3 onwards.

When answering the above, the AVI will verify:

- That a valid International Ship Security Certificate is being carried onboard.
- That the ship security plan is held onboard
- That an onboard security review has been conducted in the last twelve months by the company security officer and the ship security officer to ensure that the plan is aligned with operational requirements in the area of vessel operation.

(Ref ISPS Code Chapter 3, SOLAS Chapter XI-2)

7.2	If the vessel is not required to have an approved ship security plan because of vessel's tonnage or trading area, are there any security procedures in place?	<u>Yes</u>	<u>No</u>	NA		
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If a vessel is not required to have a ship security plan **comment** on any deficiencies regarding the following security procedures:

- company security obligations
- company security officer or representative
- vessel security obligations
- vessel security officer
- responding to a security incident
- reporting and follow up of security incidents
- port and vessel operations
- visitor management
- restricted or controlled areas
- training, drills and exercises.

If a vessel is not required to have a ship security plan the AVI will comment on any deficiencies regarding the following security procedures:

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- company security obligations
- company security officer or representative
- vessel security obligations
- vessel security officer
- responding to a security incident
- reporting and follow up of security incidents
- port and vessel operations
- visitor management
- restricted or controlled areas
- training, drills and exercises.

(Ref MSC/Circ.1097, MSC/Circ. 1111, ISPS Code Part B – Chapter 3, Chapter 4 Para 4.20, SOLAS XI-2 Reg 11)

7.3	Is there an appointed ship security officer and company security officer?	Yes	No	NA	NS	
-----	---	-----	----	----	----	--


Comment on any anomalies regarding whether:

- there is a company appointed security officer. All vessels subject to the ISPS code are required to have an officially appointed ship security officer.
- the ship security officer has been formally trained and certificated for ISPS ship security officer roles.
- roles and responsibilities of company security officer are documented and defined.
- roles and responsibilities of ship security officer are documented and defined.
- the company security reporting responsibilities are documented and clearly defined.

When answering the above, the AVI will verify:

- there is a company appointed security officer. All vessels subject to the ISPS code are required to have an officially appointed ship security officer.
- the ship security officer has been formally trained and certificated for ISPS ship security officer roles.
- roles and responsibilities of company security officer are documented and defined.
- roles and responsibilities of ship security officer are documented and defined.
- the company security reporting responsibilities are documented and clearly defined.

(Ref ISPS Code Part A Chapter 12, Part A Chapter 11)

7.4	Is the vessel’s security operating level clearly indicated to all personnel?	Yes	No	NA	NS	
-----	--	-----	----	----	----	---

Comment on how this is communicated to all personnel.

...

(Ref ISPS Code Part B Chapter 13, Part A Chapter 10)

7.5	Are personnel joining or visiting the vessel given a security induction?	Yes	No	NA		
-----	--	-----	----	----	--	--

Verify that security forms part of the vessel formal induction process and also covers security duties and responsibilities.

When answering the above, the AVI will verify that security forms part of the vessel formal induction process and also covers security duties and responsibilities.

(Ref ISPS Code Part A Chapter 13)

7.6	Are new personnel checked to ensure they have completed STCW security training requirements?	Yes	No	NA	NS	
-----	--	-----	----	----	----	--

Note: NA if vessel is not required to comply with STCW/ISPS.

There are three levels of security training required depending on roles onboard:

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- security related familiarisation
- proficiency in security awareness
- proficiency in designated security duties.

Verify and comment by sample of crew members.

NA will be noted if vessel is not required to comply with STCW/ISPS.

There are three levels of security training required depending on roles onboard:

- security related familiarisation
- proficiency in security awareness
- proficiency in designated security duties.

When answering the above, the AVI will verify by sample of crew members.

(Ref ISPS Code Part A Chapter 13, Part B Chapter 13.3)

7.7	Does the vessel have specific port security procedures covering visitors, storing and vessel gangway watchkeeping requirements?	<u>Yes</u>	<u>No</u>	NA		
-----	---	------------	-----------	----	--	--

Verify that:

- A visitors' log is maintained and comment on where this is located when the vessel is in port
- Security badges are issued to all visitors while the vessel is in port.
- A gangway watch is maintained.
- Random searches of visitors' baggage are conducted.
- There is signage at the gangway

When answering the above, the AVI will verify that:

- A visitors' log is maintained and comment on where this is located when the vessel is in port
- Security badges are issued to all visitors while the vessel is in port.
- A gangway watch is maintained.
- Random searches of visitors' baggage are conducted.
- There is signage at the gangway

(Ref ISPS Code Part A Chapter 7)

7.8	Does the vessel have a cyber security management system and/or a cyber security plan?	<u>Yes</u>	<u>No</u>		NS	
-----	---	------------	-----------	--	----	--

If none record as 'No' to include as a finding and comment on any other arrangements with respect to cyber security.

If yes comment on:

- How often the plan is reviewed? Whilst the ISPS Code only requires the ship security plan (SSP) to be reviewed every 5 years, given the rapid evolution of cyber security threats it is good practice to review the plan more frequently
- Whether there are any associated procedures in the SMS
- Whether cyber security issues are included as part of internal audits
- Whether there is a designated cyber security officer or if this is combined with the CSO duties
- Has the cybersecurity officer (CySO) undertaken specific training on Cybersecurity (CyS)

If none the AVI will record as 'No' to include as a finding and comment on any other arrangements with respect to cyber security.

If yes the AVI will verify:

- How often the plan is reviewed? Whilst the ISPS Code only requires the SSP to be reviewed every 5 years, given the rapid evolution of cyber security threats it is good practice to review the plan more frequently
- Whether there are any associated procedures in the SMS
- Whether cyber security issues are included as part of internal audits
- Whether there is a designated cyber security officer or if this is combined with the CSO duties

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- Has the CySO undertaken specific training on CyS

(Ref IMO MSC-FAL.1/Circ 3 5th July 2017, IET Code of Practice – Cyber Security for Ships Chapter 6, 7)

7.9	Are vessel systems logically and physically separated from information systems? Do logical separations include protective devices such as firewalls, network monitoring, anti-malware products and intrusion detection applications?	Yes	No			
-----	--	-----	----	--	--	--

Verify that:

- Vessel systems are housed in separate, and secure, cabinets from information systems.
- Any device that makes use of externally hosted systems or business portals employing web-based interfaces is protected.
- There is a formal process to register/document the devices connected to the ship’s network?

Comment on the type of protective measures in place, and if they are regularly monitored and updated.

When answering the above, the AVI will verify that:

- Vessel systems are housed in separate, and secure, cabinets from information systems.
- Any device that makes use of externally hosted systems or business portals employing web-based interfaces is protected.
- There is a formal process to register/document the devices connected to the ship’s network.

(Ref IET Code of Practice – Cyber Security for Ships App D 3)

7.10	Is connection of personal IT devices such as phones, tablets and laptops to the ships network controlled?	Yes	No			
------	---	-----	----	--	--	--

The measures should be more than just a password entry. i.e. username and/or ID number in addition to password.

Verify that:

- There is a sign up process and a requirement to sign on a portal
- These devices are covered by the company firewall/ protective software
- There are download restrictions on type of files, running applications, etc.
- The information on number, type and application owners information is readily available
- The information on internet access is logged, including browsing history
- The system prevents web browsers and email clients from executing malicious scripts

The measures should be more than just a password entry. i.e. username and/or ID number in addition to password.

When answering the above, the AVI will verify that:

- There is a sign up process and a requirement to sign on a portal
- These devices are covered by the company firewall/ protective software
- There are download restrictions on type of files, running applications, etc.
- The information on number, type and application owners information is readily available
- The information on internet access is logged, including browsing history
- The system prevents web browsers and email clients from executing malicious scripts

(Ref IET Code of Practice – Cyber Security for Ships App F)

7.11	Are there formal interfacing procedures and protocols in place for visitors, technicians, port officials, etc. to use their equipment onboard?	Yes	No		NS	
------	--	-----	----	--	----	--

Verify that:

- Access to certain networks for maintenance reasons should be approved and coordinated following appropriate procedures as outlined by the company/ship operator

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- The procedures require a clean anti-malware scan of all equipment before connection to any vessel system or network
- If a visitor requires computer and printer access, an independent computer, which is air-gapped from all controlled networks, is used

When answering the above, the AVI will verify that:

- Access to certain networks for maintenance reasons should be approved and coordinated following appropriate procedures as outlined by the company/ship operator
- The procedures require a clean anti-malware scan of all equipment before connection to any vessel system or network
- If a visitor requires computer and printer access, an independent computer, which is air-gapped from all controlled networks, is used

(Ref IET Code of Practice – Cyber Security for Ships)

7.12	Are there formal controls and procedures in place for handling data using portable media devices such as USB memory sticks, CD/DVDs, and portable computers?	Yes	No		NS	
------	--	-----	----	--	----	--

Note: Transferring data from uncontrolled systems to controlled systems represents a major risk of introducing malware. Removable media or computers can be used to bypass layers of defences and can be used to attack systems that are otherwise not connected to the internet.

Verify that:

- There is a clear policy for the use of such media devices; it must ensure that media devices are not normally used to transfer information between un-controlled and controlled systems.
- Policies and procedures relating to the use of removable media include a requirement to scan any removable media device prior to connecting to any vessel network or systems, using a computer /scanning station that is not connected to the ship’s controlled networks.

Note: Transferring data from uncontrolled systems to controlled systems represents a major risk of introducing malware. Removable media or computers can be used to bypass layers of defences and can be used to attack systems that are otherwise not connected to the internet.

When answering the above, the AVI will verify that:

- There is a clear policy for the use of such media devices; it must ensure that media devices are not normally used to transfer information between un-controlled and controlled systems.
- Policies and procedures relating to the use of removable media include a requirement to scan any removable media device prior to connecting to any vessel network or systems, using a computer /scanning station that is not connected to the ship’s controlled networks.

(Ref IET Code of Practice – Cyber Security for Ships App F)

7.13	Are there measures to ensure the integrity of electronic chart display systems if fitted?	Yes	No	NA		
------	---	-----	----	----	--	--

Verify that:

- The measures are more than just password entry
- There are dedicated portable device(s) for updates and that administrative privileges are controlled with differing levels of access.
- Periodic service is conducted by a service engineer.
- OS updates are available.
- A record of software issues and events investigated is maintained.
- ECDIS software details are incorporated into the software log.
- Measures are in place to protect the data integrity of the system.

When answering the above, the AVI will verify that:

- The measures are more than just password entry

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- There are dedicated portable device(s) for updates and that administrative privileges are controlled with differing levels of access.
- Periodic service is conducted by a service engineer.
- OS updates are available.
- A record of software issues and events investigated is maintained.
- ECDIS software details are incorporated into the software log.
- Measures are in place to protect the data integrity of the system.

7.14	Has the vessel or the company been free from any cyber security incident involving ship systems in the last 12 months?	Yes	No		
------	--	-----	----	--	--

Note: An incident is defined as an event which did or has had the potential to compromise the cyber systems. It could have been captured as an incident, near miss, etc.

Comment on details, equipment/systems involved, and actions taken to recover and prevent reoccurrence.

Note: An incident is defined as an event which did or has had the potential to compromise the cyber systems. It could have been captured as an incident, near miss, etc.

7.15	Is there a formal training and familiarisation programme in place for the shipboard crew on cyber security and procedures?	Yes	No		
------	--	-----	----	--	--

Comment on the type of process in place and if the programme is shore based or onboard?

When answering the above, the AVI will verify that:

- Senior officers are familiar with their roles and responsibilities with regard to cyber security
- There is a higher level of training for senior officers and critical roles such as instrument technicians, ETOs and PLC technicians

7.16	Are usernames and passwords for information systems and vessel systems controlled and managed?	Yes	No	NS	
------	--	-----	----	----	--

Verify that:

- Accounts are created only when required, managed through their lifetime (e.g. regular password changes), and terminated when no longer required
- Administrator privileges are removed once personnel have left the vessel
- Passwords are not posted and easily available (e.g. on post-it notes or dymotape, and in shift handover reports)
- On systems which are not continuously manned, there is a timeout mechanism to automatically log off after a certain period of inactivity
- There are administrators designated for various systems and they are aware of their responsibilities

Comment on whether accounts identify individual people, or are shared across a role.

When answering the above, the AVI will verify that:

- Accounts are created only when required, managed through their lifetime (e.g. regular password changes), and terminated when no longer required
- Administrator privileges are removed once personnel have left the vessel
- Passwords are not posted and easily available (e.g. on post-it notes or dymotape, and in shift handover reports)
- On systems which are not continuously manned, there is a timeout mechanism to automatically log off after a certain period of inactivity
- There are administrators designated for various systems and they are aware of their responsibilities

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7.17	Is the stability programme, if used, on a dedicated computer and not connected to network?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

Whether standalone or connected to the network, **comment** on how it is protected from cyber security.

...

7.18	Is there a formal process in place for equipment disposal, including data destruction?	Yes	No		NS	
------	--	-----	----	--	----	--

Note:

- Obsolete equipment can contain data which is commercially sensitive or confidential.
- Hardware to be disposed of in accordance with MARPOL V (e-waste).

Verify that the company has a procedure in place to ensure that the data held in obsolete equipment is properly destroyed prior to disposing of the equipment, ensuring that vital information cannot be retrieved.

Note:

- Obsolete equipment can contain data which is commercially sensitive or confidential.
- Hardware to be disposed of in accordance with MARPOL V (e-waste).

When answering the above, the AVI will verify that the company has a procedure in place to ensure that the data held in obsolete equipment is properly destroyed prior to disposing of the equipment, ensuring that vital information cannot be retrieved.

7.19	Are there formal procedures in place for remote monitoring equipment fitted on the vessel?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

Note: This could include propulsion system condition monitoring systems and station keeping systems.

Comment on the equipment involved, including mission specific equipment, and any arrangements that are in place.

Note: This could include propulsion system condition monitoring systems and station keeping systems.

7.20	Are there formal cyber security incident response, disaster recovery and business continuity plans in place and regularly tested/drilled?	Yes	No		NS	
------	---	-----	----	--	----	--

Note: An effective response should include initial assessment, methods to recover systems and data – recovery plan, investigation of incident, prevent re-occurrence.

Verify:

- The availability of shore-based support – frame agreement with third party or company’s IT team
- Interaction with relevant agencies such as coastguard is included in the procedures
- That cyber incident response plans interact with the vessel’s emergency response plans

Comment on the arrangements onboard.

Note: An effective response should include initial assessment, methods to recover systems and data – recovery plan, investigation of incident, prevent re-occurrence.

When answering the above, the AVI will verify:

- The availability of shore-based support – frame agreement with third party or company’s IT team
- Interaction with relevant agencies such as coastguard is included in the procedures
- That cyber incident response plans interact with the vessel’s emergency response plans

7.21	Additional Section 7 comments?	Yes	No			
------	--------------------------------	-----	----	--	--	--

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8 Crew Management

8.1	Based on a random sample, is the data in the crew qualification matrix accurate?	<u>Yes</u>	<u>No</u>	NA	NS	
------------	--	------------	-----------	----	----	--

Select NA if crew is not embarked or for dumb barge.

Verify by sample data in the crew qualification matrix.

Provide size of the sample, i.e. 10%, 50%, 75%, etc.

NA will be selected if crew is not embarked or for dumb barge.

When answering the above, the AVI will review data by sample in the crew qualification matrix.

8.2	Does the crew have valid certificates of competency as required, including flag state endorsements if applicable?	Yes	<u>No</u>	NA	NS	
------------	---	-----	-----------	----	----	--

Verify that the crew certification is what is required by Flag State for their role onboard and the vessel type.

...

8.3	Are the requirements of the safe manning certificate being met?	Yes	<u>No</u>	NA	NS	
------------	---	-----	-----------	----	----	--

Verify actual number of crew and compare with the safe manning certificate.

When answering the above, the AVI will verify actual number of crew and compare with the safe manning certificate.

8.4	If the master has been promoted within the last 12 months, did they receive appropriate pre-command training?	<u>Yes</u>	<u>No</u>	NA	NS	
------------	---	------------	-----------	----	----	--

Note: Discuss with the master his/her previous training and experience. Use NS if the master is not onboard and no one can verify this answer and make comment accordingly.

Comment on:

- The training undertaken.
- Confirm if the master is experienced in the operational role of the vessel

Note: Discuss with the master his/her previous training and experience. Use NS if master is not onboard and no one can verify this answer and make comment accordingly.

When answering the above, the AVI will verify:

- The training undertaken.
- If the master is experienced in the operational role of the vessel

8.5	Do critical personnel (e.g. captain, chief officer and chief engineer) complete a handover period including familiarisation appropriate to their position?	<u>Yes</u>	<u>No</u>	NA	NS	
------------	--	------------	-----------	----	----	--

Comment on the type of handover.

...

8.6	Does the vessel operator have a competency assessment process?	<u>Yes</u>	<u>No</u>	NA		
------------	--	------------	-----------	----	--	--

Verify evidence of the competency scheme completion if available onboard and identify where the evidence is held, if unavailable.

Comment on the type of scheme in use.

When answering the above, the AVI will verify evidence of the competency scheme completion if available onboard and identify where the evidence is held, if unavailable.

8.7	Has provision been made to provide crew with medical care training?	<u>Yes</u>	<u>No</u>	NA	NS	
------------	---	------------	-----------	----	----	--

Verify:

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- That the nominated responsible personnel have valid certification as per attached current crew appendix
- That there is a first aid training plan in place

Provide the latest date when the medical/first aid qualified personnel received refresher training

When answering the above, the AVI will verify:

- That the nominated responsible personnel have valid certification as per attached current crew appendix
- That there is a first aid training plan in place
- The latest date when the medical/first aid qualified personnel received refresher training

8.8	Are the crew appropriately qualified for the operations and equipment onboard?	Yes	No	NA		
-----	--	-----	-----------	----	--	--

Comment on specialist qualifications, e.g. DP operator (DPO), crane driver, FRC coxswain, rigging slinging and banksmen or other vessel specific requirements.

...

8.9	Are the crew’s medical certificates valid?	Yes	No	NA	NS	
-----	--	-----	-----------	----	----	--

Comment if medical certificates are out of date or not held.

...

8.10	Are there regular crew appraisals and personal development initiatives in place?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	--

...

...

8.11	Additional Section 8 comments?	Yes	No			
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9 Crew Qualifications

Rank	Years with vessel operator	Years in rank	Months on vessel	DP cert	GMDSS	Medical certificate	RB/FRB/coxswain	HLO	Other
Master									
Chief Officer									
Etc.									

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10 Life-Saving Appliances (LSAs)

10.1	Are all lifeboats operational and defect free?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> NA	<input type="checkbox"/> NS	<input type="checkbox"/>
-------------	--	------------------------------	--	-----------------------------	-----------------------------	--------------------------

WARNING: Lifeboats should be appropriately secured before any internal inspection is carried out.
NA if lifeboats are not embarked.

Comment on any anomalies regarding the following:

- Lifeboats should be ready for immediate use.
- Internally they should be clean, dry and tidy.
- All small equipment should be secured and stored in lockers or watertight containers as appropriate.
- Large equipment should be suitably secured.
- All equipment should be readily accessible, including medicines not stowed onboard.
- Contents of lockers should be clearly identified.
- Communications equipment, where fitted, should be operable.
- Perform a random check to ensure that food and water, and pyrotechnics are in date.
- Lifeboat operating instructions should be prominently displayed.

WARNING: Lifeboats should be appropriately secured before any internal inspection is carried out.
NA if lifeboats are not embarked.

When answering the above, the AVI will verify:

- Lifeboats are ready for immediate use.
- Internally they are clean, dry and tidy.
- All small equipment is secured and stored in lockers or watertight containers as appropriate.
- Large equipment is suitably secured.
- All equipment is readily accessible, including medicines not stowed onboard.
- Contents of lockers are clearly identified.
- Communications equipment, where fitted, is operable.
- By random check to ensure that food and water, and pyrotechnics are in date.
- Lifeboat operating instructions are prominently displayed.

10.2	Are survival craft, including life rafts, planned maintenance tasks up to date?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> NA	<input type="checkbox"/> NS	<input type="checkbox"/>
-------------	---	------------------------------	--	-----------------------------	-----------------------------	--------------------------

Comment on any anomalies regarding the following:





- Lifeboats should have been lowered/tested as appropriate for the lifeboat type.
- Engines and electrical equipment should be tested.
- Lowering equipment and associated items should be operational and defect free.
- Review any outstanding planned maintenance tasks.
- Is there a maintenance and test schedule for lifeboat on-load release gear?
- Life raft should have a valid inspection certificate.
- Davit launched liferaft training should be conducted at intervals of not more than 4 months (SOLAS III/19.4.4.3).

When answering the above, the AVI will verify:

- Lifeboats have been lowered/tested as appropriate for the lifeboat type.
- Engines and electrical equipment have been tested.
- Lowering equipment and associated items are operational and defect free.
- There are no outstanding planned maintenance tasks.
- There is a maintenance and test schedule for lifeboat on-load release gear.
- Life raft has a valid inspection certificate.
- Davit launched liferaft training is conducted at intervals of not more than 4 months (SOLAS III/19.4.4.3).

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10.3	Are all fitted life rafts available for immediate use?	<u>Yes</u>	No	NA	NS	
<p>Comment on any anomalies regarding the following:</p> <ul style="list-style-type: none"> • Casings should be in good condition. • Are life rafts stowed as per the LSA plans? • Boarding ladders should be in good condition (check for missing steps, rope deterioration and lashings where required). • Hydrostatic releases, if fitted, should be correctly attached, in good condition and in date. • Life raft operating instructions should be prominently displayed. <p>When answering the above, the AVI will verify:</p> <ul style="list-style-type: none"> • Casings are in good condition. • Life rafts are stowed as per the LSA plans? • Boarding ladders are in good condition (check for missing steps, rope deterioration and lashings where required). • Hydrostatic releases, if fitted, are correctly attached, in good condition and in date. • Life raft operating instructions are prominently displayed. 						
10.4	Are muster lists posted and correct?	<u>Yes</u>	No	NA	NS	
<p>Muster lists should be displayed and up to date.</p> <p>Verify:</p> <ul style="list-style-type: none"> • The accuracy of muster lists against current POB • That muster points are clearly identified <p>Muster lists should be displayed and up to date.</p> <p>When answering the above, the AVI will verify:</p> <ul style="list-style-type: none"> • The accuracy of muster lists against current POB • That muster points are clearly identified 						
10.5	Are sufficient serviceable immersion suits available?	<u>Yes</u>	No	NA	NS	
<p>Verify:</p> <ul style="list-style-type: none"> • Against the provisions of the Safety Equipment Certificate • Where required, check that there is sufficient numbers and sizes of immersion suits for the crew and passengers <p>When answering the above, the AVI will verify:</p> <ul style="list-style-type: none"> • Against the provisions of the Safety Equipment Certificate • Where required, that there is sufficient numbers and sizes of immersion suits for the crew and passengers 						
10.6	Are sufficient serviceable life jackets available?	<u>Yes</u>	No	NA	NS	
<p>Comment on any anomalies regarding the following:</p> <ul style="list-style-type: none"> • Sufficient numbers and sizes of life jackets for the crew and passengers • Whether the life jackets are of the appropriate type, i.e. SOLAS approved, automatic inflation etc. • Whether emergency use life jackets are located in remote positions <p>When answering the above, the AVI will verify:</p> <ul style="list-style-type: none"> • Sufficient numbers and sizes of life jackets for the crew and passengers • Whether the life jackets are of the appropriate type, i.e. SOLAS approved, automatic inflation etc. • Whether emergency use life jackets are located in remote positions 						
10.7	Is the man overboard/rescue boat, where fitted, operational and defect free?	<u>Yes</u>	No	NA	NS	
<p>NA if man overboard/rescue boat are not fitted.</p>						

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Comment on any anomalies regarding the following:

- Crew should have received onboard training in MOB use and hazards to SOLAS requirements.
- Personal protective equipment to be provided for all crew including head protection.
- Condition of spare fuel storage cans/tanks and suitability of storage location.
- Launching apparatus should be operational and defect free.
- Communications equipment should be operable.
- Drills should be held at regular intervals

Provide

- Date of last drill.

NA if man overboard/rescue boat are not fitted.

When answering the above, the AVI will verify:

- Crew have received onboard training in MOB use and hazards to SOLAS requirements.
- Personal protective equipment is provided for all crew including head protection.
- Condition of spare fuel storage cans/tanks and suitability of storage location.
- Launching apparatus is operational and defect free.
- Communications equipment is operable.
- Drills are held at regular intervals
- Date of last drill

10.8	Are training manuals onboard describing LSA equipment and its correct operation?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	--

Comment on:

- Whether the manuals provide equipment-specific information relevant to installed equipment.
- Whether manuals are in a language understood by vessel personnel

When answering the above, the AVI will verify:

- Whether the manuals provide equipment-specific information relevant to installed equipment.
- Whether manuals are in a language understood by vessel personnel

10.9	Are ship-specific life-saving equipment maintenance instructions available?	Yes	No	NA	NS	
------	---	-----	-----------	----	----	--


Comment on the language used in the manuals and whether this is suitable for the personnel carrying out maintenance

When answering the above, the AVI will verify the language used in the manuals and whether this is suitable for the personnel carrying out maintenance.

10.10	Is LSA equipment free from defects?	Yes	No	NA	NS	
-------	-------------------------------------	-----	-----------	----	----	---

Comment on any identified LSA defects based on random LSA inspection.

