



**Maritime &  
Coastguard  
Agency**

**Boatmasters' Licence**

**For operators in Inland  
Waterways and Limited  
Coastal Areas**

**Training Record Book**

# **TRAINING RECORD BOOK**

For candidates for the MCA Boatmasters' Licence

## **Notice to candidates**

This Training Record Book is an important document which you need to keep safely. It provides a record of your training in preparation for assessment for obtaining a Boatmasters' Licence, and you will need to present it as part of that process.

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Our thanks are due to all those who have assisted in the preparation of this Training Record Book. In particular we would like to express our thanks to the Passenger Boat Association and the Company of Watermen and Lightermen for their valuable contribution to this document.

Maritime Coastguard Agency

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## 1. Candidate's Personal Details

Surname	
Forenames	
Date of Birth	
Place of Birth	
National Insurance Number (UK candidates)	
Passport Details (non-UK candidates)	
Boatmasters' Licence Number (if held)	
Address	
Address (change)	
Address (change)	
Photograph of Holder (Optional)	
Signature of holder	I certify that the above details are true and accurate.
Date	

**This book is the property of the person whose details appear above. If found, please return it to the latest address shown.**

## 2. Introduction

The Boatmasters' Licence certification structure has been revised. The new arrangements came into force on 4<sup>th</sup> April 2015. The Boatmasters Licence is the principal qualification for masters of vessels operating commercially in inland waterways and limited coastal areas.

**“Inland waterways”** means within waters of Categories A to D as defined in Merchant Shipping Notice (MSN) 1837, “Categorisation of Waters”. A copy of this MSN is available on [www.gov.uk](http://www.gov.uk). Search for “MSN 1837”.

**Limited coastal area**” means an area no more than 5 miles from land and no more than 15 miles from point of arrival and/or departure.

**“Small commercial vessel”** means a vessel certificated to operate under the MCA's Small Commercial Vessel and Pilot Boat (SCV) Codes.

The Boatmasters' Licence has a “Two-Tier” structure, with Tier 1 being a national licence, and Tier 2 being a local licence.

The **Tier 1** Boatmasters' Licence has two levels and is valid for operating a vessel anywhere in the UK, within the relevant water categories and where no Local Knowledge Endorsement is required.

A Tier 1 Level 1 licence is valid for categories A, B and non-linked C waters only, subject to any restrictions specified on the licence and to any specialist and local knowledge endorsements which may be required.

A Tier 1 Level 2 licence is valid for all categories of water A to D, and limited coastal areas, but subject to any restrictions specified on the licence and to any specialist and local knowledge endorsements which may be required.

The Tier 1 Boatmasters Licence provides a national equivalent to the requirements of the European Council (EC) Directive 96/50 on “Harmonisation of the conditions for obtaining national boatmasters' certificates for the carriage of goods and passengers by inland waterways in the community”. A Boatmaster's Certificate, issued in accordance with Directive 96/50/EC will be accepted in other EC countries, subject to any local knowledge requirements. However, separate requirements currently apply on waterways that are subject to the Rhine rules.

The Tier 1 Level 2 Licence may also provide a suitable stepping stone for those who wish to progress towards STCW certification.

The **Tier 2** Boatmasters' Licence is a restricted licence valid only for specified areas, vessels and operations.

A Tier 2 Level 1 licence is a restricted licence valid for all category A canals and (i) specified areas of Category A and/or B waters, or (ii) specified areas of non-linked category C waters.

A Tier 2 Level 2 licence is a restricted licence valid for specified areas of category A to D waters and a limited coastal area. The Tier 2 Level 2 licence is not available for the River Thames below Teddington.

More information about the new licence is available in:

Merchant Shipping Notice (MSN) 1853, The Merchant Shipping (Boatmasters' Qualifications, Crew and Hours of Work) Regulations 2015. Structure and Requirements.

A copy of this MSN is available on [www.gov.uk](http://www.gov.uk). Search for "MSN 1853".

### 3. Guidance Notes for Training Supervisors

1. This Training Record Book (TRB) is published by the Maritime and Coastguard Agency (MCA) for use by candidates/trainees working towards a Boatmasters' Licence (BML), who are undertaking training and gaining experience on board vessels, as required for the issue of a BML. When used during the required periods of qualifying service time (QST) on board vessels, the TRB will ensure that the candidate/trainee receives practical training and experience in the tasks, duties and responsibilities of a boatmaster, and provide a record of that training and experience.

2. A key part of this process is that gaining experience and undertaking training by the candidate/trainee should be overseen by a suitably qualified and experienced person, who should sign off training tasks when a satisfactory standard of proficiency has been achieved. Such persons would normally include a boatmaster, employer, or engineer, and others who may be suitably qualified and experienced.

3. Those overseeing on board training and signing off tasks when a satisfactory standard of proficiency has been achieved should enter their details in Section 8.

4. When all the tasks in a particular section have been completed (or all those which it is possible to complete) the Employer or supervising boatmaster should complete and sign the box at the end of the section, annotating it accordingly, if it has not been possible for all the tasks to be completed.

5. On joining a vessel the candidate/trainee should present their TRB to all persons overseeing their on board training, usually to the boatmaster in the first instance, to establish ongoing targets for completion of further tasks. When any person supervising the on board training changes, or additional people become involved, the candidate/trainee should make their TRB available to these people as well.

6. The boatmaster, employer or other person supervising on board training should ensure that all Health & Safety and Safety Management requirements, and other Company Procedures, are complied with, and that an appropriate level of supervision is provided, before a candidate/trainee undertakes any training task.

**In Section 4 candidates/trainees are instructed that under no circumstances are they to undertake any training activity or task involving the operation or use of vessel machinery, equipment, or similar without prior approval from the Boatmaster, Employer, or Engineer, or other person who may be suitably qualified and experienced, overseeing on board training, and then only when appropriate levels of supervision and safety procedures are in place.**

7. Candidates/trainees should complete all tasks appropriate to the level of BML they are working towards by the end of their training programme. Due to the vessel type and nature of the operation in which a vessel is engaged, it may not be possible to complete all the tasks. In these circumstances these topics will be assessed during the MCA on board oral and practical assessment.

8. Tasks may be completed on any vessel on which the candidate/trainee sails and each task need only be completed once to a satisfactory standard of proficiency. There is no

requirement for a task already signed off to be signed off again on other vessels on which the candidate/trainee subsequently sails.

9. It is the responsibility of the candidate/trainee to ensure that the TRB is properly maintained and completed.

10. Please read the Guidance Notes for Candidates in Section 4 so that you are aware of what the candidate/trainee has been told about their on board training and use of the TRB.

11. Signing off tasks does not constitute formal assessment, and you have no formal responsibility or liability for assessment. Signing off tasks, however, is a serious commitment and undertaking and you should only sign off tasks when you consider the candidate/trainee has achieved a satisfactory standard of proficiency.

12. The employer or boatmaster, who must be an individual appearing in Section 8, should inspect the TRB at intervals of three months, or as close to that period as possible, and record the inspection in Section 9 in accordance with the guidance provided.

## 4. Guidance Notes for Candidates

1. The upkeep and safe keeping of this Training Record Book is your responsibility. Please complete the Personal Details section on page 4 without delay. It is also suggested that you write your name at the top of each sheet.
2. This book must be submitted to the examiner when you have your on board assessment for the Boatmaster's Licence.
3. Please read the Guidance Notes for Vessel Masters, Employers & others supervising on board training in Section 3. This will provide further information about the use of the TRB.
4. On first joining a vessel you should present your TRB to all people supervising your on board training, usually to the Boatmaster in the first instance, to establish ongoing targets for completion of further tasks. When any person supervising on board training changes, or additional people become involved, you should make your TRB available to these people as well.
5. The training task requirements for the Boatmasters' Licence are listed from page 19 onwards. When you have performed a task under observation of the boatmaster, employer or other person supervising on board training but have not yet reached a satisfactory standard of proficiency, you should enter the date against the task. There are spaces for up to 4 entries because you will need to do most of the tasks more than once before you are proficient in them. This will depend on your individual skills and experience, and the vessel you are serving on. When your boatmaster, employer or other person overseeing on board training considers that you have completed a task to a satisfactory standard of proficiency, relevant to the licence being sought, he/she should confirm that by initialling and completing the final column.
6. You will have to complete all of the tasks appropriate to your vessel, the equipment fitted to it and its area of operations. In some cases, this may mean that you do not have to, or may not be able to, do each and every task listed.
8. Before undertaking any training task in the TRB you should first advise the boatmaster, employer or other person overseeing on board training that you wish to do so. This is to ensure that before doing so all Health & Safety and Safety Management requirements, and other Company Procedures, are complied with, and that an appropriate level of supervision is provided.

If you are specifically directed by the the boatmaster, employer or other person overseeing on board training to undertake a task then they will ensure that these requirements are met.

**9. Candidates/trainees are hereby instructed that under no circumstances are they to undertake any training activity or task involving the operation or use of vessel machinery, equipment, or similar without prior approval from the Boatmaster, Employer, or Engineer, or other person who may be suitably qualified and experienced, overseeing on board training, and then only when appropriate levels of supervision and safety procedures are in place.**

10. When you have completed all of the appropriate tasks in a section, to the satisfaction of your boatmaster or employer, they should sign and complete the box at the end of that section, to confirm that you have done so.

11. The Minimum Age and QST requirements for Boatmasters' Licences are given on pages 15 and 16. Detailed information is available in MSN 1853.

12. On qualifying for your BML you should retain this TRB to record further training if you should decide to work towards upgrading your BML or gaining additional specialist endorsements.





## 6. Qualifying Requirements for a Boatmasters' Licence

The requirements for obtaining a Boatmasters' Licence are as follows.

### Tier 1

- meet the minimum age requirements for the relevant Generic Licence and Endorsements
- completion of the appropriate qualifying service time
- presentation of a completed BML Work Record
- completion of all the relevant tasks in this Training Record Book, which must be presented to the examiner when taking the on-board practical and oral assessment
- satisfactory assessment of Underpinning Knowledge for the relevant Generic Licence and Specialist Endorsements, which may be by completion of specified Maritime Studies Qualification(s) or by MCA oral assessment
- completion of ancillary safety training, which may be by completion of specified Maritime Studies Qualification(s) or attendance at MCA approved courses.
- presentation of a valid ML5 medical report, or valid ENG1 medical certificate, or other specified accepted equivalent. Note: Masters of passenger vessels proceeding to sea must hold a valid ENG1 medical certificate
- payment of the statutory fee
- a satisfactory practical and oral on board assessment by an MCA, or MCA approved, examiner.

In addition to the Generic licence, as referred to above, a Tier 1 BML candidate may need to obtain one or more of the following Specialist Endorsements listed below, according to their type of operation.

- General cargoes
- Oil cargoes
- Chemical cargoes
- Liquefied gas cargoes
- Ro-Ro operations
- General passenger operations (up to 250 passengers)
- Large passenger vessel operations (over 250 passengers)
- Towing and Pushing
- Dredging
- Radar
- Fast craft operations (this endorsement is vessel and route specific);

A Local Knowledge endorsement will also be required for operations in certain areas. These are listed in MSN 1853, Section 7.

### Tier 2

- meet the minimum age requirements for the relevant Generic Licence
- completion of sufficient service (to the satisfaction of the MCA examiner)
- presentation of a completed BML Work Record

- completion of all the relevant tasks in this Training Record Book as far as appropriate for your area, vessel(s) and operations, which must be presented to the examiner when taking the on-board practical and oral assessment
- satisfactory oral assessment of Underpinning Knowledge of relevant topics from the Generic and Specialist Endorsement syllabuses appropriate for your area, vessel(s) and operation(s). Note: separate specialist endorsements are not required for a Tier 2 licence.

Assessment of this Underpinning Knowledge will take place during the practical and oral on board assessment (see below)

- completion of ancillary safety training, which may be by completion of specified Maritime Studies Qualification(s) or attendance at MCA approved courses
- presentation of a, valid ML5 medical report or valid ENG1 medical certificate, or other specified accepted equivalent.
- payment of the statutory fee
- a satisfactory practical and oral on board assessment by an MCA, or MCA approved, examiner.

## 7. Minimum Age and Qualifying Service Requirements

### Tier 1

#### Minimum Age

<b>BML Component/Endorsement</b>	<b>Category</b>	<b>Age</b>
Generic Level 1	A, B and non-linked C	18
Generic Level 2	A, B, C, D and limited coastal	18
General Cargoes (Vessels 40m and over)	All	21
General Cargoes (Vessels under 40m)	All	18
Passenger Operations	All	21
Large Passenger Operations	All	22
Radar	All	18
All other endorsements	All	21

#### Qualifying Service

<b>Licence/Endorsement</b>	<b>Minimum Qualifying Period (Months)</b>	<b>Minimum Days Service (Days)</b>
Generic Level 1	12	120
Generic Level 2	24	240
Towing and Pushing Level 1	6	60
Towing and Pushing Level 2	12	120
General Cargoes (All Levels)	6	60
Dredging (All Levels)	6	60
Oil/Chemical/Liquified Gas Cargoes (All Levels)	6	60

Licence/Endorsement	Minimum Qualifying Period (Months)	Minimum Days Service (Days)
General Passenger Level 1	6	60
General Passenger Level 2	12	120
Large Passenger (All Levels)	6	60
Radar	Refer to MSN 1853	
Ro-Ro (Level 2 only)	6	60
Fast Craft	Refer to MSN 1853	

## Tier 2

### Minimum Age Level 1

Passenger Operations	
Numbers	Age
Up to 100 passengers	18
101 to 250 passengers	20
More than 250	21

All Other Operations	
Age	18

### Minimum Age Level 2

Passenger Operations	
Numbers	Age
Up to 100 passengers	18
101 to 250 passengers	20

All Other Operations	
Age	18

**These are quick reference tables. Candidates should read MSN 1853 Section 10 and 11 for detailed information on minimum age and qualifying service time requirements.**





## 10. Training Tasks

The underpinning (theoretical) knowledge syllabuses for the different levels of licence are given in the left hand columns of the task tables. When signing off tasks there is no requirement to assess these knowledge requirements, which is done by other means, but only to confirm that the candidate/trainee has reached a satisfactory standard of proficiency in carrying out the task. The syllabuses are provided simply to give an indication of the scope of that topic and task.

Many of the syllabus learning outcomes use the same terminology for both the Tier 1 Level 2 and Tier 1 Level 1 licences, but the depth of the topics varies according to the level of licence. Tasks should be signed off simply in the context of the vessel concerned irrespective of the category of water in which the vessel is operating.

For specialist endorsements there is no division in the underpinning knowledge syllabuses between the two levels of licence so there is only one syllabus column for these.

The radar and ancillary safety training sections are not mandatory but are provided for candidates to record tasks undertaken which may help to prepare them for the relevant short courses or Maritime Studies Qualification which must be completed, or to put into practice the knowledge and skills acquired on completion of such a course or qualification.

### Tier 1

All the generic tasks, pages 23 to 65, should be completed as appropriate.

All the specialist endorsement tasks are to be found in pages 68 to 118. However, a candidate/trainee needs only to complete the tasks for the endorsement(s) which they may also be working towards.

Note the comment above about the radar endorsement and ancillary safety training tasks.

When you have performed a task under observation of the Boatmaster, Employer or other person overseeing on board training, but have not yet reached a satisfactory standard of proficiency, you should enter the date against it. There are spaces for up to 4 entries because you will need to do most of the tasks more than once before you are proficient in them. This will depend on your individual skills and experience, and the vessel you are serving on. When your boatmaster, employer or other person overseeing on board training considers that you have completed a task to a satisfactory standard of proficiency, relevant to the licence being sought, they should confirm that by initialling and completing the final column.

## **Tier 2**

The Tier 2 Level 1 or 2 Boatmasters' Licence is a restricted licence valid only for specified areas, vessels and operations. Just the generic tasks relevant to the areas, vessels and operations concerned should be completed, and signed off in the same way as described above for the Tier 1 licences.

Separate specialist endorsements are not required for a Tier 2 licence as the relevant topics, depending on the vessel operation, will be examined during the MCA on board oral and practical assessment. So just the relevant tasks from the endorsement sections should be completed.

Note the comment above about the radar endorsement and ancillary safety training tasks.

