MSN XXXX

The Merchant Shipping (Boatmasters' Qualifications, Crew and Hours of Work) Regulations 2014
Structure and Requirements

Notice to all operators and masters of passenger ships and non-passenger vessels on inland waterways and on limited coastal operations.

This notice replaces MSN 1808 and MIN 457. It should be read in conjunction with LK MGN and Transitional arrangements MGN.

Summary

This notice describes the structure and requirements of "The Merchant Shipping (Boatmasters' Qualifications, Crew and Hours of Work) Regulations 2014" which applies to the masters of all passenger and non-passenger vessels operating in the UK.

These Regulations supersede The Merchant Shipping (Inland Waterway and Limited Coastal Operations) (Boatmasters' Qualifications and Hours of Work) Regulations 2006 and The Merchant Shipping (Local Passenger Vessels) (Crew) Regulations 2006.

Transitional arrangements for those already working as masters when these Regulations come into force are set out in MGN XXX.

Information about Local Passenger Vessel Crew arrangements is detailed in MGN 290.

Information about the Hours of Work Code for self-employed boatmasters and other working time regulations is detailed in MSN 1778(M).

1. Introduction

1.1 The Merchant Shipping (Boatmasters' Qualifications and Hours of Work) Regulations 2014 came into force on 6 April 2014 and introduced:

- a new type of licence; and
- additional requirements for specialist operations endorsements (the new Ro-Ro endorsement and revalidation requirements for certain specialist operations)

for those operating commercial vessels on inland waterway[1] operations within a restricted tidal area including limited coastal areas[2].

[1] "inland waterways" means categorised waters A, B, C and D as defined in MSN 1776, as amended, and any non-categorised inland waterways.
[2] "limited coastal area" means an area of no more than 3 miles from land and no more than 15 miles from point of departure (excluding waters of category A, B, C or D).

1.2 The aim of these Regulations is to underpin safety standards whilst helping facilitate trade and movement of labour on the UK's inland waterways, and on those in other EC countries.

1.3 Candidates who wish to be assessed for a Boatmasters Licence (**BML**) or Boatmasters' Certificate (**BMC**) need to fulfil the training and examination requirements as set out in this and related notices.

2. Application and Scope of the BML Regulations

2.1 A BML, BMC or alternative qualification[3] specified in this MSN is required for the masters of:

(a) Class IV, V, VI and VI(A) vessels which are passenger ships
(b) Class IX(A) and IX(A)(T) vessels which are non-passenger vessels

A description for the classification of these vessels is contained within **Annex 1**.

2.2 When operating in inland waterways a BML, BMC or alternative qualification specified in this MSN is not required under the following circumstances:

- for crew members[4] (unless an approval under MGN 290 requires a crew member to hold such a qualification)
- for those in charge of a pleasure vessel or hire boat being used as a pleasure vessel
- for those in charge of a fishing vessel
- for those operating in compliance with The Merchant Shipping (Small Workboats and Pilot Boats) Regulations 1998, as amended, and The Merchant Shipping (Vessels in Commercial Use for Sport or Pleasure) Regulations 1998[5], as amended
- for those undertaking low risk operations listed in **Annex 2** which are exempted from the BML Regulations.

2.3 Where local authorities' byelaws or other local legislation require those operating in their waters to hold a local licence or other master's qualification, the holder of a relevant BML is not subject to those local requirements. (Pilotage requirements are not affected).

[3] Sections 3 and 4 refer.
[4] The training requirements for crew are not specified by these Regulations. However, crew training for personnel on domestic passenger vessels is contained within MGN 203, as amended.
[5] Masters of vessels operating under the MCA's Small Commercial Vessel and Pilot Boat (SCV) Code(s) must hold one of the qualifications listed in Annex 3 of MGN 280, which is currently available from the MCA's website www.dft.gov.uk/mca under Ships and Cargoes/ Legislation and Guidance/ Marine (M) Notices.

3. Alternative Qualifications for Masters of Small Vessels[6] in Commercial Use

3.1 BMLs may be issued to masters of vessels in scope of the Regulations under 24m in load line length or which carry no more than 12 passengers. However, suitable alternative qualifications are accepted for these masters. The list of qualifications together with the medical fitness requirements is contained in **Annex 3**.