...

10.11	Is there a ship specific plan and procedure for the recovery of persons from the water?	Yes	No	NA	NS	
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Note: In accordance with (SOLAS Regulation III/17-1) with effect from 1 July 2014.

(Ro-ro passenger ships which comply with SOLAS Regulation III/26.4 shall be deemed by IMO to comply with this regulation.)

Note: In accordance with (SOLAS Regulation III/17-1) with effect from 1 July 2014.


(Ro-ro passenger ships which comply with SOLAS Regulation III/26.4 shall be deemed by IMO to comply with this regulation.)

10.12	Additional Section 10 comments?	Yes	No			
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11 Firefighting Appliances


11.1	Is the vessel provided with fixed firefighting equipment in accordance with applicable regulations for vessel type?	<u>Yes</u>	No	NA	NS	
-------------	---	------------	-----------	----	----	---

Verify:

- Fire mains, pumps, hoses and nozzles are available for use and defect free. Conduct physical inspection of a random number of hoses
- Emergency fire pump is fully operational. Starting instructions are clearly displayed
- International ship/shore fire connection is readily available and its location clearly marked
- Operating instructions for fixed systems are clearly displayed
- Crew are familiar with operation of fixed systems
- Isolating valves in fire/foam system lines are clearly marked and operational
- Fixed firefighting system activation keys are available under suitable control procedures

When answering the above, the AVI will verify :

- Fire mains, pumps, hoses and nozzles are available for use and defect free. Conduct physical inspection of a random number of hoses
- Emergency fire pump is fully operational. Starting instructions are clearly displayed
- International ship/shore fire connection is readily available and its location clearly marked
- Operating instructions for fixed systems are clearly displayed
- Crew are familiar with operation of fixed systems
- Isolating valves in fire/foam system lines are clearly marked and operational
- Fixed firefighting system activation keys are available under suitable control procedures

11.2	Is sufficient firefighting equipment available for use and defect free?	<u>Yes</u>	No	NA	NS	
-------------	---	------------	-----------	----	----	---

Verify:

- If a BA air compressor is available
- If the BA compressor and charging panel is in date for test
- The last air quality check and confirm it is still in date for safe use
- That there is a written scheme of examination for BA charging plant

Comment on any anomalies regarding the following:

- Portable fire extinguishers should be in apparent good order with operating instructions clearly marked and in date for test as marked on the extinguisher body
- Firemen’s outfits including breathing apparatus (BA) should be in good condition and ready for immediate use
- BA sets should be ready for immediate use with fully charged air bottles and spare cylinders available in accordance with SOLAS Annex III
- Whether BA cylinders are in date for test
- Sufficient fully charged spare air bottles should be available.
- Availability of emergency escape breathing devices and whether they are charged and the crew trained

When answering the above, the AVI will verify:

- If a BA air compressor is available
- If the BA compressor and charging panel is in date for test
- The last air quality check and confirm it is still in date for safe use
- That there is a written scheme of examination for BA charging plant
- Portable fire extinguishers are in apparent good order with operating instructions clearly marked and in date for test as marked on the extinguisher body
- Firemen’s outfits including breathing apparatus (BA) are in good condition and ready for immediate use
- BA sets are ready for immediate use with fully charged air bottles and spare cylinders available in accordance with SOLAS Annex III

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- Whether BA cylinders are in date for test
- Sufficient fully charged spare air bottles are available.
- Availability of emergency escape breathing devices and whether they are charged and the crew trained


11.3	Are records of firefighting equipment maintenance available?	<u>Yes</u>	<u>No</u>	NA	NS	
------	--	------------	-----------	----	----	--

Comment on any anomalies regarding the following:

- Whether inspection records and inventory lists are maintained and kept up to date
- Whether records are available to show that samples of foam compound have been tested at regular intervals
- Whether BA sets are maintained in accordance with manufacturer’s instructions

When answering the above, the AVI will verify:

- Whether inspection records and inventory lists are maintained and kept up to date
- Whether records are available to show that samples of foam compound have been tested at regular intervals
- Whether BA sets are maintained in accordance with manufacturer’s instructions


11.4	Are fixed fire and gas detection systems fully operational and tested regularly?	<u>Yes</u>	<u>No</u>	NA		
------	--	------------	-----------	----	--	---

Verify:

- If portable monitoring equipment is used, describe the system of periodic sampling and record keeping.
- The operational condition of fire detection and alarm systems throughout the vessel.
- That recorders, alarms and manufacturers’ test procedures are in order
- If a system to monitor flammable atmospheres in non-cargo spaces is fitted

When answering the above, the AVI will verify:

- If portable monitoring equipment is used, detailing the system of periodic sampling and record keeping
- The operational condition of fire detection and alarm systems throughout the vessel.
- That recorders, alarms and manufacturers’ test procedures are in order
- If a system to monitor flammable atmospheres in non-cargo spaces is fitted

11.5	Are vessel personnel familiar with the operation of firefighting, life-saving and other emergency equipment?	<u>Yes</u>	<u>No</u>	NA		
------	--	------------	-----------	----	--	---

NA should only be used for unmanned vessels.

Verify that the relevant vessel personnel are familiar with the following:

- donning and use of breathing apparatus
- location and operation of ventilation fans emergency stops
- location and operation of ventilation isolation dampers
- operation of main and emergency fire pumps
- operation of fixed firefighting systems
- emergency fuel shut-off system
- operation of emergency steering gear
- evacuation escape routes.

Comment on recorded assessment.

Provide:

- Date of last fire drill


NA should only be used for unmanned vessels.

When answering the above, the AVI will verify that the relevant vessel personnel are familiar with the following:

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- donning and use of breathing apparatus
- location and operation of ventilation fans emergency stops
- location and operation of ventilation isolation dampers
- operation of main and emergency fire pumps
- operation of fixed firefighting systems
- emergency fuel shut-off system
- operation of emergency steering gear
- evacuation escape routes

11.6	Are measures in place to effectively isolate ventilation to enclosed spaces, e.g. engine room, accommodation, galley, storerooms?	<u>Yes</u>	No	NA	NS	
------	---	------------	-----------	----	----	---

Verify:

- Vent fan stops both locally in compartments and remotely external to compartments are operational (spot check) and clearly marked.
- Closing devices have maintenance and testing programmes in place and are marked accordingly.

Provide:

- Date of last ventilation shutdown test.

When answering the above, the AVI will verify:

- Vent fan stops both locally in compartments and remotely external to compartments are operational (spot check) and be clearly marked.
- Closing devices have maintenance and testing programmes in place and are marked accordingly.
- Date of last ventilation shutdown test

11.7	Are vessel-specific manuals and plans for firefighting equipment available and up to date?	<u>Yes</u>	No	NA	NS	
------	--	------------	-----------	----	----	--

Comment on any anomalies regarding the following:

- All plans have the same revision number
- Ship-specific fire training manuals are available in a language understood by crew as required by SOLAS Reg II-2/15.2.3? (see question 4.6)
- Ship-specific fire safety operational booklets are available as required by SOLAS Reg II-2/15.2.2.5
- Fire control plans are exhibited within the accommodation and are available outside the accommodation

Provide:

- Date of the last updating of plans

When answering the above, the AVI will verify:

- All plans have the same revision number
- Ship-specific fire training manuals are available in a language understood by crew as required by SOLAS Reg II-2/15.2.3? (see question 4.6)
- Ship-specific fire safety operational booklets are available as required by SOLAS Reg II-2/15.2.2.5
- Fire control plans are exhibited within the accommodation and are available outside the accommodation
- Date of the last updating of plans

11.8	Additional Section 11 comments?	Yes	No			
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12 Pollution Prevention

12.1	Are SOPEP/SMPEP drills held at regular intervals?	<u>Yes</u>	<u>No</u>	NA	NS	
------	---	------------	-----------	----	----	--

Review the ship marine pollution emergency plan (MARPOL I Reg 37).

Provide the date of the last drill and comment on who was involved

When answering the above, the AVI will review the ship marine pollution emergency plan (MARPOL I Reg 37) and verify the date of the last drill and who was involved.


12.2	Are arrangements in place to prevent any spillage entering the water?	<u>Yes</u>	<u>No</u>	NA	NS	
------	---	------------	-----------	----	----	---

Comment on any anomalies regarding the following:

- Evidence of any leaks noticed during the inspection
- Availability of pollution prevention equipment for immediate use
- A bunkering procedure in place
- Anti-pollution warning notices
- Ability to plug or dam scuppers during fuel transfer operations
- Unused bunker pipeline connections, drains and vents and unused gauge stems not suitably blanked or capped
- Suitable containment fitted around hydraulic deck machinery
- The arrangements to prevent spillages from tank vents
- Whether emergency bilge suction valves are suitably marked with specific warning notices posted to safeguard against accidental opening. They can also be fitted with a visible tag which does not prevent the operation of the valve.

When answering the above, the AVI will verify:

- Evidence of any leaks noticed during the inspection
- Availability of pollution prevention equipment for immediate use
- A bunkering procedure is in place
- Anti-pollution warning notices
- Ability to plug or dam scuppers during fuel transfer operations
- Unused bunker pipeline connections, drains and vents and unused gauge stems are suitably blanked or capped
- Suitable containment fitted around hydraulic deck machinery
- The arrangements to prevent spillages from tank vents
- Whether emergency bilge suction valves are suitably marked with specific warning notices posted to safeguard against accidental opening. They can also be fitted with a visible tag which does not prevent the operation of the valve.

12.3	Is the bilge oily water separator (OWS)/filtering system in good working order?	<u>Yes</u>	<u>No</u>	NA	NS	
------	---	------------	-----------	----	----	---


Verify that:

- The OWS is functional
- Notices are posted to warn of the dangers of accidental opening of the overboard discharge valve
- The OWS has been fitted with an automatic stopping device

Comment on last test and any OWS planned maintenance outstanding.

When answering the above, the AVI will verify:

- That the OWS is functional
- Notices are posted to warn of the dangers of accidental opening of the overboard discharge valve
- The OWS has been fitted with an automatic stopping device
- Last test and any OWS planned maintenance outstanding

12.4	Does the vessel have a waste/garbage management plan?	<u>Yes</u>	<u>No</u>	NA	NS	
------	---	------------	-----------	----	----	---

Verify:

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- where the plan is located and who has responsibility for compliance
- the plan contains procedures for the collecting, storage, processing and disposing of garbage and e-waste
- the garbage disposal records are complete and up to date

Comment if a plan is not available onboard

When answering the above, the AVI will verify:

- where the plan is located and who has responsibility for compliance
- the plan contains procedures for the collecting, storage, processing and disposing of garbage and e-waste
- the garbage disposal records are complete and up to date

12.5	Does the vessel have a ballast water management plan?	Yes	No	NA	NS	
------	---	-----	----	----	----	--

A plan is required for most trading vessels.

Comment on the ballast water management arrangements in place and if the plan is approved by the relevant flag state or classification society

A plan is required for most trading vessels.

When answering the above, the AVI will verify the ballast water management arrangements in place and if the plan is approved by the relevant flag state or classification society.

12.6	Are oil record book(s) correctly completed and up to date?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

Verify that:

- All the activities are signed off by the person performing the task and each completed page is endorsed by the Master
- The sludge and bilge tanks designated in Form B of the IOPP certificate and those listed in the oil record book Part I, agree

Comment on any pollution incidents that have occurred in the last twelve months, how they were closed out and any preventative measures that were put in place.

(see question 15.7)

When answering the above, the AVI will verify:

- All the activities are signed off by the person performing the task and each completed page is endorsed by the Master
- The sludge and bilge tanks designated in Form B of the IOPP certificate and those listed in the oil record book Part I, agree
- If any pollution incidents have occurred in the last twelve months, how they were closed out and any preventative measures that were put in place.

(see question 15.7)

12.7	Is a fuel changeover procedure for entering a sulphur emission control area (SECA) available and are records kept that this is being implemented?	Yes	No	NA	NS	
------	---	-----	----	----	----	--

Verify that a fuel changeover logbook is available in accordance with MARPOL VI REG. 14.6.

When answering the above, the AVI will verify that a fuel changeover logbook is available in accordance with MARPOL VI REG. 14.6.

12.8	Are bunker delivery notes and representative sample records available?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

In accordance with MARPOL VI Reg. 18.

In accordance with MARPOL VI Reg. 18.

12.9	Is a list of equipment containing ozone-depleting substances available?	Yes	No	NA	NS	
------	---	-----	----	----	----	--

This is required when the vessel has ozone depleting substances onboard, see IAPP supplement.

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This is required when the vessel has ozone depleting substances onboard, see IAPP supplement.


12.10	Additional Section 12 comments?	Yes	No			
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13 General Appearance


13.1	Are there arrangements in place to address the general condition, visual appearance and cleanliness of the hull?	Yes	No		NS	
------	--	-----	----	--	----	---

Comment on:

- Whether the hull is visibly free of extensive coating breakdown.
- Any evidence of marine growth on the hull.
- Any anomalies regarding the following:
- Hull plating being free from fractures or indentations and frames are free from distortion all of which may significantly weaken the structure or affect the watertight integrity
- Hull markings, namely vessel name, load lines, draught marks and warning signs, being correctly placed and legible.

When answering the above, the AVI will verify:

- Whether the hull is visibly free of extensive coating breakdown.
- Any evidence of marine growth on the hull.
- Any anomalies regarding the following:
- Hull plating being free from fractures or indentations and frames are free from distortion all of which may significantly weaken the structure or affect the watertight integrity
- Hull markings, namely vessel name, load lines, draught marks and warning signs, being correctly placed and legible.

13.2	Are there arrangements in place to address the general condition, visual appearance and cleanliness of the weather decks?	Yes	No		NS	
------	---	-----	----	--	----	---

Inspection of weather decks must include checking for any evidence of wastage, structural problems, collision contact or distortion from heavy weather on fore end of accommodation.


Comment on any anomalies regarding the following:

- The deck being well lit
- Moorings and other equipment being securely stowed
- Forecastle space, lockers and holds free of water
- Manual sounding points being identified and easily opened and closed
- Non-slip surfaces on external walkways
- Ladders and walkways in good condition
- Condition of wood sheathing and T-bars

Inspection of weather decks must include checking for any evidence of wastage, structural problems, collision contact or distortion from heavy weather on fore end of accommodation.

When answering the above, the AVI will verify:

- The deck being well lit
- Moorings and other equipment being securely stowed
- Forecastle space, lockers and holds free of water
- Manual sounding points being identified and easily opened and closed
- Non-slip surfaces on external walkways
- Ladders and walkways in good condition
- Condition of wood sheathing and T-bars

13.3	Are deck openings, including watertight doors and portholes, defect free and capable of being properly secured?	Yes	No		NS	
------	---	-----	----	--	----	---

Comment on any anomalies regarding the following:

- Bridge windows being effectively sealed and, where vulnerable to wave action, provided with shutters
- Vents and air pipes on the freeboard deck being in good condition and fitted with closing devices to prevent ingress of water


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- Mesh screens on the FW tank vents
- Packing material and locking arrangements on closing devices being complete and free of defects
- Closing devices being included in the planned maintenance system
- Securing arrangements of the ends of vessel’s own anchor chains are unobstructed
- Chain locker doors are firmly battened down

When answering the above, the AVI will verify:

- Bridge windows being effectively sealed and, where vulnerable to wave action, provided with shutters
- Vents and air pipes on the freeboard deck being in good condition and fitted with closing devices to prevent ingress of water
- Mesh screens on the FW tank vents
- Packing material and locking arrangements on closing devices being complete and free of defects
- Closing devices being included in the planned maintenance system
- Securing arrangements of the ends of vessel’s own anchor chains are unobstructed
- Chain locker doors are firmly battened down

13.4	Are there arrangements in place to address the general condition, visual appearance and cleanliness of the accommodation?	<u>Yes</u>	<u>No</u>	NA	NS	
------	---	------------	-----------	----	----	---

Comment on any anomalies regarding the following:

- Alleyways being free from obstructions and that areas of low headroom are properly marked.
- All exits, including escape routes, clearly marked.
- Fittings such as central radio and TV antennas, lights, emergency lighting, domestic piping and isolation valves, should be identified and in apparent good physical condition.
- There is no improvised rigging of radio/TV aerials or antennas.

When answering the above, the AVI will verify:

- Alleyways being free from obstructions and that areas of low headroom are properly marked.
- All exits, including escape routes, clearly marked.
- Fittings such as central radio and TV antennas, lights, emergency lighting, domestic piping and isolation valves, should be identified and in apparent good physical condition.
- There is no improvised rigging of radio/TV aerials or antennas.

13.5	Is there evidence to show that the vessel is free of animal or insect infestation?	<u>Yes</u>	<u>No</u>			
------	--	------------	-----------	--	--	--

Comment on procedures in place to address the potential for animal or insect infestation.

...

13.6	Are the medical facilities adequate?	<u>Yes</u>	<u>No</u>	NA	NS	
------	--------------------------------------	------------	-----------	----	----	---

Comment on any anomalies regarding the following:

- Hospital ready for immediate use
- First aid kits readily available
- Hospital alarm is in working order
- Availability of a suitable stretcher for marine use
- Availability of oxygen resuscitation equipment for immediate use, where fitted
- If a defibrillator is carried, whether it is in full working order and the instructions on its use are clear


When answering the above, the AVI will verify:

- Hospital ready for immediate use
- First aid kits readily available
- Hospital alarm is in working order
- Availability of a suitable stretcher for marine use
- Availability of oxygen resuscitation equipment for immediate use, where fitted

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- If a defibrillator is carried, whether it is in full working order and the instructions on its use are clear

13.7	Is the vessel’s internal and external deck lighting appropriate to the type of vessel?	Yes	No		NS	
------	--	-----	-----------	--	----	---

Verify the following:

- A lighting survey has been conducted onboard
- The lighting survey addressed all areas onboard including the accommodation
- Arrangements are in place to provide suitable levels of lighting to cover all vessel operations, in particular vessel access, work at height, safe navigation in all parts of the vessel, highlighting of hazards

When answering the above, the AVI will verify:

- A lighting survey has been conducted onboard
- The lighting survey addressed all areas onboard including the accommodation
- Arrangements are in place to provide suitable levels of lighting to cover all vessel operations, in particular vessel access, work at height, safe navigation in all parts of the vessel, highlighting of hazards

13.8	Additional Section 13 comments?	Yes	No			
------	---------------------------------	-----	----	--	--	--

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14 Bridge, Navigation and Communications Equipment

14.1	Is the vessel provided with operator policy statements, instructions and procedures with regard to safe navigation?	Yes	No	NA	NS	
------	---	-----	----	----	----	--

Review the policies and procedures to ascertain if the duties of the watch standing officers are clearly defined.

Verify that:

- A copy of the policies and procedures are on the bridge
- The policy covers bridge team management

When answering the above, the AVI will verify:

- If the duties of the watch standing officers are clearly defined.
- A copy of the policies and procedures are on the bridge
- The policy covers bridge team management

14.2	Does the vessel have written procedures for entry into a 500-metre zone?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

Verify that:

- A checklist is in use to assist the conduct and recording of tests
- The procedure details what tests are conducted prior to entry
- The tests are reported to the appropriate installation, if applicable

When answering the above, the AVI will verify:

- A checklist is in use to assist the conduct and recording of tests
- The procedure details what tests are conducted prior to entry
- The tests are reported to the appropriate installation, if applicable

14.3	Are vessel manoeuvring characteristics clearly displayed or immediately available in a reference document on the bridge?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

Vessel manoeuvring characteristics should be displayed on the bridge where a vessel is over 100m in length.

Vessel manoeuvring characteristics should be displayed on the bridge where a vessel is over 100m in length.

14.4	Are auto, manual and emergency steering changeover procedures displayed?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

Comment on legibility, ease of access and completeness.

When answering the above, the AVI will verify legibility, ease of access and completeness.

14.5	Is the deck logbook fully maintained, both at sea and in port?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

Verify that:

- Rough logs in pencil are not being maintained
- The logbooks are up to date, with entries properly made.

Comment on whether the voyage could be reconstructed from the logbook entries, in accordance with SOLAS Reg. II and III.

When answering the above, the AVI will verify:

- Rough logs in pencil are not being maintained
- The logbooks are up to date, with entries properly made
- Whether the voyage could be reconstructed from the logbook entries, in accordance with SOLAS Reg. II and III.

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14.6	Has the master written their own standing orders and are night orders being completed?	<u>Yes</u>	<u>No</u>	NA	NS	
------	--	------------	-----------	----	----	--

The standing order and master’s night order book should ensure that all officers are clear on their responsibilities.

Verify that:

- Standing orders issued by the operator are endorsed by the master and signed by all deck officers
- The master’s specific instructions are supplemented by instructions contained in the night order book pertaining to situations to be encountered and deck officers have countersigned the night orders as being read and understood

The standing order and master’s night order book should ensure that all officers are clear on their responsibilities.

When answering the above, the AVI will verify:

- Standing orders issued by the operator are endorsed by the master and signed by all deck officers
- The master’s specific instructions are supplemented by instructions contained in the night order book pertaining to situations to be encountered and deck officers have countersigned the night orders as being read and understood

14.7	Has a system been established to ensure that nautical publications, charts and information are both onboard and current?	<u>Yes</u>	<u>No</u>	NA	NS	
------	--	------------	-----------	----	----	--

Verify the following:

- Latest notices to mariners are onboard and dated within previous two months
- Charts in use are appropriate for the port/location
- Charts are provided for ports of refuge
- If ECDIS is fitted and in use, check that all corrections have been uploaded and recorded

Comment on the system used to ensure that light lists, tide tables, pilot books, nautical almanac, charts catalogue and ship’s routing are the current editions. – Ref questions 3.3. and 3.4

When answering the above, the AVI will verify:

- Latest notices to mariners are onboard and dated within previous two months
- Charts in use are appropriate for the port/location
- Charts are provided for ports of refuge
- If ECDIS is fitted and in use, check that all corrections have been uploaded and recorded
- The system used to ensure that light lists, tide tables, pilot books, nautical almanac, charts catalogue and ship’s routing are the current editions. – Ref questions 3.3. and 3.4

14.8	Is a comprehensive passage plan available for the current voyage and does it cover the full voyage from berth to berth?	<u>Yes</u>	<u>No</u>	NA	NS	
------	---	------------	-----------	----	----	--

Verify:

- The passage plan is prepared by an appropriate officer and verified by the master
- Passage plan information is readily available for watchkeepers’ use
- The passage plan covers security considerations
- If appropriate, ECDIS safety depth settings and use of track width

Comment on the system of passage planning in use and how the passage plan is produced, whether this is manually or by computer.

When answering the above, the AVI will verify:

- Passage plan is prepared by an appropriate officer and verified by the master
- Passage plan information is readily available for watchkeepers’ use
- The passage plan covers security considerations
- If appropriate, ECDIS safety depth settings and use of track width
- The system of passage planning in use and how the passage plan is produced, whether this is manually or by computer.

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14.9	Is gyro and magnetic compass error log maintained and up to date?	Yes	No	NA	NS	
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Verify that the deviation curve(s) are displayed.

Comment on evidence to show that periodic checks of navigational equipment are made at sea.

When answering the above, the AVI will verify:

- That the deviation curve(s) are displayed.
- Evidence to show that periodic checks of navigational equipment are made at sea.

14.10	Are navigation warnings and weather forecasts available?	Yes	No	NA	NS	
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Verify source, i.e. Navtex or others.

When answering the above, the AVI will verify the source, i.e. Navtex or others.

14.11	Is a maintenance programme for radio and electronic equipment in place?	Yes	No	NA		
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Verify the maintenance programme followed, e.g. onboard maintenance by competent person or by maintenance contract, etc.

When answering the above, the AVI will verify the maintenance programme followed, e.g. onboard maintenance by competent person or by maintenance contract, etc.

14.12	Are GMDSS logs maintained and up to date?	Yes	No	NA	NS	
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Verify that the GMDSS log is being maintained.

When answering the above, the AVI will verify that the GMDSS log is being maintained.

14.13	Is the standard equipment, including bridge, communications and navigation equipment as listed in SOLAS available for use and free from defects?	Yes	No	NA	NS	
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Verify:

- That there are no deficiencies in equipment
- Availability of GMDSS manual for operations
- Instructions for operating the digital selective calling (DSC) and satellite communications equipment in an emergency is clearly displayed
- The vessel's call sign and Inmarsat ship station identity is clearly marked on the radio installation
- A continuous listening watch is being maintained on VHF channel 16
- Officers are aware of the requirements for position updating on two-way communications equipment
- The periodical tests of communications equipment is being carried out as required

When answering the above, the AVI will verify:

- That there are no deficiencies in equipment
- Availability of GMDSS manual for operations
- Instructions for operating the digital selective calling (DSC) and satellite communications equipment in an emergency is clearly displayed
- The vessel's call sign and Inmarsat ship station identity is clearly marked on the radio installation
- A continuous listening watch is being maintained on VHF channel 16
- Officers are aware of the requirements for position updating on two-way communications equipment
- The periodical tests of communications equipment is being carried out as required

14.14	Additional Section 14 comments?	Yes	No			
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15 Machinery Space

15.1	Is there a planned maintenance system in use?	<u>Yes</u>	No	NA		
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Verify that the Company has established procedures to ensure that the ship is maintained in conformity with the provisions of the relevant rules and regulations and with any additional requirements which may be established by the Company.