# Generic Licence Tasks

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## 11. Generic Licence Requirements

1. <u>BRIDGE WATCHKEEPING AND NAVIGATION</u>					
Tier 1 Level 2 Generic Underpinning Knowledge Syllabus	Tier 1 Level 1 Generic Underpinning Knowledge Syllabus	Tasks	Number of times task performed		Task completed satisfactorily
<p>1. <u>Arrival and Departure</u></p> <p>a) Demonstrates a knowledge of securing a vessel for departure</p> <p>b) Describes the process of pre-sailing checks including the methods of securing openings such as weather deck hatches, tank lids, ventilators, air and sounding pipes prior to departure]</p> <p>c) Describes the process of pre-arrival checks and preparations including passenger briefing, readiness of ropes and warps, access equipment, crew briefing. Assessment of wind and/or tide conditions</p> <p>2. <u>Bridge Watchkeeping</u></p> <p>a) Describes the duties expected of a watch-keeper</p> <p>b) Describes the procedures for relief, maintenance, takeover and handover of a watch</p>	<p>1. <u>Arrival and Departure</u></p> <p>a) Demonstrates knowledge of securing a vessel for departure</p> <p>b) Describes the process of pre-sailing checks</p> <p>c) Describes the process of pre-arrival checks and preparations including passenger briefing, readiness of ropes and warps, gangplanks, crew briefing. Assessment of wind and/or flow conditions</p> <p>2. <u>Bridge Watchkeeping</u></p> <p>a) Describes the duties expected of a watch-keeper</p> <p>b) Describes the procedures for relief, maintenance, takeover and handover of a watch</p>	<p>Locate and identify documents carried on board relevant to bridge watchkeeping and navigation</p> <p>Secure vessel for departure</p> <p>Carry out pre-sailing checks</p> <p>Carry out pre-arrival checks and preparations</p> <p>Keep a bridge watch whilst underway</p> <p>Maintain vessels log</p> <p>Takeover/handover a watch</p>			

<p>c) Describes routine communication procedures with other members of the watch/crew on matters relating to watchkeeping</p> <p>d) Recognises and demonstrates a knowledge of the use and meaning of single letter code flags listed in the 'international Code of Signals' (Code flags that are considered essential for the tests are :- A, B, C, D, E, F, J, K, L, M, N, O, U, V, Y and Z)</p> <p>e) Identifies 'Distress Signals'</p> <p>f) Describes the use of phonetic alphabet</p> <p>g) Describes routine and emergency communication procedures</p> <p>h) Demonstrates knowledge of the use of telephones, hand held radios, other signalling devices and emergency signals</p> <p>i) Describes incident and accident reporting procedures</p> <p>j) Demonstrates a working knowledge of the English language in marine terminology</p>	<p>c) Describes routine communication procedures with other team members of the watch on matters relating to watchkeeping duties</p> <p>d) Recognises and demonstrates knowledge of the use and meaning of single letter code flags listed in the 'international Code of Signals' (Code flags that are considered essential for the tests are :- A, B, C, D, E, F, J, K, L, M, N, O, U, V, Y and Z)</p> <p>e) States the distress signals</p> <p>f) Describes the use of phonetic alphabet</p> <p>g) Describes routine and emergency communication procedures</p> <p>h) Demonstrates the use of telephones, hand held radios and emergency signals</p> <p>i) Describes incident and accident reporting procedures</p> <p>j) Demonstrates the working knowledge of the English language in marine terminology</p>	<p>Communicate with team members using correct terminology</p> <p>Recognise and respond to flag, light and sound signals</p> <p>Locate and identify distress signals</p> <p>Demonstrate a knowledge of when and how to use distress signals</p> <p>Use phonetic alphabet</p> <p>Carry out routine and emergency communication procedures</p> <p>Operate communication and alarm systems in accordance with procedures</p> <p>Identify guidance and prepare reports based on a simulated incident</p> <p>Communicate in English using correct marine terminology</p>					
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<p>3. <u>Navigation</u></p> <p>a) Demonstrates a knowledge of good navigational practice while underway</p> <p>b) Demonstrates knowledge of the content and application of the International and National Regulations for Preventing Collisions at Sea as appropriate for vessels in inland waterways, harbours and coastal sea waters</p> <p>c) Describes IALA Buoyage System A and Demonstrates knowledge of the direction of buoyage, recognition of marks from shape, colour, top mark and light</p> <p>d) Describes the procedure for taking the correct action for passing a carninal mark</p> <p>e) Demonstrates the knowledge of depth finding methods and equipments</p> <p>f) Explains and describes the responsibilities of a lookout</p> <p>g) Recognises the relative movement of other vessels</p> <p>4. <u>Anchor Watch</u></p> <p>r) Demonstrates knowledge of maintaining an anchor watch including checks made for dragging an anchor</p>	<p>3. <u>Navigation</u></p> <p>a) Demonstrates a knowledge of good navigational practice while underway</p> <p>b) Demonstrates knowledge of the content and application of the International and National Regulations for Preventing Collisions at Sea as appropriate for vessels in inland waterways and harbours</p> <p>c) Describes IALA Buoyage System A and demonstrates knowledge of the direction of buoyage, recognition of marks from shape, colour, top mark and light</p> <p>d) Describes the procedure for taking the correct action for passing cardinal marks</p> <p>e) Demonstrates the knowledge of depth finding methods and equipments</p> <p>f) Explains the responsibilities of a lookout</p> <p>g) Recognizes the relative movement of other vessels</p> <p>4. <u>Anchor Watch</u></p> <p>r) Demonstrates a knowledge of maintaining an anchor watch including checks made for dragging an anchor</p>	<p>Undertake navigation duties while underway</p> <p>Conduct navigation of the vessel in compliance with colregs and buoyage system</p> <p>Identify various buoys as per IALA Buoyage system A and describe their charectistics.</p> <p>Navigate around cardinal marks</p> <p>Ascertain water depth using a hand lead line and echo sounder</p> <p>Carry out lookout duties</p> <p>Identify the relative movements of other vessels</p> <p>Carry out an anchor watch</p> <p>Carry out checks for dragging anchor</p>					
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**I confirm that this candidate has completed the above tasks on “Bridge Watchkeeping And Navigation” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>1A. BRIDGE WATCHKEEPING AND NAVIGATION</b> (Additional Items for BML Tier 1 Level 2 Only)					
<b>Tier 1 Level 2 Generic Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>1. <u>Tides and Currents</u></p> <p>a) Demonstrates a knowledge of tide tables and tidal stream atlases</p> <p>b) States the causes of spring and neap tides</p> <p>c) Defines height of tide, Mean High Water Spring, Mean Low Water Spring, range of tide, chart datum, height of charted objects, drying heights, spring and neap ranges</p> <p>d) Describes the use of tidal diamonds when using charts</p> <p>e) Finds the height and time of high water and low water using tide tables</p> <p>f) Calculates the height of tide at a given time using tide tables and tidal curves</p> <p>g) Calculates the time the tide will reach a given height using tide tables and tidal curves</p> <p>h) Calculates the correction of soundings to chart datum</p>	<p>Locate and identify documents carried on board relevant to bridge watchkeeping and navigation</p> <p>Use tide tables and tidal stream atlases</p> <p>Demonstrate knowledge of the effect of different tidal conditions on vessel operations</p> <p>Identify and interpret tidal information found on a navigational chart</p> <p>Determine tidal stream using a tidal diamond</p> <p>Determine height and time of high water and low water using tide tables</p> <p>Calculate height of tide using tide tables</p> <p>Calculate the time the tide will reach a given height using tide tables</p> <p>Apply tide corrections to chart soundings</p>				

<p>2. <u>Compass Work</u></p> <p>a)(i) Demonstrates a knowledge of Magnetic Compass:</p> <ul style="list-style-type: none"> <li>• card graduation in degrees</li> <li>• compass bowl and binnacle</li> <li>• dangers of magnetic material in the vicinity of the compass</li> <li>• standard compass/steering compass</li> </ul> <p>(ii) Demonstrates a knowledge of Gyro compass and repeaters, compass alarm and off course alarm</p> <p>b) Demonstrates the use of azimuth mirror, pelorus etc. for taking bearings</p> <p>c) Calculates compass error and deviation by means of transits</p> <p>d) Determines variation and deviation using charts, curves and tables</p> <p>e) Converts compass or gyro courses to true courses</p> <p>3. <u>Chartwork</u></p> <p>a) Demonstrates a knowledge of Navigation and routing charts, sailing directions, chart catalogue, notices to mariners, nautical almanac, tide tables and tidal atlases carried aboard the vessel including distance tables</p> <p>b) Describes the procedures for and makes necessary corrections to update charts and publications including ECDIS.</p>	<p>Use and maintain a magnetic compass</p> <p>Use and maintain a gyro compass</p> <p>Take bearings using an azimuth mirror and pelorus</p> <p>Calculate compass error and deviation by means of transit bearings</p> <p>Calculate variation and deviation using charts,curves and tables</p> <p>Carry out conversion of compass and gyro courses to true courses</p> <p>Demonstrate a knowledge of the contents of the Bridge Publications</p> <p>Carry out corrections to charts and updates to ECDIS</p>					
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c) Demonstrates a knowledge of the use of Navigation drawing instruments, parallel rulers and dividers	Use parallel rulers,dividers and other drawing instruments for navigation					
d) Describes natural scale, distance measurement and chart co-ordinates	Identify the key features and information on a navigational chart					
e) Explains navigational terms, international nautical mile, position line and position circle						
f) Demonstrates a knowledge of the meaning of chart symbols and abbreviations	Use a chart for navigation					
g) Explains and describes the procedures for appraisal, planning, execution and monitoring of a passage plan	Prepare and execute a passage plan.					
h) Identifies charted objects/shore marks suitable for position fixing	Use appropriate landmarks for fixing the vessel's position					
i) Plots the position of the vessel on a chart using latitude and longitude, or position lines derived from charted objects including the use of bearing, range, cross bearings, transits, running fixes, vertical sextant angles, procedures and limitations of navigation by GPS	Fix vessels position by various methods					
j) Explains the effects of set, drift and leeway (drift due to wind) and how to counteract	Allow for the effect of leeway and set and drift on a vessel's course					
k) Calculates dead reckoning (DR) and estimated position (EP)	Calculate dead reckoning and estimated positions					
l) Describes the basic operational features and controls of marine Radar and ARPA	Set up radar and ARPA					
m) Demonstrates a knowledge of the use of radar and ARPA to maintain safety of navigation	Use radar and ARPA for navigation and collision avoidance					
n) Describes reliability, common errors and limitations of Radar, ARPA, Satellite positioning systems, Echo sounder and electronic log	Use other electronic aids to navigation including:					

<p>o) Demonstrates a knowledge of the use of satellite positioning systems such as GPS</p> <p>4. <u>Anchor Work</u></p> <p>a) Describes the types of anchor in common use on vessels operating in inland waterways, harbours and coastal sea areas.</p> <p>b) Describes various parts of anchors, spurling and hawse pipes, connection and marking of anchor cables, chain lockers and connections, bow stoppers and other securing devices.</p> <p>c) Explains the securing of anchors and cables for passage and the importance of ensuring watertight integrity</p> <p>d) Explains anchoring terminology and describes lights, shapes and sound signals for vessels at anchor</p> <p>e) Demonstrates a knowledge of preparations and procedures for anchoring operations including in an emergency</p> <p>f) Describes the safety precautions when anchoring, securing anchors including the safe use of machinery</p>	<ul style="list-style-type: none"> <li>• Satellite positioning systems</li> <li>• Echo sounder</li> <li>• Log</li> </ul> <p>Locate, identify and describe the anchor(s) and associated equipment carried on board</p> <p>Locate and identify spurling pipes etc and explain-the connections and markings of anchor cables and chain locker on board</p> <p>Carry out anchoring operations including:</p> <ul style="list-style-type: none"> <li>• Dropping anchor</li> <li>• Heaving up anchor</li> <li>• Securing anchors and cables for passage</li> <li>• Use of correct anchoring terminology</li> <li>• Display of lights and shapes</li> <li>• Sound signals</li> <li>• Compliance with safety procedures</li> </ul>					
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**I confirm that this candidate has completed the above tasks on “Bridge Watchkeeping And Navigation” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>1B. BRIDGE WATCHKEEPING AND NAVIGATION</b> (Additional Items for BML Tier 1 Level 1 Only)					
Tier 1 Level 1 Generic Underpinning Knowledge Syllabus	Tasks	Number of times task performed			Task completed satisfactorily
a) Demonstrates a knowledge of the use of waterways guides, maps and charts	Locate and identify documents carried on board relevant to bridge watchkeeping and navigation				
	Use waterway guides, maps, and charts for safe navigation				

**I confirm that this candidate has completed the above tasks on “Bridge Watchkeeping And Navigation” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>2. METEOROLOGY</b>						
<b>Tier 1 Level 2 Generic Underpinning Knowledge Syllabus</b>	<b>Tier 1 Level 1 Generic Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
		Locate and identify documents carried on board relevant to meteorological activities				
a) Demonstrates a knowledge of the weather services available to shipping	a) Demonstrates a knowledge of the weather services available to shipping	Obtain weather forecasts from weather services available to shipping				
b) Explains meteorological terms in sufficient depth to interpret weather conditions	b) Explains meteorological terms in sufficient depth to interpret weather conditions	Use appropriate meteorological terminology				
c) Describes types of cloud, cloud cover and precipitation	c) Describes types of cloud, cloud cover and precipitation	Classify the prevailing types of cloud and precipitation				
d) Defines visibility including horizontal visibility	d) Defines visibility including horizontal visibility	Assess visibility				
e) Explains use of non-instrumental observations	e) Explains use of non-instrumental observations	Make non-instrumental observations and assess likely weather developments				
f) Recognise and respond to extreme weather forecast and emerging conditions	f) Recognise and respond to extreme weather forecast and emerging conditions	Recognise signs of approaching bad weather				
g) Describes wind force, Beaufort scale, direction, true and apparent wind		Assess wind force, direction and strength on Beaufort scale (not required for T1 L1)				
h) Describes waves, sea and swell state		Assess sea and state (not required for T1 L1)				

i) Identifies on surface charts the main synoptic patterns and describes the associated weather (UK only)		Interpret synoptic charts (not required for T1 L1)					
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**I confirm that this candidate has completed the above tasks on “Meteorology” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>3. SHIP MANOEUVRING</b>						
<b>Tier 1 Level 2 Generic Underpinning Knowledge Syllabus</b>	<b>Tier 1 Level 1 Generic Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>1. <u>Steering Systems &amp; Their Function</u></p> <p>a) Demonstrates a knowledge of the components of steering systems and their function including selection of information from instruction manual</p> <p>b) Describes the steering wheel or lever, helm indicators, steering motor, rudder, rudder indicators and rate of turn indicators including functioning of the rudder and propellor</p> <p>c) Describes emergency steering systems including the change over procedures</p> <p>2. <u>Steering by Compass</u></p> <p>a) Demonstrates a knowledge of steering a vessel including helm orders and altering course by helm orders</p> <p>b) Demonstrates a knowledge of course keeping, altering course by compass and the procedure for making large alterations including maintaining of course by shore and leading marks</p>	<p>1. <u>Steering Systems &amp; Their Function</u></p> <p>a) Describes the component of steering systems and states their function</p> <p>b) Demonstrates an ability to deal with minor malfunctions</p> <p>2. <u>Helm Orders and Vessel Steering</u></p> <p>a) Demonstrates a knowledge of steering a vessel/boat</p> <p>b) Demonstrates a knowledge of the process of maintaining course by shore marks</p>	<p>Locate and identify documents carried on board relevant to manoeuvring</p> <p>Locate, identify and describe the steering systems in use on board</p> <p>Locate, identify and describe the functioning of the steering system, rudder and propeller, rudder angle indicators and rate of turn indicators</p> <p>Change over to emergency steering systems</p> <p>Carry out helmsman duties, including response to given helm orders</p> <p>Steer a vessel including (as applicable to T1 L2 or T1 L1):</p> <ul style="list-style-type: none"> <li>• By a compass course</li> </ul>				