3.2 Masters of small vessel in commercial uses using one of the qualifications listed in Annex 3 must obtain a BML specialist operation endorsement or equivalent[7] if undertaking any of the following specialist operations:

- carriage of oil cargoes in bulk
- carriage of chemical cargoes in bulk
- carriage of gas cargoes in bulk
- towing and pushing

3.3 Candidates wishing to obtain a BML specialist operation endorsement must meet the qualifying conditions for the relevant operation specified in Table C of Annex 5 to this Notice.

3.4 Upon meeting the qualifying conditions, candidates must complete MSF XXXX and submit it with the statutory fee to their local MCA Marine Office[8]. On receipt of the application, the local Marine Office will arrange for the candidate to undertake an oral assessment on underpinning knowledge and practical assessment which is appropriate to the BML specialist operation endorsement sought.

3.5 For masters holding alternative qualifications, the BML specialist operation endorsement will be carried as a separate paper certificate to be kept with the alternative qualification.

3.6 These Regulations supersede the recommendations at section 26 of the MCA/Association of Inland navigation Authorities' Inland Waters Small Passenger Boat Code[9], in respect of the qualification of the master of small passenger vessels (carrying no more than 12 passengers) which do not go to sea.

3.7 Masters of small vessels in commercial use must comply with pilotage requirements where applicable.

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[6] "small vessel" means a vessel under 24m in loadline length which carries no more than 12 passengers and is not certificated to operate under the MCA's Small Commercial Vessel and Pilot Boat (SCV) Code.

[7] Qualifications accepted as equivalents to the BML specialist endorsements are listed in Table C of Annex 5.

[8] Contact details for local MCA Marine Offices can be found on the which is currently available from the MCA's website www.dft.gov.uk/mca under About Us/ Contact Us

[9] Currently available from the MCA's website www.dft.gov.uk/mca under Leisure and the Seaside/ Inland Waterways.

4. Other Alternative Qualifications

4.1 Subject to any specialist operation or local knowledge requirements (paras. 5.3 and 5.4 refer), the Regulations recognise Boatmasters' Certificates (**BMC**) issued under EC Directive 96/50/EC for use on vessels to which the Regulations apply (para 2.1 refers). The BMC must be appropriate to both the vessel and the waters in which it is navigated.

4.2 The Regulations provide for the Secretary of State to specify in this notice that equivalent or higher sea-going qualifications may be used in lieu of the BML or BMC to act as masters of vessels in scope of the Regulations (para. 2.1 refers). These qualifications together the medical fitness requirements are listed in **Annex 4**.

4.3 Masters holding one of the qualifications listed in Annex 4 (with the exception of the Canal & River Trust Helmsman Certificate and Rhine navigation licence) wishing to operate on vessels to which the Regulations apply[10], must :

(a) in the first instance contact their local Marine Office confirming:
- the type/details of vessel they wish to operate;
- waters in which they wish to sail; and
- their work history

At the discretion of the local Marine Office the master may be required to pay the statutory fee and undergo a practical boat handling assessment[11].

(b) obtain a BML specialist operation endorsement or equivalent should they wish to undertake a specialist operation[12].

4.4 For masters holding alternative qualifications, the BML specialist operation endorsement will be carried as a separate paper certificate to be kept with the alternative qualification.

4.5 Masters must comply with pilotage requirements where applicable.

4.6 Every other vessel must be in command of the holder of a BML.

5. Boatmaster Licensing Structure

5.1 The boatmaster[13] licensing structure is a two-tiered system based on the same overall competency standards. However, the level of training and validation is

[10] Details of these vessels are contained within Annex 1 to this Notice.
[11] Whilst masters holding the accepted alternative qualifications to the BML have the required underpinning knowledge for a BML, the majority of these qualifications are generally for larger seagoing vessels. Consequently these masters may not be competent in operating smaller inland waterway vessels; therefore the MCA must assess their practical competence.
[12] Specialist operations are defined in Section 8 with qualifying conditions and accepted equivalents listed in Table C of Annex 5 to this notice. The application procedure for masters holding alternative qualifications is listed in para. 3.4.
[13] "boatmaster" means the person in command of an inland waterways vessel.

higher for Tier 1 BMLs to reflect the wider scope of conditions under which a holder may operate.