Comment on:

- The type of planned maintenance system in use
- If the planned maintenance system class-approved or not.
- The number of routines outstanding, and why

When answering the above, the AVI will verify:

- That the Company has established procedures to ensure that the ship is maintained in conformity with the provisions of the relevant rules and regulations and with any additional requirements which may be established by the Company.
- The type of planned maintenance system in use
- If the planned maintenance system class-approved or not.
- The number of routines outstanding, and why

(Ref. ISM Code section 10)

15.2	Are critical systems identified within the planned maintenance system?	<u>Yes</u>	No	NA		
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The SMS should provide for specific measures aimed at promoting the reliability of critical equipment or systems.

Verify:

- These measures include the regular testing of stand-by arrangements and equipment or technical systems that are not in continuous use
- The Company has identified equipment and technical systems the sudden operational failure of which may result in hazardous situations.

The SMS should provide for specific measures aimed at promoting the reliability of critical equipment or systems.

When answering the above, the AVI will verify:


- These measures include the regular testing of stand-by arrangements and equipment or technical systems that are not in continuous use
- The Company has identified equipment and technical systems the sudden operational failure of which may result in hazardous situations.

(Ref. ISM Code section 10)

15.3	Does the planned maintenance system include predictive maintenance techniques such as fuel and lube oil analysis and/or vibrations analysis?	<u>Yes</u>	No	NA		
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Comment upon the schemes the vessel operator has in use.

When answering the above, the AVI will verify the schemes the vessel operator has in use.

15.4	Are engine room emergency stops, shut-offs and quick closing valves clearly marked and regularly tested with tests recorded?	<u>Yes</u>	No	NA		
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Verify that operating instructions are clearly posted.

When answering the above, the AVI will verify that operating instructions are clearly posted.

15.5	Is there an inventory of spare parts with minimum stock levels defined?	<u>Yes</u>	No	NA		
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Verify that critical spares are identified as such within the inventory.

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When answering the above, the AVI will verify that critical spares are identified as such within the inventory.

15.6	Are manufacturers' manuals available onboard for all equipment in a language understood by the relevant technical personnel?	Yes	No	NA		
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15.7	Is the engine logbook fully maintained, both at sea and in port?	Yes	No	NA	NS	
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Verify that logbooks are up to date with entries made in ink.

When answering the above, the AVI will verify that logbooks are up to date with entries made in ink.

15.8	If the chief engineer has produced standing orders have these been countersigned by all engineers?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

Comment upon if the chief engineer keeps a night order book.

When answering the above, the AVI will verify if the chief engineer keeps a night order book.

15.9	Is the machinery space certified for unmanned operation?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

If so, **verify** that the vessel carries an unattended machinery space (UMS) Certificate or Class notation.

If so, the AVI will verify that the vessel carries an unattended machinery space (UMS) Certificate or Class notation.

15.10	If the vessel is certified for UMS, is there evidence available to show that the engineers' call alarms are regularly tested?	Yes	No	NA	NS	
-------	---	-----	----	----	----	--

Call alarms are required to be functional at all call points in the accommodation.

Call alarms are required to be functional at all call points in the accommodation.

15.11	Is the number of certified engineers sufficient to perform a 24-hour watch as the ship's operation may require (i.e. DP operations)?	Yes	No	NA	NS	
-------	--	-----	----	----	----	--

...

...

15.12	Is a blackout recovery procedure readily available?	Yes	No	NA		
-------	---	-----	----	----	--	--

Verify that the procedure details the equipment that needs to be re-started manually and the priority for doing so.

When answering the above, the AVI will verify that the procedure details the equipment that needs to be re-started manually and the priority for doing so.

15.13	In the case of a DP vessel are copies of the ASOG/CAMO/TAMO and DP checklists available in the engine control room.	Yes	No	NA		
-------	---	-----	----	----	--	--

Note: If the vessel is fitted with a Dynamic Positioning System, the DP supplement must be completed.

Verify that there is object evidence that these are in use.

Note: If the vessel is fitted with a Dynamic Positioning System, the DP supplement must be completed.

When answering the above, the AVI will verify that there is object evidence that these are in use.

15.14	Is main, auxiliary and emergency plant reported to be fully operational?	Yes	No	NA		
-------	--	-----	----	----	--	--

Comment:

- If items of machinery are not operational, and why.
- If any alarms are inhibited, and why.


When answering the above, the AVI will verify:

- If items of machinery are not operational, and why.

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- If any alarms are inhibited, and why.

15.15	Is the necessary technical information available for safe and efficient handling of bulk cargo and ballast?	<u>Yes</u>	No	NA	NS	
-------	---	------------	----	----	----	---

Ballast operations should be monitored and controlled to prevent tank overflow or over pressurisation.


Comment:

- On the type of system in use, is it remote operation, if so from where or local control
- If the transfer systems for cargo and ballast (including bulk cargo) and associated monitoring and control systems pumps are not fully operational
- If a procedure is not in place for their use

Ballast operations should be monitored and controlled to prevent tank overflow or over pressurisation.

When answering the above, the AVI will verify:

- The type of system in use, is it remote operation, if so from where or local control
- If the transfer systems for cargo and ballast (including bulk cargo) and associated monitoring and control systems pumps are fully operational
- A procedure is in place for their use


15.16	Is the bilge pumping system fully operational?	<u>Yes</u>	<u>No</u>	NA	NS	
-------	--	------------	-----------	----	----	---

Verify that:

- Engine room bilge oily water pumping and disposal arrangements are available for use
- Bilge system normal discharge is via OWS without bypass and not directly overboard.
- Emergency bilge pumping arrangements are ready for immediate use
- The emergency bilge suction is clearly identified and, where fitted, the emergency overboard discharge valve is provided with a notice warning against accidental opening


When answering the above, the AVI will verify:

- Engine room bilge oily water pumping and disposal arrangements are available for use
- Bilge system normal discharge is via OWS without bypass and not directly overboard.
- Emergency bilge pumping arrangements are ready for immediate use
- The emergency bilge suction is clearly identified and, where fitted, the emergency overboard discharge valve is provided with a notice warning against accidental opening

15.17	Is the bilge alarm system fully operational?	<u>Yes</u>	<u>No</u>	NA	NS	
-------	--	------------	-----------	----	----	---

Verify that the bilge level alarms are regularly tested and records maintained.

When answering the above, the AVI will verify that the bilge level alarms are regularly tested and records maintained.

15.18	Are all machinery spaces clean and free from obvious leaks?	<u>Yes</u>	<u>No</u>	NA	NS	
-------	---	------------	-----------	----	----	---

Verify that the bilges are free of significant accumulations of oil or fuel or cleaning materials, for example, rags, absorbent pads, etc.

Comment on general condition of machinery spaces.

When answering the above, the AVI will verify that the bilges are free of significant accumulations of oil or fuel or cleaning materials, for example, rags, absorbent pads, etc.

15.19	Is all pipework in good condition?	<u>Yes</u>	<u>No</u>	NA		
-------	------------------------------------	------------	-----------	----	--	---

Verify:


- All fluid transfer and storage systems are leak-free. Note any signs of significant leakage or temporary repairs.
- All valves and pipelines are identified by tagging, colour coding or similar.
- Schematics for all vessel systems are available for reference.

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When answering the above, the AVI will verify:

- All fluid transfer and storage systems are leak-free. Note any signs of significant leakage or temporary repairs.
- All valves and pipelines are identified by tagging, colour coding or similar.
- Schematics for all vessel systems are available for reference.

15.20	Are sounding pipes for double bottom tanks and gauge glasses fitted with self-closing devices and do these operate freely?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

Comment on any self-closing devices that have been defeated (i.e. by cable ties etc.).


When answering the above, the AVI will verify that self-closing devices have not been defeated (i.e. by cable ties etc.).

15.21	Are surfaces with temperatures above 220°C which may be impinged as a result of a fuel or oil system failure properly insulated?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

Surfaces that may operate at above 220°C include exhaust systems and indicator cocks.


Surfaces that may operate at above 220°C include exhaust systems and indicator cocks.

(Ref. SOLAS REG.II-2/15.2.10 – Surfaces with temperatures above 220°C which may be impinged as a result of a fuel system failure shall be properly insulated).

15.22	Where insulation is installed is it intact and free of fuel, or oil contamination?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

Best practice is for absorbent insulation materials to be encased in sheet steel or equivalent material.

Best practice is for absorbent insulation materials to be encased in sheet steel or equivalent material.

15.23	Are main switchboard, generators and critical electrical equipment protected against water spray?	Yes	No	NA	NS	
-------	---	-----	----	----	----	---

Verify:


- Main switchboards and generators are protected against water spray.
- Electric motors critical to the propulsion or steering of the vessel are protected against water spray, by shielding or have suitable ingress protection (IP) rating (IP65 or above would be suitable).

Comment:

- If the main switchboards are not located in the engine control room or other protected location.
- If any pipework passing close to main switchboards

When answering the above, the AVI will verify:

- Main switchboards and generators are protected against water spray.
- Electric motors critical to the propulsion or steering of the vessel are protected against water spray, by shielding or have suitable ingress protection (IP) rating (IP65 or above would be suitable)

15.24	Do switchboards have insulated decking or rubber mats to the front and rear?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

SOLAS II-1/45.2. Approved insulated decking or matting to the front and rear of switchboards greater than 220v should be in place and in good condition.

SOLAS II-1/45.2. Approved insulated decking or matting to the front and rear of switchboards greater than 220v should be in place and in good condition.

15.25	Are switchboards free from earth faults?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

Earth resistance should not be less than 1MΩ. There is a risk of critical equipment tripping if a second earth fault occurs when there is a pre-existing earth fault. This includes 24Vdc switchboards.


Check switchboard earth fault monitors. Earth resistance should not be less than 1MΩ

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There is a risk of critical equipment tripping if a second earth fault occurs when there is a pre-existing earth fault.

This includes 24Vdc switchboards.

15.26	Are cable runs and trays in good condition?	Yes	No	NA	NS	
-------	---	-----	----	----	----	---

Verify that cables are secured with suitable materials to prevent them dropping and blocking escape routes in the event of fire.

When answering the above, the AVI will verify that cables are secured with suitable materials to prevent them dropping and blocking escape routes in the event of fire.

15.27	Are emergency electrical power supplies fully operational?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

Verify:

- Emergency power supplies are regularly tested and proved to be operational.
- Emergency power supplies are capable of operating for a minimum of 18 hours


Comment on the type of emergency electrical power system installed – emergency generator, emergency batteries or redundancy of main supplies (including physical separation).

Provide:

- Date of the last on load test of emergency power supplies.
- In the case of emergency batteries the date of the last endurance test

When answering the above, the AVI will verify:

- Emergency power supplies are regularly tested and proved to be operational.
- The date of the last on load test of emergency power supplies.
- Emergency power supplies are capable of operating for a minimum of 18 hours.
- In the case of emergency batteries the date of the last endurance test
- The type of emergency electrical power system installed – emergency generator, emergency batteries or redundancy of main supplies (including physical separation).

15.28	Is the emergency generator fuel tank full?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

SOLAS II-1/43.2 requires that the emergency generator is capable of operating at full load for a minimum of 18 hours.

Verify that it is possible to trip the quick closing valve without affecting other machinery.

SOLAS II-1/43.2 requires that the emergency generator is capable of operating at full load for a minimum of 18 hours.


When answering the above, the AVI will verify that it is possible to trip the quick closing valve without affecting other machinery.

SOLAS II-2/4.2.2.3.4

15.29	Does the emergency generator have simple instructions for manual operation and they are clearly displayed?	Yes	No	NA	NS	
-------	--	-----	----	----	----	--

Verify that instructions are available to maintain/restore main plant in the event of emergency.

When answering the above, the AVI will verify that instructions are available to maintain/restore main plant in the event of emergency.

15.30	Is the steering gear/steering compartment free from defects?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

Verify:

- All steering gear hydraulic reservoirs are charged to normal operating levels.
- Access to steering gear is unobstructed.
- The steering gear save-all(s) are free from spilt oil.

When answering the above, the AVI will verify:

- All steering gear hydraulic reservoirs are charged to normal operating levels.

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- Access to steering gear is unobstructed.
- The steering gear save-all(s) are free from spilt oil.

15.31	Are instructions for the changeover of steering gear from remote to local operation clearly displayed in steering flat?	Yes	No	NA	NS	
-------	---	-----	----	----	----	--


Verify:

- Emergency steering gear has been tested quarterly and tests recorded
- All deck and engineer officers are familiar with the operation of steering gear in normal and emergency modes.

Provide the date of the last emergency steering gear test.

When answering the above, the AVI will verify:

- Emergency steering gear has been tested quarterly and tests recorded
- All deck and engineer officers are familiar with the operation of steering gear in normal and emergency modes.
- The date of the last emergency steering gear test.

15.32	Are the steering gear communications systems in good order?	Yes	No	NA	NS	
-------	---	-----	----	----	----	---

Communications between the bridge and emergency steering position should be satisfactory – SOLAS V-19.2.9.


Verify:

- The rudder angle indicator is clearly visible at the auxiliary/emergency steering position.
- A compass repeater is provided at the emergency steering position and reading correctly (Required for all vessels >500GRT constructed after 1st February 1992 – SOLAS V-19.2.5.2)

Communications between the bridge and emergency steering position should be satisfactory – SOLAS V-19.2.9.

When answering the above, the AVI will verify:

- The rudder angle indicator is clearly visible at the auxiliary/emergency steering position.
- A compass repeater is provided at the emergency steering position and reading correctly (Required for all vessels >500GRT constructed after 1st February 1992 – SOLAS V-19.2.5.2)

15.33	Are power operated watertight doors provided with operating instructions and warning notices?	Yes	No	NA	NS	
-------	---	-----	----	----	----	---


Verify:

- Watertight doors are in full working order and operating/warning notices posted.
- Training is carried out for the persons responsible for operating the doors.

When answering the above, the AVI will verify:

- Watertight doors are in full working order and operating/warning notices posted.
- Training is carried out for the persons responsible for operating the doors.

(Ref ISM Code Chapter VII, UK MCA MSN 331(M+F), Code of safe working practices for merchant seafarers)

15.34	Is the engine room workshop in good order?	Yes	No		NS	
-------	--	-----	----	--	----	---

Verify:


- Tools are in good condition and secured for sea.
- Machine tools are suitably guarded and fitted with emergency stops

When answering the above, the AVI will verify:

- Tools are in good condition and secured for sea.
- Machine tools are suitably guarded and fitted with emergency stops

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15.35	Is there evidence that safe working practices are being consistently applied to machinery spaces?	Yes	<u>No</u>		NS	
-------	---	-----	-----------	--	----	---

Verify:

- Warning signs are in place indicating where hearing protection is required
- Guards are in place on exposed shafts/gears.
- Changes in level are suitably highlighted or guarded.
- Emergency escape routes are clearly marked, unobstructed and well lit.
- The machinery spaces are properly secured for sea.

Comment on whether machinery space PPE requirements are specified and complied with.

When answering the above, the AVI will verify:

- Warning signs are in place indicating where hearing protection is required
- Guards are in place on exposed shafts/gears.
- Changes in level are suitably highlighted or guarded.
- Emergency escape routes are clearly marked, unobstructed and well lit.
- The machinery spaces are properly secured for sea.
- Whether machinery space PPE requirements are specified and complied with


15.36	Additional Section 15 comments?	Yes	No			
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16 Mooring, Towing and Lifting Equipment


16.1	Are mooring/towing practices appropriate for the size of vessel?	Yes	No		NS	
------	--	-----	-----------	--	----	---

Verify:

- Certificates are available for all mooring ropes and wires
- Mooring lines are flaked out to minimise tripping hazard
- Mooring lines are secured to bitts and not to drum ends
- Spare mooring ropes are available
- The vessel is securely moored at berth with moorings arranged to take into account anticipated conditions
- Moorings are tended regularly, especially at berths where there is a large tidal difference
- Powered mooring drums are de-clutched or out of gear when the vessel is moored (drum held on the band brake only)
- Clutch pins are being used

When answering the above, the AVI will verify:

- Certificates are available for all mooring ropes and wires
- Mooring lines are flaked out to minimise tripping hazard
- Mooring lines are secured to bitts and not to drum ends
- Spare mooring ropes are available
- The vessel is securely moored at berth with moorings arranged to take into account anticipated conditions
- Moorings are tended regularly, especially at berths where there is a large tidal difference
- Powered mooring drums are de-clutched or out of gear when the vessel is moored (drum held on the band brake only)
- Clutch pins are being used

16.2	Is all mooring/towing equipment available for use and defect free?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	---

Verify:

- The condition of all mooring equipment, brakes, wires and lines
- Mooring ropes are available for use and defect free
- Suspiciously weighted heaving line tails, i.e. "Monkey's fist" does not include additional weight
- Stowed out of direct sunlight
- Fairleads, rollers, bitts and chocks are available for use and defect free
- Deadmen and roller fairleads are well greased and free to turn with little evidence of grooving
- Winch seatings and connections to deck are sound
- Appropriate stoppers are available
- Towing hawsers and wires are maintained according with manufacturer's instructions
- An emergency towing booklet is available
- Whether a policy is in place for testing brakes

Provide the date when brake bands were last inspected.

When answering the above, the AVI will verify:


- The condition of all mooring equipment, brakes, wires and lines
- Mooring ropes are available for use and defect free
- Suspiciously weighted heaving line tails, i.e. "Monkey's fist" does not include additional weight
- Stowed out of direct sunlight
- Fairleads, rollers, bitts and chocks are available for use and defect free
- Deadmen and roller fairleads are well greased and free to turn with little evidence of grooving
- Winch seatings and connections to deck are sound
- Appropriate stoppers are available
- Towing hawsers and wires are maintained according with manufacturer's instructions

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- An emergency towing booklet is available
- Whether a policy is in place for testing brakes
- The date when the brake bands were last inspected

(Ref. MSC Circ. 1255; IMCA HSS029/IMCA M214 – Mooring practice safety guidance for offshore vessels when alongside in ports and harbours)

16.3	Are anchors, cables and securing arrangements available for use and defect free?	<u>Yes</u>	No	NA	NS	
------	--	------------	-----------	----	----	---


Verify:

- Anchor chain stoppers are available for use and defect free
- Anchors are cleared and ready for immediate use during port entry
- Chain locker spurling pipe cover(s) are in place at sea to prevent the chain locker flooding

Comment on the general state of anchor(s) and cable(s)

When answering the above, the AVI will verify:

- Anchor chain stoppers are available for use and defect free
- Anchors are cleared and ready for immediate use during port entry
- Chain locker spurling pipe cover(s) are in place at sea to prevent the chain locker flooding
- The general state of anchor(s) and cable(s)

16.4	Does the company have a lifting equipment management system in place?	<u>Yes</u>	No	NA	NS	
------	---	------------	-----------	----	----	--

Verify:


- How fixed lifting equipment is maintained
- The chain register/lifting appliance register is up to date
- A colour-coding or alternative system is in use to identify inspected lifting equipment
- Check that it is being adhered to, i.e. no evidence of wrong colour/non-coded equipment in use, that non-coded/wrong colour equipment is segregated and access to same denied.
- The programme for routine testing, i.e. start-up, daily, weekly and monthly checks.
- Items such as cranes, derricks and pad eyes are clearly marked with their SWL.
- Test certificates are onboard for all items of lifting equipment including chain blocks, strops, ropes, shackles (NB: may have a batch certificate for small shackles).

Comment on the system in use and the system for quarantining equipment.

When answering the above, the AVI will verify:

- How fixed lifting equipment is maintained
- The chain register/lifting appliance register is up to date
- A colour-coding or alternative system is in use to identify inspected lifting equipment
- Check that it is being adhered to, i.e. no evidence of wrong colour/non-coded equipment in use, that non-coded/wrong colour equipment is segregated and access to same denied.
- The programme for routine testing, i.e. start-up, daily, weekly and monthly checks.
- Items such as cranes, derricks and pad eyes are clearly marked with their SWL.
- Test certificates are onboard for all items of lifting equipment including chain blocks, strops, ropes, shackles (NB: may have a batch certificate for small shackles).

(Ref ILO Con No 152 1979 Art 25(2))

16.5	Does the vessel have an approved cargo securing manual?	<u>Yes</u>	No	NA	NS	
------	---	------------	-----------	----	----	---

Verify that the manual carried onboard is certified by the Administration, i.e. classification society or flag state.

If cargo securing software is in place, comment on the type and date of last use.

When answering the above, the AVI will verify:

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- That the manual carried onboard is certified by the Administration, i.e. classification society or flag state
- If cargo securing software is in place, the type and date of last use.

16.6	Additional Section 16 comments?	Yes	No			
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17 Construction and Stability

17.1	Is a survey report file maintained onboard?	Yes	No	NS	
------	---	-----	----	----	--

Comment on any anomalies regarding the information contained in the file which should include the following:

- Previous repair history
- Inspections by vessel personnel of structural deterioration and leakages detected in bulkheads and pipes
- Condition of coatings and/or corrosion prevention systems
- A summary of the results of the tank coating surveys, including date conducted and tanks inspected.

When answering the above, the AVI will verify the information contained in the file which should include the following:

- Previous repair history
- Inspections by vessel personnel of structural deterioration and leakages detected in bulkheads and pipes
- Condition of coatings and/or corrosion prevention systems
- A summary of the results of the tank coating surveys, including date conducted and tanks inspected.


17.2	Is there an approved stability book?	Yes	No	NA	NS	
------	--------------------------------------	-----	----	----	----	--

Note: damage stability is required for vessels >3000 GT.

Verify that the approved stability book is available including damage stability.

Note that damage stability is required for vessels >3000 GT.

When answering the above, the AVI will verify that the approved stability book is available including damage stability.

17.3	Are procedures in place to govern vessel stability through all stages of vessel operations?	Yes	No	NA	NS	
------	---	-----	----	----	----	---

Verify:

- The officer in charge of ballast transfer operations understands the number of tanks that may be slack for the vessel to remain stable
- Damage control plans are clearly exhibited on each deck and booklets containing this information is available to ships officers
- How the officer in charge can establish stability conditions without extensive calculations
- If a stability calculation program is used, that it has classification society approval
- For vessels without a stability program, records should be kept of previous loading conditions and stability calculations i.e. spreadsheet based.

When answering the above, the AVI will verify:

- The officer in charge of ballast transfer operations understands the number of tanks that may be slack for the vessel to remain stable
- Damage control plans are clearly exhibited on each deck and booklets containing this information is available to ships officers
- How the officer in charge can establish stability conditions without extensive calculations
- If stability calculation program is used, that it has classification society approval
- For vessels without a stability program, records should be kept of previous loading conditions and stability calculations i.e. spreadsheet based.

17.4	Additional Section 17 comments?	Yes	No			
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Supplement 1 Dynamic Positioning (DP) Vessels

S1.1	Is the vessel's DP class notation free from any class-imposed restrictions?	<u>Yes</u>	No		NS	
-------------	---	------------	-----------	--	----	--

Note: Verbal confirmation is insufficient, the most recent class status report or survey status report should be referenced to determine the notation and whether or not there are any imposed restrictions.

Provide:

- The vessel's DP class notation
- Any DP class-imposed restrictions

Verbal confirmation is insufficient, the most recent class status report or survey status report should be referenced to determine the notation and whether or not there are any imposed restrictions.

When answering the above, the AVI will verify:

- The vessel's DP class notation
- Any DP class-imposed restrictions

S1.2	Have DP trials been carried out within the past 12 months and is there a copy of the trials report onboard?	<u>Yes</u>	No		NS	
-------------	---	------------	-----------	--	----	--

Note: A classification society annual survey or annual inspection does not fulfil the requirement of this question.

The term 'DP trials' means DP annual trials programme. This is defined in detail within IMCA M190 – Guidance for developing and conducting DP annual trials programmes. A DP annual trials programme would typically be a series of tests each with their own test sheet containing purpose of test, methodology for conducting the test, expected results, actual results, comments and a sign off section for the individual(s) witnessing the trial. Any findings of the programme should be clear, as should the close out actions. IMCA M190 Appendix 1 provides a detailed example of DP annual trials report.

Verify that:

- Appropriate corrective action is being or has been taken on any findings. Actions not closed out are to be carried forward to this report under the original date.
- The trials report is available onboard and if not state the reasons why

Provide the date of the last trials.

A classification society annual survey or annual inspection does not fulfil the requirement of this question.

The term 'DP trials' means DP annual trials programme. This is defined in detail within IMCA M190 – Guidance for developing and conducting DP annual trials programmes. A DP annual trials programme would typically be a series of tests each with their own test sheet containing purpose of test, methodology for conducting the test, expected results, actual results, comments and a sign off section for the individual(s) witnessing the trial. Any findings of the programme should be clear, as should the close out actions. IMCA M190 Appendix 1 provides a detailed example of DP annual trials report.

When answering the above, the AVI will verify that:

- Appropriate corrective action is being or has been taken on any findings. Actions not closed out are to be carried forward to this report under the original date.
- The trials report is available onboard and if not state the reasons why
- The date of the last trials

S1.3	Have the DP annual trials been witnessed by an IMCA Accredited DP Practitioner?	Yes	No			
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Note: IMCA recommends that the independent witness is accredited according to the IMCA DP Practitioner Accreditation Scheme.

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IMCA recommends that the independent witness is accredited according to the IMCA DP Practitioner Accreditation Scheme.