<p>c) Explains the effect of weather, ship's speed and condition of loading on steering</p> <p>3. <u>Ship Manoeuvring</u></p> <p>a) Explains the effects of deadweight, draught, trim, speed, rudder angle and propeller/transverse thrust on manoeuvring, turning circles and stopping distances</p> <p>b) Explains the effects of single, twin, controllable pitch and fixed propellers on vessel manoeuvring</p> <p>c) Describes the effects of wind, current and tidal stream on vessel manoeuvring/handling</p> <p>d) Describes the effects of underkeel clearance, squat and shallow water on vessel maneuvering</p> <p>e) Describes the effects of vessel to vessel and vessel/bank interaction</p>	<p>c) Explains the effect of weather, ship's speed and condition of loading on steering</p> <p>3. <u>Ship Manoeuvring</u></p> <p>a) Demonstrates the knowledge of manoeuvring vessel under normal condition, including stopping and going astern; coordinating helm and engine.</p> <p>b) States the effects of transverse thrust, single, twin, controllable pitch and fixed propellers on manoeuvring/boat handling, turning circles and stopping distances on the handling of vessel</p> <p>c) Describes the effects of wind, current on vessel manoeuvring</p> <p>d) Describes the effects of underkeel clearance, squat and shallow water on vessel manoeuvring</p> <p>e) Describes the effects of vessel to vessel and vessel/bank interaction</p>	<ul style="list-style-type: none"> <li>• Altering course by compass</li> <li>• Following procedures for large alterations</li> <li>• On a course by using shore marks &amp; leading lights</li> </ul> <p>Steer a vessel taking account of the effect of weather,ships speed and condition of loading</p> <p>Manoeuvre vessel under normal conditions, including stopping and going astern; coordinating helm and engine movements</p> <p>Manoeuvre vessel using engines and thrusters.</p> <p>Manoeuvre vessel using anchor</p> <p>Allow for effects of tide and wind while manoeuvring the vessel</p> <p>Allow for effects of squat, interactions &amp; shallow water effects while manoeuvring</p> <p>Manoeuvre in limited depth of water and confined areas</p>					
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<p>4. <u>Locks, Docks and Bridges</u></p> <p>a) Locks – terminology and mechanical principles</p> <p>b) Demonstrates knowledge of entering and leaving a dock or a lock in all stream conditions</p> <p>c) Demonstrates a knowledge of the rope techniques pertinent to lock or dock operations</p> <p>d) Demonstrates a knowledge of passing through (under) bridges and navigating in close proximity to other structures</p> <p>5. <u>Emergency Manoeuvres</u></p> <p>a) States the precautions to be taken if vessel is aground and; during and after a collision including minimising of collision damage</p>	<p>4. <u>Locks, Docks and Bridges</u></p> <p>a) Locks – terminology and mechanical principles</p> <p>b) Demonstrates knowledge of entering and leaving a dock or a lock in all stream conditions</p> <p>c) Demonstrates a knowledge of the rope techniques pertinent to lock or dock operations</p> <p>d) Demonstrates a knowledge of passing through (under) bridges and navigating in close proximity to other structures</p> <p>5. <u>Emergency Manoeuvres</u></p> <p>a) States the precautions to be taken prior to, after grounding, collision and minimising collision damage</p>	<p>Manoeuvre own vessel while passing another vessel.</p> <p>Manoeuvre close to weirs and discharges</p> <p>Locate, identify and operate manned and unmanned lock equipment</p> <p>Manoeuvre a vessel entering and leaving a dock or lock in various tidal conditions</p> <p>Carry out ropework operations whilst entering and leaving locks and docks</p> <p>Manoeuvre a vessel under bridges and in the vicinity of other moveable and immoveable structures (e.g. power lines or pipes)</p> <p>Manoeuvre a vessel in emergency situations including:</p> <ul style="list-style-type: none"> <li>• Gouging</li> <li>• Collision</li> </ul>				
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b) Demonstrates a knowledge of the manoeuvres for turning short round, emergency stop and man overboard	b) Demonstrates a knowledge of the manoeuvres for turning short round, emergency stop and man overboard	<ul style="list-style-type: none"> <li>• Fire</li> <li>• Abandon ship</li> <li>• Emergency stop</li> <li>• Turning short round</li> <li>• Man overboard</li> <li>• Providing emergency towing assistance</li> </ul>					
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**I confirm that this candidate has completed the above tasks on “Ship Manoeuvring” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>4. <u>VESSEL HANDLING IN EXTREME WEATHER</u></b>						
<b>Tier 1 Level 2 Generic Underpinning Knowledge Syllabus</b>	<b>Tier 1 Level 1 Generic Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>a) Describes the precautions and procedures required to be carried out when heavy weather is expected including the rigging of safety lines, restriction of access to the weather deck</p> <p>b) Demonstrate the knowledge of assessing a place of safety</p> <p>c) Demonstrates a knowledge of turning a vessel in rough sea</p> <p>d) Demonstrates a knowledge of hazards resulting from pitching, pounding, rolling, racing and broaching to</p> <p>e) Describes how and when to make report on the conditions of seaworthiness</p>	<p>a) Describes the precautions and procedures required to be carried out when heavy weather is expected including the rigging of safety lines, restriction of access to the weather deck and securing of loose items</p> <p>b) Demonstrate the knowledge of assessing a place of safety</p> <p>c) Demonstrates a knowledge of turning a vessel in adverse weather</p>	<p>Prepares vessel for heavy weather</p> <p>Assess places of safety in local operating area for different weather conditions</p> <p>Carry out turning manoeuvres in adverse weather conditions</p> <p>Carry out manoeuvres to counteract the hazards resulting from pitching, pounding, rolling, racing and broaching to (not required for T1 L1)</p> <p>Identify and locate items to be checked to ensure condition of seaworthiness is maintained (not required for T1 L1)</p>				

**I confirm that this candidate has completed the above tasks on “Vessel Handling In Extreme Weather” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>5. MOORING AND UNMOORING A VESSEL</b>						
<b>Tier 1 Level 2 Generic Underpinning Knowledge Syllabus</b>	<b>Tier 1 Level 1 Generic Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>a) Demonstrates a knowledge of relevant sections of Merchant Shipping and HSE regulations, M notices, Company regulations and requirements, manufacturers recommendations</p> <p>b) Explains the need for personal safety equipment during mooring and safe positions when towing and mooring ropes under strain</p> <p>c) Demonstrates a knowledge of the safety precautions and safe working practices to be observed in securing the vessel when mooring/unmooring including mooring terminology</p> <p>d) Explains preparation and safe operation of winches, windlass, drum ends and similar machineries in all weather situation</p> <p>e) Explains the dangers of rope bights during towing, securing and mooring operations</p>	<p>a) Demonstrates a knowledge of relevant sections of Merchant Shipping and HSE regulations, M notices, Company regulations and requirements, manufacturers recommendations</p> <p>b) Explains the need for personal safety equipment and clothing, importance of sufficient personnel during mooring and safe positions when towing and mooring ropes under strain</p> <p>c) Demonstrates the use and safe handling of ropes in mooring operations</p> <p>d) Explains preparation and safe operation of winches, windlass, drum ends and similar machineries in all weather situation</p> <p>e) Explains the dangers of rope bights during towing, securing and mooring operations</p>	<p>Locate and identify M-notices, company policies and procedures,</p> <p>Use PPE appropriate to the operation being undertaken</p> <p>Carry out mooring and unmooring operations in accordance with safe procedures</p> <p>Operate and use all machinery in accordance with safe procedures</p> <p>Demonstrate awareness of dangers of bights during towing, securing and mooring operations</p>				

<p>f) Identifies head and stern ropes, breast ropes, towing springs, back springs, shore moorings, bits, fairleads and Panama roller leads</p>	<p>f) Identifies commonly used types of moorings</p>	<p>Locate and identify different types and uses of moorings, and associated fittings and equipment</p>					
<p>g) Explains the characteristics, safe handling and use of ropes including heaving lines in mooring operations</p>	<p>g) Describes the use of heaving lines and messengers including precautionary measures</p>	<p>Use heaving lines and messengers while carrying out mooring operations in accordance with safe procedures</p>					
<p>h) Demonstrates the knowledge of general best practice in getting underway, coming alongside, securing to and letting go from buoys, berth at and leave quay or jetty or another vessel or buoy, with or against wind and/or current</p>	<p>h) Demonstrates the knowledge of general best practice in getting underway, coming alongside, securing to and letting go from buoys, berth at and leave quay or jetty or another vessel or buoy, with or against wind and/or current</p>	<p>Use moorings to assist with arrival and departure manoeuvres in accordance with safe procedures</p>					
<p>i) Demonstrates the use of fenders, overboard discharge covers</p>	<p>i) Demonstrates the use of fenders, overboard discharge covers</p>	<p>Rig fenders and overboard discharge covers</p>					
<p>j)securing the mooring area on departure</p>	<p>j) Explains the need to secure the mooring area on departure</p>	<p>Secure the mooring area on departure in accordance with procedures</p>					
<p>k) Explains the need to keep moorings clear of thrusters and propellers</p>	<p>k) Explains the need to keep moorings clear of thrusters and propellers</p>	<p>State the need for and keep moorings clear of thrusters and propellers</p>					
<p>l) Demonstrates a knowledge of adjusting moorings when alongside, warping along a quay,</p>	<p>l) Demonstrates a knowledge of adjusting moorings when alongside, warping along a quay</p>	<p>Adjust moorings when alongside to take account of weather and tidal conditions and when warping along a quay, in accordance with safe procedures</p>					
<p>m) Explains the use of lines to assist vessels or to tie-up to a vessel</p>	<p>m) Explains the use of lines to assist vessels or to tie-up to a vessel</p>	<p>Moor up to another vessel in accordance with safe procedures</p>					

o) Describes routine and emergency communication procedures	o) Describes routine and emergency communication procedures	Communicate effectively during mooring operations in accordance with procedures and using correct terminology					
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**I confirm that this candidate has completed the above tasks on “Mooring And Unmooring A Vessel” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

6. ROPE WORK AND ACCESS AND LIFTING GEAR						
Tier 1 Level 2 Generic Underpinning Knowledge Syllabus	Tier 1 Level 1 Generic Underpinning Knowledge Syllabus	Tasks	Number of times task performed			Task completed satisfactorily
<p>1. <u>Ropework</u></p> <p>a) Demonstrates a knowledge of safe use of man-made fibre, wire and combination ropes</p> <p>b) Demonstrates the knowledge of inspection and certification of all wires and ropes</p> <p>c) Demonstrates knowledge of correct use of knots, splices, bends, hitches and stoppers</p>	<p>1. <u>Ropework</u></p> <p>a) Demonstrates a knowledge of safe use of man-made fibre, wire and combination ropes</p> <p>b) Demonstrates the knowledge of inspection and certification of all wires and ropes</p> <p>c) Demonstrates knowledge of correct use of knots, splices, bends, hitches and stoppers</p>	<p>Locate and identify documents carried on board relevant to rope work, access and lifting gear</p> <p>Identify different types of ropes, wires and cordage and their usage</p> <p>Demonstrate the care and stowage of ropes, wires and cordage, including break-out of a new coil</p> <p>Identify the safe working loads of ropes, including synthetic fibre and wire rope</p> <p>Select ropes and wires with the correct safe working loads for various uses</p> <p>Demonstrate the correct use of knots, bends and hitches in common use Demonstrate an ability to seize, rack and whip rope and cordage Make up chain and rope stoppers</p>				

<p>d) Demonstrate knowledge of correct use of winches</p> <p>e) Demonstrate the knowledge of purchases, tackles and riggings including mechanical advantage</p> <p>2. <u>Safe Access</u></p> <p>a) Demonstrates a knowledge of the requirements to rig, recover and maintain gangways and other safe means of access to a vessel</p> <p>b) Describes the methods available to ensure safe movement onboard ship</p> <p>c) Describes the effects of tide, wind, waves, swell, changes of draught, trim and passing vessels while alongside</p>	<p>d) Demonstrate knowledge of correct use of winches</p> <p>2. <u>Safe Access</u></p> <p>a) Describes the gangways, accommodation ladders and other approved means of access to the vessel, and how safe means of access to a vessel is achieved</p> <p>b) Describes the methods available to ensure safe movement onboard ship</p> <p>c) Describes the effect of changing weather and passing vessels while alongside</p>	<p>Demonstrate an ability to make various splices using different types of rope and cordage including multi-strand, plaited manilla, synthetic fibre and wire rope</p> <p>Operate winches and associated machinery and equipment</p> <p>Rig purchases and tackles to obtain appropriate mechanical advantage (not required for T1 L1)</p> <p>Rig ladders, gangways and other approved means of access</p> <p>Rig safety lines and other gear to ensure safe movement around the vessel</p> <p>Adjust means of access to take account of changing conditions</p>					
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**I confirm that this candidate has completed the above tasks on “Ropework And Access” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>7. SHIP KNOWLEDGE</b>						
<b>Tier 1 Level 2 Generic Underpinning Knowledge Syllabus</b>	<b>Tier 1 Level 1 Generic Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>1. <u>Publications and General</u></p> <p>a) Demonstrates a knowledge of terms and definitions used in connection with vessel operations and vessel construction</p> <p>b) Explains the relationship between law, codes and other forms of guidance</p> <p>c) Demonstrates a knowledge of legislation, Codes of Practice and M Notices and Safety Management System</p> <p>d) Demonstrates a knowledge of the law, codes, principles and procedures and other forms of guidance relating to:</p> <ul style="list-style-type: none"> <li>• maintaining a safe working environment on board ship</li> <li>• safe movement to, from and around the vessel</li> <li>• reporting of accidents and dangerous occurrences</li> <li>• risk assessment</li> <li>• using chemicals or other hazardous materials, COSHH (Control of Substances</li> </ul>	<p>1. <u>Publications and General</u></p> <p>a) Demonstrates a knowledge of terms and definitions used in connection with vessel operations and vessel construction</p> <p>b) Explains the relationship between law, codes and other forms of guidance</p> <p>c) Demonstrates a knowledge of legislation, Codes of Practice and M Notices and Safety Management System</p> <p>d) Demonstrates a knowledge of the law, codes, principles and procedures and other forms of guidance relating to:</p> <ul style="list-style-type: none"> <li>• maintaining a safe working environment on board ship</li> <li>• safe movement to, from and around the vessel</li> <li>• reporting of accidents and dangerous occurrences</li> <li>• risk assessment</li> <li>• using chemicals or other hazardous materials, COSHH (Control of Substances</li> </ul>	<p>Show proficiency in the use of marine terminology</p> <p>Apply guidance in respect of:</p> <ul style="list-style-type: none"> <li>• safe working practices</li> <li>• safe movement on board</li> <li>• reporting of accidents and near misses</li> <li>• carrying out risk assessments</li> <li>• precautions while handling and using chemicals</li> <li>• personal protective clothing and equipment</li> </ul>				

<p>Hazardous to Health) Regulations</p> <ul style="list-style-type: none"> <li>personal protective clothing and equipment</li> </ul> <p>e) Appreciates the requirements of records for commercial and legislative process</p> <p>f) Describes the recording methods available – written records</p> <p>g) Explains the requirement for accuracy, brevity and clarity in record keeping</p> <p>2. <u>Ship Construction</u></p> <p>a) Demonstrates a knowledge of ship construction features for various ship types sufficient to assist with ensuring watertightness and sea worthiness including the function and structure of tanks</p> <p>b) Explains the methods of ensuring watertightness and seaworthiness when closing openings in deck, bulkheads, deck machinery and lifting devices, ventilators, air and sounding pipes including features to aid the shedding of water</p> <p>c) Describes the siting and securing of air and sounding pipes, bilge and ballast piping systems from tanks/holds to engine rooms including non return valves, sea chests and mud boxes</p>	<p>Hazardous to Health) Regulations</p> <ul style="list-style-type: none"> <li>personal protective clothing and equipment</li> </ul> <p>e) Appreciates the requirements of record keeping for legal or commercial purpose including</p> <p>f) Describes the recording methods available – written records</p> <p>g) Explains the requirement for accuracy in record keeping</p> <p>2. <u>Ship Construction</u></p> <p>a) Demonstrates a knowledge of ship construction features for various ship types sufficient to assist with ensuring watertightness and sea worthiness including the function and structure of tanks</p> <p>b) Explains the methods of ensuring watertightness and seaworthiness when closing openings in deck, bulkheads, deck machinery and lifting devices, ventilators, air and sounding pipes including features to aid the shedding of water</p> <p>c) Describes the siting and securing of air and sounding pipes, bilge and ballast piping systems from tanks/holds to engine rooms including non return valves, sea chests and mud boxes</p>	<p>Assist in completing record books and log books</p> <p>Identify on the ships plans construction features which assist in ensuring watertight integrity</p> <p>Demonstrate ability to open and close openings on deck, bulkheads, ventilators, air and sounding pipes and other structures which assist in ensuring watertightness and seaworthiness</p> <p>Locate and identify air and sounding pipes, bilge and ballast piping systems from tanks/holds to engine rooms, including non-return</p>					
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<p>d) Demonstrates knowledge of bilge pumping system</p> <p>e) Explains the causes of stress in a ship's</p> <p>f) Describes the cause and regions affected by forces exerted on a ship – loads that create stress and strain in still water and a seaway</p> <p>g) Describes the variation in stress and strain – effect of pressure caused by the sea and by liquids in tanks (static and moving), stresses due to uneven loading on decks, holds and engine spaces</p> <p>h) Identifies structures to resist pounding, panting including the parts of structure liable to sustain damage due to heavy weather, vibration, shifting cargo, grounding or collision</p> <p>3. <u>Ship Stability</u></p> <p>a) Describes the basic principles of ship stability including the principles of floatation</p> <p>b) Describes water and weather tightness, watertight integrity and reserve buoyancy, watertight doors, ports, windows, deadlights and doors</p>	<p>d) Demonstrates knowledge of bilge pumping system</p> <p>e) Explains the causes of stress in a ship's structure</p> <p>f) Describes the cause and regions affected by forces exerted on a ship – loads that create stress and strain in still water and a seaway</p> <p>g) Describes the variation in stress and strain – effect of pressure caused by the sea and by liquids in tanks (static and moving), stresses due to uneven loading on decks, holds and engine spaces</p> <p>h) Identifies structures to resist pounding, panting including the parts of structure liable to sustain damage due to heavy weather, vibration, shifting cargo, grounding or collision</p> <p>3. <u>Ship Stability</u></p> <p>a) Describes the basic principles of ship stability including the principles of floatation</p> <p>b) Describes water and weather tightness, watertight integrity and reserve buoyancy, watertight doors, ports, windows, deadlights and doors</p>	<p>valves, sea chests and mud boxes</p> <p>Operate the bilge pumping system in accordance with procedures</p> <p>Locate and identify the areas on board most affected by stress</p> <p>Plan loading of fuel, stores and cargo to avoid uneven loading on decks</p> <p>Locate and identify those structures designed to resist stress and strain</p> <p>The following tasks support the ship stability syllabus:</p> <p>Locate and identify the vessel stability book/information</p>					
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<p>c) Define mass, volume, density and relative density</p> <p>d) Define volume, displacement, deadweight, buoyancy, waterline length, breadth, draught, Length overall, Length between perpendicular, freeboard (freeboard deck/deck line to water line) and identifies hydrostatic data</p> <p>e) Define Centre of Buoyancy, Centre of Gravity, free surface, transverse metacentre, up-righting lever, up-righting moment at small angle of heel</p> <p>f) Explain stable, neutral and unstable equilibrium, stiff and tender vessels</p> <p>f) Explain the effect on Centre of Gravity (G) on loading, discharging, moving weights, ballasts or bunkers and changes (if any) in stability during voyage</p> <p>g) Explain the dangers and effect of free surface at small angle of heel</p>	<p>c) Define mass, volume, density, relative density</p> <p>d) Define volume, displacement, deadweight, buoyancy, waterline length, breadth, draught, Length overall, Length between perpendicular, freeboard (freeboard deck/deck line to water line) and identifies hydrostatic data</p> <p>e) Define Centre of Buoyancy, Centre of Gravity, free surface, transverse metacentre, up-righting lever, up-righting moment at small angle of heel</p> <p>f) Explain stable, neutral and unstable equilibrium, stiff and tender vessels</p> <p>f) Explain the effect on Centre of Gravity (G) on loading, discharging, moving weights, ballasts or bunkers and changes (if any) in stability during voyage</p> <p>g) Explain the dangers and effect of free surface at small angle of hee</p>	<p>Handle the vessel taking into account the effect of manoeuvres on stability</p> <p>Monitor movements of passengers on board for potential effects on stability</p> <p>Load stores, fuel, water and ballast taking into account the potential effects on the centre of gravity, draft, trim and any free surface effect</p> <p>Load cargo taking into account the potential effects on the centre of gravity, draft, trim and any free surface effect</p> <p>Monitor moving weights, fuel, water, ballast and cargo whilst on passage for potential effects on stability</p>					
<p>4. <u>Maintenance</u></p> <p>a) Identifies plans, specifications, materials and equipment and the need to ensure availability</p> <p>b) Demonstrates a knowledge of use of various types of paints and correct lubrication of moving parts including scheduling of lubrication for deck machinery and equipment</p>	<p>4. <u>Maintenance</u></p> <p>a) Identifies plans, specifications, materials and equipment and the need to ensure availability</p> <p>b) Demonstrates a knowledge of use of various types of paints and correct lubrication of moving parts including scheduling of lubrication for deck machinery and equipment</p>	<p>Locate and identify the maintenance plans and schedules, materials and equipment on board</p> <p>Carry out maintenance tasks, including painting, servicing, lubrication and cleaning,</p>					