5.2 The types of BMLs are:

Generic BMLs		**Area of Operation**
Tier 1	**Level 2**	National licence valid for operating a vessel anywhere on the UK's inland waterways (categories A to D) and limited coastal area, except where local knowledge requirements apply.
Tier 1	**Level 1**	National licence valid for operating a vessel anywhere on the UK's non-tidal waters (categories A, B and non-linked C), except where local knowledge requirements apply.
Specific BMLs		**Area of Operation**
Tier 2	**Level 2**	Restricted licence valid for specified areas of category A[14] to D waters and limited coastal area.
Tier 2	**Level 1**	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.

5.3 To operate in certain waters, in addition to a generic Tier 1 BML (i.e. without endorsements), candidates must also obtain a Local Knowledge Endorsement (**LKE**). Please refer to section 7 of this notice for further guidance in this area.

5.4 To undertake certain operations, in addition to a generic Tier 1 BML, candidates must also obtain the relevant Specialist Operations Endorsement. Please refer to section 8 of this notice for further guidance in this area.

5.5 Tier 2 BMLs allow a boatmaster to operate in the area(s), and undertake the specific operation(s), as printed in their licence. Therefore, candidates for a Tier 2 BML will not require separate local knowledge or specialist operation endorsements as they will be examined for specific waters and operations for their T2 BML.

5.6 Holders of Tier 2 BMLs wishing to change the area or type of operation specified in their licence will normally require an assessment and new licence.

[14] If the area of operation includes a section of Category A canals, the candidate may operate on all Category A canals. This description may be printed on the candidate's licence upon request.

5.7 The Tier 1 BML with the cargo and towing and pushing endorsements[15] provide the foundation for the issue of a UK Boatmasters' Certificate (**BMC**) under EC Directive 96/50/EC. The types of BMCs are:

BMC Type	Area of Operation	Base BML
Group A	Certificate valid for all waterways in the Member States, with the exception of waterways to which the Regulation on the issue of Rhine navigation licences apply[16].	Tier 1 Level 2 + cargo and towing and pushing endorsements
Group B	Certificate valid for all waterways in the Member States, with the exception of waterways of a maritime character[17] referred to in Annex II to Directive 91/672/EEC, and with the exception of waterways to which the Regulation on the issue of Rhine navigation licences apply.	Tier 1 Level 1 + cargo and towing and pushing endorsements

5.8 BMCs are valid for operations on inland waterways of other Member States. Please note that the BMC may not be accepted by other Member States for coastal operations.

5.9 Similar to the Tier 1 BML, holders of generic BMCs require local knowledge endorsements to operate in certain waters or additional certificates on the generic BMC to undertake certain operations. Please refer to **Annex 7** for further in this area.

5.10 Holders of a BMC may not carry dangerous goods in other EC countries, except where the holder is certificated under the European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway (ADN).

6. Generic Licence (Tier 1 BMLs only)

6.1 The generic licence covers the "core" competencies and boatmanship skills needed for operating in the relevant water category/ies. These generic competencies are divided into the following sections for all candidates:

- Bridge Watchkeeping
- Ship manoeuvring
- Mooring and unmooring a vessel
- Ship knowledge
- Health and safety
- Pollution prevention and waste management
- Meteorology
- Vessel handling in extreme weather
- Ropework and access
- Basic engineering and machinery
- Emergency action

[15] Council Directive 96/50/EC requires BMC candidates to be assessed for cargo and towing and pushing knowledge for the issue of both Group A and B certificates.
[16] For operation on the Rhine a Rhine Patente is required. The current EC Directive (96/50/EC) is due for review, and one of the objectives of that review will be to bring the Rhine into the scope of certificates issued under the Directive. In the meantime, the UK will submit the UK Tier 1 licence for recognition on the Rhine under separate arrangements.
[17] Tidal waters

6.2 In addition, depending on the categories of waters to be covered, there are sections on:

- Generic chartwork
- Compass work
- Locks and bridges
- Tides and currents
- Anchor work

6.3 With regard to local knowledge, holders of the generic licence must:

- demonstrate knowledge of generic local rules, bylaws and other navigational requirements for their expected area of operation and immediately adjacent waters;
- be able to interpret local charts etc.; and
- have the skills to allow for local tides, currents and other common navigational features when applying for the BML..

6.4 A list of port and harbour authorities with local navigational requirements is contained within LKE MGN.

6.5 The syllabus for the generic licence is set out at **Annex 8**.

6.6 If a Tier 1 BML holder moves to a different area, it is their responsibility to contact the responsible port or navigation authority for the waters in question, and to find out about and ensure a similar familiarity with the local navigational requirements in the new area, as a matter of good practice and responsible seamanship.