(Ref. IMCA M190 Section 5.3)

S1.4	Have the DP annual trials been carried out in accordance with the current version of IMCA M190 - Code of Practice for Developing and Conducting DP Annual Trials Programmes?	Yes	No	NA		
------	--	-----	----	----	--	--

Note: This refers to whether the annual trials have been carried out in-line with IMCA M190. Trials can be undertaken:

- by a third party onboard the vessel recording the results of the annual trials
- remotely using a Class-approved digital data acquisition application to collect and report the results

Comment on whether trials were undertaken by a third party onboard or using a Class-approved digital data acquisition application.

When answering the above, the AVI will verify that DP annual trials have been carried out in accordance to IMCA M190. They will indicate whether a third party was onboard the vessel recording the results of the annual trials or if the results were collected remotely using a Class-approved data acquisition application as described in IMCA M190 Section 7.

(Ref. IMCA M190 – Code of practice for developing and conducting DP annual trials programmes)

S1.5	Regarding the vessel’s FMEA, are all the below criteria satisfied?	Yes	No	NA	NS	
------	--	-----	----	----	----	--

Note: If the FMEA is over five years old and there is no review evidence available, then a finding should be generated. Review evidence should be in the form of an updated FMEA in line with five-yearly periodical trials (as defined by IMCA M166 section 3.4).

In summary, an FMEA should be reviewed for accuracy and completeness every five years. Even if there are no changes to the document, evidence of the review process should be sought.

IMO MSC.1/Circ. 1580 – Guidelines for Vessels and Units with DP systems – section 5 states requirement and revalidation of analysis/testing of FMEAs. IMCA M166 elaborates on these subjects further.

Verify that:

- Appropriate corrective action is being or has been taken on any findings identified in the DP FMEA proving trials report. Actions not closed out are to be carried forward to this report under the original date.
- The DP FMEA and proving trials is class approved and that it shows periodic tests have been performed after five years which consist of a complete test of all systems and components and the ability to keep position after single failures associated with the assigned equipment class (FMEA proving trials).

Comment on any anomalies regarding the following:

- The latest revision of the DP FMEA proving trials report is onboard.
- The key DP personnel have signed a statement that says they have read and understood the vessel’s FMEA.
- The DP FMEA document is within five years since its first publication for use.
- Any updates made to the document

If any of the above notes cannot be answered, then a finding should be recorded, and explanatory comments entered.

Note: If the FMEA is over five years old and there is no review evidence available, then a finding should be generated. Review evidence should be in the form of an updated FMEA in line with five-yearly periodical trials (as defined by IMCA M166 section 3.4).

In summary, an FMEA should be reviewed for accuracy and completeness every five years. Even if there are no changes to the document, evidence of the review process should be sought.

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IMO MSC.1/Circ. 1580 – Guidelines for Vessels and Units with DP systems – section 5 states requirement and revalidation of analysis/testing of FMEAs. IMCA M166 elaborates on these subjects further.

When answering the above, the AVI will verify that:

- Appropriate corrective action is being or has been taken on any findings identified in the DP FMEA proving trials report. Actions not closed out are to be carried forward to this report under the original date.
- The DP FMEA and proving trials is class approved and that it shows periodic tests have been performed after five years which consist of a complete test of all systems and components and the ability to keep position after single failures associated with the assigned equipment class (FMEA proving trials).
- The latest revision of the DP FMEA proving trials report is onboard.
- The key DP personnel have signed a statement that says they have read and understood the vessel’s FMEA.
- The DP FMEA document is within five years since its first publication for use.
- Any updates made to the document

If any of the above notes cannot be answered, then a finding is recorded.

S1.6	Does the vessel have suitable DP checklists?	Yes	No		NS	
------	--	-----	-----------	--	----	--

Note: The AVI should seek object evidence that these checklists are being used prior to, or during DP operations.

Verify that the following are available, and in use:

- Field arrival checklist
- DP watch handover checklist
- ER DP checklist

Note: The AVI will seek object evidence that these checklists are being used prior to, or during DP operations.

When answering the above, the AVI will verify that the following are available, and in use:

- Field arrival checklist
- DP watch handover checklist
- ER DP checklist

S1.7	Does the vessel have onboard a DP operations manual?	Yes	No		NS	
------	--	-----	-----------	--	----	--

Note: DP operations manual contents are outlined in IMCA M109 – A guide to DP-related documentation for DP vessels.

In addition to IMCA M109, The IMO MSC.1/Circ. 1580: Guidelines for vessels and units with DP systems, section 4 (applicable to all DP vessels regardless of the year of build) states the following checklists, test procedures, trials and instructions that should be included within the vessel-specific DP operations manuals:

1. location checklist
2. watchkeeping checklist
3. DP operating instructions
4. annual tests and procedures
5. initial and periodical (five-year) tests and procedures
6. examples of tests and procedures after modifications and non-conformities
7. blackout recovery procedure
8. list of critical components
9. examples of operating modes
10. decision support tools such as ASOG

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11. capability plots

Verify that:

- The manual is onboard and if not state the reason why
- The DP operations manual is specific to the vessel
- Key DP personnel have signed a statement to say they have read and understood the DP operations manual.

Note: DP operations manual contents are outlined in IMCA M109 – A guide to DP-related documentation for DP vessels.

In addition to IMCA M109, The IMO MSC.1/Circ. 1580: Guidelines for vessels and units with DP systems, section 4 (applicable to all DP vessels regardless of the year of build) states the following checklists, test procedures, trials and instructions that should be included within the vessel-specific DP operations manuals:

1. location checklist
2. watchkeeping checklist
3. DP operating instructions
4. annual tests and procedures
5. initial and periodical (five-year) tests and procedures
6. examples of tests and procedures after modifications and non-conformities
7. blackout recovery procedure
8. list of critical components
9. examples of operating modes
10. decision support tools such as ASOG
11. capability plots

When answering the above, the AVI will verify that:

- The manual is onboard and if not state the reason why
- The DP operations manual is specific to the vessel
- Key DP personnel have signed a statement to say they have read and understood the DP operations manual.

S1.8	Do the DPOs have access to the DP capability plots?	Yes	No	NA	NS	
------	---	-----	-----------	----	----	--

Note: The worst-case failure should be easily identifiable from brief review of the DP system FMEA/DP operations manual. It is important that the DP capability plots demonstrate capability of the vessel in both intact state and post worst-case failure. The capability plots should represent the environmental conditions in the area of operation and the mission specific operational condition of the vessel. This is a specific requirement of IMO MSC.1/Circ. 1580 – Guidelines for vessels and units with DP systems – and is applicable to all DP vessels regardless of year of build.

Verify that:

- The plots are available onboard and if not state the reason why
- The DP capability plots show the worst-case failure (theoretical and practical footprints using IMCA M140 – Specification for DP capability plots).

Comment on whether the vessel has been modified which may affect the validity of the plots.

Note that the worst-case failure should be easily identifiable from brief review of the DP system FMEA/DP operations manual. It is important that the DP capability plots demonstrate capability of the vessel in both intact state and post worst-case failure. The capability plots should represent the environmental conditions in the area of operation and the mission specific operational condition of the vessel. This is a specific requirement of IMO MSC.1/Circ. 1580 – Guidelines for vessels and units with DP systems – and is applicable to all DP vessels regardless of year of build.

When answering the above, the AVI will verify that:

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- The plots are available onboard and if not state the reason why
- The DP capability plots show the worst-case failure (theoretical and practical footprints using IMCA M140 – Specification for DP capability plots).
- Whether the vessel has been modified which may affect the validity of the plots

S1.9	Do the DPOs have the appropriate and valid DP qualification?	Yes	No		NS	
------	--	-----	----	--	----	--

Note: The qualification of the DPO will be dependent on the requirement of the vessel operator.

Comment on the number of qualified DP operators (DPOs) and state whether DP familiarisations are carried out for Bridge and ER new personnel.

Note: The qualification of the DPO will be dependent on the requirement of the vessel operator.

When answering the above, the AVI will verify the number of qualified DP operators (DPOs) and state whether DP familiarisations are carried out for Bridge and ER new personnel.

(Ref IMCA M117 – Code of practice for the training and experience of key DP personnel – sections 7 and 8 for a detailed guide to the qualification and experience requirements of key DP personnel)

S1.10	Do the key DP personnel take part in onboard training and drills involving various DP scenarios?	Yes	No		NS	
-------	--	-----	----	--	----	--

Note: Emergency drill scenarios should be developed from the experience gained during the conduct of annual DP trials and FMEA reviews undertaken onboard the vessel. The annual trials and revised FMEA documents provide the background for specific vessel drills and these should always be readily available for information and reference by operational personnel. Drill scenarios can also be developed from DP station keeping events reported as part of the IMCA DP reporting scheme.

Drills should be relevant to operational activity (e.g. pipelaying, drilling, diving, floatel, etc.) and include scenarios based on the emergency procedures detailed in the DP system operating manual.

Provide details of onboard training and drills.

Note: Emergency drill scenarios should be developed from the experience gained during the conduct of annual DP trials and FMEA reviews undertaken onboard the vessel. The annual trials and revised FMEA documents provide the background for specific vessel drills and these should always be readily available for information and reference by operational personnel. Drill scenarios can also be developed from DP station keeping events reported as part of the IMCA DP reporting scheme.

Drills should be relevant to operational activity (e.g. pipelaying, drilling, diving, floatel, etc.) and include scenarios based on the emergency procedures detailed in the DP system operating manual.

When answering the above, the AVI will verify details of onboard training and drills.

(Ref IMCA M117 – Code of practice for the training and experience of key DP personnel)

S1.11	Does the vessel maintain a DP incident log?	Yes	No	NA	NS	
-------	---	-----	----	----	----	--

Verify that:

- DP events and incidents are recorded
- Subsequent required actions are closed out

When answering the above, the AVI will verify that:

- DP events and incidents are recorded
- Subsequent required actions are closed out

S1.12	Are the vessel's DP events reported to IMCA in accordance with the confidential DP Event Reporting Scheme?	Yes	No		NS	
-------	--	-----	----	--	----	--

Note: A 'No' does not generate a finding.

The vessel may have an IMCA certificate of participation for the IMCA DP event reporting scheme.

Verify that:

- DP events are reported as part of the company SMS

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- The company report the DP events to IMCA. If not, comment on why DP events are not reported to IMCA – confidential DP event reporting helps the industry learn lessons and contributes to IMCA documents and bulletins.

A ‘No’ does not generate a finding.

The vessel may have an IMCA certificate of participation for the IMCA DP event reporting scheme.

When answering the above, the AVI will verify that:

- DP events are reported as part of the company SMS
- The company report the DP events to IMCA. If not, comment on why DP events are not reported to IMCA – confidential DP event reporting helps the industry learn lessons and contributes to IMCA documents and bulletins.

S1.13	Is the DP equipment contained in a planned maintenance system?	Yes	No		NS	
-------	--	-----	----	--	----	--

Note: Specifically, the planned maintenance system should contain all the main systems and sub-systems making up the overall DP system. The DP FMEA is a good source to identify the systems and subsystems relevant to the DP system.

Verify that:

- The DP planned maintenance system is up to date
- Any defective DP related equipment is recorded

Specifically, the planned maintenance system should contain all the main systems and sub-systems making up the overall DP system. The DP FMEA is a good source to identify the systems and subsystems relevant to the DP system.

When answering the above, the AVI will verify that:

- The DP planned maintenance system is up to date
- Any defective DP related equipment is recorded

S1.14	Are activity specific operating guidelines in place and available?	Yes	No		NS	
-------	--	-----	----	--	----	--

Note: Decision support tools such as ASOG are a requirement of the IMO MSC.1/Circ. 1580 – Guidelines for vessels and Units with DP systems – and is applicable to all DP vessels regardless of year of build. Decision support tools should be clearly visible to the DPO and engine room watchkeepers.

Comment if there is no evidence of an ASOG, then state what other decision support tools are available to define the same limit of DP operations.

Decision support tools such as ASOG are a requirement of the IMO MSC.1/Circ. 1580 – Guidelines for vessels and Units with DP systems – and is applicable to all DP vessels regardless of year of build. Decision support tools should be clearly visible to the DPO and engine room watchkeepers.

(Ref IMCA M220 – Guidance on operational planning)

S1.15	Does the vessel have a DP data log?	Yes	No		NS	
-------	-------------------------------------	-----	----	--	----	--

Note: this can be electronic, video, voice tape, DP event logbook, DP incident logbook, permanent recorded alarms, screenshots and any other.

Most DP control systems have a data logging facility with sufficient memory for at least a few days. If there is no additional designated electronic data logging facility that records data from the DP control system and power system, there should be a process for recording actions, events and incidents.

Verify that records are retained onboard for a period specified by the vessel operator.

Note: this can be electronic, video, voice tape, DP event logbook, DP incident logbook, permanent recorded alarms, screenshots and any other.

Most DP control systems have a data logging facility with sufficient memory for at least a few days. If there is no additional designated electronic data logging facility that records data from the DP control system and power system, there should be a process for recording actions, events and incidents.

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When answering the above, the AVI will verify that records are retained onboard for a period specified by the vessel operator.

S1.16	Additional Supplement comments?	Yes	No			
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Supplement 2 Anchor Handling Vessels (AHVs)

S2.1	Are the anchor handling winches appropriately certified?	Yes	No		NS	
-------------	--	-----	-----------	--	----	--

Verify the following:

- Check guards fitted.
- Emergency stops fitted/tested.

Comment on bollard pull certification records.

Provide date of last test.

When answering the above, the AVI will verify the following:

- Check guards fitted.
- Emergency stops fitted/tested.
- Bollard pull certification records and date of last test

S2.2	Are the anchor handling equipment maintenance records up to date?	Yes	No		NS	
-------------	---	-----	-----------	--	----	--

Verify by visual inspection the maintenance records relating to all anchor handling equipment including wires.

Comment if any mission-critical equipment is reported to be defective/out of action.


When answering the above, the AVI will verify:

- By visual inspection the maintenance records relating to all anchor handling equipment including wires
- If any mission-critical equipment is reported to be defective/out of action

S2.3	Is a clear deck policy in place for anchor handling?	Yes	No			
-------------	--	-----	-----------	--	--	--


Verify that this policy includes measures to reduce the risk of snapback, recoil and personal injury to as low as reasonably practicable.

When answering the above, the AVI will verify that this policy includes measures to reduce the risk of snapback, recoil and personal injury to as low as reasonably practicable.

S2.4	Is the anchor handling deck area clearly visible from the bridge?	Yes	No			
-------------	---	-----	-----------	--	--	---


Verify that there is adequate lighting to cover the work areas.

When answering the above, the AVI will verify that there is adequate lighting to cover the work areas.

S2.5	Is the deck area sheathing free from any significant damage?	Yes	No		NS	
-------------	--	-----	-----------	--	----	---

Verify that the sheathing does not present a potential trip hazards.

When answering the above, the AVI will verify that the sheathing does not present a potential trip hazards.

S2.6	Are protected areas provided for crew working on the deck?	Yes	No		NS	
-------------	--	-----	-----------	--	----	---

Comment on the provision for deck crew safety lines.

...

S2.7	Is there a notice posted on the bridge for emergency release procedures?	Yes	No		NS	
-------------	--	-----	-----------	--	----	--

Note: Procedures should include the operations of winch stops, wire release and associated system shutdown. There should be ongoing proving of functionality and crew awareness.

Comment on the frequency of the tests.

Provide date of last emergency release and stops test.


Procedures should include the operations of winch stops, wire release and associated system shutdown. There should be ongoing proving of functionality and crew awareness.

When answering the above, the AVI will verify:

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- The frequency of the tests
- The date of the last emergency release and stops test

S2.8	Are there life-saving appliances for the crew working on the stern?	Yes	<u>No</u>		NS	
------	---	-----	-----------	--	----	---

Comment on numbers, type and suitability of LSA.

When answering the above, the AVI will verify the numbers, type and suitability of LSA.

S2.9	Are there records held onboard which confirm that winch operators have been formally trained?	Yes	<u>No</u>		NS	
------	---	-----	-----------	--	----	--

Verify the training records for the winch operators.

When answering the above, the AVI will verify the training records for the winch operators.

S2.10	Are the maximum acceptable vertical and horizontal transverse forces defined and posted?	<u>Yes</u>	<u>No</u>		NS	
-------	--	------------	-----------	--	----	--

Comment on ease of access to this information.

When answering the above, the AVI will verify the ease of access to this information.


S2.11	Additional Supplement comments?	Yes	No			
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Supplement 3 Offshore Supply Vessels (OSVs)

Cargo Handling

S3.1	Is PPE available for crew appropriate to the types of cargo working conditions?	Yes	No		NS	
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...
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S3.2	Are there cargo discharge rates available for all classes of liquid cargo?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	--

Verify that the discharge rates state head and discharge pressures.

When answering the above, the AVI will verify that the discharge rates state head and discharge pressures.


S3.3	Is there a cargo plan identifying all classes of permitted cargo, including dangerous goods?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	--

Verify that:

- The cargo is loaded in accordance with loading plan.
- The vessel has adequate procedures and training, where appropriate, for handling dangerous goods, i.e. PPE, data sheets.

When answering the above, the AVI will verify that:

- The cargo is loaded in accordance with loading plan.
- The vessel has adequate procedures and training, where appropriate, for handling dangerous goods, i.e. PPE, data sheets.

S3.4	Is there appropriately certified securing equipment available?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	---

Comment on the availability of securing points and their condition.


When answering the above, the AVI will verify the availability of securing points and their condition.

S3.5	Is the relevant industry guidance onboard for the safe management and handling of cargo?	Yes	No		NS	
------	--	-----	-----------	--	----	--

Refer to cargo securing manual (see Section 3 – Certification and publications).

Refer to cargo securing manual (see Section 3 – Certification and publications).

Cargo Deck Area

S3.6	Is the deck area clearly visible from the bridge control position?	Yes	No			
------	--	-----	-----------	--	--	---

Note: An area of deck is usually designated and marked out for hazardous cargo.

Comment on:


- CCTV coverage of areas which are not clearly visible
- Whether deck markings are clear and visible from the bridge

Provide the deck loading capacity.

Note: An area of deck is usually designated and marked out for hazardous cargo.

When answering the above, the AVI will verify:

- There is CCTV coverage of areas which are not clearly visible
- Whether deck markings are clear and visible from the bridge
- The deck loading capacity


S3.7	Is there adequate lighting of the deck area?	Yes	No		NS	
------	--	-----	-----------	--	----	---

NS does not generate a finding.

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NS does not generate a finding.

S3.8	Is the deck sheathing area free from damage that could cause potential hazards to personnel?	Yes	No		NS	
------	--	-----	----	--	----	---


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S3.9	Is cargo deck perimeter free from projections likely to snag cargo while being transferred?	Yes	No			
------	---	-----	----	--	--	---

...

...


S3.10	Are crash barriers and guardrails free from potentially hazardous damage and are they fitted for optimum effect?	Yes	No		NS	
-------	--	-----	----	--	----	---

Safe areas should not be obstructed by pipelines, hatches, etc.

Verify that there is personnel access to safe areas beyond crash barriers.

Safe areas should not be obstructed by pipelines, hatches, etc.

When answering the above, the AVI will verify that there is personnel access to safe areas beyond crash barriers.


S3.11	Is there a safe means of access to manifolds?	Yes	No	NA	NS	
-------	---	-----	----	----	----	--

Comment on whether:

- Manifolds are blanked or capped
- Connections are clearly marked/colour coded.


When answering the above, the AVI will verify that:

- Manifolds are blanked or capped
- Connections are clearly marked/colour coded.

S3.12	Is deck pipe work free from damage and heavy corrosion?	Yes	No	NA	NS	
-------	---	-----	----	----	----	---

Verify that pipelines are free of soft patches or other temporary repairs.

When answering the above, the AVI will verify that pipelines are free of soft patches or other temporary repairs.

S3.13	Are tugger winches and wires certificated and well lubricated?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

The AVI should be provided with sufficient wire to make assessment of overall wire condition.

The AVI should be provided with sufficient wire to make assessment of overall wire condition.

Cargo Tanks

S3.14	Are cargo tank inspection records available?	Yes	No	NA	NS	
-------	--	-----	----	----	----	--


Comment on frequency of inspections and any documented coating/internal damage.

When answering the above, the AVI will verify the frequency of inspections and any documented coating/internal damage.

S3.15	Are there documented procedures for the sampling and analysis of cargo tank contents?	Yes	No	NA	NS	
-------	---	-----	----	----	----	--

Comment on the sampling routine for fresh/potable water and fuel tank analysis.

When answering the above, the AVI will verify the sampling routine for fresh/potable water and fuel tank analysis.

S3.16	Are the main and stand-by agitators/recirculation system for oil-based mud tanks reported to be operational?	Yes	No	NA		
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Verify that guards are fitted/available to install on sharp edged mud agitators to protect tank cleaning personnel from injury.

Comment on the last date of system operation and if there were any documented problems.


When answering the above, the AVI will verify:

- That guards are fitted/available to install on sharp edged mud agitators to protect tank cleaning personnel from injury
- The last date of system operation and if there were any documented problems

S3.17	Are there procedures for the cleaning of cargo tanks to prevent contamination?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	--

Comment on the procedures for the cleaning of cargo tanks and how contamination is prevented.

When answering the above, the AVI will verify the procedures for the cleaning of cargo tanks and how contamination is prevented.

S3.18	Are the cargo tanks appropriately identified and marked with safe working pressure?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	---

Verify that tank identification and location match the tank plan.

When answering the above, the AVI will verify tank identification and location match the tank plan.


S3.19	Is there safe access to the cargo tanks?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

Verify that:

- Lighting and tank access is adequate
- Access and egress routes to tanks for cleaning are clearly indicated and described in procedures
- The permit to work regime includes requirements for confined space entry and PPE


When answering the above, the AVI will verify that:

- Lighting and tank access is adequate
- Access and egress routes to tanks for cleaning are clearly indicated and described in procedures
- The permit to work regime includes requirements for confined space entry and PPE

S3.20	Are the cargo tank system valves reported to be operational?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

Provide the date of last system pressure test.

When answering the above, the AVI will verify the date of last system pressure test.

S3.21	Are the dry cargo tank systems fitted with operational pressure gauges and relief valves?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	---

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S3.22	Additional Supplement comments?	Yes	No			
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Supplement 4 LNG-fuelled Vessels

S4.1	Does the crew hold a flag state recognised liquefied gas tanker training programme certificate and have they undergone shipboard gas related basic safety training?	Yes	No		NS	
------	---	-----	-----------	--	----	--

Officers and ratings assigned duties and responsibilities related to LNG equipment on the vessel shall hold a certificate in basic training for liquefied gas tanker operations. (STCW Reg V/1-2.1).

Officers and ratings assigned duties and responsibilities related to LNG equipment on the vessel shall hold a certificate in basic training for liquefied gas tanker operations. (STCW Reg V/1-2.1).

(Ref IMO MSC 285(86) Chapter 8.2.1 – Gas related training)

S4.2	Have the crew members with direct responsibility for the operation of gas related equipment received special training?	Yes	No			
------	--	-----	-----------	--	--	--

...

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(Ref IMO MSC 285(86) Chapter 8.2.1 – Gas related training)

S4.3	Does the vessel have a bespoke training/exercise programme for the gas installations?	Yes	No			
------	---	-----	-----------	--	--	--


...

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S4.4	Are gas related emergency exercises conducted at regular intervals and are they documented?	Yes	No		NS	
------	---	-----	-----------	--	----	--


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S4.5	Are the tools and equipment for working on or near the gas zones intrinsically safe and non-sparking?	Yes	No		NS	
------	---	-----	-----------	--	----	---


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S4.6	Are all the LNG bunkering hoses appropriately certified and in good condition?	Yes	No		NS	
------	--	-----	-----------	--	----	---

...

...

S4.7	Are all the gas hazardous area ventilation fans operational?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	---


...

...

S4.8	Does the vessel carry a copy of the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code)?	Yes	No		NS	
------	--	-----	-----------	--	----	--

...

...


S4.9	Are all the low-pressure gas pipes on deck and in the machinery space adequately protected against accidental impact?	Yes	No		NS	
------	---	-----	-----------	--	----	---

...


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S4.10	Are the gas high pressure pipes installed and protected so as to minimise the risk to personnel in case of rupture?	Yes	No	NA	NS	
-------	---	-----	----	----	----	---

...
...

S4.11	Are the LNG bunkering station drip trays thermally insulated and fitted with a drain valve to enable rainwater to be drained over the ship's side?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

...
...

S4.12	Is the gas detection system for all gas hazardous spaces functioning and tested as part of the planned maintenance routine?	Yes	No	NA	NS	
-------	---	-----	----	----	----	---

...
...

S4.13	Additional Supplement comments?	Yes	No			
-------	---------------------------------	-----	----	--	--	--

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Supplement 5 Standby Vessels (SBVs) (Emergency Response Rescue Vessels (ERRVs))

S5.1	Has the SBV been surveyed for compliance with relevant industry regulations/ guidelines?	Yes	No			
------	--	-----	-----------	--	--	--

Verify that a copy of relevant industry guidelines/regulations are onboard.

When answering the above, the AVI will verify that a copy of relevant industry guidelines/regulations are onboard.

S5.2	Certificate of survey available onboard and valid?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	--

Certificate should be in authorised format with annual endorsements according to national requirements.

Provide details of:

- Any non-compliance of SBV noted at the last survey and outstanding at time of inspection
- Any endorsements on the survey certificate

Certificate should be in authorised format with annual endorsements according to national requirements.