<p>c) Prepares surfaces for coating steel, aluminium and wood</p> <p>d) Explains the maintenance of fire fighting and life saving equipment</p> <p>e) Demonstrates a knowledge of the need for preparation of work area and resources for maintenance</p> <p>f) Identifies work area, tools and materials including safe stowage and use of materials</p> <p>g) Explains 'Permit to Work' procedures</p> <p>5. <u>Lifting Gear</u></p> <p>a) States the precaution to take when using lifting gears</p> <p>b) States the precautions to be taken when fork-lift trucks or similar devices are used</p> <p>c) States that all cargo gear should be inspected before the start of operations each day</p> <p>d) Identifies lubrication schedules for deck machinery and equipment including correct lubrication of moving parts</p>	<p>c) Prepares surfaces for coating steel, aluminium and wood</p> <p>d) Explains the maintenance of fire fighting and life saving equipment</p> <p>e) Demonstrates a knowledge of the need for preparation of work area and resources for maintenance</p> <p>f) Identifies work area, tools and materials including safe stowage and use of materials</p> <p>g) Explains 'Permit to Work' procedures</p> <p>5. <u>Lifting Gear</u></p> <p>a) States the precaution to take when using lifting gears</p> <p>b) States the precautions to be taken when fork-lift trucks or similar devices are used</p> <p>c) States that all cargo gear should be inspected before the start of operations each day</p> <p>d) Identifies lubrication schedules for deck machinery and equipment including correct lubrication of moving part</p>	<p>Carry out surface preparation prior to coating</p> <p>Carry out maintenance of fire fighting and life saving equipment</p> <p>Prepare a work area, tools, equipment and materials, in accordance with all relevant safety and other procedures</p> <p>Notify other personnel and departments and post warning signs as appropriate before starting work</p> <p>Comply with 'Permit to Work' procedures before starting work.</p> <p>Operate lifting gear in accordance with all safety procedures</p> <p>Operate forklift trucks or similar in accordance with all safety procedures</p> <p>Inspect lifting gear before use</p> <p>Implement machinery lubrication schedules</p>					
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e) Outlines the care and maintenance of lifting gears including derricks, cranes and other gears	e) Outlines the care and maintenance of lifting gears including derricks, cranes and other gears	Carry out maintenance of lifting gear					
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**I confirm that this candidate has completed the above tasks on “Ship Knowledge” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>8. BASIC ENGINEERING AND MACHINERY</b>						
<b>Tier 1 Level 2 Generic Underpinning Knowledge Syllabus</b>	<b>Tier 1 Level 1 Generic Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>		<b>Task completed satisfactorily</b>	
<p><u>1. General Engineering Practice and Procedures</u></p> <p>a) Demonstrates a knowledge of relevant safety regulations, machinery operating instructions, conditions, manufacturer’s instructions</p> <p>b) Plans engineering practices and procedures for small vessel propulsion machinery, auxiliaries and services in compliance with safety regulations including the use of machinery schedules and instructions (to include manufacturer’s instructions).</p> <p>c) Explains system operation and principles involved including the appropriate sequence and timing of activities for machinery and auxiliary operations</p> <p>d) Explains preparation of machinery and auxiliaries and knows how to carry out operations according to plan</p>	<p><u>1. General Engineering Practice and Procedures</u></p> <p>a) Demonstrates a knowledge of relevant safety regulations, machinery operating instructions, conditions, manufacturer’s instructions</p> <p>b) Plans engineering practices and procedures for small vessel propulsion machinery, auxiliaries and services in compliance with safety regulations including the use of machinery schedules and instructions (to include manufacturer’s instructions)</p> <p>c) Explains system operation and principles involved including the appropriate sequence and timing of activities for machinery and auxiliary operations</p> <p>d) Explains preparation of machinery and auxiliaries and knows how to carry out operations according to plan</p>	<p>Demonstrate an understanding of the safe operation of machinery on board</p> <p>Demonstrate a knowledge of how to implement on board planned engineering practices and procedures</p> <p>Demonstrate a knowledge of on board engineering systems and the sequence of activities for operation</p> <p>Carry out pre-starting checks of auxiliary and ancillary machinery and services</p> <p>Carry out pre-starting checks of main propulsion machinery</p> <p>Start auxiliary and ancillary machinery and services</p> <p>Start main propulsion units</p>				

<p>e) Describes how to locate common faults including the causes of machinery malfunctions and actions required to be taken</p>	<p>e) Describes how to locate common faults including the causes of machinery malfunctions and actions required to be taken</p>	<p>Demonstrate an understanding of common machinery faults and malfunctions which might occur and remedial actions to take</p>					
<p>f) Describes how to operate the control systems, possible problems and how to identify and correct minor deviations</p>	<p>f) Describes how to operate the control systems, possible problems and how to identify and correct minor deviations</p>	<p>Demonstrate knowledge of the defect reporting procedures</p> <p>Operate on board control systems</p> <p>Demonstrate knowledge of common faults and deviations which might occur in the control systems and corrective actions to be taken</p>					
<p>g) Describes emergency shut down sequence, timing and hazards</p>	<p>g) Describes emergency shut down sequence, timing and hazards</p>	<p>Demonstrate knowledge of how to take emergency shut down action on board</p>					
<p>h) Describes how to make adjustments to achieve and maintain safe operation including the use of instruments to monitor conditions</p>	<p>h) Describes how to make adjustments to achieve and maintain safe operation including the use of instruments to monitor conditions</p>	<p>Identify the operating parameters of on board main propulsion, auxiliary and ancillary machinery</p> <p>Demonstrate a knowledge of and implement monitoring procedures for safe operation of machinery and systems on board</p> <p>Check machinery is operating within specified parameters</p>					

<p>i) Describes measures to avoid pollution of the marine environment</p> <p><u>2. Pumping and associated Control Systems</u></p> <p>a) Demonstrates a knowledge of relevant safety regulations, conditions, manufacturer’s instructions and maintenance schedules with respect to pumping and associated control systems</p> <p>b) Describes planning for pumping operations</p> <p>c) Describes routine pumping operations, bilge, ballast and operational pumping systems, equipment and machinery operations and possible problems that could occur</p>	<p>i) Describes measures to avoid pollution of the marine environment</p> <p><u>2. Pumping and associated Control Systems</u></p> <p>a) Demonstrates a knowledge of relevant safety regulations, conditions, manufacturer’s instructions and maintenance schedules with respect to pumping and associated control systems</p> <p>b) Describes planning for pumping operations</p> <p>c) Describes routine pumping operations, bilge, ballast and operational pumping systems, equipment and machinery operations and possible problems that could occur</p>	<p>Demonstrate an understanding of actions to be taken if machinery is running outside specified operating parameters.</p> <p>Demonstrate a knowledge of how to make adjustments to maintain safe operation</p> <p>Comply with engineering anti-pollution procedures</p> <p>Demonstrate an understanding of the safe operation of pumping systems on board</p> <p>Demonstrate a knowledge of on board pumping systems and the sequence of activities for operation</p> <p>Demonstrate a knowledge of how to implement on board planned pumping practices and procedures</p> <p>Start up and operate vessel pumping systems</p> <p>Demonstrate an understanding of common faults and malfunctions which might occur in</p>					
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<p>d) Describes how to use instruments to monitor conditions</p> <p>e) Demonstrates a knowledge of precautions to prevent pollution of the marine environment, anti-pollution procedures and associated equipment</p> <p>3. <u>Electrical Equipment</u></p> <p>a) Describes the basic principles and operation of electrical machines (to include alternators or generators and control systems)</p> <p>b) Describes electrical systems, protection arrangements, circuits and circuit breakers, instruments to monitor conditions</p> <p>c) Describes the maintenance of electrical supply within given conditions, possible problems and irregularities that could occur</p> <p>d) Explains fault detection system operation and isolating procedures including simple fault diagnosis, location of common faults on plant and control systems and actions to prevent damage</p>	<p>d) Describes how to use instruments to monitor conditions</p> <p>e) Demonstrates a knowledge of precautions to prevent pollution of the marine environment, anti-pollution procedures and associated equipment</p> <p>3. <u>Electrical Equipment</u></p> <p>a) Describes the basic principles and operation of electrical machines (to include alternators or generators and control systems)</p> <p>b) Describes electrical systems, protection arrangements, circuits and circuit breakers, instruments to monitor conditions</p> <p>c) Describes the maintenance of electrical supply within given conditions, possible problems and irregularities that could occur</p> <p>d) Explains fault detection system operation and isolating procedures including simple fault diagnosis, location of common faults on plant and control systems and actions to prevent damage</p>	<p>pumping systems and remedial actions to take</p> <p>Demonstrate an ability to use instruments to monitor conditions</p> <p>Comply with anti-pollution procedures for pumping operations</p> <p>Demonstrate an understanding of the safe operation of electrical machinery and control systems on board</p> <p>Demonstrate knowledge of on board electrical systems, machinery and instruments and the sequence of activities for operation</p> <p>Start up and operate vessel electrical systems and maintain supply within given parameters</p> <p>Demonstrate an understanding of common faults and malfunctions which might occur in electrical systems and remedial actions to take</p>					
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		Demonstrate an ability to use instruments and fault detection systems to monitor conditions on board					
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**I confirm that this candidate has completed the above tasks on “Basic Engineering And Machinery” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>9. HEALTH AND SAFETY</b>						
<b>Tier 1 Level 2 Generic Underpinning Knowledge Syllabus</b>	<b>Tier 1 Level 1 Generic Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>a) Demonstrates a knowledge of the principles of health and safety practice</p> <p>b) Demonstrates a knowledge and understanding of of regulations and guidance on risk assessment and other general duties under h&amp;s legislation</p> <p>c) Demonstrates a knowledge of the safety precautions, regulations, codes of practice and guidelines relating to:</p> <ul style="list-style-type: none"> <li>• working at a height or over side</li> <li>• demonstrates knowledge of planned maintenance systems for LSA and FFA</li> <li>• entry into and working in enclosed spaces</li> </ul>	<p>a) Demonstrates a knowledge of the principles of health and safety practice</p> <p>b) Demonstrates a knowledge and understanding of of the regulations, Code of Safe Working Practices for Merchant Seamen on risk assessment,</p> <p>c) Demonstrates a knowledge of the safety precautions, regulations, codes of practice and guidelines relating to:</p> <ul style="list-style-type: none"> <li>• working at a height or over side</li> <li>• demonstrates knowledge of planned maintenance systems for LSA and FFA</li> <li>• entry into and working in enclosed spaces</li> </ul>	<p>Locate and identify documents carried on board relevant to health and safety requirements and procedures</p> <p>Carry out task based and vessel based risk assessments</p> <p>Comply with health and safety requirements and procedures when carrying out any of the following or similar activities:</p> <ul style="list-style-type: none"> <li>• working at a height or over side</li> <li>• planned maintenance of LSA and FFA</li> <li>• entering and working in enclosed spaces</li> </ul>				

<ul style="list-style-type: none"> <li>• use of powered cleaning devices, hand and powered tools</li> <li>• operating lifting plant and the slinging of heavy equipment</li> <li>• use and storage of chemical or other hazardous materials</li> <li>• protective equipment and clothing</li> <li>• cargo access equipment</li> <li>• maintenance of batteries</li> <li>• noise</li> <li>• vibration</li> </ul>	<ul style="list-style-type: none"> <li>• use of powered cleaning devices, hand and powered tools</li> <li>• operating lifting plant and the slinging of heavy equipment</li> <li>• use and storage of chemical or other hazardous materials</li> <li>• protective equipment and clothing</li> <li>• cargo access equipment</li> <li>• maintenance of batteries</li> <li>• noise</li> <li>• vibration</li> </ul>	<ul style="list-style-type: none"> <li>• using powered cleaning devices, hand and powered tools</li> <li>• operating lifting plant and slinging heavy equipment</li> <li>• using and storing chemical and other hazardous materials</li> <li>• using protective equipment and clothing</li> <li>• operating cargo access equipment</li> <li>• maintenance of batteries</li> <li>• use appropriate protection when working in a area with significant noise levels</li> <li>• working in an area with significant vibration levels</li> </ul>				
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**I confirm that this candidate has completed the above tasks on “Health And Safety” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>10. EMERGENCY ACTION</b>						
<b>Tier 1 Level 2 Generic Underpinning Knowledge Syllabus</b>	<b>Tier 1 Level 1 Generic Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>a) States the contingency plans and action to take in the event of emergencies at sea or in port as applicable, including imminent collision, collision, stranding, grounding, beaching, shoring, flooding, man overboard and abandon ship and fire</p>	<p>a) States the contingency plans and actions to take in the event of emergencies including imminent collision, collision, grounding, beaching, flooding, man overboard and abandon ship and fire</p>	<p>Participate in the following emergency drills and exercises, performing effectively in accordance with procedures:</p> <p>Fire</p> <p>Engine/propeller failure</p> <p>Rudder failure</p> <p>Collision</p> <p>Grounding, stranding or beaching</p> <p>Flooding</p> <p>Man overboard</p> <p>Medical incident</p> <p>Violent acts and threatening or abusive behaviour</p> <p>Assisting another vessel in distress</p> <p>Take initial action on discovering a potential emergency situation in accordance with procedures</p>				

<p>b) Identifies the nature of emergency and takes initial action to conform to the vessel's emergency procedure</p> <p>c) Communicates information to the relevant personnel promptly and accurately</p> <p>d) Takes appropriate action on recognising an alarm signal in accordance with emergency procedure including the raising of alarm promptly by the most appropriate method available</p> <p>e) Explains the methods of making distress and emergency alerts including use of equipment</p> <p>f) Describes how to avoid sending false alerts and the remedial action to take if a false alert is sent</p> <p>g) Demonstrates a knowledge of basic Search and Rescue arrangements including SARCo plans as applicable to inland waterways and limited distances to sea.</p>	<p>b) Identifies the nature of emergency and takes initial action to conform to the vessel's emergency procedure</p> <p>c) Communicates information to the relevant personnel promptly and accurately</p> <p>d) Takes appropriate action on recognising an alarm signal in accordance with emergency procedure including the raising of alarm promptly by the most appropriate method available</p> <p>e) Explains the methods of making distress and emergency alerts including use of equipment</p> <p>f) Describes how to avoid sending false alerts and the remedial action to take if a false alert is sent</p> <p>g) Demonstrates a knowledge of basic Search and Rescue arrangements including SARCo plans as applicable to inland waterways and limited distances to sea.</p>	<p>Carry out communications in accordance with procedures while participating in an emergency drill</p> <p>Respond to alarm signals in accordance with procedures</p> <p>Demonstrate knowledge of how to make emergency and distress alerts by all the available means on board</p> <p>Demonstrate knowledge of how to cancel a false alert</p> <p>Implement Search and Rescue procedures including SAR Cooperation plans as applicable to the vessel</p>					
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**I confirm that this candidate has completed the above tasks on “Emergency Action” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>11. POLLUTION PREVENTION AND WASTE MANAGEMENT</b>						
<b>Tier 1 Level 2 Generic Underpinning Knowledge Syllabus</b>	<b>Tier 1 Level 1 Generic Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>a) Describes how MARPOL and other current guidance and legislation provides knowledge of the precautions and procedures to be taken to prevent pollution of the marine environment.</p> <p>b) Demonstrates a knowledge of policies, vessel operations, bunkering, hazardous substances on board, garbage and tank residual disposal, noise and clean air</p>	<p>a) Describes how MARPOL and other current guidance and legislation provides knowledge of the precautions and procedures to be taken to prevent pollution of the marine environment.</p> <p>b) Demonstrates a knowledge of policies, vessel operations, bunkering, hazardous substances on board, garbage and tank residual disposal, noise and clean air</p>	<p>Locate and identify documents carried on board relevant to pollution prevention and waste management</p> <p>Locate and identify on board anti-pollution equipment</p> <p>Participate in anti-pollution exercises</p> <p>Participate in bunkering operations in accordance with procedures</p> <p>Participate in disposal of tank residues in accordance with procedures-</p> <p>Participate in disposal of general rubbish in accordance with procedures</p> <p>Participate in disposal of hazardous and oil/diesel waste in accordance with procedures</p>				