6.7 On its own, the generic licence is a suitable qualification for operators of workboats and vessels carrying up to 12 passengers.

7. Local Knowledge Endorsement (Tier 1 BMLs only)

7.1 In certain areas there are for example, features and characteristics that present a hazard to safe navigation which requires Boatmasters to be trained beyond what might be expected under the generic skills described in para. 6.3 above to safety operate. Therefore a local knowledge endorsement (**LKE**) in addition to the generic Tier 1 BML is required.

7.2 Masters which hold a Pilotage Exemption Certificate (PEC) covering waters within an area requiring a LKE may operate within the conditions specified in the PEC without holding an LKE. However, should they wish to operate outside the limits of their PEC in a local knowledge area, they must obtain the relevant LKE.

7.2 LKE MGN contains information on:

- the criteria for proposing and agreeing on local knowledge requirements;
- areas where a LKE is required;
- conditions which must be met to be eligible for a LKE examination; and
- the syllabus against which candidates for each LKE are assessed.

7.3 In agreement with the relevant port or navigation authority, the waters where a LKE is required are:

Area	
Bristol Port	The River Avon from Ashton Swing Bridge to the mouth of the Avon and King Road from Portishead Point to the port limits to the North and West
Caernafon and Menai Strait	From the Southern Limit specified in the Menai Strait Pilotage District Pilotage Directions, that is an imaginary line joining positions 53°09.6'N 004°25.7'W (Malltraeth Bay); 53°05.0'N 004°32.15'W (Caernafon Bay) and 53°00.55'N 004°23.58'W (afon Hen, Clynnog) to a line drawn between Bangor Pier and Garth-y-Don
Dee Conservancy	From an imaginary straight line connecting Point of Ayr (National Grid reference point SJ 12268519) and Hilbre Point (National Grid reference point SJ 20298843) to the Airbus Load-out Facility at Broughton
Dover Harbour	The harbour and the sea within a distance of one mile from the seaward limits of the harbour
Fowey Harbour	The upper estuary, north of Upper Carne Point
Gloucester Harbour	The Severn estuary from the harbour limits at Goldcliff to the weirs at Maisemore, Lanthony (Gloucester) on the tidal River Severn, and to Bigsweir Bridge on the tidal River Wye.
Medway	The waters within a line from Garrison Point to Grain Tower thence west to shore-line and from the east limits of the Port of Sheerness to Rochester Bridge including the Swale as far as Shellness
Padstow Harbour	The waters within a line joining Stepper Point, Gulland Rock and Pentire Point
Port of Liverpool	The River Mersey from a straight line drawn between the Perch Rock Lighthouse and Gladstone River Entrance West Bullnose, south to a straight line drawn between the East Bullnose of Eastham 50' Lock and the West Bullnose of Stalbridge (Garston) Lock
Port of London	The River Thames from Putney Bridge to the eastern limit of the Thames Barrier Control Zone (currently Margaretness)
Portsmouth Harbour	The waters between No 4 Bar Buoy and a line drawn from No 98 Pile to Whale Island.
Isles of Scilly	The waters within a line drawn from Bishop Rock Lighthouse to Scilly Rock, Round Island, White Island, Hanjague and around the South East of St Mary's.
Teignmouth	The waters from Ness Point to 100 yards East of Den Lighthouse

7.4 For areas requiring a local knowledge endorsement, an MCA (or MCA-approved) examiner will conduct a test on local knowledge before the issue of a formal endorsement on top of the generic Tier 1 BML. The additional qualifying requirements for an LKE are shown in Table B to **Annex 5**.

8. Specialist Operations Endorsements (Tier 1 BMLs only)

8.1 In addition to the generic licence, a Tier 1 BML candidate may need to obtain one or more of the following endorsements listed below, according to their type/s of operation.

Type of Endorsement	Descriptions
Cargo - General	Dry cargoes in bulk and packaged dangerous goods
Chemical Cargoes	Chemical cargoes in bulk
Dredging	
Fast craft	Specified type of vessel and route
General Passenger	No more than 250 passengers
Large Passenger Vessel	More than 250 passengers
Liquefied Gas Cargoes	Liquefied Gas cargoes in bulk
Oil Cargoes	Oil cargoes in bulk
Radar	
Ro-Ro operations	
Towing and pushing	

8.2 The practical competencies for each endorsement are listed in the Task Record Book[18], and the syllabi are listed in **Annex 9**. The minimum age requirements, qualifying service times and any other qualifying criteria are included at Annex 5.