When answering the above, the AVI will provide details of:

- Any non-compliance of SBV noted at the last survey and outstanding at time of inspection
- Any endorsements on the survey certificate


S5.3	Is the SBV operating in accordance with relevant industry requirements?	Yes	No			
------	---	-----	-----------	--	--	--

Verify that:

- Vessel crew are aware of industry guidelines/regulations.
- Crew training certification meets the relevant national requirements.

When answering the above, the AVI will verify that:

- Vessel crew are aware of industry guidelines/regulations.
- Crew training certification meets the relevant national requirements.


S5.4	Are the survivor areas clean, tidy and ready for immediate use?	Yes	No	NA	NS	
------	---	-----	-----------	----	----	---

Areas include:

- Decontamination area.
- Survivor reception area.
- Treatment area.
- Recovery area (survivor bunks made-up ready for use).
- Sanitary area – also check skin degreaser and soap available.

Areas include:

- Decontamination area.
- Survivor reception area.
- Treatment area.
- Recovery area (survivor bunks made-up ready for use).
- Sanitary area – also check skin degreaser and soap available.

S5.5	Are the survivor ready use provisions available?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	---

Provisions include:


- Instant soup or stew reserved for survivors' use.
- Concentrated fruit glucose cordials.
- Supply of warm/hot drinking water from fitted water boilers located in survivor spaces.
- Containers/cups to be available.

Provisions include:

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- Instant soup or stew reserved for survivors' use.
- Concentrated fruit glucose cordials.
- Supply of warm/hot drinking water from fitted water boilers located in survivor spaces.
- Containers/cups to be available.


S5.6	Are all means of recovering survivors/casualties in good order?	Yes	No	NA	NS	
------	---	-----	----	----	----	---

Verify that:

- All crew are provided with sufficient PPE appropriate to normal and emergency duties.
- Personal protective equipment is provided for all FRC crew, including head protection.
- Safety harnesses for use in rescue zones have strops suitably sized.
- The condition of spare fuel storage cans (where used) and storage location is satisfactory
- Launching apparatus and deck cranes are in good condition and regularly tested (for example: cranes used for Dacon Scoop (if fitted) subject to COSWP Chapter 17 testing rules; FRC/DC davits are subject to 2.2 x SWL static tests; weather limitations may apply in some areas to onboard rescue and recovery equipment).
- Regular drills both with the assigned installation and independently, are conducted. These drills should test all equipment associated with survivor recovery in realistic scenarios.

When answering the above, the AVI will verify that:

- All crew are provided with sufficient PPE appropriate to normal and emergency duties.
- Personal protective equipment is provided for all FRC crew, including head protection.
- Safety harnesses for use in rescue zones have strops suitably sized.
- The condition of spare fuel storage cans (where used) and storage location is satisfactory
- Launching apparatus and deck cranes are in good condition and regularly tested (for example: cranes used for Dacon Scoop (if fitted) subject to COSWP Chapter 17 testing rules; FRC/DC davits are subject to 2.2 x SWL static tests; weather limitations may apply in some areas to onboard rescue and recovery equipment).
- Regular drills both with the assigned installation and independently, are conducted. These drills should test all equipment associated with survivor recovery in realistic scenarios.


S5.7	Are sufficient suitable medical stores available and regularly checked?	Yes	No	NA	NS	
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Verify that:

- An annual certificate of inspection of medical inventory by medical equipment supplier is available
- Medical logbook is available
- Records are kept of monthly stores checks, system in place to prevent stocking of expired medicines.

When answering the above, the AVI will verify that:

- An annual certificate of inspection of medical inventory by medical equipment supplier is available
- Medical logbook is available
- Records are kept of monthly stores checks, system in place to prevent stocking of expired medicines.

S5.8	Are normal and emergency lighting systems for search, over-side, deck and accommodation operational?	Yes	No	NA	NS	
------	--	-----	----	----	----	---

Verify that:

- Deck lighting (main and 24 volt) is operational
- Searchlights operational range and radius meets guidelines standard
- Internal emergency lighting in survivors' accommodation is satisfactory.

When answering the above, the AVI will verify that:

- Deck lighting (main and 24 volt) is operational

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- Searchlights operational range and radius meets guidelines standard
- Internal emergency lighting in survivors’ accommodation is satisfactory.

S5.9	Are rescue guidance and instruction publications readily available?	Yes	No	NA	NS	
------	---	-----	----	----	----	--

Note: Appropriate publications giving guidance on the management of emergency response for offshore installations and dealing with offshore emergencies. The SBV should be provided by client with, for example, extracts from safety case and installation ERP relevant to the operation of the vessel.

Verify that operator’s instructions are provided covering response of the SBV in an incident.

Note: Appropriate publications giving guidance on the management of emergency response for offshore installations and dealing with offshore emergencies. The SBV should be provided by client with, for example, extracts from safety case and installation ERP relevant to the operation of the vessel.

When answering the above, the AVI will verify that operator’s instructions are provided covering response of the SBV in an incident.

S5.10	Is the ongoing, onboard training programme being followed?	Yes	No	NA	NS	
-------	--	-----	----	----	----	--

Verify that the whole crew is following an onboard training course.

When answering the above, the AVI will verify that the whole crew is following an onboard training course.


S5.11	Are there procedures in place to identify any prevention of fire and emergency escape, or rescue and recovery performance standards for the relevant installation(s)?	Yes	No	NA	NS	
-------	---	-----	----	----	----	--

Verify that a copy of the performance standards is onboard.

Comment on if the vessel and its crew have been tested against the performance standard and relevant reports/results available onboard.

When answering the above, the AVI will verify that:

- The vessel and its crew have been tested against the performance standard and relevant reports/results available onboard
- A copy of the performance standards is onboard

S5.12	Does the helicopter winching zone have appropriate markings and non-slip coatings?	Yes	No	NA	NS	
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S5.13	Additional Supplement 5 comments?	Yes	No			
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Supplement 6 Survey Vessels (Including Offshore Seismic Survey)**General**

S6.1	Is there a risk assessment for the survey equipment preparation and streaming area/slipway/recovery position/back deck?	Yes	No		NS	
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S6.2	Does the risk assessment include all relevant survey equipment carried onboard including new/recently installed systems?	Yes	No		NS	
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S6.3	Is there sufficient specialist safety equipment available in accordance with the risk assessment requirements?	Yes	No		NS	
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Verify:

- The availability of life jackets/safety harnesses/headgear/noise protection/non-slip and protective footwear.
- There is safe and secure footing in working areas.
- There is adequate lighting.
- The availability of appropriate PPE for wet/cold conditions.
- That deck areas are well marked and clear of obstructions and maintained in a clean condition.


When answering the above, the AVI will verify:

- The availability of life jackets/safety harnesses/headgear/noise protection/non-slip and protective footwear.
- There is safe and secure footing in working areas.
- There is adequate lighting.
- The availability of appropriate PPE for wet/cold conditions.
- That deck areas are well marked and clear of obstructions and maintained in a clean condition.

S6.4	Are deck and bulkhead safety/warning markings for survey equipment deployment/recovery in place?	Yes	No			
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S6.5	Is there visual (line of sight or CCTV) surveillance of the back deck/slipway/ streaming/recovery deck from the bridge?	Yes	No	NA	NS	
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S6.6	Is there a man overboard alarm system fitted and operational on the slipway/ streaming/back deck?	Yes	No	NA	NS	
------	---	-----	----	----	----	---

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S6.7	Is there adequate man overboard life-saving equipment fitted and operational?	Yes	No	NA	NS	
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This includes fall arrestors and portable railings where appropriate.


Comment on maintenance records for equipment.

This includes fall arrestors and portable railings where appropriate.

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When answering the above, the AVI will verify maintenance records for equipment.

S6.8	Are there adequate communications facilities available for bridge to back deck and surveyors?	Yes	No	NA	NS	
------	---	-----	-----------	----	----	---

Verify that the communications systems are operational.

If radio only **comment** on type, availability, number and coverage.

When answering the above, the AVI will verify that the communications systems are operational.

S6.9	If any lifting plant is associated with the survey equipment, is it in full working order?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	---

Comment on certification, test and maintenance records.


When answering the above, the AVI will verify certification, test and maintenance records.

S6.10	Does any lifting plant associated with the survey equipment have an appropriate planned maintenance system?	Yes	No	NA	NS	
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S6.11	Does any lifting plant associated with the survey equipment have the required certification?	Yes	No	NA	NS	
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S6.12	Are procedures and equipment available for the storage and maintenance of lithium batteries used in the survey equipment?	Yes	No	NA	NS	
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Verify that:

- There are suitable and sufficient warning notices/signs.
- Procedures include the safe handling of lithium batteries.
- Adequate PPE is available
- Procedures and equipment include provisions for emergencies involving lithium batteries
- Procedures include firefighting equipment/damaged battery handling PPE
- Batteries are stowed in their own dedicated locker
- Battery stowage space cannot be flooded

When answering the above, the AVI will verify that:

- There are suitable and sufficient warning notices/signs.
- Procedures include the safe handling of lithium batteries.
- Adequate PPE is available
- Procedures and equipment include provisions for emergencies involving lithium batteries
- Procedures include firefighting equipment/damaged battery handling PPE
- Batteries are stowed in their own dedicated locker
- Battery stowage space cannot be flooded

Seismic Cables

S6.13	Is firefighting equipment provided for survey equipment fire hazards?	Yes	No		NS	
-------	---	-----	-----------	--	----	---

Provisions include:

- Suitable extinguishing system, e.g. foam smothering, for oil-filled seismic streamers
- Smoke/heat detectors in high-risk areas
- Permits to work for hot work on back deck

Verify that:

- Test certificates for the foam compound are in date

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- Records of test of the system are appropriate

Provisions include:

- Suitable extinguishing system, e.g. foam smothering, for oil-filled seismic streamers
- Smoke/heat detectors in high-risk areas
- Permits to work for hot work on back deck

When answering the above, the AVI will verify that:

- Test certificates for the foam compound are in date
- Records of test of the system are appropriate


S6.14	Are procedures for reels and other equipment available to deal with oil leakage from streamer?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

Comment on:

- Availability of oil spill kit
- Procedures for handling spillages of streamer oil and hydraulic oil


When answering the above, the AVI will verify the:

- Availability of oil-spill kit
- Procedures for handling spillages of streamer oil and hydraulic oil.

S6.15	Are procedures and PPE available for the prevention of injury through electrocution from active electronic streamers?	Yes	No	NA	NS	
-------	---	-----	----	----	----	---

Verify that there are instructions to ensure power is removed from streamer before opening sections on deck.

When answering the above, the AVI will verify that there are instructions to ensure power is removed from streamer before opening sections on deck.

S6.16	Are procedures and PPE available for handling of streamers?	Yes	No	NA	NS	
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Verify that procedures are available for streamer handling in the following circumstances:

- black-out
- engine failure
- steering failure
- collapse of diverter equipment (as appropriate for multi-streamer vessels)
- tangled streamers (as appropriate for multi-streamer vessels)
- provision of fall arrestors, life jackets, personal locator beacons.

When answering the above, the AVI will verify that procedures are available for streamer handling in the following circumstances:

- black-out
- engine failure
- steering failure
- collapse of diverter equipment (as appropriate for multi-streamer vessels)
- tangled streamers (as appropriate for multi-streamer vessels)
- provision of fall arrestors, life jackets, personal locator beacons.

S6.17	Is there an emergency procedure and equipment available to enable the urgent release of cables (for seabed/ocean floor operations only)?	Yes	No	NA	NS	
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S6.18	Is there an emergency stop fitted for all winches and hydraulic equipment?	Yes	No	NA	NS	
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Verify that there is a record of testing for the emergency stop.

When answering the above, the AVI will verify that there is a record of testing for the emergency stop.

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Air Guns

S6.19	Are high pressure air warning lights/alarms fitted and in working order?	Yes	No	NA	NS	
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S6.20	Are high pressure air warning signs fitted in all appropriate access routes to the gun deck?	Yes	No	NA	NS	
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S6.21	Is there a lockout/tag out procedure for the HP system?	Yes	No	NA	NS	
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Comment on usage as shown in maintenance records.

When answering the above, the AVI will verify usage as shown in maintenance records.

S6.22	Are there procedures for protecting crew from electrocution from active or powered gun arrays under repair – lockout/tag-out system for gun array power?	Yes	No	NA	NS	
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S6.23	Is the HP manifold in the gun control cabin fitted with a cage/screen?	Yes	No	NA	NS	
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S6.24	Is there a system for testing the integrity of air compressor and HP air systems	Yes	No	NA	NS	
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Verify this includes:

- Periodic hydrostatic testing of equipment.
- Preventative maintenance plan.
- Operations of emergency stops.

When answering the above, the AVI will verify this includes:

- Periodic hydrostatic testing of equipment.
- Preventative maintenance plan.
- Operations of emergency stops.

S6.25	Is correct PPE and first aid equipment available for use on the gun deck?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	---

This should include:

- Fall arrestors, life jackets, personal locator beacons
- Provision of Jon buoys or life rafts
- Rules regarding ‘never working alone’ on the back decks

Verify that operation of the MOB alarm shuts off air to the guns.


This should include:

- Fall arrestors, life jackets, personal locator beacons
- Provision of Jon buoys or life rafts
- Rules regarding ‘never working alone’ on the back decks

When answering the above, the AVI will verify that operation of the MOB alarm shuts off air to the guns.

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S6.26	Are battery operated or pneumatic tools in use on the back decks?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	---

Comment on maintenance system and testing records.

When answering the above, the AVI will verify maintenance system and testing records.

S6.27	Are there procedures for protecting divers working in the vicinity by preventing the use of air guns?	Yes	No	NA	NS	
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S6.28	Are there procedures for ‘soft starts’ to minimise potential harm to marine mammals?	Yes	No	NA	NS	
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Workboats

S6.29	Are there procedures for transfer of personnel into survey workboats at sea?	Yes	No	NA	NS	
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Verify this includes:

- transfer only to occur if contractor and client agree
- transfer to comply with locally enforced regulations
- transfer only to occur if personnel being transferred are willing
- pre-launch video.

When answering the above, the AVI will verify this includes:

- transfer only to occur if contractor and client agree
- transfer to comply with locally enforced regulations
- transfer only to occur if personnel being transferred are willing
- pre-launch video.


S6.30	Are there procedures for launch, operation and recovery of the ship’s small boats?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	--

Verify this includes:

- test of radio communications before launch and recovery
- pre-launch toolbox meeting
- MOPO for small boat operations
- do operations require the master’s authorisation?
- are procedures in place for operations in exclusion zones around platforms etc.

When answering the above, the AVI will verify this includes:

- test of radio communications before launch and recovery
- pre-launch toolbox meeting
- MOPO for small boat operations
- do operations require the master’s authorisation?
- are procedures in place for operations in exclusion zones around platforms etc.

S6.31	Is there adequate, suitable equipment for use in the ship’s small boats?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

Verify this includes:

- dry suits, dedicated life jackets and helmets
- maintenance of boat equipment and engine
- emergency equipment appropriate to climate and location
- qualified coxswain and crew.

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When answering the above, the AVI will verify this includes:


- dry suits, dedicated life jackets and helmets
- maintenance of boat equipment and engine
- emergency equipment appropriate to climate and location
- qualified coxswain and crew.

S6.32	Are procedures in place for the use of workboats for streamer in-water repairs?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	--

Comment whether this requires a support vessel to be stationed nearby during repair operations.

When answering the above, the AVI will verify whether this requires a support vessel to be stationed nearby during repair operations?

Hull Penetrations

S6.33	Are there any hull penetrations for survey equipment and if so are they class approved and are procedures available for their operation and maintenance?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

Verify that:


- Procedures are available for raising and lowering of poles including permit to work process
- The planned maintenance system covers the checking and maintenance of gate valves, top plate assembly, watertight doors, bilge alarms and suction
- Appropriate procedures are in place if operation involves enclosed space entry

Provide the type, number and location.

When answering the above, the AVI will verify:

- Procedures are available for raising and lowering of poles including permit to work process
- The planned maintenance system covers the checking and maintenance of gate valves, top plate assembly, watertight doors, bilge alarms and suction
- Appropriate procedures are in place if operation involves enclosed space entry
- The type, number and location

Survey Equipment Safety Management

S6.34	Are procedures available for dealing with any hazardous substances used in survey equipment?	Yes	No	NA	NS	
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National regulations should be followed, and the AVI should ensure that up to date regulations are complied with.


For example, UK Control of Substances Hazardous to Health (COSHH) regulations include ensuring:

- COSHH items stored in an appropriately marked and suitable stowage
- COSHH handling instructions available at the site of use
- COSHH incident cleaning equipment is available.

National regulations should be followed, and AVI should ensure that up to date regulations are complied with.

For example, UK Control of Substances Hazardous to Health (COSHH) regulations include ensuring:

- COSHH items stored in an appropriately marked and suitable stowage
- COSHH handling instructions available at the site of use
- COSHH incident cleaning equipment is available.

S6.35	Are MARPOL instructions and spillage cleaning equipment available for all survey equipment systems?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	---

Verify that MARPOL incident kits are adequate and available.

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When answering the above, the AVI will verify that MARPOL incident kits are adequate and available.

S6.36	If the vessel can be steered from a survey room remote from the navigation bridge is there an official process to manage the control of this operation?	Yes	<u>No</u>	NA	NS	
-------	---	-----	-----------	----	----	--

Verify this includes:

- Watchkeeping duties
- Communication arrangements
- Emergency actions.

When answering the above, the AVI will verify this includes:

- Watchkeeping duties
- Communication arrangements
- Emergency actions.




S6.37	Additional Supplement comments?	Yes	No			
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Supplement 7 Diving Support Vessels


S7.1	Are there dive system operating and emergency procedures available?	Yes	No		NS	
<p>Note: The AVI is not being asked to confirm the adequacy of these procedures, merely that they are present.</p> <p>Verify that they are the latest version and available in the required control rooms.</p> <p>Note: The AVI is not being asked to confirm the adequacy of these procedures, merely that they are present.</p> <p>When answering the above, the AVI will verify that the procedures are the latest version and available in the required control rooms.</p>						
S7.2	Is there safe access available around the diving system?	Yes	No	NA	NS	
<p>Verify that:</p> <ul style="list-style-type: none"> This includes visible highlighted walkways to the DDC if located onboard, from divers' launch and recovery position The safety of personnel operating around the dive system has been considered in terms of such things as slip and trip hazards, access steps, handrails, etc. <p>When answering the above, the AVI will verify that:</p> <ul style="list-style-type: none"> This includes visible highlighted walkways to the DDC if located onboard, from divers' launch and recovery position The safety of personnel operating around the dive system has been considered in terms of such things as slip and trip hazards, access steps, handrails, etc. 						
S7.3	Is the hyperbaric lifeboat launched as part of a routine testing plan?	Yes	No	NA	NS	
<p>Provide date of last launch on primary and secondary launch systems.</p> <p>When answering the above, the AVI will verify date of last launch on primary and secondary launch systems.</p>						
S7.4	Is a hyperbaric evacuation plan (HEP) in place?	Yes	No	NA	NS	
<p>...</p> <p>...</p>						
S7.5	Is the storage of the oxygen gas quads and enriched gases above 25% oxygen in an open and well-ventilated area with adequate firefighting arrangements?	Yes	No	NA	NS	
<p>...</p> <p>...</p>						
S7.6	Are there written or electronic records available demonstrating that the plant and equipment is subject to regular planned maintenance?	Yes	No	NA	NS	
<p>...</p> <p>...</p>						
S7.7	Has the PLC element of the diving system been assessed and verified?	Yes	No	NA	NS	
<p>...</p> <p>...</p> <p><i>(Ref IOGP Report 468, Diving System Assurance R.P. Appendix C)</i></p>						
S7.8	Has a Diving Equipment System Inspection Guidance Note (DESIGN) document been completed by an independent third party within the past 12 months?	Yes	No	NA	NS	

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Note: The AVI is not being asked to confirm the adequacy of the document, merely that it is present.

Note: The AVI is not being asked to confirm the adequacy of the document, merely that it is present.


S7.9	Are the primary and secondary means of communication between the bridge and dive control functioning?	Yes	<u>No</u>	NA	NS	
------	---	-----	-----------	----	----	---

Note:

- Primary link must be hard wired, immediately available and unable to be interrupted.
- One link must be able to operate without the need for external supply, i.e. sound powered telephone.

Note:

- Primary link must be hard wired, immediately available and unable to be interrupted.
- One link must be able to operate without the need for external supply, i.e. sound powered telephone.


S7.10	Is/are oxygen analyser(s) fitted with alarms in areas that could potentially be oxygen deficient or excessively enriched where personnel may enter?	Yes	<u>No</u>	NA	NS	
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Verify that:

- At least one analyser alarm is working by conducting a random test.
- Warning signs are in place at the entrance for such areas.

When answering the above, the AVI will verify that:

- At least one analyser alarm is working by conducting a random test.
- Warning signs are in place at the entrance for such areas.


S7.11	Do HP gas storage areas have adequate signage and provision for firefighting/cooling	Yes	<u>No</u>			
-------	--	-----	-----------	--	--	---

Note: Typical signage would be 'No entry for unauthorised persons' 'Check with saturation control prior to entry'

Verify that adequate water cooling is available for the HP gas storage in case of a fire and it is part of the fire safety plan.

Note: Typical signage would be 'No entry for unauthorised persons' 'Check with saturation control prior to entry'

When answering the above, the AVI will verify that adequate water cooling is available for the HP gas storage in case of a fire and it is part of the fire safety plan.

S7.12	Is safety signage adequate to identify safety critical areas?	Yes	<u>No</u>			
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S7.13	Additional Supplement comments?	Yes	No			
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Supplement 8 Pipe Lay and Cable Lay Vessels

S8.1	Is there documented evidence that the vessel’s crew have received training for the operation and maintenance of the onboard laying equipment?	Yes	No		NS	
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S8.2	Are the abandonment and recovery (A&R) winches operational and do they have the valid certification for the wires?	Yes	No	NA	NS	
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S8.3	Is there a record of load monitoring and alarm system testing?	<u>Yes</u>	No	NA	NS	
------	--	------------	-----------	----	----	--

Comment on frequency of testing.
Provide date of last test.
 When answering the above, the AVI will verify:


- Frequency of testing.
- Date of last test.

S8.4	Is the lay system integrated with the vessel’s DP system?	<u>Yes</u>	No	NA	NS	
------	---	------------	-----------	----	----	--

Comment on visual displays available to DPOs and laying operation personnel.
 When answering the above, the AVI will verify visual displays available to DPOs and laying operation personnel.

S8.5	Are there at least two independent working voice communication systems available between the lay system and the bridge?	Yes	No	NA	NS	
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S8.6	Is there documented evidence that shows local emergency stops for the laying system are regularly tested?	Yes	No	NA	NS	
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S8.7	Are all the lay system operational procedures and maintenance manuals available onboard?	Yes	No	NA	NS	
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S8.8	Are all the components of the lay system included in the vessel’s planned maintenance system?	Yes	No	NA	NS	
------	---	-----	-----------	----	----	--

Verify that the planned maintenance for the lay system includes the tensioner and load cell calibrations and is up to date.
 When answering the above, the AVI will verify that the planned maintenance for the lay system includes the tensioner and load cell calibrations and is up to date.

S8.9	Are hang-off platforms and other lay system platforms in good order?	Yes	No	NA	NS	
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S8.10	Is personnel access to the lay system operational areas adequate?	<u>Yes</u>	No	NA	NS	
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Comment on:

- Lighting
- Anti-skid deck coatings
- Fall protection.

When answering the above, the AVI will verify:

- Lighting
- Anti-skid deck coatings
- Fall protection.

S8.11	Is there an FMEA which covers the pipelay system?	Yes	<u>No</u>		NS	
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Note: The FMEA study of the pipe-laying tensioner should include the potential wider impact on the vessel. If the pipe tensioner stops operating, the vessel is effectively anchored to the seabed by the pipe.

Comment on:

- Whether the pipe-laying operation has an effect on the positioning of the vessel by applying a force to the DP system by virtue of the weight and size of the pipe being laid.
- When and by whom the FMEA was written and any recommendations or operational restrictions.

Note: The FMEA study of the pipe-laying tensioner should include the potential wider impact on the vessel. If the pipe tensioner stops operating, the vessel is effectively anchored to the seabed by the pipe.

When answering the above, the AVI will verify:

- Whether the pipe-laying operation has an effect on the positioning of the vessel by applying a force to the DP system by virtue of the weight and size of the pipe being laid.
- When and by whom the FMEA was written and any recommendations or operational restrictions.

S8.12	Additional Supplement comments?	Yes	No			
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Supplement 9 Autonomous Underwater Vehicles (AUVs) and Remotely Operated Vehicles (ROVs)

S9.1	Is a risk assessment procedure available for launch and recovery of the AUV/ROV system?	Yes	No		NS	
------	---	-----	----	--	----	--

Verify that:


- The risk assessment includes working at height risks
- The risk assessment includes risk mitigation for high voltage (HV) hazards
- The risk assessment is subject to review

When answering the above, the AVI will verify that:

- The risk assessment includes working at height risks
- The risk assessment includes risk mitigation for high voltage (HV) hazards
- The risk assessment is subject to review

S9.2	Does the risk assessment include all relevant AUV/ROV plant and equipment systems carried onboard including new/recently installed systems?	Yes	No	NA	NS	
------	---	-----	----	----	----	--

...
...