**I confirm that this candidate has completed the above tasks on “Pollution Prevention And Waste Management” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

# Specialist Operations, Local Knowledge and Ancillary Safety Training Tasks

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## 12. Specialist Operations Endorsements

1. <u>GENERAL CARGOES</u>					
Underpinning Knowledge Syllabus	Tasks	Number of times task performed			Task completed satisfactorily
<p>1. <u>General Principles And Procedures</u></p> <p>a) Explains the principles and safe working practices for the proper loading, and discharging of dry and bulk cargoes including powdery cargo</p> <p>b) Demonstrates a knowledge of safe procedures to be adopted for opening and closing cargo holds such as wooden, pontoon and Mcgregor type hatch covers</p> <p>c) Describes the operation of access equipment for hatches, hatch covers, rampways, side/bow/stern doors and ramps</p> <p>d) Demonstrates knowledge of rigging of cargo gear, proper and appropriate use of slings and other types of lifting equipment</p> <p>e) Explains the procedures for the loading, stowage and securing of dry cargo</p> <p>f) Demonstrates a knowledge of the effects on stability during/after loading and discharging of dry, bulk and liquid cargo</p> <p>g) Demonstrates an awareness of free surface effect on stability at all stages of loading and discharging</p>	<p>Locate and identify documents carried on board relevant to general cargo operations</p> <p>Comply with safe working practices when working cargo</p> <p>Open, close and secure cargo holds</p> <p>Operate access equipment</p> <p>Rig cargo gear</p> <p>Use slings and other types of lifting equipment</p> <p>Load, stow, secure and discharge cargoes including bulk cargoes</p> <p>Make stability calculations during/after loading and discharging operations.</p> <p>Allow for any potential free surface effect on stability during loading and discharging</p>				

<p>h) Describes the approval, maintenance and safe use of cargo handling equipment</p>	<p>Carry out maintenance of cargo handling equipment</p>					
	<p>Use cargo handling equipment</p>					
<p>i) Identifies and describes cargo care on passage for a given cargo</p>	<p>Monitor cargo and vessel stability during passage</p>					
<p>j) Demonstrates a knowledge of ventilation of cargo holds</p>	<p>Ventilate cargo holds alongside and on passage as appropriate to the cargo carried</p>					
<p>2. <u>Inspection and Preparation of Holds</u></p>						
<p>a) Outlines the reasons for inspection of holds including items to be inspected</p>	<p>Inspect cargo holds before loading</p>					
<p>b) Demonstrates a knowledge of:</p>						
<ul style="list-style-type: none"> <li>• Cleaning holds before loading</li> </ul>	<p>Clean holds before loading</p>					
<ul style="list-style-type: none"> <li>• Cleaning after the discharge of cargo</li> </ul>	<p>Clean cargo holds after discharge</p>					
<ul style="list-style-type: none"> <li>• Use of dunnage including types and sizes</li> </ul>	<p>Use dunnage in holds for stowage and separation of cargo</p>					
<p>c) States that bilges, strum boxes or drain wells should be clean and suctions in working order</p>	<p>Inspect and clean bilges, strum boxes and drain wells</p>					
<p>3. <u>Separation of Cargoes</u></p>						
<p>a) Demonstrates a knowledge for the need of separation/segregation of different cargoes</p>	<p>Separate/segregate different types of cargoes as appropriate</p>					
<p>4. <u>Securing cargoes</u></p>						
<p>a) Explains the need for a solid stow and securing of cargoes</p>	<p>Block, lash, shore and trim cargo as necessary to achieve a solid and secure stow</p>					
<p>b) Describes methods of blocking, lashing, shoring and trimming cargo</p>						

<p>c) Describes the method of securing heavy loads, vehicles and trailers in accordance with securing arrangement manual</p>	<p>Secure heavy loads, vehicles and trailers in accordance with the cargo securing manual or other procedures</p>					
<p>5. <u>Deck Cargo</u></p>						
<p>a) Outlines cargoes commonly carried on deck</p>	<p>Secure deck cargo in accordance with the cargo securing manual or other procedures</p>					
<p>b) Explains why efficient securing of deck cargo is essential for the safety of the ship as well as the cargo</p>	<p>Check deck cargo does not exceed permissible weight limits</p>					
<p>c) Describes the reason for stowage to leave access to essential equipment and spaces and for unrestricted views for safe navigation</p>	<p>Carry out weight calculations when loading heavy loads</p>					
<p>d) Explains that the weight of deck cargo should not exceed the permissible load</p>	<p>Demonstrate the avoidance of point loading on the deck</p>					
<p>e) Describes how the effects of a concentrated load can be spread over a wider area and of the method of stowage and securing of containers on deck</p>	<p>Stow and secure containers on deck in accordance with the cargo securing manual or other procedures</p>					
<p>6. <u>Packaged dangerous goods</u></p>						
<p>a) States the safe stowing arrangements for hazardous cargo</p>	<p>Identify the type of dangerous goods presented for shipment</p>					
<p>b) Demonstrates an awareness of the 9 (UN) classes of dangerous goods as defined in the International Maritime Dangerous Goods (IMDG) Code and other sources</p>	<p>Check that the type of dangerous goods presented for shipment meet the requirements of any document of compliance before loading</p>					
	<p>Check that any dangerous goods presented for shipment may be carried on the vessel before loading</p>					

<p>c) Demonstrates an awareness of the labels, marks and signs used to designate cargoes within those classes as indicated in the IMDG Code and other sources including cargo separation, marking and documentations</p> <p>d) Applies procedures for checking, loading, carriage and discharge of dangerous and hazardous cargo in packaged form</p>	<p>Check that any dangerous goods presented for shipment are correctly packed, labelled and marked</p> <p>Check all required documentation is in order before loading</p> <p>Ensure all other procedures for the stowage and carriage of dangerous goods are complied with before and during loading</p>					
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**I confirm that this candidate has completed the above tasks on “General Cargoes” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-



<ul style="list-style-type: none"> <li>• tank temperature and pressure control systems</li> <li>• fire-fighting systems</li> </ul> <p>b) Proficiency in tanker safety culture and implementation of safety-management system</p> <p>c) Knowledge and understanding of monitoring and safety systems, including the emergency shutdown</p> <p>2. <u>Loading, unloading, care and handling of cargo</u></p> <p>a) Ability to perform cargo measurements and calculations</p> <p>b) Knowledge of the effect of bulk liquid cargoes on trim, stability and structural integrity</p> <p>c) Knowledge and understanding of oil cargo-related operations, including:</p> <ul style="list-style-type: none"> <li>• loading and unloading plans</li> <li>• ballasting and deballasting</li> <li>• tank cleaning operations</li> <li>• inerting</li> <li>• gas-freeing</li> <li>• ship-to-ship transfers</li> </ul> <p>d) Development and application of cargo-related operation plans, procedures and checklists</p>	<p>Demonstrate knowledge of the contents and application of the vessel's safety management system or alternative/equivalent procedures</p> <p>Demonstrate an ability to carry out emergency shut downs</p> <p>Carry out cargo measurements and calculations</p> <ul style="list-style-type: none"> <li>• Prepare loading and unloading plans</li> <li>• Carry out ballasting and deballasting operations</li> <li>• Carry out tank cleaning operations</li> <li>• Carry out inerting operations</li> <li>• Carry out gas freeing operations</li> <li>• Carry out ship to ship transfers</li> </ul> <p>Use plans and checklists as appropriate</p>					
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<p>e) Ability to calibrate and use monitoring and gas -detection systems, instruments and equipment</p> <p>f) Ability to manage and supervise personnel with cargo-related responsibilities</p> <p>3. <u>Familiarity with physical and chemical properties of oil cargoes</u></p> <p>a) Knowledge and understanding of the physical and chemical properties of oil cargoes</p> <p>b) Understanding the information contained in a Material Safety Data Sheet (MSDS)</p> <p>4. <u>Take precautions to prevent hazards</u></p> <p>a) Knowledge and understanding of the hazards and control measures associated with oil tanker cargo operations, including:</p> <ul style="list-style-type: none"> <li>• Toxicity</li> <li>• flammability and explosion</li> <li>• health hazards</li> <li>• inert gas composition</li> <li>• electrostatic hazards</li> </ul> <p>5. <u>Apply occupational health and safety precautions</u></p> <p>a) Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to oil tankers:</p>	<p>Calibrate and use monitoring equipment and systems</p> <p>Manage and supervise effectively other personnel involved in cargo operations</p> <p>Locate and identify the MSDS for cargoes carried</p> <p>Demonstrate knowledge of the hazards associated with oil cargo operations</p> <p>Demonstrate knowledge of control measures available on the vessel to counteract hazards</p> <ul style="list-style-type: none"> <li>• Undertake risk assessments for work activities</li> </ul>					
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<ul style="list-style-type: none"> <li>• precautions to be taken when entering enclosed spaces, including correct use of different types of breathing apparatus</li> <li>• precautions to be taken before and during repair and maintenance work</li> <li>• precautions for hot and cold work</li> <li>• precautions for electrical safety</li> <li>• use of appropriate Personal Protective Equipment (PPE)</li> </ul> <p>6. <u>Respond to emergencies</u></p> <p>a) Knowledge and understanding of oil tanker emergency procedures, including:</p> <ul style="list-style-type: none"> <li>• ship emergency response plans</li> <li>• cargo operations emergency shutdown</li> <li>• actions to be taken in the event of failure of systems or services essential to cargo</li> <li>• fire-fighting on oil tankers</li> <li>• enclosed space rescue</li> <li>• use of a Material Safety Data Sheet (MSDS)</li> </ul> <p>b) Actions to be taken following collision, grounding, or spillage</p>	<ul style="list-style-type: none"> <li>• Follow specified procedures when entering or authorising entry into enclosed spaces</li> <li>• Follow specified procedures when undertaking or authorising repair and maintenance work</li> <li>• Follow specified procedures when undertaking or authorising hot or cold work</li> <li>• Follow specified procedures for ensuring electrical safety before any work is undertaken</li> <li>• Use appropriate PPE for any work activity</li> </ul> <p>Participate in emergency drills and exercises, performing effectively in accordance with procedures, including:</p> <ul style="list-style-type: none"> <li>• Cargo operations emergency shutdown</li> <li>• Failure of systems essential to cargo operations</li> <li>• Fire</li> <li>• Enclosed space rescue</li> </ul> <ul style="list-style-type: none"> <li>• Collision</li> <li>• Grounding</li> </ul>					
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<p>c) Knowledge of medical first aid procedures on board oil tankers</p> <p>7. <u>Take precautions to prevent pollution of the environment</u></p> <p>a) Understanding of procedures to prevent pollution of the atmosphere and the environment</p> <p>8. <u>Monitor and control compliance with legislative requirements</u></p> <p>a) Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL), as amended, and other relevant IMO instruments, industry guidelines and port regulations as commonly applied</p>	<ul style="list-style-type: none"> <li>• Spillage</li> <li>• Medical incident</li> </ul> <p>Carry out procedures for prevention of pollution</p> <p>Demonstrate knowledge of legislative and other requirements and guidance</p>					
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**I confirm that this candidate has completed the above tasks on “Oil Cargoes” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-



<ul style="list-style-type: none"> <li>• vapour return/recovery systems</li> <li>• fire-fighting systems</li> <li>• tank, pipeline and fittings' material and coatings</li> <li>• slop management</li> </ul> <p>b) Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation</p> <p>c) Proficiency in tanker safety culture and implementation of safety management system</p> <p>d) Knowledge and understanding of monitoring and safety systems, including the emergency shutdown system</p> <p>2. <u>Loading, unloading, care and handling of cargo</u></p> <p>a) Ability to perform cargo measurements and calculations</p> <p>b) Knowledge of the effect of bulk liquid cargoes on trim and stability and structural integrity</p> <p>c) Knowledge and understanding of chemical cargo-related operations, including:</p> <ul style="list-style-type: none"> <li>• loading and unloading plans</li> <li>• ballasting and deballasting</li> <li>• tank cleaning operations</li> <li>• tank atmosphere control</li> <li>• inerting</li> </ul>	<p>Operate cargo pumps in accordance with procedures</p> <p>Demonstrate knowledge of the contents and application of the vessel's safety management system or alternative/equivalent procedures</p> <p>Demonstrate an ability to carry out emergency shut downs</p> <p>Carry out cargo measurements and calculations</p> <ul style="list-style-type: none"> <li>• Prepare loading and unloading plans</li> <li>• Carry out ballasting and deballasting operations</li> <li>• Carry out tank cleaning operations</li> <li>• Carry out tank atmosphere control</li> <li>• Carry out inerting operations</li> </ul>					
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<ul style="list-style-type: none"> <li>• gas-freeing</li> <li>• ship-to-ship transfers</li> <li>• inhibition and stabilization requirements</li> <li>• heating and cooling requirements and consequences to adjacent cargoes</li> <li>• cargo compatibility and segregation</li> <li>• high-viscosity cargoes</li> <li>• cargo residue operations</li> <li>• operational tank entry</li> </ul> <p>d) Development and application of cargo-related operation plans, procedures and checklists</p> <p>e) Ability to calibrate and use monitoring and gas-detection systems, instruments and equipment</p> <p>f) Ability to manage and supervise personnel with cargo-related responsibilities</p> <p>3. <u>Familiarity with physical and chemical properties of chemical cargoes</u></p> <p>a) Knowledge and understanding of the chemical and the physical properties of noxious liquid substances, including:</p> <ul style="list-style-type: none"> <li>• chemical cargoes categories (corrosive, toxic, flammable, explosive)</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out gas freeing operations</li> <li>• Carry out ship to ship transfers</li> <li>• Implement inhibition and stabilization requirements</li> <li>• Implement heating and cooling requirements</li> <li>• Ensure segregation of cargoes in accordance with the plan</li> <li>• Implement the specific requirements for high viscosity cargoes</li> <li>• Carry out cargo residue operations</li> <li>• Follow specified procedures when entering tanks</li> </ul> <p>Use plans and checklists as appropriate</p> <p>Calibrate and use monitoring equipment and systems</p> <p>Manage and supervise effectively other personnel involved in cargo operations</p>					
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<ul style="list-style-type: none"> <li>• chemical groups and industrial usage</li> <li>• reactivity of cargoes</li> </ul> <p>b) Understanding the information contained in a Material Safety Data Sheet (MSDS)</p> <p>4. <u>Take precautions to prevent hazards</u></p> <p>a) Knowledge and understanding of the hazards and control measures associated with chemical tanker cargo operations, including:</p> <ul style="list-style-type: none"> <li>• flammability and explosion</li> <li>• toxicity</li> <li>• health hazards</li> <li>• inert gas composition</li> <li>• electrostatic hazards</li> <li>• reactivity</li> <li>• corrosivity</li> <li>• low-boiling-point cargoes</li> <li>• high-density cargoes</li> <li>• solidifying cargoes</li> <li>• polymerizing cargoes</li> </ul> <p>b) Knowledge and understanding of dangers of non-compliance with relevant rules/regulations</p>	<p>Locate and identify the MSDS for cargoes carried</p> <p>Demonstrate knowledge of the hazards associated with chemical cargo operations</p> <p>Demonstrate knowledge of control measures available on the vessel to counteract hazards</p>					
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<p>5. <u>Apply occupational health and safety precautions</u></p> <p>a) Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to chemical tankers:</p> <ul style="list-style-type: none"> <li>• precautions to be taken when entering enclosed spaces, including correct use of different types of breathing apparatus</li> <li>• precautions to be taken before and during repair and maintenance work</li> <li>• precautions for hot and cold work</li> <li>• precautions for electrical safety</li> <li>• use of appropriate Personal Protective Equipment (PPE)</li> </ul>	<ul style="list-style-type: none"> <li>• Undertake risk assessments for work activities</li> <li>• Follow specified procedures when entering or authorising entry into enclosed spaces</li> <li>• Follow specified procedures when undertaking or authorising repair and maintenance work</li> <li>• Follow specified procedures when undertaking or authorising hot or cold work</li> <li>• Follow specified procedures for ensuring electrical safety before any work is undertaken</li> <li>• Use appropriate PPE for any work activity</li> </ul>					
<p>6. <u>Respond to emergencies</u></p> <p>a) Knowledge and understanding of chemical tanker emergency procedures, including:</p> <ul style="list-style-type: none"> <li>• ship emergency response plans</li> <li>• cargo operations emergency shutdown</li> <li>• actions to be taken in the event of failure of systems or services essential to cargo</li> <li>• fire fighting on chemical tankers</li> </ul>	<p>Participate in emergency drills and exercises, performing effectively in accordance with procedures, including:</p> <ul style="list-style-type: none"> <li>• Cargo operations emergency shutdown</li> <li>• Failure of systems essential to cargo operations</li> <li>• Fire</li> <li>• Enclosed space rescue</li> </ul>					