9. How to apply for BMLs and BMCs

9.1 To qualify for a BML, candidates must meet the following criteria:

(a) be of the correct **minimum age**;
(b) have completed the appropriate **qualifying service time** and present this service in the **Work Record**[19] book;
(c) present certificates to reflect having completed the **ancillary safety training**;
(d) present the **Task Record Book** (**TRB**) with the relevant sections completed which are appropriate to the type of BML sought; and
(e) present a valid accepted certificate attesting to their **medically fitness**.

9.2 Candidates must complete application form MSF 4364[20] and submit it with proof of identity, evidence of meeting the above criteria and the statutory **fees**[21] to their local MCA Marine Office[22]. On receipt of the application, the local Marine Office will arrange assessments for the candidate:

[18] MSF 4367 – under revision
[19] MSF 4366 – under revision
[20] BML Application forms can be located with the MCA's dedicated BML webpage under Working at Sea/ Training and Certification/ Boatmasters' Licences
[21] The applicable fees are: practical and oral assessments for the generic licence, any assessments for endorsements and for the issue of a BML. The fees are contained within: the Merchant Shipping (Fees) Regulations 2006 (S.I. No. 2006/2055), as amended.
[22] Contact details for local MCA Marine Offices is currently available from the MCA's website www.dft.gov.uk/mca under About Us/ Contact Us

(f) to demonstrate the required level of **underpinning knowledge** appropriate to the type of BML sought; and
(g) to demonstrate a satisfactory level of seamanship and vessel handing competencies (**practical boat handling**).

9.3 To qualify for a BMC, candidates must meet the following criteria:
(a) be of the correct **minimum age**;
(b) have completed the appropriate **qualifying service time** and present this in the **Work Record** book;
(c) present a valid accepted certificate attesting to their **medical fitness**; and
(d) have demonstrated the required level of **underpinning knowledge** through:
- presenting a valid Tier 1 BML with the relevant endorsements appropriate to the Group of BMC sought[23];
- passing an assessment on the European Code for Inland Waterways (CEVNI); and
- an understanding of the technical standards for inland waterway vessels[24]

9.4 Applications for a BMC must be submitted with the statutory fee to Seafarer Training and Certification Branch. Contact details at the end of this notice.

10. Minimum Age Requirements

10.1 The minimum age to qualify for a BML varies according to the category of water and the type of operation.

10.2 The minimum age requirements for:
- the Tier 1 BML and endorsements are contained in Table C of **Annex 5**
- the Tier 2 BML are contained in **Annex 6**
- the BMC are contained in Table A of **Annex 7**

11. Qualifying Service Time Requirements

11.1 The Qualifying Service Time (**QST**) and minimum qualifying period for BMLs and BMCs will vary according to the category of water and the type of operation.

11.2 Qualifying service means service which has been undertaken:
(a) in an appropriate deck capacity;
(b) in appropriate waters; and
(c) on vessels appropriate to the class of licence / certificate / endorsement applied for.

[23] Tier 1 BML competencies are assessed to the standard required by EC Directive 96/50/EC.
[24] The prerequisite knowledge is contained within Council Directive 82/714/EC

11.3 Candidates for the generic Tier 1 BML must complete of the required QST within a minimum qualifying period to be eligible for the issue of the licence. Details of both are set out at **Annex 5**.

11.4 Additional service requirements for LKEs at also set out at **Annex 5**. With the exception of qualifying for the Port of London (Thames) LKE, this service may be served concurrently with the QST for the generic Tier 1 BML.

11.5 The service requirement for the Port of London (Thames) LKE must be served after completing the service required for the generic Tier 1 Level 2 BML.

11.6 QST for specialist operation endorsements must be served after completing the QST for the generic Tier 1 BML, an illustration on how to count QST is available from **Annex 5**.

11.7 QST for ro-ro and fast craft endorsements may be counted concurrently with the QST for other specialist operation endorsements (passenger or cargo endorsement).