S9.3	Is there sufficient specialist safety equipment available in accordance with the risk assessment requirements?	Yes	No	NA	NS	
------	--	-----	----	----	----	---

Verify that:


- Life jackets/safety harnesses/headgear/noise protection/non-slip and protective footwear are available
- HV protection/insulation is available

When answering the above, the AVI will verify that:


- Life jackets/safety harnesses/headgear/noise protection/non-slip and protective footwear are available
- HV protection/insulation is available

S9.4	Are deck and bulkhead safety/warning markings for AUV/ROV plant and equipment deployment/recovery in place?	Yes	No	NA	NS	
------	---	-----	----	----	----	---


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S9.5	Is there CCTV surveillance available on the bridge of the working deck/slipway/LARS area?	Yes	No	NA	NS	
------	---	-----	----	----	----	---

...
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S9.6	Is there a remote video link from the ROV operating station to other relevant control stations such as dive control and bridge?	Yes	No	NA	NS	
------	---	-----	----	----	----	---


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S9.7	Is there a man overboard alert procedure and/or system for the slipway/ working deck/LARS deck?	Yes	No	NA	NS	
------	---	-----	----	----	----	---


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S9.8	Is there adequate man overboard life-saving equipment fitted and operational?	Yes	No	NA	NS	
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S9.9	Are communications fitted and available between bridge and working deck?	Yes	No	NA	NS	
------	--	-----	-----------	----	----	---

...
...

S9.10	Are communications fitted and available between other relevant control stations (dive, survey) and working deck?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

Verify that communications are operational

Comment on the type of communications hardware/radio. If radio only then comment on the type, number and coverage.


When answering the above, the AVI will verify:

- That communications are operational
- The type of communications hardware/radio


ROV Work Site

S9.11	Are guardrails fitted appropriately on the ROV working deck?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

...
...


S9.12	Is there adequate provision for working at height on the AUV/ROV working deck?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

...
...

S9.13	Is there adequate provision for firefighting on the AUV/ROV working deck?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	---

...
...

Lifting/ROV Equipment

S9.14	Is all lifting equipment operated safely and are all safety measures in place?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

Verify that:

- The SWL is marked on the jib
- Load tests and non-destructive testing of critical components are carried out
- Control levers are marked
- Warning signs for high pressure hydraulics are in place if required
- Rotating machinery (winches, thruster, etc.) are covered/protected
- Pennants are available to secure the ROV during maintenance/inspection

When answering the above, the AVI will verify that:

- The SWL is marked on the jib
- Load tests and non-destructive testing of critical components are carried out
- Control levers are marked

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- Warning signs for high pressure hydraulics are in place if required
- Rotating machinery (winches, thruster, etc.) are covered/protected
- Pennants are available to secure the ROV during maintenance/inspection

S9.15	Is documentation available for all AUV/ROV systems?	Yes	No	NA	NS	
-------	---	-----	----	----	----	--

Verify that:

- ROV equipment service manuals are available
- Operating instructions are available for all ROV equipment
- Safety locks are available on ROV switch gear.

When answering the above, the AVI will verify that:

- ROV equipment service manuals are available
- Operating instructions are available for all ROV equipment
- Safety locks are available on ROV switch gear.

Electrical Installation

S9.16	Are electrical safety measures and procedures in place for all AUV/ROV systems?	Yes	No	NA	NS	
-------	---	-----	----	----	----	--

Verify that:

- Electrical warning signs are on appropriate cabinets
- Electrical technicians are qualified for working on high voltage equipment
- That circuit breakers are connected to vessel switchboard

When answering the above, the AVI will verify that:

- Electrical warning signs are on appropriate cabinets
- Electrical technicians are qualified for working on high voltage equipment
- That circuit breakers are connected to vessel switchboard

ROV Safety Management

S9.17	Has the ROV spread been subject to an independent audit under IMCA R006 or a similar scheme?	Yes	No	NA	NS	
-------	--	-----	----	----	----	--

Verify that:

- All associated findings have been satisfactorily addressed
- Outstanding issues are recorded

When answering the above, the AVI will verify that:

- All associated findings have been satisfactorily addressed
- Outstanding issues are recorded

S9.18	Are emergency measures and procedures in place for all AUV/ROV systems?	Yes	No	NA	NS	
-------	---	-----	----	----	----	--

Verify that:

- Appropriate warning signs and procedures are in place for working on hydraulic, electrical systems.
- Technicians are qualified for working on the hydraulic/electrical equipment.

When answering the above, the AVI will verify:

- Appropriate warning signs and procedures are in place for working on hydraulic, electrical systems.
- Technicians are qualified for working on the hydraulic/electrical equipment.

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S9.19	Are procedures for dealing with hazardous substances available for those used in AUV/ROV systems?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	--

Note: National regulations should be followed. For example, UK Control of Substances Hazardous to Health (COSHH) regulations include ensuring:


- COSHH items stored in an appropriately marked and suitable stowage
- COSHH handling instructions available at the site of use
- COSHH incident cleaning equipment is available.

Verify that up-to-date regulations are complied with.

Note: National regulations should be followed. For example, UK Control of Substances Hazardous to Health (COSHH) regulations include ensuring:


- COSHH items stored in an appropriately marked and suitable stowage
- COSHH handling instructions available at the site of use
- COSHH incident cleaning equipment is available.

When answering the above, the AVI will verify that up-to-date regulations are complied with.

S9.20	Are there adequate arrangements for preventing any hydraulic oil leakages from entering the sea?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

Comment on the save-alls and availability of spill clean-up equipment.

When answering the above, the AVI will verify the adequacy of save-alls and availability of spill clean-up equipment.

S9.21	Are MARPOL instructions and spillage cleaning equipment available for all AUV/ROV systems?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

Verify that MARPOL incident kits are adequate and available.

When answering the above, the AVI will verify that MARPOL incident kits are adequate and available.

S9.22	Additional Supplement comments?	Yes	No			
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Supplement 10 Helicopter Operations

S10.1	Are procedures for helicopter operations available onboard?	Yes	No		NS	
--------------	---	-----	-----------	--	----	--

Verify that relevant regional helicopter operational guidance is onboard, such as:

- ICAO Annex 14 & CAP 437
- UKOOA Guidance for the Management of Offshore Helideck Operations
- ICS Guide to Helicopter/Ship Operation
- operating procedures for helicopter operations and winching.

When answering the above, the AVI will verify that relevant regional helicopter operational guidance is onboard, such as:

- ICAO Annex 14 & CAP 437
- UKOOA Guidance for the Management of Offshore Helideck Operations
- ICS Guide to Helicopter/Ship Operation
- operating procedures for helicopter operations and winching.

S10.2	Are procedures for helicopter emergencies available onboard?	Yes	No		NS	
--------------	--	-----	-----------	--	----	--

Verify that the procedures include:

- helicopter crash on deck/fire on deck
- helicopter ditching
- fuel spillages.

When answering the above, the AVI will verify that the procedures include:

- helicopter crash on deck/fire on deck
- helicopter ditching
- fuel spillages.

S10.3	Is the helideck appropriately certified and approved?	Yes	No		NS	
--------------	---	-----	-----------	--	----	--


Note: For example, a helicopter landing area certificate issued by the UK Helideck Certification Agency). If the vessel has been operational in another region, confirm the relevant requirements being complied with at the time of inspection.

Comment on:

- The material condition of the helideck
- What the certification covers including helicopter types
- Whether Norwegian restrictions apply (1.25D applicable to vessel constructed after 2008)


When answering the above, the AVI will verify:

- The material condition of the helideck
- What the certification covers including helicopter types
- Whether Norwegian restrictions apply (1.25D applicable to vessel constructed after 2008)

S10.4	Are helideck markings and identification panels/signs in good condition, not obscured by paraphernalia and subject to a maintenance plan?	Yes	No		NS	
-------	---	-----	-----------	--	----	---

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S10.5	Is the helideck firefighting equipment available for immediate use and free of defects?	Yes	No		NS	
--------------	---	-----	-----------	--	----	---

Verify the condition of the following:

- dry powder and compressed gas extinguishers
- foam extinguishing systems – has foam concentrate and mixing induction system been tested as satisfactory within the last 12 months?

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- total fire protection suit (sizes available for personnel onboard), including breathing apparatus
- emergency equipment box with an inventory of equipment available. Confirm that all the equipment is accounted for.

When answering the above, the AVI will verify the condition of the following:

- dry powder and compressed gas extinguishers
- foam extinguishing systems – has foam concentrate and mixing induction system been tested as satisfactory within the last 12 months?
- total fire protection suit (sizes available for personnel onboard), including breathing apparatus
- emergency equipment box with an inventory of equipment available. Confirm that all the equipment is accounted for.

Deck Crew Allocated and Trained

S10.6	Are all personnel required for helideck operations trained in accordance with relevant requirements?	Yes	No	NS	
--------------	--	-----	-----------	----	--


Verify that:

- The training records are onboard for the HLO, fireman, baggage handler, fire valve attendant and loaders (if required)
- The HLO and firemen are trained to appropriate standards
- Drills are held for helicopter deck crew and records kept.

When answering the above, the AVI will verify that:

- The training records are onboard for the HLO, fireman, baggage handler, fire valve attendant and loaders (if required)
- The HLO and firemen are trained to appropriate standards
- Drills are held for helicopter deck crew and records kept.

Procedures for Briefing Passengers

S10.7	Are procedures in place for the safe embarkation/disembarkation of passengers?	Yes	No	NS	
--------------	--	-----	-----------	----	---

Verify that they include:

- Who is in charge
- Names of passengers
- Confirmation that passengers have received and are in date for helicopter passenger escape training
- Route to/from helicopter
- Correct clothing and PPE to be worn and securing of loose articles
- Emergency procedures/exits
- Helicopter cargo securing procedures
- Video tapes/discs for varying types of helicopters to be onboard.

When answering the above, the AVI will verify that they include:

- Who is in charge
- Names of passengers
- Confirmation that passengers have received and are in date for helicopter passenger escape training
- Route to/from helicopter
- Correct clothing and PPE to be worn and securing of loose articles
- Emergency procedures/exits
- Helicopter cargo securing procedures
- Video tapes/discs for varying types of helicopters to be onboard.

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Preparations for Helicopter Flying Operations

S10.8	Are procedures in place for the completion of preparations for helicopter flying operations?	Yes	No		NS	
-------	--	-----	-----------	--	----	--

Verify that they include:

- Warning messages to vessel crew that helicopter flying operations will commence
- Deck and surrounds clear of loose articles
- Helideck net in good condition and correctly tensioned
- Crane stowed and secured
- Workboat and covers lashed
- Firefighting equipment ready
- Lighting working
- Communications working
- Provision of meteorological and environmental conditions (wind, sea state, pitch, roll, heave) to aircraft
- Baggage weighing equipment ready for use
- Passing planned passenger and load information to aircraft.

When answering the above, the AVI will verify that they include:

- Warning messages to vessel crew that helicopter flying operations will commence
- Deck and surrounds clear of loose articles
- Helideck net in good condition and correctly tensioned
- Crane stowed and secured
- Workboat and covers lashed
- Firefighting equipment ready
- Lighting working
- Communications working
- Provision of meteorological and environmental conditions (wind, sea state, pitch, roll, heave) to aircraft
- Baggage weighing equipment ready for use
- Passing planned passenger and load information to aircraft.


S10.9	Is there a list of helicopter types which can be operated from the vessel's helideck?	Yes	No		NS	
-------	---	-----	-----------	--	----	--

...
...

S10.10	If the vessel only conducts helicopter operations with a winching area, does this conform to relevant regulations?	Yes	No	NA	NS	
--------	--	-----	-----------	----	----	--

Refer to regional helicopter operations regulations.

Refer to regional helicopter operations regulations.

S10.11	If a heli-fuel skid is fitted, is it certified for use?	Yes	No	NA	NS	
--------	---	-----	-----------	----	----	---


Uncertified refuelling facilities should not be used.

Uncertified refuelling facilities should not be used.

S10.12	Additional Supplement comments?	Yes	No			
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Supplement 11 Accommodation Vessels


S11.1	Is the gangway and/or boat landing monitored and operated by appropriately certified marine personnel during personnel transfer operations?	Yes	No		NS	
-------	---	-----	-----------	--	----	---

Comment on how personnel are tracked as they cross the gangway and if the person responsible for this monitoring is trained in the system use.


When answering the above, the AVI will verify how personnel are tracked as they cross the gangway and if the person responsible for this monitoring is trained in the system use.

S11.2	Are personnel appropriately briefed in the vessel’s safety and personnel safety during personnel transfer operations?	Yes	No		NS	
-------	---	-----	-----------	--	----	--

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...

S11.3	Are all cabins single berth or two berth shift segregated to ensure no personnel are disturbed during hours of rest?	Yes	No		NS	
-------	--	-----	-----------	--	----	---

...
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S11.4	Is a fixed fire alarm and sprinkler system fitted in the accommodation areas?	Yes	No		NS	
-------	---	-----	-----------	--	----	---

...
...

S11.5	Is there a record of additional fire rounds carried out by the crew?	Yes	No		NS	
-------	--	-----	-----------	--	----	--

Verify that this includes all accommodation modules and spaces.

When answering the above, the AVI will verify that this includes all accommodation modules and spaces.

S11.6	Are mess room and common rooms clean and tidy?	Yes	No		NS	
-------	--	-----	-----------	--	----	---

Comment on what cleaning regime is used.

When answering the above, the AVI will verify what cleaning regime is used.

S11.7	Is there a person onboard identified as being in charge of personnel welfare?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	--

Verify that the identification of the welfare officer is posted throughout the accommodation and break out areas.

When answering the above, the AVI will verify that the identification of the welfare officer is posted throughout the accommodation and break out areas.

S11.8	Is there an FMEA to cover the gangway system?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	--

Note: An assurance process is needed to identify single failures that could result in loss of gangway control. The FMEA study of the gangway should include the potential wider impact on the vessel. If the gangway stops operating, the vessel can be effectively anchored to the platform.

Comment on:

- Whether the gangway influences the vessel’s DP system
- When and by whom the FMEA was written and any recommendations or operational restrictions

Note: An assurance process is needed to identify single failures that could result in loss of gangway control. The FMEA study of the gangway should include the potential wider impact on the vessel. If the gangway stops operating, the vessel can be effectively anchored to the platform.

When answering the above, the AVI will verify:

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- Whether the gangway influences the vessel's DP system
- When and by whom the FMEA was written and any recommendations or operational restrictions

S11.9	Additional Supplement comments?	Yes	No			
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Supplement 12 Jack-up Vessels

S12.1	Is the vessel operating within its specific trading area or limiting distance from a safe haven as prescribed by their flag state?	Yes	No	NA	NS	
--------------	--	-----	-----------	----	----	--

Refer to the jack-ups registry certificate or certificate of seaworthiness and trading area.
Refer to the jack-ups registry certificate or certificate of seaworthiness and trading area.

S12.2	Does the vessel have a MODU/MOU certificate?	Yes	No		NS	
--------------	--	-----	-----------	--	----	--

The vessel should as a minimum be provided with a class certificate verifying the provision of adequate safety equipment for the type of vessel and the number of personnel onboard.
The vessel should as a minimum be provided with a class certificate verifying the provision of adequate safety equipment for the type of vessel and the number of personnel onboard.

S12.3	Are the leg height marks (if fitted) clearly visible from a designated point on the vessel?	Yes	No	NA	NS	
--------------	---	-----	-----------	----	----	---

Normally visible from the jacking control position.
Normally visible from the jacking control position.

S12.4	Do the longitudinal and transverse inclinometers have a valid calibration certificate?	Yes	No		NS	
--------------	--	-----	-----------	--	----	--

Accuracy should be within 0.2 degrees of tilt.
Rack phase difference indication should be available to detect inconsistencies in raising/lowering.
Accuracy should be within 0.2 degrees of tilt.
Rack phase difference indication should be available to detect inconsistencies in raising/lowering.

S12.5	Has/have the jacking engineer(s) received formal training in jack-up operations including fundamentals of jack-up soil conditions?	Yes	No		NS	
--------------	--	-----	-----------	--	----	--

...
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S12.6	Does the vessel’s operating manual cover generic procedures for re-floating, towing/self-propulsion, dynamic positioning, preloading and elevated operations applicable to the routine operation of the jack-up?	Yes	No		NS	
--------------	--	-----	-----------	--	----	--

...
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S12.7	Does the jacking system manual cover the safe operation and maintenance of the jacking machinery?	Yes	No		NS	
--------------	---	-----	-----------	--	----	--

...
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S12.8	Are the jack-up’s design limits for each mode and limiting weather criteria for each mode clearly defined?	Yes	No		NS	
--------------	--	-----	-----------	--	----	--

Limiting modes are as follows:

- pre-loading
- afloat under tow
- moored afloat
- partly elevated with the hull partly buoyant in leg-stabilised mode
- elevated in the operating mode at a working air gap
- elevated in the survival mode at air gap ≥ the minimum recommended safe air gap.

Limiting modes are as follows:

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- pre-loading
- afloat under tow
- moored afloat
- partly elevated with the hull partly buoyant in leg-stabilised mode
- elevated in the operating mode at a working air gap
- elevated in the survival mode at air gap ≥ the minimum recommended safe air gap.

S12.9	During load outs, have the appropriate stability criteria been completed?	Yes	No		NS	
-------	---	-----	-----------	--	----	--

...
...

S12.10	Does the vessel have the appropriate site data for the working location?	Yes	No	NA	NS	
--------	--	-----	-----------	----	----	--

Soil conditions/assessment, water depth, tidal range, storm surge, wave and current data, bathymetric survey data, seabed surface survey data etc.

The site-specific assessment shall be carried out in accordance with the guidelines and recommended practice contained in the SNAME TR5-5A "Guidelines for site specific assessment of mobile jack-up units".

Soil conditions/assessment, water depth, tidal range, storm surge, wave and current data, bathymetric survey data, seabed surface survey data etc.

The site-specific assessment shall be carried out in accordance with the guidelines and recommended practice contained in the SNAME TR5-5A "Guidelines for site specific assessment of mobile jack-up units".

S12.11	Does the vessel have a comprehensive lifting manual?	Yes	No	NA	NS	
--------	--	-----	-----------	----	----	--

Verify that the manual covers the following:

- description of the operation
- time schedule
- lift module dimensions weight and COG
- details of stabbing guides and beams (if used)
- details of auxiliary winches and tag lines
- details of the jack-up and attending vessels (tugs, transport barges etc.)
- jack-up station keeping arrangement (jacked up, leg-stabilised, moored afloat, DP)
- transport barge station keeping arrangement
- specific operations (ballasting, ROV, divers, survey measurements etc.)
- vessel positioning procedures
- configuration and certification of the crane
- certification of all lifting equipment
- crane radius curve (manufacturers/class de-rating of crane when afloat if applicable)
- proposed clearances between lifted module/crane/legs/vessels/existing structures
- lifting equipment details, rigging weights and rigging drawings
- limiting environmental criteria for each lift
- plan and profile drawings
- organisation, communications and responsibilities
- recording procedure
- pre-lift checklist
- safety and contingency plans.

When answering the above, the AVI will verify that the manual covers the following:

- description of the operation
- time schedule
- lift module dimensions weight and COG

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- details of stabbing guides and beams (if used)
- details of auxiliary winches and tag lines
- details of the jack-up and attending vessels (tugs, transport barges etc.)
- jack-up station keeping arrangement (jacked up, leg-stabilised, moored afloat, DP)
- transport barge station keeping arrangement
- specific operations (ballasting, ROV, divers, survey measurements etc.)
- vessel positioning procedures
- configuration and certification of the crane
- certification of all lifting equipment
- crane radius curve (manufacturers/class de-rating of crane when afloat if applicable)
- proposed clearances between lifted module/crane/legs/vessels/existing structures
- lifting equipment details, rigging weights and rigging drawings
- limiting environmental criteria for each lift
- plan and profile drawings
- organisation, communications and responsibilities
- recording procedure
- pre-lift checklist
- safety and contingency plans.

S12.12	Does the vessel have personnel transfer procedures that cover all vessel conditions for transferring personnel safely?	Yes	<u>No</u>	NA	NS	
--------	--	-----	-----------	----	----	--

Transfer of personnel should cover moored, afloat or elevated at the quayside, afloat or partly elevated (inshore and offshore), elevated (inshore and offshore). Include emergency evacuation procedures.

Transfer of personnel should cover moored, afloat or elevated at the quayside, afloat or partly elevated (inshore and offshore), elevated (inshore and offshore). Include emergency evacuation procedures.

S12.13	Does the vessel have documented emergency procedures, route and site contingency plans and a site-specific emergency response plan?	Yes	<u>No</u>	NA	NS	
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...
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S12.14	Additional Supplement comments?	Yes	No			
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Supplement 13 Heavy Lift Vessels

S13.1	Does the vessel have a training and operation scheme for the ballast control console?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	--


Verify that there is refresher training for the ballast control operators.

When answering the above, the AVI will verify that there is refresher training for the ballast control operators.

S13.2	Is/are there a person(s) in charge of ballast control and stability calculations?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	--


Comment on the training and certification of the person(s) in charge.

When answering the above, the AVI will verify the training and certification of the person(s) in charge.

S13.3	Is there a working and calibrated inclinometer available at the ballast control console?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

Note: DP motion reference units can be used if the ballast control is adjacent to the DP desk.

Note: DP motion reference units can be used if the ballast control is adjacent to the DP desk.

S13.4	Are the draught gauges operational and certificated?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

Verify operation of draught gauges and tank sensors (if installed).

Comment on draught gauge certificate date and expiry.

When answering the above, the AVI will verify:

- The operation of draught gauges and tank sensors (if installed).
- The draught gauge certificate date and expiry.

S13.5	Is there a lifting equipment management system in place?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	--


To include the marking of equipment, certification, discard criteria for ropes and slings, inspection criteria and maintenance of all lifting equipment.

To include the marking of equipment, certification, discard criteria for ropes and slings, inspection criteria and maintenance of all lifting equipment.

S13.6	Are there documented training and exercises (normal and emergency) covering stability issues with respect to the heavy lift operation?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	--


Verify that training and exercises are regularly carried out for all personnel involved in the operation.

When answering the above, the AVI will verify that training and exercises are regularly carried out for all personnel involved in the operation.

S13.7	Are the crane alarm systems operational and tested regularly?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	---

Verify by inspection of the planned maintenance system.

When answering the above, the AVI will verify by inspection of the planned maintenance system.

S13.8	On semi-submersible and submersible vessels, are all watertight doors, hatches and other openings in working order?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	---

Comment on testing schedule for all watertight doors and hatches.

Provide date of last operation.

When answering the above, the AVI will verify:

- The testing schedule for all watertight doors and hatches.
- The date of last operation

S13.9	Is there a procedure to record lighthouse additions and does this refer to the impact on stability?	Yes	No	NA	NS	
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Heavy lift vessels can work at maximum safe limits for stability and if weight control is not properly managed it can lead to a reduction in safety margins.

Heavy lift vessels can work at maximum safe limits for stability and if weight control is not properly managed it can lead to a reduction in safety margins.

S13.10	Is the ballast control console permanently manned during lifts?	Yes	<u>No</u>	NA	NS	
--------	---	-----	-----------	----	----	--

...

...

S13.11	Is there an FMEA to cover the ballast and bilge system?	Yes	<u>No</u>	NA	NS	
--------	---	-----	-----------	----	----	--

Assurance process should be available to identify single failures that could result in loss of ballast control which may affect the vessels stability and/or DP capability.

Assurance process should be available to identify single failures that could result in loss of ballast control which may affect the vessels stability and/or DP capability.

S13.12	Additional Supplement comments?	Yes	No			
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Supplement 14 Oil Recovery Vessels

S14.1	Does the vessel have certification for oil recovery operations?	Yes	<u>No</u>		NS	
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Comment on the type of certification and issuer.

Provide the start date of the issued certificate.

When answering the above, the AVI will verify:

- The type of certification and issuer.
- The start date of the issued certificate.

S14.2	Is the oil recovery operations manual class-approved?	Yes	<u>No</u>		NS	
-------	---	-----	-----------	--	----	--

Comment on class approval.

Provide date when approved.

When answering the above, the AVI will verify:

- Class approval.
- The date when approved.

S14.3	If fitted, is the oil recovery equipment such as booms, skimmers, etc. included in the vessel's planned maintenance system?	Yes	<u>No</u>		NS	
-------	---	-----	-----------	--	----	--

...

...

S14.4	Can the relevant personnel show that they have been trained in oil recovery operations?	<u>Yes</u>	<u>No</u>		NS	
-------	---	------------	-----------	--	----	--

Comment on training received such as H₂S, oil explosion risks, PPE and drill frequency.

When answering the above, the AVI will verify training received such as H₂S, oil explosion risks, PPE and drill frequency.

S14.5	Is recovery equipment tested in regular exercises?	Yes	<u>No</u>	NA	NS	
-------	--	-----	-----------	----	----	--

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...

S14.6	Are there procedures for transfer of personnel at sea?	Yes	<u>No</u>	NA	NS	
-------	--	-----	-----------	----	----	--

Verify that they include:

- transfer only to occur if contractor and client agree
- transfer to comply with locally enforced regulations
- transfer only to occur if personnel being transferred are willing to do so.

When answering the above, the AVI will verify that they include:

- transfer only to occur if contractor and client agree
- transfer to comply with locally enforced regulations
- transfer only to occur if personnel being transferred are willing to do so.