<ul style="list-style-type: none"> <li>• enclosed space rescue</li> <li>• cargo reactivity</li> <li>• jettisoning cargo</li> <li>• use of a Material Safety Data Sheet (MSDS)</li> </ul> <p>b) Actions to be taken following collision, grounding, or spillage</p> <p>c) Knowledge of medical first aid procedures on board chemical tankers, with reference to the Medical First Aid Guide for Use in Accidents involving Dangerous Goods (MFAG)</p> <p>7. <u>Take precautions to prevent pollution of the environment</u></p> <p>a) Understanding of procedures to prevent pollution of the atmosphere and the environment</p> <p>8. <u>Monitor and control compliance with legislative requirements</u></p> <p>a) Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL) and other relevant IMO instruments, industry guidelines and port regulations as commonly applied</p> <p>b) Proficiency in the use of the IBC Code and related documents</p>	<ul style="list-style-type: none"> <li>• Cargo reactivity</li> <li>• Jettisoning cargo</li> <li>• Collison</li> <li>• Grounding</li> <li>• Spillage</li> <li>• Medical incident</li> </ul> <p>Carry out procedures for prevention of pollution</p> <p>Demonstrate knowledge of legislative and other requirements and guidance</p>					
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**I confirm that this candidate has completed the above tasks on “Chemical Cargoes” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>4. LIQUEFIED GAS CARGOES</b>					
<b>Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p><b>Candidates will be tested from the perspective of gas carriers and barges operating on inland waterways.</b></p> <p>1. <u>Ability to safely perform and monitor all cargo operations</u></p> <p>a) Knowledge of liquefied gas tanker design, systems, and equipment, including:</p> <ul style="list-style-type: none"> <li>• types of liquefied gas tankers and cargo tanks construction</li> <li>• general arrangement and construction</li> <li>• cargo containment systems, including materials of construction and insulation</li> <li>• cargo-handling equipment and instrumentation, including:                             <ul style="list-style-type: none"> <li>○ cargo pumps and pumping arrangements</li> <li>○ cargo pipelines and valves</li> <li>○ expansion devices</li> <li>○ flame screens</li> <li>○ temperature monitoring systems</li> <li>○ cargo tank level-gauging systems</li> <li>○ tank pressure monitoring and control systems</li> </ul> </li> <li>• cargo temperature maintenance system</li> <li>• tank atmosphere control systems (inert gas, nitrogen), including storage, generation and distribution systems</li> <li>• cofferdam heating systems</li> <li>• gas-detecting systems</li> </ul>	<p>Locate and identify documents carried on board relevant to liquefied gas cargo operations</p> <p>Locate, identify and demonstrate knowledge of all on board cargo handling machinery, equipment and systems</p>				

<ul style="list-style-type: none"> <li>• ballast system</li> <li>• boil-off systems</li> <li>• reliquefaction systems</li> <li>• cargo Emergency Shut Down system (ESD)</li> <li>• custody transfer system</li> </ul> <p>b) Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation</p> <p>2. <u>Loading, unloading, care and handling of cargo</u></p> <p>a) Knowledge of the effect of bulk liquid cargoes on trim and stability and structural integrity</p> <p>b) Proficiency in tanker safety culture and implementation of safety management requirements</p> <p>c) Proficiency to apply safe preparations, procedures and checklists for all cargo operations, including:</p> <ul style="list-style-type: none"> <li>• post docking and loading:             <ul style="list-style-type: none"> <li>○ tank inspection</li> <li>○ inerting (oxygen reduction, dewpoint reduction)</li> <li>○ gassing-up</li> <li>○ cooling down</li> <li>○ loading</li> </ul> </li> <li>○ deballasting</li> </ul>	<p>Operate cargo pumps in accordance with procedures</p> <p>Demonstrate knowledge of the contents and application of the vessel's safety management system or alternative/equivalent procedures</p> <p>Carry out preparations for loading in accordance with procedures and checklists</p> <p>Load cargo in accordance with procedures and checklists</p> <p>Carry out deballasting operations in accordance with procedures and checklists</p>					
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<ul style="list-style-type: none"> <li>○ sampling, including closed-loop sampling</li> <li>● en-route:             <ul style="list-style-type: none"> <li>○ cooling down</li> <li>○ pressure maintenance</li> <li>○ boil-off</li> <li>○ inhibiting</li> </ul> </li> <li>● unloading:             <ul style="list-style-type: none"> <li>○ unloading</li> </ul> </li> <li>○ ballasting</li> <li>○ stripping and cleaning systems systems to make the tank liquid-free</li> <li>● pre-docking preparation:             <ul style="list-style-type: none"> <li>○ warm-up</li> <li>○ inerting</li> <li>○ gas-freeing</li> </ul> </li> <li>● ship-to-ship transfer</li> </ul> <p>d) Proficiency to perform cargo measurements and calculations, including:</p> <ul style="list-style-type: none"> <li>● liquid phase</li> <li>● gas phase</li> <li>● On Board Quantity (OBQ)</li> <li>● Remain On Board (ROB)</li> <li>● boil-off cargo calculations</li> </ul>	<p>Sample cargo in accordance with shipboard procedures</p> <p>Maintain cargo within specified parameters whilst en route in accordance with procedures and checklists</p> <p>Discharge cargo in accordance with procedures and checklists</p> <p>Carry out ballasting operations in accordance with procedures and checklists</p> <p>Carry out stripping and cleaning operations in accordance with procedures and checklists</p> <p>Carry out pre-loading preparation in accordance with procedures and checklists</p> <p>Carry out ship to ship transfers in accordance with procedures and checklists</p> <p>Carry out cargo measurements and calculations</p>					
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<p>e) Proficiency to manage and supervise personnel with cargo-related responsibilities</p> <p><u>3. Familiarity with physical and chemical properties of liquefied gas cargoes</u></p> <p>a) Knowledge and understanding of basic chemistry and physics and the relevant definitions related to the safe carriage of liquefied gases in bulk in ships, including:</p> <ul style="list-style-type: none"> <li>• the chemical structure of gases</li> <li>• the properties and characteristics of liquefied gases (including CO<sub>2</sub>) and their vapours, including: <ul style="list-style-type: none"> <li>○ simple gas laws</li> <li>○ states of matter</li> <li>○ liquid and vapour densities</li> <li>○ diffusion and mixing of gases</li> <li>○ compression of gases</li> <li>○ reliquefaction and refrigeration of gases</li> <li>○ critical temperature of gases and pressure</li> <li>○ flashpoint, upper and lower explosive limits, auto-ignition temperature</li> <li>○ compatibility, reactivity and positive segregation of gases</li> <li>○ polymerization</li> <li>○ saturated vapour pressure/reference temperature</li> <li>○ dewpoint and bubble point</li> <li>○ lubrication of compressors</li> <li>○ hydrate formation</li> </ul> </li> <li>• the properties of single liquids</li> <li>• the nature and properties of solutions</li> <li>• thermodynamic units</li> <li>• basic thermodynamic laws and diagrams</li> </ul>	<p>Manage and supervise effectively other personnel involved in cargo operations</p>				
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<ul style="list-style-type: none"> <li>• properties of materials</li> <li>• effect of low temperature – brittle fracture</li> </ul> <p>b) Understanding the information contained in a Material Safety Data Sheet (MSDS)</p> <p>4. <u>Take precautions to prevent hazards</u></p> <p>a) Knowledge and understanding of the hazards and control measures associated with liquefied gas tanker cargo operations, including:</p> <ul style="list-style-type: none"> <li>• flammability</li> <li>• explosion</li> <li>• toxicity</li> <li>• reactivity</li> <li>• corrosivity</li> <li>• health hazards</li> <li>• inert gas composition</li> <li>• electrostatic hazards</li> <li>• polymerizing cargoes</li> </ul> <p>b) Proficiency to calibrate and use monitoring and gas-detection systems, instruments and equipment</p> <p>c) Knowledge and understanding of dangers of non-compliance with relevant rules/regulations</p>	<p>Locate and identify the MSDS for cargoes carried</p> <p>Demonstrate knowledge of the hazards associated with liquefied gas cargo operations</p> <p>Demonstrate knowledge of control measures available on the vessel to counteract hazards</p> <p>Calibrate and use monitoring equipment and systems</p>					
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<p>5. <u>Apply occupational health and safety precautions</u></p> <p>a) Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to liquefied gas tankers, including:</p> <ul style="list-style-type: none"> <li>• precautions to be taken when entering enclosed spaces (such as compressor rooms), including the correct use of different types of breathing apparatus</li> <li>• precautions to be taken before and during repair and maintenance work, including work affecting pumping, piping, electrical and control systems</li> <li>• precautions for hot and cold work</li> <li>• precautions for electrical safety</li> <li>• use of appropriate Personal Protective Equipment (PPE)</li> <li>• precautions for cold burn and frostbite</li> <li>• proper use of personal toxicity monitoring equipment</li> </ul> <p>6. <u>Respond to emergencies</u></p> <p>a) Knowledge and understanding of liquefied gas tanker emergency procedures, including:</p> <ul style="list-style-type: none"> <li>• ship emergency response plans</li> <li>• cargo operations emergency shutdown procedure</li> </ul>	<ul style="list-style-type: none"> <li>• Undertake risk assessments for work activities</li> <li>• Follow specified procedures when entering or authorising entry into enclosed spaces</li> <li>• Follow specified procedures when undertaking or authorising repair and maintenance work</li> <li>• Follow specified procedures when undertaking or authorising hot or cold work</li> <li>• Follow specified procedures for ensuring electrical safety before any work is undertaken</li> <li>• Use appropriate PPE for any work activity</li> <li>• Take precautions against cold burn and frostbite</li> <li>• Use personal toxicity monitoring equipment</li> </ul> <p>Participate in emergency drills and exercises, performing effectively in accordance with procedures, including:</p> <ul style="list-style-type: none"> <li>• Cargo operations emergency shutdown</li> </ul>					
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<ul style="list-style-type: none"> <li>• emergency cargo valve operations</li> <li>• actions to be taken in the event of failure of systems or services essential to cargo operations</li> <li>• fire-fighting on liquefied gas tankers</li> <li>• jettisoning of cargo</li> <li>• enclosed space rescue</li> </ul> <p>b) Actions to be taken following collision, grounding or spillage and envelopment of the ship in toxic or flammable vapour</p> <p>c) Knowledge of medical first-aid procedures and antidotes on board liquefied gas tankers, with reference to the Medical First Aid Guide for Use in Accidents involving Dangerous Goods (MFAG)</p> <p>7. <u>Take precautions to prevent pollution of the environment</u></p> <p>a) Understanding of procedures to prevent pollution of the environment</p> <p>8. <u>Monitor and control compliance with legislative requirements</u></p> <p>a) Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL) and other relevant IMO instruments, industry guidelines and port regulations as commonly applied</p> <p>b) Proficient in the use of the OBC and IGC Codes and related documents</p>	<ul style="list-style-type: none"> <li>• Emergency cargo valve operations</li> <li>• Failure of systems essential to cargo operations</li> <li>• Fire</li> <li>• Explain procedure to jettison cargo</li> <li>• Enclosed space rescue</li> <li>• Collision</li> <li>• Grounding</li> <li>• Spillage</li> <li>• Envelopment of ship in toxic or flammable vapour</li> <li>• Medical incident</li> </ul> <p>Carry out procedures for prevention of pollution</p> <p>Demonstrate knowledge of legislative and other requirements and guidance</p>					
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**I confirm that this candidate has completed the above tasks on “Liquified Gas Cargoes” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>5. RO-RO OPERATIONS</b>					
<b>Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>1. <u>Stability</u></p> <p>a) Demonstrates knowledge and application of stability and other information contained in the vessel’s stability book.</p> <p>b) Demonstrate knowledge and application of the Tonnes per Centimetre (TPC) immersion and to ascertain the effect of loading a heavy vehicle on the vessel’s draught.</p> <p>c) Have knowledge of any trim restrictions applicable to the vessel</p> <p>d) Demonstrate awareness of the effect of flooding and damaged stability applicable to your vessel</p> <p>e) Demonstrate knowledge of common loading conditions applicable to the vessel</p> <p>f) Demonstrate awareness of point and axle weight loading as it applies to your vessel on vehicle decks and ramps.</p> <p>2. <u>Opening &amp; Closing of Ramps and Hull Openings</u></p> <p>a) Be able to apply vessel procedures for opening and closing vehicle ramps, including checks to ensure these are secure for the voyage</p> <p>b) Demonstrate ability to check on watertight seals and securing devices</p> <p>c) Demonstrate knowledge of procedures for closing and securing other hull openings as applicable</p>	<p>Locate and identify documents carried on board relevant to ro-ro operations</p> <p>Plan loading and discharging operations in accordance with vessel stability criteria as contained in the vessel’s stability book/information</p> <p>Open, close, raise and lower (as appropriate) hull doors/openings, mezzanine decks, vehicle ramps and hatches in accordance with procedures</p> <p>Carry out checks on watertight seals and locking/securing devices of hull doors/openings, mezzanine decks, vehicle ramps, hatches and other openings</p>				

<p>d) Demonstrate knowledge of visual and audible alarms relating to vehicle deck operations.</p>	<p>Identify and describe visual and audible alarms related to vehicle deck operations, and appropriate responses</p>					
<p>e) Demonstrate knowledge and recording of planned maintenance relating to the above opening and closing devices.</p>	<p>Carry out planned and ad hoc (when necessary) maintenance on hull doors/openings, mezzanine decks, vehicle ramps and hatches and associated operating/control systems, and record such maintenance in accordance with procedures</p>					
<p>3. <u>Vehicle Deck Operations</u></p>						
<p>a) Demonstrate knowledge of the Company and Vessel's Safety Management System procedures relating to Vehicle Deck Operations</p>	<p>Demonstrate knowledge of the contents and application of the vessel's safety management system, or alternative/equivalent procedures, to loading and discharging operations</p>					
<p>b) Demonstrate awareness of the requirements of the Merchant Navy Code of Safe Working Practices in relation to vehicle deck operations</p>	<p>Ensure safe practices and procedures are complied with by all personnel</p>					
<p>c) Demonstrate awareness of the MCA Ro-Ro ships Stowage and Securing of vehicles Code of Practice.</p>						
<p>d) Demonstrate awareness of the requirements of any risk assessments carried out under the Safety Management System.</p>	<p>Carry out risk assessments of vehicle deck operations</p>					
<p>e) Before loading ensure vehicles presented for shipment are suitable for carriage on the vessel with regard to roadworthiness, no fuel leaks, not overloaded, declared weight within acceptable limits, adequate securing points, any load secure on the vehicle.</p>	<p>Check vehicles presented for shipment are suitable for carriage before loading</p>					
<p>f) Ensure vehicles carrying dangerous goods are properly placarded and are acceptable for shipment.</p>	<p>Check that vehicles carrying dangerous goods may be carried on board and comply with all requirements before loading</p>					

<p>g) Demonstrate awareness of any procedures to follow if livestock vehicles are carried.</p>	<p>Check that vehicles carrying livestock comply with all requirements before loading</p>					
<p>h) Demonstrate knowledge of procedures to follow when vehicles and passengers embark your vessel using the vehicle ramp.</p>	<p>Ensure safety/separation procedures are complied with when both vehicles and foot passengers board the vessel by the vehicle ramp</p>					
<p>i) Demonstrate awareness of what personal protective equipment must be worn by Crew engaged in vehicle deck operations.</p>	<p>Ensure that all personnel wear/use personal protective equipment and/or clothing in accordance with specified procedures</p>					
<p>j) Ensure crew members engaged in vehicle deck operations are able to give clear directions and instructions to vehicles and passengers embarking and disembarking</p>	<p>Brief crew members about the loading and discharging plan and ensure they give clear directions and instructions to vehicles and passengers</p>					
<p>4. <u>Carriage of Dangerous Goods</u></p>						
<p>a) Demonstrate awareness of the types of Dangerous Goods commonly carried on your vessel</p>	<p>Identify the type of dangerous goods presented for shipment</p>					
<p>b) Demonstrate knowledge of any requirements of a Document of Compliance for the Carriage of Dangerous Goods issued for your vessel</p>	<p>Check that the type of dangerous goods presented for shipment meet the requirements of any document of compliance before loading</p>					
<p>c) Demonstrate knowledge of the IMDG Code in relation to the Dangerous Goods commonly carried on your vessel.</p>	<p>Check all required documentation is in order before loading</p>					
<p>d) Demonstrate knowledge of Company procedures for when carrying dangerous goods &amp; undertaking any Company training requirement</p>	<p>Ensure all other procedures for the carriage of dangerous goods are complied with before loading</p>					
<p>e) Demonstrate awareness of procedure to follow in the event that dangerous goods not commonly carried are presented for shipment and who to contact in your organisation for advice.</p>						