11.8 There are no set QST or minimum qualifying period for Tier 2 BMLs. Instead, a candidate must demonstrate that they have sufficient experience to be proficient in handling the vessel, have adequate knowledge of navigation matters, local rules and any necessary related skills. Examples of these are: methods of controlling and directing passengers (for a passenger operator); or the loading of cargo with regard to stability (for a freight operator).

Guidance

11.9 In practice, this means that an employed Tier 2 BML candidate will have to firstly satisfy their employer that they should enter for the Tier 2 BML, and then the MCA examiner that they have sufficient knowledge and practical skills to gain the licence for operating the vessel in the area for the type of operation concerned.

11.10 Guidance on the number of qualifying service days the MCA would expect for candidates to acquire the necessary skills for a Tier 2 BML is contained within Annex 6.

11.11 The QST requirements for a BMC is contained in **Annex 7**.

11.12 QST must be recorded in a Work Record – see para. 12 below.

12. Work Record

12.1 All boatmasters should complete a Work Record to record their service and experience. This Work Record must be submitted to the MCA when candidates first apply for the BML, and when boatmasters who already hold a BML apply to revalidate it. The record will also be an important personal document if a boatmaster changes employer.

12.2 The Work Record is available from the MCA's website[25]. This is the recommended format but others will be acceptable provided that they show all the details indicated.

12.3 When a candidate is applying for an UK BMC, for use on community waterways outside the UK, the MCA will need to validate and endorse the work record.

13. Ancillary Safety Training Requirements

13.1 Ancillary safety training is an integral part of the competency requirements. There are three one-day basic safety courses which must be successfully completed by all candidates:
(a) Personal Survival
(b) First Aid
(c) Fire Safety

13.2 All ancillary training required for issue of a BML must be completed at an MCA approved training centre. A list of MCA approved training centres is available from the MCA's website[26] or on request from exams@mcga.gov.uk

13.3 The syllabi for the three ancillary safety training courses is contained in **Annex 8**.

14. Task Record Book

14.1 The Task Record Book (**TRB**) is an essential and integral part of a candidate's training and certification for the BML. It is designed to be kept by the candidate and is a personal record of skills mastered and knowledge and experience gained. The TRB is also important in helping to ensure accountability and transparency in the training process.

14.2 The TRB is divided into the following main sections:
(a) generic requirements for all water categories A, B, C and D
(b) other generic requirements for categories A and B only
(c) further generic requirements for categories C and D and limited coastal operations
(d) specialist endorsement requirements

14.3 For Tier 1 BML candidates, the TRB must be completed in respect of the generic BML and any endorsements they wish to take. It lists a number of tasks that must be performed and mastered, which together with the relevant underpinning knowledge will satisfy the competency requirements of the BML. When a task is satisfactorily performed or an item of learning completed, it should be recorded in the TRB in the spaces provided.

[25] Currently available from the MCA's dedicated BML webpage under Working at Sea/ Training and Certification/ Boatmasters' Licences
[26] Currently available from the MCA's dedicated BML webpage under Working at Sea/ Training and Certification/ Boatmasters' Licences

14.4 For Tier 2 BML candidates, the TRB should be completed as far as is appropriate for their area, type of operation and vessel, for the following reasons:

- it is a valuable personal record of training done and skills mastered, which may also be useful if a new Tier 2 boatmaster changes vessels or employers;
- any training done and skills mastered which are recorded in the TRB can be used towards a Tier 1 licence if the holder wishes later to apply for a national licence;
- it will improve accountability and transparency with regard to the candidate's training; and
- it will provide a useful quick reference for both the candidate and the examiner.

14.5 The completed TRB must be submitted to the examiner for the candidate's onboard practical and oral assessment. The examiner will refer to the TRB in testing the candidate's skills and knowledge during the assessment.

14.6 Further details and guidance are given in the TRB itself, which is available from the MCA's website[26] or on request from exams@mcga.gov.uk

15. Medical Fitness

15.1 To serve as a boatmaster, qualified licence holders of any of the acceptable qualifications under these Regulations must be medically fit at all times so as not to jeopardise their own and others' safety.

15.2 Any BML/BMC holder wishing to operate a passenger vessel which goes to sea must hold a valid **ENG1** seafarer medical certificate (or equivalent issued by a recognised country as specified in MSN 1815). ENG1 certificates are issued following an examination by an MCA approved doctor[27]. An ENG1 certificate is valid for one year for seafarers aged 16 to 18 years and a maximum of 2 years for those over the age of 18.