S14.7	Are there procedures for launch, operation and recovery of the ship's small boats?	Yes	<u>No</u>	NA	NS	
-------	--	-----	-----------	----	----	--

Verify that they include:

- test of radio communications before launch and recovery
- pre-launch toolbox meeting.

When answering the above, the AVI will verify that they include:

- test of radio communications before launch and recovery
- pre-launch toolbox meeting.

S14.8	Is there adequate, suitable equipment for use in the ship's small boats?	Yes	<u>No</u>	NA	NS	
-------	--	-----	-----------	----	----	---

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Verify this includes:

- dry suits, dedicated life jackets and helmets
- maintenance equipment for boat and engine
- emergency equipment appropriate to climate and location.

When answering the above, the AVI will verify this includes:

- dry suits, dedicated life jackets and helmets
- maintenance equipment for boat and engine
- emergency equipment appropriate to climate and location.


S14.9	Additional Supplement comments?	Yes	No			
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Supplement 15 Barges (non-Self-Propelled)

S15.1	Is the main towing bridle including chains/wires/shackles/Smit brackets and recovery winch certificated and in satisfactory condition?	Yes	No		NS	
-------	--	-----	-----------	--	----	---

...
...

S15.2	Is the emergency towing bridle including chains/wires/shackles/Smit brackets and pick up rope certificated and in a satisfactory condition?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	---

Comment by making an objective assessment of the condition of the equipment.

When answering the above, the AVI will verify by making an objective assessment of the condition of the equipment.

S15.3	Is there an emergency recovery system available for the tow wire?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	--

...
...

S15.4	Is there an emergency anchor available?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	---

...
...

S15.5	Is the towing gear included in the vessel's planned maintenance system?	Yes	No	NA	NS	
-------	---	-----	-----------	----	----	--

Comment on spares carried.

When answering the above, the AVI will verify the spares carried.


S15.6	Are the hull fendering arrangements in a satisfactory condition?	Yes	No	NA	NS	
-------	--	-----	-----------	----	----	---

...
...

S15.7	Do the navigation lights and shapes meet local and COLREG requirements?	Yes	No	NA		
-------	---	-----	-----------	----	--	--


Verify that there are adequate electrical power arrangements.

When answering the above, the AVI will verify that there are adequate electrical power arrangements.

S15.8	Is the deck equipment/machinery (if fitted) in a satisfactory condition?	Yes	No	NA		
-------	--	-----	-----------	----	--	---

Comment by making an objective assessment of the adequacy and condition of the fitted equipment/machinery such as bollards, mooring fittings, generators, cranes, pumps, etc.

When answering the above, the AVI will verify by making an objective assessment of the adequacy and condition of the fitted equipment/machinery such as bollards, mooring fittings, generators, cranes, pumps, etc.

S15.9	Are the vessel's handrails adequate to prevent personnel falling overboard?	Yes	No	NA		
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S15.10	Is there a safety induction programme for workers who board the barge?	Yes	No	NA		
--------	--	-----	-----------	----	--	--

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S15.11	Additional Supplement comments?	Yes	No			
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Supplement 16 Gravel Discharge, Dredgers and Trenching


S16.1	Are there documented operational and safety procedures for all relevant discharging, dredging and trenching operations?	Yes	No		NS	
-------	---	-----	----	--	----	---

Verify that:

- They are specific to the vessel and included in the vessel ISM
- Include operational limitations, such as environmental conditions
- They state what PPE and LSA are required for operations
- There is evidence to suggest the procedures are understood and followed by the crew
- Appropriate special safety signs are in place (see question 5.1)
- Risk assessments relevant to the type of operation are available (see question 5.7)
- They include specific requirements for manning required for operations

When answering the above, the AVI will verify that:

- They are specific to the vessel and included in the vessel ISM
- Include operational limitations, such as environmental conditions
- They state what PPE and LSA are required for operations
- There is evidence to suggest the procedures are understood and followed by the crew
- Appropriate special safety signs are in place (see question 5.1)
- Risk assessments relevant to the type of operation are available (see question 5.7)
- They include specific requirements for manning required for operations

S16.2	Are there adequate communications facilities available for bridge to back deck and to surveyors?	Yes	No		NS	
-------	--	-----	----	--	----	---

Note: This should include CCTV coverage of the working area being available on the bridge/control or instrumentation room.

Verify that there are adequate back-up communications methods including:


- intercoms
- telephones
- UHF/VHF radios.

Comment on the type of communications.

Note: This should include CCTV coverage of the working area being available on the bridge/control or instrumentation room.

When answering the above, the AVI will verify that there are adequate back-up communications methods including:

- intercoms
- telephones
- UHF/VHF radios.
- the type of communications

S16.3	Is cargo handling/specialist equipment and ship fittings in good working order?	Yes	No		NS	
-------	---	-----	----	--	----	---

Verify that:

- All stowage guard rails and barriers, hydraulically operated plant (e.g. grab cranes, fall pipe systems (including ROV) and associated equipment) is adequately maintained
- All cable and umbilical chutes on deck are in working condition
- Ballast valves fail to the closed position in the event of power failure
- Trenching control system can locate/track sub-sea equipment

When answering the above, the AVI will verify that:

- All stowage guard rails and barriers, hydraulically operated plant (e.g. grab cranes, fall pipe systems (including ROV) and associated equipment) is adequately maintained

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- All cable and umbilical chutes on deck are in working condition
- Ballast valves fail to the closed position in the event of power failure
- Trenching control system can locate/track sub-sea equipment

S16.4	Does the vessel have structured competence and currency training for the relevant specialist operations?	Yes	No			
-------	--	-----	----	--	--	--

Comment on:

- Evidence of training currency programme
- Whether this is included in the vessel SMS
- The certification of operators/crew members (sampling).

When answering the above, the AVI will verify:

- Evidence of training currency programme
- Whether this is included in the vessel SMS
- The certification of operators/crew members (sampling).

S16.5	Does the vessel have a copy of the class-approved cargo operations manual onboard?	Yes	No	NA	NS	
-------	--	-----	----	----	----	--

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S16.6	Are there quick release procedures for the subsea plant/equipment?	Yes	No	NA	NS	
-------	--	-----	----	----	----	--

Comment on whether the procedures include the use of pelican hooks or senhouse slips.

When answering the above, the AVI will verify the procedures include the use of pelican hooks or senhouse slips.


S16.7	Does the operational planning procedure include calculations for stress and stability states involved in the operations conducted?	Yes	No	NA	NS	
-------	--	-----	----	----	----	--

Note: This is not required for trenching operations.

Verify that the calculations include the start, middle and end of the cargo transfer phase of the operation.

Note: this is not required for trenching operations.

When answering the above, the AVI will verify that the calculations include the start, middle and end of the cargo transfer phase of the operation

S16.8	Is an inclinometer available at the ballast control station?	Yes	No	NA	NS	
-------	--	-----	----	----	----	---

...
...

S16.9	Can draught marks be seen?	Yes	No	NA	NS	
-------	----------------------------	-----	----	----	----	---

Verify that:

- Remote draught gauges are fitted and serviceable
- Gauges calibrated

When answering the above, the AVI will verify that:

- Remote draught gauges are fitted and serviceable
- Gauges calibrated

S16.10	Do operating procedures require ballast control position to be manned continuously when cargo loading/discharge is taking place?	Yes	No	NA	NS	
--------	--	-----	----	----	----	--

Comment on whether there is a procedure for monitoring and recording quantity of stone/gravel/dredge load in the cargo area.

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When answering the above, the AVI will verify there is a procedure for monitoring and recording quantity of stone/gravel/dredge load in the cargo area.

S16.11	Additional Supplement comments?	Yes	No			
--------	---------------------------------	-----	----	--	--	--

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Supplement 17 Vessel Reactivation from Lay-up

S17.1	Have all statutory flag state surveys been completed and certification issued?	Yes	No			
-------	--	-----	----	--	--	--

If No, **comment** on which flag state surveys are yet to be completed.

...

S17.2	Have all class surveys been completed and certification issued?	Yes	No		NS	
-------	---	-----	----	--	----	--

If No, **comment** on which class surveys are yet to be completed.

...

S17.3	Have the actions taken to put the vessel in a cold layup status been recorded in a preservation plan (or equivalent)?	Yes	No			
-------	---	-----	----	--	--	--

Verify that:

- The plan was followed
- Lay-up maintenance tasks are included and undertaken

When answering the above, the AVI will verify that:

- The plan was followed
- Lay-up maintenance tasks are included and undertaken

S17.4	Have the actions taken to reactivate the vessel been recorded in a reactivation plan (or equivalent)?	Yes	No			
-------	---	-----	----	--	--	--

Verify that the plan was followed.

When answering the above, the AVI will verify that the plan was followed.

S17.5	Has a new safe manning document certificate been issued by the flag state prior to the vessel resuming trading?	Yes	No	NA		
-------	---	-----	----	----	--	--


Only required if the vessel was issued with a safe manning document to cover the duration of the lay-up period.

Only required if the vessel was issued with a safe manning document to cover the duration of the lay-up period.

S17.6	Has the vessel’s safety management system been brought up to date, including supplying the vessel with the latest company circulars?	Yes	No	NA		
-------	--	-----	----	----	--	--


Comment on whether the crew have been trained/familiarised with the safety management system/company circulars.

When answering the above, the AVI will verify whether the crew have been trained/familiarised with the safety management system/company circulars.

S17.7	Have the galley equipment and domestic fridges and freezers been checked and proved to be operating at the required temperature(s) and emergency alarms tested?	Yes	No			
-------	---	-----	----	--	--	---


...

...

S17.8	Have the main and emergency lighting around the entire vessel been checked for operation?	Yes	No			
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...

...


S17.9	Have the davit wires for the lifeboat/life raft and crane wires been inspected and renewed where necessary?	Yes	No			
-------	---	-----	----	--	--	---

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S17.10	Have all the firefighting appliances and equipment been verified for correct operation?	Yes	No			
--------	---	-----	-----------	--	--	---


May have been checked as part of the flag state and/or class surveys.

May have been checked as part of the flag state and/or class surveys.

S17.11	Have the pyrotechnics been inspected and renewed as appropriate?	Yes	No			
--------	--	-----	-----------	--	--	--

May have been checked as part of the flag state and/or class surveys.

May have been checked as part of the flag state and/or class surveys.

S17.12	Have all mooring ropes and wires been checked for wear and damage, and in the case of ropes, actinic degradation and internal wear along their entire length?	Yes	No			
--------	---	-----	-----------	--	--	---

...

...

S17.13	Where considered necessary, has an underwater inspection been carried out?	Yes	No	NA		
--------	--	-----	-----------	----	--	--

Underwater inspector should verify that sea chest blanks have been removed and that there is no marine growth in way of water injections, thruster grids. Propeller seal(s) should be checked for presence of nets/fishing lines and ropes on main props and thruster props.

If not considered necessary, select NA.

Underwater inspector should verify that sea chest blanks have been removed and that there is no marine growth in way of water injections, thruster grids. Propeller seal(s) should be checked for presence of nets/fishing lines and ropes on main props and thruster props.

NA may be selected if not considered necessary.

S17.14	Have fuel and lube oil samples been taken and analysed?	Yes	No	NA		
--------	---	-----	-----------	----	--	--


Fuel and lubes should be checked for contamination and if fit for further use.

Fuel and lubes should be checked for contamination and if fit for further use.

S17.15	Have insulation resistance readings and, where appropriate, megger tests been carried on electrical equipment that is connected to the main and emergency switchboards?	Yes	No	NA		
--------	---	-----	-----------	----	--	--

...

...

S17.16	Have all machinery space alarms and trips been checked for correct operation?	Yes	No	NA		
--------	---	-----	-----------	----	--	---

May have been checked as part of the flag state and/or class surveys.

May have been checked as part of the flag state and/or class surveys.

S17.17	Have all piping systems been filled and bled of air to ensure that no air locks will form in pumps etc.?	Yes	No	NA		
--------	--	-----	-----------	----	--	--

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S17.18	Have sea trials including, where appropriate, DP trials been carried out?	Yes	No	NA		
--------	---	-----	-----------	----	--	--

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When a vessel has been laid-up for a prolonged period it is recommended that sea trials are conducted prior to the vessel resuming service.

When a vessel has been laid-up for a prolonged period it is recommended that sea trials are conducted prior to the vessel resuming service.

S17.19	Has any industrial mission equipment been satisfactorily tested to ensure correct operation?	Yes	<u>No</u>	NA		
--------	--	-----	-----------	----	--	---

Deck winches, pipe laying equipment, cranes etc.

Deck winches, pipe laying equipment, cranes etc.

S17.20	Have the vessel's 24V DC batteries been replaced or appropriately load tested to ensure their condition is suitable?	Yes	<u>No</u>	NA		
--------	--	-----	-----------	----	--	---

Battery condition report if not renewed.

Battery condition report if not renewed.

S17.21	Additional Supplement comments?	Yes	No			
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Supplement 18 High Speed Craft Code Compliance

This supplement contains a question set primarily based on International Code of Safety for High-Speed Craft (2000), 2008 Edition, with the exception of those questions specifically referencing the Code for High Speed Offshore Service Craft (HS-OSC Ver.24th April 2017). HS-OSC Section 1- The standard for High Speed Offshore Service Craft of up to 500GT shall follow the framework of the HSC Code for Cargo Craft unless expressly stated otherwise.

S18.1	Does the vessel hold a valid safety certificate for the HS-OSC code?	<u>Yes</u>	<u>No</u>	NA		
--------------	--	------------	-----------	----	--	--

A High-Speed Craft safety certificate is issued after completion of an initial or renewal survey to a craft which complies with the requirements of the Code. The Certificate shall be issued or endorsed either by the Administration or by any person or organization recognised by it. On all craft, all certificates issued under this chapter, or certified copies thereof, shall be carried on the craft. Except where the flag state is a party to the 1988 SOLAS protocol, a copy of each of these certificates shall be posted up in a prominent and accessible place in the craft.

A High-Speed Craft safety certificate is issued after completion of an initial or renewal survey to a craft which complies with the requirements of the Code. The Certificate shall be issued or endorsed either by the Administration or by any person or organization recognised by it. On all craft, all certificates issued under this chapter, or certified copies thereof, shall be carried on the craft. Except where the flag state is a party to the 1988 SOLAS protocol, a copy of each of these certificates shall be posted up in a prominent and accessible place in the craft.

(Ref. HSC Code section 1.8)

S18.2	If the vessel is currently in HS-OSC operation, does the vessel hold a valid permit to operate for the applicable project/sea area?	<u>Yes</u>	<u>No</u>	NA		
--------------	---	------------	-----------	----	--	--

To operate commercially, all high-speed craft (HSC) must have a permit to operate (POHSC), setting out the safety limitations and conditions imposed on their operation. This is drawn up on the basis of the information contained in the route operational manual and the type rating certificates for the operating crew. The management and reduction of risk is complemented by detailed operating and maintenance manuals, which must be carried onboard and agreed as part of the POHSC process.

To operate commercially, all high-speed craft (HSC) must have a permit to operate (POHSC), setting out the safety limitations and conditions imposed on their operation. This is drawn up on the basis of the information contained in the route operational manual and the type rating certificates for the operating crew. The management and reduction of risk is complemented by detailed operating and maintenance manuals, which must be carried onboard and agreed as part of the POHSC process.

(Ref. HSC Code section 1.9)

S18.3	If the craft is currently operating as HSC-OSC is the route operations manual for current charter identified in the POHSC and available?	<u>Yes</u>	<u>No</u>	NA		
--------------	--	------------	-----------	----	--	--

A previous copy of the manual could be reviewed should the vessel not be in HS-OSC use.

Verify that the route operational manual includes at least the following information:

- .1 evacuation procedures;
- .2 operating limitations, including the worst intended conditions;
- .3 procedures for operation of the craft within the limitations of .2;
- .4 the elements of applicable contingency plans for primary and secondary rescue assistance in the case of foreseeable incidents, including land-based arrangements and activities for each incident;
- .5 arrangements for obtaining weather information;
- .6 identification of the "base port(s)";
- .7 identification of the person responsible for decisions to cancel or delay voyages;
- .8 identification of crew complement, functions and qualifications;

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- .9 restrictions on working hours of crew;
- .10 safety arrangements at terminals;
- .11 traffic control arrangements and limitations, as appropriate;
- .12 specific route conditions or requirements relating to position fixing, operations by night and in restricted visibility, including the use of radar or other electronic aids to navigation; and
- .13 communication arrangements between craft, coast radio stations, base ports radio stations, emergency services and other ships, including radio frequencies to be used and watch to be kept.

A previous copy of the manual could be reviewed should the vessel not be in HS-OSC use.

When answering the above, the AVI will verify that the route operational manual includes at least the following information:

- .1 evacuation procedures;
- .2 operating limitations, including the worst intended conditions;
- .3 procedures for operation of the craft within the limitations of .2;
- .4 the elements of applicable contingency plans for primary and secondary rescue assistance in the case of foreseeable incidents, including land-based arrangements and activities for each incident;
- .5 arrangements for obtaining weather information;
- .6 identification of the "base port(s)";
- .7 identification of the person responsible for decisions to cancel or delay voyages;
- .8 identification of crew complement, functions and qualifications;
- .9 restrictions on working hours of crew;
- .10 safety arrangements at terminals;
- .11 traffic control arrangements and limitations, as appropriate;
- .12 specific route conditions or requirements relating to position fixing, operations by night and in restricted visibility, including the use of radar or other electronic aids to navigation; and
- .13 communication arrangements between craft, coast radio stations, base ports radio stations, emergency services and other ships, including radio frequencies to be used and watch to be kept.

Ref. HSC Code section 18.2.2)

S18.4	Are the crew members qualified in accordance with the STCW Convention?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> NA		
--------------	--	------------------------------	--	-----------------------------	--	--

Crew members are to be qualified in accordance with the STCW Convention and two shall be trained in crowd control when carrying more than 12 persons other than crew members.

Crew members are to be qualified in accordance with the STCW Convention and two shall be trained in crowd control when carrying more than 12 persons other than crew members.


(Ref. HSC Section 18.3.1 (HS-OSC Version 24 April 2017))

S18.5	Are at least two crew members trained in crowd control?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> NA		
--------------	---	------------------------------	--	-----------------------------	--	--

Crew members are to be qualified in accordance with the STCW Convention and two shall be trained in crowd control when carrying more than 12 persons other than crew members.

Crew members are to be qualified in accordance with the STCW Convention and two shall be trained in crowd control when carrying more than 12 persons other than crew members.

(Ref. HSC Section 18.3.1 (HS-OSC Version 24 April 2017))

S18.6	Does the vessel have an ECDIS and are crew trained in its use?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> NA		
--------------	--	------------------------------	--	-----------------------------	--	---

Craft shall be provided with nautical charts and nautical publications to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage; an electronic chart display and information system (ECDIS) may be accepted as meeting the chart carriage requirements of this paragraph.

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High-speed craft shall be fitted with an ECDIS as follows:

- .1 craft constructed on or after 1 July 2008;
- .2 craft constructed before 1 July 2008, not later than 1 July 2010.

Craft shall be provided with nautical charts and nautical publications to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage; an electronic chart display and information system (ECDIS) may be accepted as meeting the chart carriage requirements of this paragraph.

High-speed craft shall be fitted with an ECDIS as follows:

- .1 craft constructed on or after 1 July 2008;
- .2 craft constructed before 1 July 2008, not later than 1 July 2010.

(Ref. HSC Section 13.8.1/13.8.2)

S18.7	Do the officers having an operational role onboard hold a 'type rating certificate' issued by the administration as per the HSC code section 18.3.3	Yes	No	NA		
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18.3.3 The Administration shall issue a type rating certificate to the master and all officers having an operational role following an appropriate period of operational/simulator training and on the conclusion of an examination including practical test commensurate with the operational tasks onboard the particular type and model of craft concerned and the route followed.

The type rating training shall cover at least the following items:

- .1 knowledge of all on-board propulsion and control systems, including communication and navigational equipment, steering, electrical, hydraulic and pneumatic systems and bilge and fire pumping;
- .2 the failure mode of the control, steering and propulsion systems and proper response to such failures;
- .3 handling characteristics of the craft and the limiting operational conditions;
- .4 bridge communication and navigation procedures;
- .5 intact and damage stability and survivability of the craft in damage condition;
- .6 location and use of the craft's life-saving appliances, including survival craft equipment;
- .7 location and use of escapes in the craft and the evacuation of passengers;
- .8 location and use of fire protection and fire-extinguishing appliances and systems in the event of fire onboard;
- .9 location and use of damage control appliances and systems, including operation of watertight doors and bilge pumps;
- .10 cargo and vehicle stowage and securing systems;
- .11 methods for control of and communication with passengers in an emergency; and
- .12 location and use of all other items listed in the training manual.

18.3.3 The Administration shall issue a type rating certificate to the master and all officers having an operational role following an appropriate period of operational/simulator training and on the conclusion of an examination including practical test commensurate with the operational tasks onboard the particular type and model of craft concerned and the route followed.

The type rating training shall cover at least the following items:

- .1 knowledge of all on-board propulsion and control systems, including communication and navigational equipment, steering, electrical, hydraulic and pneumatic systems and bilge and fire pumping;
- .2 the failure mode of the control, steering and propulsion systems and proper response to such failures;
- .3 handling characteristics of the craft and the limiting operational conditions;

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- .4 bridge communication and navigation procedures;
- .5 intact and damage stability and survivability of the craft in damage condition;
- .6 location and use of the craft's life-saving appliances, including survival craft equipment;
- .7 location and use of escapes in the craft and the evacuation of passengers;
- .8 location and use of fire protection and fire-extinguishing appliances and systems in the event of fire onboard;
- .9 location and use of damage control appliances and systems, including operation of watertight doors and bilge pumps;
- .10 cargo and vehicle stowage and securing systems;
- .11 methods for control of and communication with passengers in an emergency; and
- .12 location and use of all other items listed in the training manual.

(Ref. HSC Code Sections 18.3.3-18.3.5)

S18.8	Is the vessel's operations manual available and valid?	Yes	No	NA	NS	
-------	--	-----	----	----	----	--

Note that this requirement is in addition to the permit to operate.
 Note that this requirement is in addition to the permit to operate.

S18.9	Can the control station be securely separated from passenger interactions?	Yes	No			
-------	--	-----	----	--	--	--

Public spaces shall not contain operating controls unless the operating controls are so protected and located that their operation by a crew member shall not be impeded by passengers during normal and emergency conditions.
 Public spaces shall not contain operating controls unless the operating controls are so protected and located that their operation by a crew member shall not be impeded by passengers during normal and emergency conditions.

(Ref. HSC Section 4.1.3 and 1.4.16)

S18.10	Do the fire alarm system call points look in good condition, armed and ready for immediate operation?	Yes	No	NA		
--------	---	-----	----	----	--	--

Any required fixed fire-detection and fire alarm system with manually operated call points shall be capable of immediate operation at all times.
 Any required fixed fire-detection and fire alarm system with manually operated call points shall be capable of immediate operation at all times.

(Ref. HSC Section 7.7.1.1.1.1)

S18.11	Do areas accessible to passengers contain controls, electrical equipment, high-temperature parts and pipelines, rotating assemblies or other items, from which injury to passengers could result, excluding such items are adequately shielded, isolated, or otherwise protected?	Yes	No	NA		
--------	---	-----	----	----	--	--

Spaces accessible to passengers shall not contain controls, electrical equipment, high-temperature parts and pipelines, rotating assemblies or other items, from which injury to passengers could result, unless such items are adequately shielded, isolated, or otherwise protected.
 Spaces accessible to passengers shall not contain controls, electrical equipment, high-temperature parts and pipelines, rotating assemblies or other items, from which injury to passengers could result, unless such items are adequately shielded, isolated, or otherwise protected.

(Ref. HSC 4.1.2)

S18.12	Are the crew able to show the evacuation procedure and competently walk-through a mass evacuation drill?	Yes	No	NA		
--------	--	-----	----	----	--	--


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HS-OSC Section 1.2.1.2 (b) Operational procedures shall be developed which cover the operation of the craft and changes to the mode of operation (e.g. relocation voyages). Such procedures should also reflect the evacuation procedures for the number of persons carried. These procedures should form part of training drills.

HS-OSC Section 1.2.1.2 (b) Operational procedures shall be developed which cover the operation of the craft and changes to the mode of operation (e.g. relocation voyages). Such procedures should also reflect the evacuation procedures for the number of persons carried. These procedures should form part of training drills.

(Ref. HSC Section 4.8.2)

S18.13	Are seats and safety belts fitted for all passengers and crew as per the vessel's High Speed Safety Certificate?	Yes	No	NA	NS	
--------	--	-----	-----------	----	----	---

A seat shall be provided for each passenger and crew member for which the craft is certified to carry. Such seats shall be arranged in enclosed spaces.

Safety belts shall be provided on passenger seats and crew seats, if necessary, to obtain the protective performance measures described in annex 10.

A seat shall be provided for each passenger and crew member for which the craft is certified to carry. Such seats shall be arranged in enclosed spaces.

Safety belts shall be provided on passenger seats and crew seats, if necessary, to obtain the protective performance measures described in annex 10.