<p>f) Demonstrate awareness of what classes of dangerous Goods are not permitted to be carried on Passenger Vessels</p>	<p>Ensure any dangerous goods presented for shipment may be carried on the vessel before loading</p>					
<p>g) Demonstrate knowledge of emergency procedures to follow should any emergency arise involving Dangerous Goods and where to find the relevant information.</p>	<p>Participate in emergency exercises and drills involving dangerous goods, performing effectively in accordance with procedures</p>					
<p>h) Demonstrate awareness of the need to maintain adequate spacing between vehicles on the vehicle deck to allow passenger access.</p>	<p>Load vehicles leaving enough space for passenger and crew access between them, and to keep access points to passenger decks clear</p>					
<p>5. <u>Vehicle Securing Arrangements</u></p>						
<p>a) Demonstrate awareness of the requirements of any Cargo Securing Manual provided for your vessel</p>	<p>Ensure vehicles are secured in accordance with specified systems, procedures and guidance</p>					
<p>b) Demonstrate awareness of any Company procedures relating to the securing of vehicles</p>	<p>Take account of present and forecast weather when deciding the level of securing required</p>					
<p>c) Demonstrate knowledge of, and how to correctly apply vehicle securing devices provided for your vessel and their limitations.</p>	<p>Use vehicle securing devices correctly</p>					
<p>d) Demonstrate knowledge of what constitutes a securing point on a vehicle presented for shipment.</p>	<p>Check vehicles presented for shipment have required securing points</p>					
<p>e) Demonstrate ability to inspect securing devices and points provided on your vessel and procedure to follow if any defects found.</p>	<p>Check vessel securing points and devices are in good condition, and follow reporting procedures if any defects are found</p>					
<p>f) Demonstrate awareness of any planned maintenance requirements for securing devices used on your vessel and what records are kept.</p>	<p>Carry out planned and ad hoc (when necessary) maintenance of securing devices and record such maintenance in accordance with procedures</p>					

<p>g) Demonstrate knowledge of the “Rule of Thumb” method for determining the securing requirements for heavy vehicles.</p>	<p>Carry out securing of heavy vehicles and explain the reasoning</p>				
<p>6. <u>Ro-Ro Deck Atmosphere</u></p>					
<p>a) Demonstrate awareness of any Company procedures for the ventilation of any enclosed ro-ro cargo spaces:</p>	<p>Ensure vehicle decks are ventilated in accordance with procedures for different circumstances</p>				
<ul style="list-style-type: none"> <li>• during loading</li> <li>• whilst on passage)</li> <li>• in an emergency</li> </ul>	<p>Test vehicle deck atmosphere</p> <p>Operate ventilation machinery and systems</p>				
<p>7. <u>General</u></p>					
<p>a) Demonstrate awareness of any safety signage and public announcements necessary for safe Ro-ro operations.</p>	<p>Check safety signage is in accordance with requirements</p>				
<p>b) Demonstrate awareness of visual and audible alarms in use during vehicle deck operations.</p>	<p>Identify public announcements required and ensure they are made</p>				
<p>c) Demonstrate awareness of any other safety measures required by statute or Company procedures.</p>					

**I confirm that this candidate has completed the above tasks on “Ro-Ro Operations” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>6. GENERAL PASSENGER OPERATIONS</b>					
<b>Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>1. <u>Regulations</u></p> <p>a) Demonstrates an outline knowledge of Domestic Safety Management Code requirements</p> <p>b) Explains the importance of carrying principal documents including the Passenger Ship Certificate</p> <p>c) Explains the importance and requirements of carrying other statutory certificates</p> <p>2. <u>Passenger Operations</u></p> <p>a) Explains the planning and operational procedures for carrying passengers</p> <p>b) Describes how to carry out or manage effective pre-voyage procedures including pre-voyage checks, crew briefing, passenger safety announcements</p> <p>c) Describes the means of providing safe passenger access</p> <p>d) Describes accurate passenger counting and reporting</p> <p>e) Identifies the correct locations that passengers should be guided to</p>	<p>Locate and identify documents carried on board relevant to passenger operations</p> <p>Demonstrate knowledge of the vessel's safety management system</p> <p>Demonstrate knowledge of the certificates and documents required to be carried on board</p> <p>Plan each passenger trip/voyage in accordance with procedures Carry out pre-voyage procedures</p> <p>Check that means of safe access is in place before embarking or disembarking passengers</p> <p>Ensure emabarkation and disembarkation is monitored by a crew member stationed at the means of access</p> <p>Carry out passenger counting and reporting in accordance with procedures</p> <p>Direct and guide passengers to the passenger decks</p>				

<p>f) Describes the correct procedure for the control of unruly passengers</p>	<p>Implement procedures for the control of unruly passengers</p>					
<p>g) Describes how to give efficient safety briefings/advice to passengers while underway</p>	<p>Deliver safety briefings and advice to passengers</p>					
<p>h) Demonstrates knowledge of any operational limitations imposed on the ship, performance restrictions including speed limitations in adverse weather, which are intended to maintain the safety of life, ship and cargo</p>	<p>Comply with operational limitations of the vessel and performance restrictions in adverse weather</p>					
<p>i) Demonstrates knowledge of procedures for opening, closing and securing of bow, stern, side doors and ramps and to correctly operate the related systems</p>	<p>Operate shell doors, ramps and other openings in accordance with procedures</p>					
<p>3. <u>Emergency Response</u></p>						
<p>a) Describes how to control and manage passengers in emergency situations, including the importance of clear identification of crew members</p>	<p>Participate in drills and exercises controlling and managing passengers in emergency situations, performing effectively in accordance with procedures</p>					
<p>b) Explains the passenger care duties to allocate to crew members in an emergency</p>						
<p>c) Describes how to prepare efficient plans for the safety and/or evacuation of passengers including plans for contacting the appropriate emergency or/and Search And Rescue (SAR) service in the event of an emergency</p>	<p>Locate and identify the emergency plans on board and implement them during drills and exercises</p>					
<p>d) Demonstrates an outline knowledge of SAR plan for co-ordinating with local emergency/SAR services</p>						
<p>e) Demonstrates an awareness of control plan for life saving appliance fitted on vessels:</p>	<p>Locate, identify and check safety instructions and information signs required by vessel plans and procedures</p>					
<p>f) Demonstrates a knowledge of safety instructions and mandatory information signs that should be located on the</p>						

<p>vessel, and how to maintain them in good order including instructions related to</p> <ul style="list-style-type: none"> <li>• Emergency exits</li> <li>• Gangway</li> <li>• Fire and evacuation plans and routes</li> </ul> <p>4. <u>First Aid and Fire Prevention</u></p> <p>a) Demonstrates a knowledge of First Aid equipment carried on board and action required pertaining to the care of passengers</p> <p>b) Demonstrates an awareness of fire prevention on passenger vessels including:</p> <ul style="list-style-type: none"> <li>• Fire fighting equipment fitted on vessel</li> <li>• Designated 'No Smoking' areas</li> </ul>	<p>Locate and identify first aid equipment carried on board</p> <p>Participate in medical incident drills and exercises, performing effectively in accordance with procedures</p> <p>Locate and identify fire fighting equipment on board</p> <p>Participate in fire incident drills and exercises, performing effectively in accordance with procedures</p> <p>Locate and identify lifesaving appliances and equipment on board</p> <p>Participate in abandon ship and man overboard drills and exercises, performing effectively in accordance with procedures</p> <p>Locate 'No Smoking' areas on board</p>					
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**I confirm that this candidate has completed the above tasks on “General Passenger Operations” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>7. LARGE PASSENGER VESSEL OPERATIONS</b>					
<b>Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>1. <u>Regulations and Certificates</u></p> <p>a) Demonstrates an effective knowledge of all routine and emergency procedures under the Domestic Safety Management Code</p> <p>b) Explains the importance and legal meaning of principal documents, including the Passenger Ship Certificate</p> <p>c) Explains the importance and requirements of carrying other statutory certificates</p> <p>d) Explains the draught marks and their application</p> <p>2. <u>Vessel Management</u></p> <p>a) Demonstrates a knowledge of berthing and un-berthing of large passenger vessel including:</p> <ul style="list-style-type: none"> <li>• specific manoeuvring skills</li> <li>• steering, anchor handling and engine controls on large vessels</li> </ul> <p>b) Describes the procedures for man overboard and recovery with larger vessels</p> <p>c) Demonstrates a knowledge of bunkering procedures, distribution of fuel in tanks, weight distribution and storage</p>	<p>Demonstrate knowledge of the vessel's safety management system</p> <p>Demonstrate knowledge of the certificates and documents required to be carried on board</p> <p>Take the vessel's draught</p> <p>Check the vessel does not exceed the maximum permissible draught in different circumstances</p> <p>Berth and un-berth the vessel</p> <p>Manoeuvre the vessel in a tideway</p> <p>Demonstrate effective control of the vessels propulsion, steering and anchoring systems</p> <p>Manoeuvre the vessel in man overboard and recovery drills and exercises</p> <p>Control bunkering operations in accordance with procedures and stability requirements</p>				

<p>capacity including pollution control measures during bunkering</p>					
<p>d) Demonstrates an outline knowledge of:</p> <ul style="list-style-type: none"> <li>• engine capacity and type of engine</li> <li>• KW power/bhp, reduction gearboxes</li> <li>• power take-off uses</li> <li>• generators- type, KVA, power supply</li> <li>• familiarity with other machinery appliances</li> <li>• monitoring equipment</li> <li>• pumping system and pipelines</li> </ul>	<p>Locate, identify and demonstrate knowledge of all on board engineering machinery, equipment and systems</p>				
<p>3. <u>Passenger and Crew Management</u></p>					
<p>a) Demonstrates a knowledge of crew pre-voyage briefing and passenger safety announcements</p>	<p>Deliver crew pre-voyage briefings</p> <p>Make passenger safety announcements</p>				
<p>b) Explains passenger management and control techniques including procedures in emergency situations</p>	<p>Demonstrate a knowledge of passenger management and control techniques, in both routine and emergency situations, during drills and exercises</p>				
<p>c) States the importance of clear identification of crew members</p>					
<p>d) Describes the procedures for control of unruly passengers in large numbers</p>	<p>Implement procedures for the control of unruly passengers during drills and exercises</p>				
<p>e) Describes how to deal with extreme weather conditions</p>	<p>Prepare vessel for extreme weather conditions, including passenger briefings</p>				

<p>4. <u>Communication</u></p> <p>a) Describes the elements for effective communication</p> <p>b) Demonstrates a knowledge of:</p> <ul style="list-style-type: none"> <li>• the use of public address system in an emergency</li> <li>• communication in a crisis situation</li> </ul> <p>c) Describes how to give clear and reassuring orders</p>	<p>Communicate effectively in routine situations</p> <p>Communicate effectively in emergency drills and exercises</p>					
<p>4. <u>Human Element</u></p> <p>a) Demonstrates a knowledge of the control of passengers and other personnel in emergency situations including:</p> <ul style="list-style-type: none"> <li>• general reaction pattern of passengers</li> <li>• appreciation of panic resulting from separating families</li> </ul> <p>b) Demonstrates a knowledge of stress and fear</p> <p>c) Demonstrates a knowledge of the ability to lead and direct others in emergency situation</p>	<p>Demonstrate a knowledge of human behaviour and reactions in emergency situations, and the actions to take to manage those situations, during drills and exercises</p>					
<p>5. <u>Emergency Response</u></p> <p>a) Demonstrates a knowledge of awareness of life saving appliance and control plans including knowledge of:</p> <ul style="list-style-type: none"> <li>• emergency instructions</li> <li>• emergency exits</li> <li>• restriction on the use of elevators</li> <li>• assist passengers to embarkation stations</li> </ul>	<p>Locate and identify the life saving and control plans, and emergency instructions on board</p> <p>Locate and identify lifesaving appliances and equipment on board</p>					

<ul style="list-style-type: none"> <li>• control of passengers in corridors and staircases and passageways</li> <li>• maintaining escape routes clear of obstructions</li> <li>• methods available for evacuation of disabled persons and persons needing special assistance</li> <li>• search of accommodation spaces</li> </ul> <p>b) Describes the mustering procedures including</p> <ul style="list-style-type: none"> <li>• muster list and passenger assisting team</li> <li>• the importance of keeping order</li> <li>• the use of, where appropriate, passenger lists for evacuation counts</li> <li>• that the passengers are suitably clothed and have donned their lifejackets correctly</li> </ul> <p>a) Demonstrates a knowledge of the contents of first aid box and other first aid equipment</p>	<p>Participate in mustering and abandon ship drills and exercises, performing effectively in accordance with procedures</p> <p>Assist others in correctly donning lifejackets and buoyancy aids</p> <p>Locate and identify first aid equipment carried on board</p>					
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**I confirm that this candidate has completed the above tasks on “Large Passenger Vessel Operations” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-



<p>c) Explains the passage planning</p> <p>d) Explains the method of preparing departure information</p> <p>e) Demonstrates a knowledge of the awareness of:</p> <ul style="list-style-type: none"> <li>• turning circles</li> <li>• wind and tide considerations</li> <li>• stopping techniques</li> <li>• bank effect</li> <li>• operation in confines areas, basins and locks</li> <li>• girting</li> <li>• interaction of other vessels</li> </ul>	<p>Prepare and execute a passage plan</p> <p>Demonstrate knowledge of the particular factors affecting manoeuvring during towing operations, including potential hazards</p>					
<p><u>Boat Handling -</u></p>						
<p>a) Describes the operation of anchoring with a tow</p>	<p>Anchor the vessel with a tow</p>					
<p>b) Describes boat handling operations with a vessel alongside</p>	<p>Handle the towing vessel with a vessel alongside</p>					
<p>c) Describes the method of working with a tug – with special regard to communication</p>	<p>Communicate with the tow in accordance with procedures</p>					
<p><u>Checking of Documents -</u></p>						
<p>a) Demonstrates a knowledge of the requirement of:</p> <ul style="list-style-type: none"> <li>• carrying statutory certificates</li> <li>• towage approval certificates</li> </ul>	<p>Check all required documentation is in place before commencing the tow</p>					

<ul style="list-style-type: none"> <li>• insurance certificate</li> <li>• skipper’s responsibilities with special reference to the tow</li> </ul> <p>b) Explains pre-departure discussions with crew on methods of leaving port with pilots and streaming of the tow</p>	<p>Brief crew members on the intended operation</p>					
<p><u>Securing and letting go of tow</u></p>						
<p>a) Describes the preparations for towing another craft or vessel</p>	<p>Prepare equipment and machinery for towing</p>					
<p>b) Demonstrates a knowledge of:</p> <ul style="list-style-type: none"> <li>• inspecting equipment prior to towage/pushing a craft/barge</li> <li>• securing for voyage</li> <li>• using emergency towlines</li> <li>• ensuring watertight integrity</li> </ul>	<p>Inspect the condition of all equipment required for the tow, and check required certification is current</p> <p>Secure the towing vessel, and the tow, for the voyage, including ensuring watertight integrity</p>					
<p><u>Towing/Pushing operations</u></p>						
<p>a) Describe the streaming of adequate wire/rope for various conditions</p>	<p>Stream adequate wire/rope for the prevailing conditions</p>					
<p>b) Describes the securing and letting go of tow with respect to:</p> <ul style="list-style-type: none"> <li>• connecting and disconnecting during passage /underway</li> <li>• ranging and caring of towline during the voyage</li> <li>• methods of passing lines and suitable securing points</li> </ul>	<p>Secure, let go and adjust the towline(s) as required</p>					

<p>on tugs and tows</p> <ul style="list-style-type: none"> <li>• presentation and securing of tug to various crafts including barges and lighters</li> </ul>						
<p><u>Manoeuvring and managing tug and tow</u></p>						
<p>a) Demonstrates a knowledge of operating a vessel with a tow</p>	<p>Manoeuvre the vessel and tow underway</p>					
<p>b) Describes the monitoring of weather forecast</p>	<p>Obtain weather forecasts and monitor changes which might affect the operation</p>					
<p>c) Demonstrates a knowledge of keeping a log for the voyage</p>	<p>Maintain standard bridge and engine logs, and a log of the towing operation</p>					
<p>d) Demonstrates an understanding of navigation with regard to:</p> <ul style="list-style-type: none"> <li>• wind and tidal effects</li> <li>• giving way</li> <li>• traffic lanes requirements</li> <li>• use of appropriate towing/pushing lights and shapes</li> </ul>	<p>Take account of and comply with, as appropriate, special factors and requirements relating to navigation whilst towing another vessel</p>					
<p>e) Describes the method of checking wire/rope for chafe</p>	<p>Check wires and ropes for chafing</p>					
<p>f) Describes a knowledge of hazard of tow line touching sea bottom</p>	<p>Handle the vessel to avoid the tow line touching the sea or river bed</p>					
<p><u>Inspection of Tow on arrival at departure port</u></p>						
<p>a) Demonstrates a knowledge of checking the following with tow Surveyor:</p> <ul style="list-style-type: none"> <li>• seaworthiness of the vessel</li> <li>• trim</li> </ul>	<p>Inspect the tow on completion of the voyage</p>					