15.3 For all other BML/BMC applicants an **ML5 Medical Certificate** is required. An ML5 form and certificate (MSF 4112) is available on request from any MCA Marine Office, or may be downloaded from the MCA website – address www.dft.gov.uk/mca. A ML5 Medical Certificate is valid for a maximum of 5 years for seafarers up to 64. For seafarers 65 and over the ML5 Medical Certificate is valid for a maximum of 1 year.

15.4 A valid medical fitness certificate must be submitted when applying for a BML, BMC or for any endorsement.

15.5 At revalidation, BML holders under the age of 45 must sign a self-declaration on the application form attesting medical fitness. BML holders aged 45 and over must also submit either a valid ENG1 or ML5 Medical Certificate with their revalidation application.

[27] A list of MCA approved doctors is available from the MCA's website: http://www.dft.gov.uk/mca/mcga07-home/workingatsea/mcga-healthandsafety/mcga-medicalcertandadvice/mcga-ml5-medicalinfo/mcga-approved-docs-list.htm

Guidance

15.6 Whilst the validity periods of the BML and BMC qualifications may differ from that of the medical fitness certificates, it is the individual Boatmaster's responsibility to ensure they are medically fit to serve as master.

15.7 The MCA may, at its discretion, call for a medical report at other times and has the power to suspend or revoke a licence on the grounds that, for health reasons, the holder is not fit enough to hold it.

15.8 All BML and BMC holders must notify the MCA issuing office about any changes or deterioration in health that might affect their medical fitness to operate a vessel.

15.9 More detailed information on the medical fitness requirements for those employed on local passenger vessels is contained in MGN 264.

16. Underpinning Knowledge

16.1 All BML and BMC candidates need to be examined in the theoretical and underpinning knowledge which supports their practical skills. The examination for the BML and BMC ensures the qualification is robust, accountable and transparent, with an examination that is auditable and capable of validation.

16.2 Furthermore, examinations for the Tier 1 BML and BMC ensure that UK issued BMCs are of an equivalent standard to that required in other EC countries.

16.3 Examination of that underpinning knowledge will be carried out by the MCA or an MCA-approved examining body.

16.4 The full syllabus for underpinning knowledge for the generic licence and specialist endorsements contained in **Annexes 9 and 10** respectively.

16.5 There is no requirement under the Regulations to attend an underpinning knowledge course prior to the MCA examination. However, BML underpinning knowledge may be assessed through successfully completing the relevant series of Maritime Studies Qualification[28] units.

16.6 Normally the MCA will conduct an on-board practical and oral assessment for Tier 2 BML candidates.

[28] The Maritime Skills Alliance is currently developing Maritime Studies Qualification (MSQ) units to cover BML underpinning knowledge (UPK). Once these units are available for candidate enrolment, the MCA will publish a list of MSQ unit codes which cover the required BML UPK. MSQs are transferable across the maritime sector, information on existing units is available from the www.maritimeskills.org

17. Practical Boat Handling

17.1 All BML candidates must undergo a practical test of their seamanship and vessel handling competencies under various circumstances. The practical test will be carried out by a MCA examiner.

17.2 The examiner will normally refer to the candidate's Task Record Book and Work Record before and during the assessment. The examiner may ask questions relating to information that has been entered into both documents and regarding any tasks that have not been completed to ensure that the candidate meets the competency requirements.

18. Validity of the BML

18.1 All BMLs are valid for a maximum of five years. To enable the boatmaster to continue operating, it is advised that the licence be revalidated before its expiry date, although an application can be made up to 6 months after the licence has expired.

19. Revalidation requirements for a BML and how to apply

19.1 Evidence of qualifying service is required to revalidate all BMLs and the following endorsements: General Passenger, Large Passenger, Towing and Pushing, Fast Craft, Oil Cargoes, Chemical Cargoes and Liquefied Gas Cargoes operations and local knowledge.

19.2 To revalidate a BML, candidates must meet the following criteria:

(a) have completed the appropriate **revalidation qualifying service time** in the five years preceding the date of application;
(b) produce evidence of this service in an accepted format[29]; and
(c) produce evidence attesting their **medically fitness**.