(Ref. HSC Section 4.5.1/HSC Section 4.6.2)

S18.14	Additional Supplement comments?	Yes	No			
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Supplement 19 Walk to Work

The offshore industry is increasingly using walk to work (W2W) as a means of access to offshore assets in both the oil & gas and renewable energy sectors. An actively motion compensated gangway (or motion compensated access device) autonomously compensates for the vessel motions of which it is attached to, by actively altering either its base, telescoping, luffing and slewing angles in order to provide a steady and controlled transitional link between its mother vessel and its target (either another vessel or fixed structure), enabling safe transfer of personnel and, when appropriate, the safe transfer of equipment. This supplement has been prepared by industry with the intent of providing a standardised approach to W2W system inspections. Note that this supplement should not be used for the selection, or as a commissioning checklist for installation of walk to work systems. The basis for this supplement is IMCA M254, *Guidelines for Walk to Work Operations*.

S19.1	Does the walk to work system have an FMEA?	Yes	No			
-------	--	-----	----	--	--	--

The gangway active systems should be designed with the same redundancy philosophy as the vessel DP system and therefore subject to failure modes and effects analysis (FMEA).

Provide date and revision details of analysis within comments.

The gangway active systems should be designed with the same redundancy philosophy as the vessel DP system and therefore subject to failure modes and effects analysis (FMEA).

When answering the above, the AVI will verify the date and revision details of analysis.

(Ref. IMCA M254 Section 2.10)

S19.2	Has regular testing of the FMEA been undertaken and all findings closed out?	Yes	No			
-------	--	-----	----	--	--	--


Due to the safety critical nature of gangway operations regular testing of the FMEA is required. Mobile systems should be tested every time the system is mobilised onto a vessel. Permanent installations should be tested annually or whenever there is significant modification to the system.

Provide date and revision details of test record within comments.

Due to the safety critical nature of gangway operations regular testing of the FMEA is required. Mobile systems should be tested every time the system is mobilised onto a vessel. Permanent installations should be tested annually or whenever there is significant modification to the system.

When answering the above, the AVI will verify the date and revision details of test record.

(Ref. IMCA M254 Section 2.10)

S19.3	Is there a dedicated and backup system for communication between the gangway and key areas, for example, bridge and engine room?	Yes	No			
-------	--	-----	----	--	--	---

A dedicated system for communication between all relevant operating and control locations of the vessel should be provided. There should be a backup communication system, both primary and backup communications should be checked as part of the pre-operation checklists.

A dedicated system for communication between all relevant operating and control locations of the vessel should be provided. There should be a backup communication system, both primary and backup communications should be checked as part of the pre-operation checklists.

(Ref. IMCA M254 Section 2.10)

S19.4	For permanent installations, are the walk to work systems integrated into the vessel’s planned maintenance system?	Yes	No	NA		
-------	--	-----	----	----	--	--

Verify that planned maintenance routines are up to date.

When answering the above, the AVI will verify that planned maintenance routines are up to date.

(Ref. IMCA M254 Section 5)

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S19.5	For mobile systems, are there critical maintenance routines in place?	Yes	No	NA		
-------	---	-----	-----------	----	--	--

Verify that planned maintenance routines are up to date.

When answering the above, the AVI will verify that planned maintenance routines are up to date.

(Ref. IMCA M254 Section 5)

S19.6	Are there critical spares held onboard for the walk to work system?	Yes	No			
-------	---	-----	-----------	--	--	--

Appropriate spare parts for the gangway system are required to be carried onboard.

Appropriate spare parts for the gangway system are required to be carried onboard.

(Ref. IMCA M254 Section 3.1.11 and Section 5)

S19.7	Is there a walk to work operations manual in place?	Yes	No			
-------	---	-----	-----------	--	--	--

The W2W operations manual ideally only contains information specific to operating the vessel and its W2W system during W2W operations.

Verify that it contains information on the following:

- The organisation and responsibilities (on the vessel and between the vessel and asset)
- Vessel specification
- W2W philosophy
- Checklists (prior to commencing W2W operations and during W2W operations)
- W2W trials procedure
- W2W operations procedure.

The W2W operations manual ideally only contains information specific to operating the vessel and its W2W system during W2W operations.

When answering the above, the AVI will verify that it contains information on the following:

- The organisation and responsibilities (on the vessel and between the vessel and asset)
- Vessel specification
- W2W philosophy
- Checklists (prior to commencing W2W operations and during W2W operations)
- W2W trials procedure
- W2W operations procedure.

(Ref. IMCA M254 Section 3.3)

S19.8	Are logs maintained during W2W operations to record events?	Yes	No			
-------	---	-----	-----------	--	--	--

Verify that the following logs are maintained during W2W operations:

- Transfer log
- Bridge log
- Gangway log

When answering the above, the AVI will verify that the following logs are maintained during W2W operations:

- Transfer log
- Bridge log
- Gangway log

(Ref. IMCA M254 Section 3.4)

S19.9	Is the W2W system included in the vessel operator's safety management system (SMS) from an emergency preparedness perspective?	Yes	No			
-------	--	-----	-----------	--	--	--

The SMS should establish procedures on how to respond to, for example:

- Field operator emergency response plan

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- Response to evacuation requests

The SMS should establish procedures on how to respond to, for example:

- Field operator emergency response plan
- Response to evacuation requests

(Ref. IMCA M254 Section 7 and ISM Code chapter 8)

S19.10	Does the gangway have an independent alert system for gangway crossing?	Yes	<u>No</u>			
--------	---	-----	-----------	--	--	--

An independent alert system should be fitted for the gangway crossing. The gangway operation manual should provide advice covering the action to be taken on the specific gangway, but in general:

- Green status lights each end of the gangway to indicate ‘safe to cross’
- Red lights each end of the gangway and an audible alarm to indicate ‘unsafe to cross’, persons on the gangway should act as required by the gangway specific emergency procedures

An independent alert system should be fitted for the gangway crossing. The gangway operation manual should provide advice covering the action to be taken on the specific gangway, but in general:

- Green status lights each end of the gangway to indicate ‘safe to cross’
- Red lights each end of the gangway and an audible alarm to indicate ‘unsafe to cross’, persons on the gangway should act as required by the gangway specific emergency procedures

(Ref. IMCA M254 Section 7.3)

S19.11	Is there evidence of the conduct of W2W system emergency response drills covering different possible scenarios?	Yes	<u>No</u>			
--------	---	-----	-----------	--	--	--

The following scenarios are suggested for emergency response drills.

- Emergency evacuation from the asset using the gangway
- Equipment specific drills
 - a) Emergency lowering elevator
 - b) Automatic retract
- Fire drill with gangway in use
- MOB drill with gangway in use
- Oil leakage drill with gangway in use

The following scenarios are suggested for emergency response drills.

- Emergency evacuation from the asset using the gangway
- Equipment-specific drills
 - a) Emergency lowering elevator
 - b) Automatic retract
- Fire drill with gangway in use
- MOB drill with gangway in use
- Oil leakage drill with gangway in use

(Ref. IMCA M254 Section 7.5)

S19.12	Is there evidence of specific crew training and competence on the normal and emergency use of the W2W system?	Yes	<u>No</u>			
--------	---	-----	-----------	--	--	--

It is the vessel operator’s responsibility to ensure all the onboard key personnel involved with gangway system operations are competent to carry out their duties.

It is the vessel operator’s responsibility to ensure all the onboard key personnel involved with gangway system operations are competent to carry out their duties.

(Ref. IMCA M254 Section 4)

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S19.13	Is there a proactive system in place to report, record and learn from W2W related incidents/events?	Yes	No	NA	NS	
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The vessel operator should proactively encourage the reporting of incidents, accidents and near misses as required in the vessel operator’s safety management system (SMS) and in chapter 9 of the ISM Code.

The vessel operator should proactively encourage the reporting of incidents, accidents and near misses as required in the vessel operator’s safety management system (SMS) and in chapter 9 of the ISM Code.

(Ref. IMCA M254 Section 6)

S19.14	Additional Supplement comments?	Yes	No			
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Supplement 20 Hybrid Battery Systems for DP Vessels

The offshore industry is increasingly upgrading to hybrid battery systems or building new tonnage with hybrid battery systems, in the offshore energy sectors. Battery systems are being fitted to the power grids of vessels and integrated within their power management systems in order to enable more efficient running of internal combustion engines used for power generation. This supplement has been prepared with the intent of providing a standardised approach to Hybrid system inspections. Note that this supplement should not be used for the selection, or as a commissioning checklist for installation of hybrid battery systems. The basis for this supplement is IMCA M250, *Introduction to Hybrid Battery Systems for DP Vessels*.

S20.1	Does the DP system FMEA include analysis of the hybrid battery system?	Yes	No			
-------	--	-----	-----------	--	--	--

If the battery system connects to or has any ability to influence the DP system and its redundancy concept, then the DP failure modes and effects analysis (FMEA) must be updated to include the new installation and those failure modes and effects that are either affected, or created, by the new installation. Batteries may also be fitted to mission equipment and still influence DP systems.

Provide date and revision details of analysis within comments

If the battery system connects to or has any ability to influence the DP system and its redundancy concept, then the DP failure modes and effects analysis (FMEA) must be updated to include the new installation and those failure modes and effects that are either affected, or created, by the new installation. Batteries may also be fitted to mission equipment and still influence DP systems.


When answering the above, the AVI will verify the date and revision details of analysis.

(Ref. IMCA M250 Section 5.5)

S20.2	Are state of charge (SOC) and state of health (SOH) clearly displayed to the operator?	Yes	No			
-------	--	-----	-----------	--	--	--

The operator needs to know the SOC and SOH.

The operator needs to know the SOC and SOH.

S20.3	Are alarms available at the control position for all relevant situations?	Yes	No	NA		
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These alarms may include:

- loss of communication between the battery management system and energy management system or power management system battery
- failure of the management system
- failure or fault in the cooling system (if installed)
- the battery management system has disconnected a battery pack(s)
- low remaining battery charge
- ambient temperature in the battery box or battery room above a specified level
- detection of a build-up of explosive gas

These alarms maybe local or presented on the VMS, some may not be applicable.

These alarms may include:

- loss of communication between the battery management system and energy management system or power management system battery
- failure of the management system
- failure or fault in the cooling system (if installed)
- the battery management system has disconnected a battery pack(s)
- low remaining battery charge
- ambient temperature in the battery box or battery room above a specified level
- detection of a build-up of explosive gas

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These alarms may be local or presented on the VMS, some may not be applicable.

S20.4	Does the DP annual trials programme consider/include testing the detection and protection devices and performance of the hybrid battery system and are all associated findings closed out?	Yes	No	NA		
-------	--	-----	-----------	----	--	--

Battery installations connecting to, or having the ability to influence, the DP system must form part of the DP annual trials programme. Annual trials need to demonstrate that the hybrid elements remain in suitable condition, and, for example, that batteries retain adequate charge and capacity and that the mode functionality remains intact as installed.

Where NA has been selected, **provide** an explanation with details

Provide date and revision details of test record within comments.

Battery installations connecting to, or having the ability to influence, the DP system must form part of the DP annual trials programme. Annual trials need to demonstrate that the hybrid elements remain in suitable condition, and, for example, that batteries retain adequate charge and capacity and that the mode functionality remains intact as installed.

Where NA has been selected the AVI to provide an explanation with details

Provide date and revision details of test record within comments.

(Ref. IMCA M250 Section 5.5)

S20.5	Has all associated DP documentation onboard been updated to include the hybrid battery system?	Yes	No			
-------	--	-----	-----------	--	--	--

Depending on the design and intended use of the hybrid battery installation, DP documentation may be required to be updated to include specific details. By example, DP operations manuals, ASOG and field arrival trials, may require updating.

Depending on the design and intended use of the hybrid battery installation, DP documentation may be required to be updated to include specific details. By example, DP operations manuals, ASOG and field arrival trials, may require updating.

(Ref. IMCA M250 Section 5.6)

S20.6	Have the crew attended a type-specific course for the operation and maintenance of the hybrid system fitted?	Yes	No			
-------	--	-----	-----------	--	--	--

In addition to maintenance crew training, operator training related to specific functionality may also be required to ensure operators fully understand the functionality and operation in both intact DP status and in the event of a DP event.

Onboard training may have been given specific to the installed system by the OEM, this should be considered.

In addition to maintenance crew training, operator training related to specific functionality may also be required to ensure operators fully understand the functionality and operation in both intact DP status and in the event of a DP event.

Onboard training may have been given specific to the installed system by the OEM, this should be considered.

(Ref. IMCA M250 Section 5.6)

S20.7	Have the crew undertaken an approved course in battery and stored energy maintenance and does the vessel carry the correct tools to undertake tasks associated with proactive and reactive maintenance?	Yes	No	NA		
-------	---	-----	-----------	----	--	--

In addition to maintenance crew training, operator training related to specific functionality may also be required to ensure operators fully understand the functionality and operation in both intact DP status and in the event of a DP event.

This should include auxiliary systems – cooling, ventilation, firefighting etc.

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In addition to maintenance crew training, operator training related to specific functionality may also be required to ensure operators fully understand the functionality and operation in both intact DP status and in the event of a DP event.

This should include auxiliary systems – cooling, ventilation, firefighting etc.

(Ref. IMCA M250 Section 5.6)

S20.8	Are maintenance routines in place for hybrid battery systems?	Yes	No			
-------	---	-----	-----------	--	--	--

In addition to maintenance crew training, operator training related to specific functionality may also be required to ensure operators fully understand the functionality and operation in both intact DP status and in the event of a DP event.

Verify that this includes auxiliary systems – cooling, ventilation, firefighting etc.

In addition to maintenance crew training, operator training related to specific functionality may also be required to ensure operators fully understand the functionality and operation in both intact DP status and in the event of a DP event.

When answering the above, the AVI will verify that this includes auxiliary systems – cooling, ventilation, firefighting etc.

(Ref. IMCA M250 Section 5.1)

S20.9	Are spares held onboard for the hybrid battery system?	Yes	No			
-------	--	-----	-----------	--	--	--

This should include auxiliary systems – cooling, ventilation, firefighting etc.

This should include auxiliary systems – cooling, ventilation, firefighting etc.

S20.10	Is a hybrid battery system operations manual in place?	Yes	No			
--------	--	-----	-----------	--	--	--

Comment on the purpose of the hybrid battery system installed on the vessel. The operations manual should be able to explain the purpose of the system.

When answering the above, the AVI will verify the purpose of the hybrid battery system installed on the vessel. The operations manual should be able to explain the purpose of the system.

S20.11	Are records of battery history maintained?	Yes	No			
--------	--	-----	-----------	--	--	--

Logbooks should be kept for battery time in service, SOH, replacement status.

Logbooks should be kept for battery time in service, SOH, replacement status.

S20.12	Is adequate signage on display?	Yes	No			
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Examples include:

- Appropriate precautions are to be taken when opening or entering this space
- Naked lights, smoking and sources of ignition are not permitted within or outside the entrance of a battery box or battery room or ventilation discharge points
- No unauthorised personnel are permitted to enter or open battery boxes or battery rooms

Examples include:

- Appropriate precautions are to be taken when opening or entering this space
- Naked lights, smoking and sources of ignition are not permitted within or outside the entrance of a battery box or battery room or ventilation discharge points
- No unauthorised personnel are permitted to enter or open battery boxes or battery rooms

S20.13	Do the ASOG, CAM and TAM modes address hybrid DP operations?	Yes	No			
--------	--	-----	-----------	--	--	--

Verify that:

- The ASOG is sufficiently populated to include the hybrid system
- CAM and TAM modes are clearly defined with regards the hybrid configuration

When answering the above, the AVI will verify that:

- The ASOG is sufficiently populated to include the hybrid system

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- CAM and TAM modes are clearly defined with regards the hybrid configuration

(Ref. IMCA M220 Section 3)

S20.14	Are regular hybrid battery system endurance tests carried out and documented?	Yes	No	NA		
--------	---	-----	----	----	--	--

In line with annual DP trials performance tests.

In line with annual DP trials performance tests.

S20.15	Are battery spaces/boxes adequately ventilated and away from heat source?	Yes	No			
--------	---	-----	----	--	--	---

Air ducts should not be obstructed.

Air ducts should not be obstructed.

S20.16	Is there evidence of conducting hybrid battery system emergency response drills covering different possible scenarios?	Yes	No			
--------	--	-----	----	--	--	--

The following scenarios are suggested for emergency response drills.

- Emergency stop/shutdown
- Fire drill within the battery storage area and/ converter area
- Response to a single cell or module, fault or failure
- Response to thermal runaway
- Emergency contact for OEM support


The following scenarios are suggested for emergency response drills.

- Emergency stop/shutdown
- Fire drill within the battery storage area and/ converter area
- Response to a single cell or module, fault or failure
- Response to thermal runaway
- Emergency contact for OEM support

S20.17	Is a system in place to report, record and learn from hybrid battery system related incidents/events?	Yes	No	NA	NS	
--------	---	-----	----	----	----	--

The vessel operator should proactively encourage the reporting of incidents, accidents and near misses as required in the vessel operator’s safety management system (SMS) and in chapter 9 of the ISM Code.

The vessel operator should proactively encourage the reporting of incidents, accidents and near misses as required in the vessel operator’s safety management system (SMS) and in chapter 9 of the ISM Code.

S20.18	Are fire detection and fighting systems in place and functional?	Yes	No			
--------	--	-----	----	--	--	---

Verify that:

- Gas, smoke and heat detectors are in battery areas
- Fire extinguishing medium(s) are able to penetrate the casing of batteries to extinguish a potential fire
- Power and control for a fixed fire suppression system is located outside of the battery box or battery room
- There are sufficient portable extinguishers

When answering the above, the AVI will verify that:

- Gas, smoke and heat detectors are in battery areas
- Fire extinguishing medium(s) are able to penetrate the casing of batteries to extinguish a potential fire
- Power and control for a fixed fire suppression system is located outside of the battery box or battery room

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- There are sufficient portable extinguishers

S20.19	Additional Supplement comments?	Yes	No			
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Supplement 21 Battery Propulsion Systems for non-DP Vessels

The offshore industry is increasingly upgrading to hybrid battery systems or building new tonnage with hybrid battery systems, in the offshore energy sectors. Battery systems are being fitted to the propulsion systems of vessels as the main propulsion. This supplement has been prepared with the intent of providing a standardised approach to Hybrid system inspections on non-DP vessels. Note that this supplement should not be used for the selection, or as a commissioning checklist for installation of battery systems.

S21.1	Are state of charge (SOC) and state of health (SOH) clearly displayed to the operator?	Yes	<u>No</u>				
-------	--	-----	-----------	--	--	--	--

The operator needs to know the SOC and SOH.

The operator needs to know the SOC and SOH.

S21.2	Are alarms available at the control position for all relevant situations?	Yes	<u>No</u>				
-------	---	-----	-----------	--	--	--	--

These alarms may include:

- loss of communication between the battery management system and energy management system or power management system battery
- failure of the management system
- failure or fault in the cooling system (if installed)
- the battery management system has disconnected a battery pack(s)
- low remaining battery charge
- ambient temperature in the battery box or battery room above a specified level
- detection of a build-up of explosive gas

These alarms may be local or presented in the VMS, some may not be applicable.

These alarms may include:

- loss of communication between the battery management system and energy management system or power management system battery
- failure of the management system
- failure or fault in the cooling system (if installed)
- the battery management system has disconnected a battery pack(s)
- low remaining battery charge
- ambient temperature in the battery box or battery room above a specified level
- detection of a build-up of explosive gas

These alarms may be local or presented in the VMS, some may not be applicable.

S21.3	Does the vessel documentation account for the battery system?	Yes	<u>No</u>				
-------	---	-----	-----------	--	--	--	--

Comment on what documentation is available.

When answering the above, the AVI will verify what documentation is available.

(Ref. ISM Code Chapters 7 & 11)

S21.4	Have the crew attended a type-specific course for the operation and maintenance of the hybrid propulsion system fitted?	Yes	<u>No</u>				
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In addition to maintenance crew training, operator training related to specific functionality may also be required to ensure operators fully understand the functionality and operation in both intact DP status and in the event of a DP event.

In addition to maintenance crew training, operator training related to specific functionality may also be required to ensure operators fully understand the functionality and operation in both intact DP status and in the event of a DP event.

(Ref. ISM Code Chapter 6)

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S21.5	Have the crew undertaken approved training in battery and stored energy maintenance?	Yes	No			
-------	--	-----	----	--	--	--

Onboard training may have been given specific to the installed system by the OEM, this should be considered.

Onboard training may have been given specific to the installed system by the OEM, this should be considered.

S21.6	Are there maintenance routines in place for the battery systems?	Yes	No		NS	
-------	--	-----	----	--	----	--

Battery systems, when installed, need to form part of the vessel’s maintenance regime. No battery system is completely maintenance free.

Verify that this includes auxiliary systems – cooling, ventilation, firefighting etc.

Battery systems, when installed, need to form part of the vessel’s maintenance regime. No battery system is completely maintenance free.

When answering the above, the AVI will verify that this includes auxiliary systems – cooling, ventilation, firefighting etc.

S21.7	Does the vessel carry the correct tools to undertake tasks associated with proactive and reactive maintenance?	Yes	No			
-------	--	-----	----	--	--	--

Specialist tools may be required to complete maintenance tasks.

Specialist tools may be required to complete maintenance tasks.

S21.8	Are records of battery history maintained	Yes	No			
-------	---	-----	----	--	--	--

Logbooks should be kept for battery time in service, SOH, replacement status.

Logbooks should be kept for battery time in service, SOH, replacement status.

S21.9	Are critical spares held onboard for the battery system?	Yes	No	NA		
-------	--	-----	----	----	--	--

Appropriate spare parts for the hybrid system carried onboard.

Verify that this includes auxiliary systems – cooling, ventilation, firefighting etc.


Appropriate spare parts for the hybrid system carried onboard.

When answering the above, the AVI will verify that this includes auxiliary systems – cooling, ventilation, firefighting etc.

S21.10	Is a battery system operations manual in place?	Yes	No			
--------	---	-----	----	--	--	--

Comment on the purpose of the hybrid battery system installed on the vessel. The operations manual should be able to explain the purpose of the system.

When answering the above, the AVI will comment on the purpose of the hybrid battery system installed on the vessel. The operations manual should be able to explain the purpose of the system.

S21.11	Are battery spaces/boxes adequately ventilated and away from heat source?	Yes	No			
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Air ducts should not be obstructed.

Air ducts should not be obstructed.

S21.12	Are regular hybrid battery system endurance tests carried out and documented?	Yes	No			
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In line with annual system performance tests.

In line with annual system performance tests.

S21.13	Is there evidence of hybrid battery system emergency response drills covering different possible scenarios being conducted?	Yes	No			
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The following scenarios are suggested as a minimum for emergency response drills.

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- Emergency stop/shutdown
- Fire drill within the battery storage area and/ converter area
- Response to a single cell or module fault or failure
- Response to thermal runaway
- Emergency contact for OEM support

The following scenarios are suggested as a minimum for emergency response drills.

- Emergency stop/shutdown
- Fire drill within the battery storage area and/ converter area
- Response to a single cell or module fault or failure
- Response to thermal runaway
- Emergency contact for OEM support

(Ref. ISM Code Chapter 8)

S21.14	Are the charging points and cable in good order?	Yes	No	NA		
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Verify that:

- Charging points located above deck are sufficient to prevent inadvertent down-flooding if the vessel is heeled
- They are sealed with a watertight cap.
- Constructed with non-sparking material

Comment on the condition of plugs, sockets and cable.

When answering the above, the AVI will verify:

- Charging points located above deck are sufficient to prevent inadvertent down-flooding if the vessel is heeled
- They are sealed with a watertight cap.
- Constructed with non-sparking material.
- The condition of plugs, sockets and cable

S21.15	Is a system in place to report, record and learn from hybrid battery system related incidents/events?	Yes	No			
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The vessel operator should proactively encourage the reporting of incidents, accidents and near misses as required in the vessel operator’s safety management system (SMS) and in chapter 9 of the ISM Code.

The vessel operator should proactively encourage the reporting of incidents, accidents and near misses as required in the vessel operator’s safety management system (SMS) and in chapter 9 of the ISM Code.


S21.16	Is appropriate signage on display?	Yes	No			
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Examples include:

- Appropriate precautions are to be taken when opening or entering this space
- Naked lights, smoking and sources of ignition are not permitted within or outside the entrance of a battery box or battery room or ventilation discharge points
- No unauthorised personnel are permitted to enter or open battery boxes or battery rooms

Examples include:

- Appropriate precautions are to be taken when opening or entering this space
- Naked lights, smoking and sources of ignition are not permitted within or outside the entrance of a battery box or battery room or ventilation discharge points
- No unauthorised personnel are permitted to enter or open battery boxes or battery rooms

S21.17	Are fire detection and fighting systems in place and functional?	Yes	No			
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Verify that:

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- Gas, smoke and heat detectors are in battery areas
- Fire extinguishing medium(s) are able to penetrate the casing of batteries to extinguish a potential fire
- Power and control for a fixed fire suppression system is located outside of the battery box or battery room
- There are sufficient portable extinguishers

When answering the above, the AVI will verify that:

- Gas, smoke and heat detectors are in battery areas
- Fire extinguishing medium(s) are able to penetrate the casing of batteries to extinguish a potential fire
- Power and control for a fixed fire suppression system is located outside of the battery box or battery room
- There are sufficient portable extinguishers

S21.18	Additional Supplement comments?	Yes	No				
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Appendix – Additional Images

Upload up to 10 additional images below. Where these support earlier responses, refer to the relevant question in the comments.

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