<ul style="list-style-type: none"> <li>• slack tanks</li> <li>• fuel and Lubricating oil on board</li> <li>• securing status of cargo</li> <li>• securing status of equipment – onboard and outboard</li> <li>• propellers - rudder/s</li> <li>• openings such as vents, watertight doors, hatch/tank covers, windows/ports, deadlights, engine room sea water intakes/outlets</li> <li>• noting of existing damage – photograph</li> <li>• dredger – hopper doors</li> <li>• areas around lifting points</li> <li>• securing of all connecting shackles, pinned nuts spot welded</li> </ul>					
<p>b) Describes bridles and shackles hung over the tow, clear of all obstructions</p>	<p>Rig bridles and shackles</p>				
<p>c) Describes the placement of a gobline when required</p>	<p>Rig a gobline and explain its importance</p>				
<p>d) Describes the method of rigging towing diamond</p>	<p>Rig a towing diamond</p>				
<p>e) Demonstrates a knowledge of checking:</p> <ul style="list-style-type: none"> <li>• towing lights being fitted and operational</li> <li>• anchoring arrangements on tow</li> </ul>	<p>Ensure all required lights and signals are correctly displayed</p>				
<p><u>Hazard identification and safety issues</u></p>					
<p>a) Demonstrates an awareness of 'snatching' and conditions where this would be most likely to occur</p>	<p>Control the vessel to avoid snatching</p>				

<p>b) Describes the method of reducing `snatching`</p> <p>c) Explains emergency tow rigging outside of handrails, ships fixtures and fittings</p> <p>d) Demonstrates an awareness with respect to:</p> <ul style="list-style-type: none"> <li>• crew safety</li> <li>• vessel safety</li> <li>• safety of the vessel/barge/craft in tow</li> </ul>	<p>Prepare and rig emergency towing equipment</p> <p>Comply with all safety requirements and procedures</p>					
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**I confirm that this candidate has completed the above tasks on “Towing And Pushing” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>9. <u>DREDGING</u></b>					
<b>Generic UPK Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>a) Describes the importance of the need for the planning of the operation on a vessel engaged in dredging operations.</p> <p>b) Describes how to correctly establish the area to be dredged, the material likely to be removed including its quantity, and identify and assess any related potential hazards</p> <p>c) Describes the need for briefing of crew and other personnel on a vessel engaged in dredging operations.</p> <p>d) Explains the importance of maintaining a look out and radio watch for other individuals and vessels within the vicinity of the dredging operation and take the necessary action to maximise safe working operations</p> <p>e) Describes the importance of the use of appropriate equipment on a vessel engaged in dredging operations.</p> <p>f) Describes the types and procedure for dredging including ploughing, jetting, grab, cutter suction or trailer.</p>	<p>Plan dredging operation</p> <p>Identify the area to be dredged and material to be removed in accordance with licence conditions, and potential hazards such as power cables, gas pipes and similar</p> <p>Brief crew and other personnel on the intended operation and their individual responsibilities</p> <p>Ensure all safety procedures, including use of personal protective clothing and equipment, are complied with</p> <p>Conduct bridge watchkeeping in accordance with normal procedures, and taking into account the special circumstances of dredging, including the correct navigational lights to be displayed while carrying out dredging operation</p> <p>Prepare dredging equipment required for the operation in accordance with the plan</p> <p>Operate dredging equipment in accordance with procedures</p> <p>Carry out the dredging operation in accordance with procedures and</p>				

<p>g) Describes the procedure for dealing with suspicious objects in spoil on a vessel engaged in dredging operations.</p> <p>h) Describes the importance of and the procedure for the disposal of spoil on a vessel engaged in dredging operations.</p> <p>i) Confirms the destination of the waste materials, that this is adequate and appropriate for the safe and correct disposal of the materials, and that all necessary permissions have been obtained</p> <p>j) Demonstrates knowledge of their organisation's and local navigation authorities' requirements for dealing with reports of hazards and obstructions within navigable channels.</p> <p>k) Describes the function and purpose of VTS information and requirements on a vessel engaged in dredging operations.</p> <p>l) Explains importance and impact of Department for Environment and Rural Affairs' (DEFRA) dredging licence, United Kingdom Hydrographic Office's (UKHO) Hydrographic Standards, and other regulations upon dredging operations</p>	<p>requirements for:</p> <ul style="list-style-type: none"> <li>• loading and discharging</li> <li>• ballasting</li> <li>• managing stability of the vessel</li> </ul> <p>Demonstrate knowledge of how to deal with suspicious objects dredged up</p> <p>Dispose of spoil and waste materials in accordance with procedures and licence conditions</p> <p>Comply with own organisation's and local navigation authorities reporting requirements</p> <p>Comply with all VTS requirements</p> <p>Ensure operations are carried out in compliance with DEFRA licences, UKHO standards and other regulations</p>					
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**I confirm that this candidate has completed the above tasks on “Dredging” to a satisfactory standard.**

Employer's/Boatmaster's signature:-

Name:-

Date:-

Vessel Name:-

**10. RADAR**

Note: It is not a mandatory requirement to complete this section. It is provided for candidates to record tasks undertaken which may help to prepare them for the relevant short courses or Maritime Studies Qualification which must be completed, or to put into practice the knowledge and skills acquired on completion of such a course or qualification

Underpinning Knowledge Syllabus	Tasks	Number of times task performed			Task completed satisfactorily
<p>1. <u>Regulations And Guidance</u></p> <p>a) Explain the content of Maritime &amp; Coastguard Agency (MCA) and 'M' notices and other regulations and guidance covering the use of radar systems on Domestic and Code vessels</p> <p>2. <u>Principles Of Operation And Use</u></p> <p>a) Explain how radar is used as a ranging device</p> <p>b) Explain setting up procedures, including the use of performance monitoring facilities</p> <p>c) Explain the importance of heading marker alignment</p> <p>d) Explain different screen displays</p> <p>e) Explain the limitations which can affect data obtained from radar, including sea and precipitation clutter, shadow sectors and blind arcs, false echoes, target aspect and beam width</p> <p>f) Explain the function of different controls</p>	<p>Identify and use data from publications</p> <p>Carry out safety checks, power up a radar system and check the scanner</p> <p>Ensure the heading marker is correctly aligned</p> <p>Select the appropriate display for the intended use, taking into account prevailing sea and weather conditions</p> <p>Select the appropriate range for the intended use, taking into account prevailing sea and weather conditions</p> <p>Set the sea and precipitation clutter controls appropriate for the prevailing sea and weather conditions</p>				

<p>3. <u>Navigation</u></p> <p>a) Explain how radar is used as an aid to navigation, including parallel indexing</p> <p>b) Explain how radar is used for bearing measurement, including position fixing</p> <p>4. <u>Collision Avoidance</u></p> <p>a) Explain how radar is used as an aid to collision avoidance, including the use of manual and automatic plotting devices</p> <p>5. <u>Interface With Other Electronic Systems</u></p> <p>a) Explain how radar may be interfaced with other electronic navigation and communication systems</p>	<p>Set the brilliance and contrast controls appropriate for prevailing sea and weather conditions</p> <p>Utilise parallel indexing techniques</p> <p>Take bearings and ranges of land and navigational features for fixing the position of a vessel on a chart</p> <p>Transfer bearings and ranges of land and navigational features to a chart to fix the position of a vessel</p> <p>Set the plotting mode appropriate for the intended use</p> <p>Use an appropriate range setting</p> <p>Take bearings of ship echoes to determine the risk of collision and avoidance actions</p> <p>Use manual and automatic plotting devices to determine the risk of collision and avoidance actions</p> <p>Set up interfaces with other electronic navigation and communication systems</p> <p>Utilise information obtained from the interface between radar and other electronic navigation and communication systems</p>				
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**I confirm that this candidate has completed the above tasks on “Radar” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

<b>11. FAST CRAFT</b>					
<b>Underpinning Knowledge Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>1. <u>Shipboard Knowledge</u></p> <p>a) Demonstrates a knowledge of on-board propulsion systems including:</p> <ul style="list-style-type: none"> <li>• communication and navigational equipment</li> <li>• steering, electrical, hydraulic and pneumatic systems</li> <li>• bilge and fire systems</li> <li>• failure mode of control, steering and propulsion systems</li> <li>• proper response to system failures</li> </ul> <p>c) Explains handling characteristics of the craft and the limiting operational conditions</p> <p>d) Describes the procedures for bridge communication and navigation including the methods of control and communication with passengers in an emergency</p> <p>e) Demonstrates a knowledge of cargo and vehicle stowage and securing systems</p> <p>f) Demonstrates an outline knowledge of loading and stability data</p>	<p>Locate and identify documents carried on board relevant to fast craft</p> <p>Locate, identify and demonstrate knowledge of on board systems</p> <p>Manoeuvre the craft</p> <p>Carry out communications in accordance with procedures</p> <p>Load and discharge cargo and vehicles in accordance with procedures</p> <p>Secure cargo and vehicles in accordance with procedures</p> <p>Manage vessel stability in accordance with the stability book and other information</p>				

<p>g) Demonstrates a knowledge of buoyancy, stability, subdivision, down flooding point and intact stability information</p> <p>h) Demonstrates an awareness of the impact and damage stability and survivability of the craft in damaged condition Lifesaving, firefighting and damage control</p>						
<p><u>2. Lifesaving, Fire Fighting And Damage Control</u></p>						
<p>a) Demonstrates an ability to locate and use the craft's life-saving appliances, survival craft equipment, escapes in the craft</p>	<p>Locate and identify life saving appliances and equipment on board</p> <p>Participate in emergency drills and exercises, demonstrating knowledge of how to use the life saving appliances and equipment on board, performing effectively in accordance with emergency procedures</p>					
<p>b) Demonstrates an awareness of the procedures for passenger evacuation including the location and use of items listed in vessel's training manual</p>	<p>Participate in abandon ship drills and exercises, controlling and managing passengers in emergency situations, performing effectively in accordance with emergency procedures</p>					
<p>c) Demonstrates a knowledge of the location and use of fire protection and extinguishing appliances and systems in the event of fire on board</p>	<p>Locate and identify fire fighting appliances and equipment on board</p> <p>Participate in emergency drills and exercises, demonstrating knowledge of how to use the fire fighting appliances and equipment on board, performing effectively in accordance with emergency procedures</p>					
<p>d) Demonstrates a knowledge of the location and use of damage control appliances and systems including the operation of watertight doors and bilge pumps</p>	<p>Locate and identify damage control appliances, equipment and systems on board</p> <p>Participate in emergency drills and exercises, demonstrating knowledge of how to use the damage control appliances, equipment and systems on board,</p>					

<p>3. <u>Regulations</u></p> <p>a) Demonstrates an outline knowledge of the High Speed Craft Code and amendments including operational requirements</p>	<p>performing effectively in accordance with emergency procedures</p> <p>Control vessel operations in compliance with the High Speed Craft Code</p> <p>Demonstrate knowledge of the contents and application of the vessel's safety management system or alternative/equivalent procedures</p>					
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**I confirm that this candidate has completed the above tasks on “Fast Craft” to a satisfactory standard.**

Employer's/Boatmaster's signature:-

Name:-

Date:-

Vessel Name:-

### 13. Local Knowledge

1. LOCAL KNOWLEDGE					
Syllabus	Tasks	Number of times task performed			Task completed satisfactorily
(As applicable to the local knowledge area concerned. Space is left at the end of the syllabus for additional topics to be entered relevant to the area concerned)					
	Locate and identify documents carried on board relevant to the local knowledge area				
	<b>Tasks are not separately defined, but as knowledge of the syllabus topics is gained for the area concerned they should be signed off in the next column</b>				
a) A thorough knowledge of local regulations and byelaws (this is essential for all areas)					
b) Knowledge of navigation authority publications (and where to obtain)					
c) Local signals and traffic regulations					
d) Local marks, including buoyage, lights, leading lights and marks					
e) Local dangers to navigation – depths over banks, obstructions, currents					
f) Local safe havens and landing places in differing weather conditions					
g) A knowledge of the times and heights of tides					
h) Safe courses in and out of local harbours					
i) Locations of, and means of communication with the nearest Coastguard centre, and other emergency services					

<p>j) Local language terminology (including radio communications where appropriate)</p> <p>k) Knowledge of local VTS and traffic control</p> <p>l) Knowledge of local traffic density and patterns:</p> <ul style="list-style-type: none"> <li>• Types of traffic to be entered</li> </ul> <p>m) Any other item of local knowledge which an examiner may deem to be necessary (eg current notices to mariners on temporary works)</p> <p>n) Fixed items and air draft hazards (eg bridges)</p>						
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**I confirm that this candidate has completed the above tasks on “Local Knowledge” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

## 14. Ancillary Safety Training

<b><u>ANCILLARY SAFETY TRAINING</u></b>					
<p>Note: It is not a mandatory requirement to complete this section. It is provided for candidates to record tasks undertaken which may help to prepare them for the relevant short courses or Maritime Studies Qualification which must be completed, or to put into practice the knowledge and skills acquired on completion of a course or qualification</p>					
<b>Syllabus</b>	<b>Tasks</b>	<b>Number of times task performed</b>			<b>Task completed satisfactorily</b>
<p>1. <b><u>Personal Survival/Water Safety</u></b></p> <p>a) Demonstrates an awareness of safe practices and accident prevention in order to minimize risks including</p> <ul style="list-style-type: none"> <li>• the types of emergency situations which may occur, such as collisions, fire, grounding and man overboard</li> <li>• the need to adhere to the principles of survival</li> </ul> <p>b) Identifies the types of life saving appliances normally carried on inland waterways vessels for the relevant areas of operation including lifebuoys, lifejackets/vests, lines</p> <p>c) Describes the correct utilisation of appliances to aid another crew member, or self in water</p> <p>d) Demonstrates a knowledge of effects of immersion in water including hypothermia and how to treat affected persons</p> <p>e) Demonstrates a knowledge of recovery procedures in man-overboard situations</p>	<p>Locate and identify life saving appliances carried on board</p> <p>Demonstrate knowledge of how to use the appliances to aid self or another crew member</p> <p>Demonstrate knowledge of actions to be taken to counteract the effects of hypothermia</p> <p>Participate in man overboard drills and exercises, performing effectively in accordance with procedures</p>				

<p><u>Additional elements for categories C and D waters and adjacent coastal sea</u></p> <p>f) Demonstrates a knowledge of types of lifejackets likely to be carried on board including the donning and use of lifejackets</p> <p>g) Demonstrates an awareness of the types of life rafts likely to be carried and encountered on board including</p> <ul style="list-style-type: none"> <li>• stowage and deployment</li> <li>• maintenance and servicing requirements</li> <li>• hydrostatic release units</li> <li>• distress signals</li> <li>• helicopter strop</li> <li>• portable radio equipment or set <del>(if any)</del></li> </ul> <p><b>2. <u>Fire Safety</u></b></p> <p>a) Demonstrates a knowledge of the theory of combustion</p> <p>b) Demonstrates a knowledge of types and sources of ignition likely to be encountered on vessels including</p> <ul style="list-style-type: none"> <li>• classification of fires (A, S, C and D)</li> <li>• correct extinguishing equipment and methods for each type</li> </ul> <p>c) Demonstrates an awareness of flammable materials, fire hazards and the spread of fire on board including</p>	<p>Don lifejackets/buoyancy aids carried on board in accordance with instructions for use</p> <p>Locate and identify the liferafts carried on board and their key features</p> <p>Demonstrate knowledge of how to launch liferafts in accordance with procedures</p> <p>Maintain liferafts in accordance with maintenance schedules</p> <p>Locate and identify potential sources of ignition, and flammable materials on board</p> <p>Identify the appropriate equipment on board to extinguish different types of fire</p>					
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<ul style="list-style-type: none"> <li>• how to position a casualty</li> <li>• how to apply resuscitation techniques and maintain clear airway</li> <li>• how to control bleeding</li> <li>• how to apply appropriate measures of basic shock management</li> </ul> <p>c) Describes the appropriate measures in the event of burns and scalds including accidents caused by electric current</p> <p>d) Describes how to improvise bandages and use materials in emergency kit</p> <p>e) Demonstrates how to raise the alarm efficiently and effectively for accidents or medical emergencies in different situations</p> <p><u>Additional elements for categories C and D waters and adjacent coastal sea</u></p> <p>f) Describes how to rescue and transport casualty (e.g. use of stretchers for Class VI vessels)</p> <p>g) Demonstrates how to identify promptly the probable cause, nature and extent of any injuries</p> <p>h) Demonstrates awareness of ‘Category C’ medical stores, and when they should be carried</p>	<ul style="list-style-type: none"> <li>• positioning a casualty</li> <li>• applying resuscitation techniques and maintaining a clear airway</li> <li>• controlling bleeding</li> <li>• treating shock</li> <li>• treating burns and scalds</li> <li>• treating injuries caused by electric current, after first isolating/switching off the electric current</li> <li>• using bandages and items in the first aid kit</li> </ul> <p>Demonstrate knowledge of how to raise an alarm in case of a medical emergency.</p> <p>Rescue and transport casualties with and without the use of stretchers.</p> <p>Diagnose injuries and conditions</p> <p>Locate and identify the medical stores on board</p>					
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**I confirm that this candidate has completed the above tasks on “Ancillary Safety Training” to a satisfactory standard.**

Employer’s/Boatmaster’s signature:-

Name:-

Date:-

Vessel Name:-

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