[29] Where an accepted format is one of the following: (1) A company letter signed by an appropriate person (e.g. the owner or fleet manager); (2) A completed BML Work Record (MSF 4366); (3) A letter from a representative of the statutory navigation/port authority responsible for the area in which the applicant operates; (4). A letter from a shipper or customer who can verify the applicant has the relevant experience; or (5). A letter from a trade association who can verify the applicant has the relevant experience.

19.3 The revalidation qualifying service requirements for masters holding a BML issued under the Regulations are set out in the following table:

Generic BML / Endorsement		Revalidation qualifying service
Tier 1 Level 2		120 days
	General Passenger	60 days
	Large Passenger	60 days
	Towing and Pushing	60 days
	Oil	30 days
	Chemical	30 days
	Gas	30 days
	Ro-Ro	30 days
	Fast Craft	60 days
Tier 1 Level 1		120 days
	General Passenger	30 days
	Large Passenger	30 days
	Towing and Pushing	30 days
	Oil	30 days
	Chemical	30 days
	Gas	30 days
	Fast Craft	30 days
Tier 2 Level 2		50 days
Tier 2 Level 1		50 days

19.4 The revalidation requirements for LKEs are set out in LKE MGN.

19.5 For revalidation purposes, qualifying service for the endorsements may be counted concurrently as the generic BML.

19.6 Medical fitness requirements are set out in paragraph 15.5.

19.7 Once the above criterion has been met, candidates must complete application form MSF 4365[30] and submit it with the statutory **fee**[31] to the Registry of Shipping and Seamen[32].

20. Fees

20.1 The fees for the Boatmasters' Licence, Certificate and endorsements are detailed in the Merchant Shipping (Fees) Regulations 2006 (S.I. No. 2006/2055), as amended.

[30] BML Application forms are currently located on the MCA's dedicated BML webpage under Working at Sea/ Training and Certification/ Boatmasters' Licences
[31] Merchant Shipping (Fees) Regulations 2006 (S.I. No. 2006/2055), as amended.
[32] Contact details for the Registry of Shipping and Seamen can be found on the MCA's website: www.dft.gov.uk/mca

21. Exemptions

21.1 MCA has powers to issue an exemption from the Boatmasters' Regulations requirements for a specified vessel. These powers will only be exercised where there are strong grounds for why the requirements of the Regulations cannot be met in full and safety is not jeopardised.

21.2 Exemptions will be time-limited and conditional on the operator satisfying the MCA that the alternative arrangements proposed are equivalent, in terms of the safety of the crew and any passengers carried, to the vessel being manned in accordance with the regulations.

22. Penalties

22.1 It is an offence to master a vessel on inland waterways (or to sea) without a Boatmaster's Licence, BMC, or specified alternative that is valid for both the area and type of operation. Details of offences and penalties are shown in the Merchant Shipping (Boatmasters' Qualifications, Crew and Hours of Work) Regulations 2014.

22.2 It is also an offence for a master to sail without being medically fit. Details of offences and penalties are shown in the Merchant Shipping (Boatmasters' Qualifications, Crew and Hours of Work) Regulations 2014.

22.3 A company commits an offence if it allows a vessel to sail knowing that the master is not medically fit.

23. Grievances

23.1 A BML and BMC candidate aggrieved by an assessment or other aspects in relations to the Regulations may set out their complaint and reasons for it in writing[33] to the Secretary of State, care of the Surveyor in Charge at the appropriate local Marine Office[32] of the Maritime and Coastguard Agency.

23.2 Upon receipt of such representations, the Surveyor in Charge must investigate the complaint and if they consider it is justified, may offer to take such action as they deem appropriate in relation to the complaint.

23.3 A candidate who is not satisfied with the action offered may appeal in writing to the Chief Executive of the Agency at Spring Place, 105 Commercial Road, Southampton SO15 1EG setting out the grounds of their appeal.

23.4 Upon receipt of such representations, the Chief Executive must investigate the complaint and if they consider it is justified may offer to take such action as they deem appropriate in relation to the complaint.

[33] In writing includes email.

23.5 A candidate who is not satisfied with the action offered may ask the Chief Executive to refer the complaint to an independent adjudicator for a review of the fairness of the handling of the complaint.

23.6 The independent adjudicator may request such further written evidence as he reasonably requires and may make such recommendations as they deem appropriate to the Chief Executive who must act upon them.

24. Further Information

24.1 Further information on the contents of this Notice can be obtained from the MCA at the address given overleaf.

Annex 1

Classification of vessels

A. VESSELS WHICH ARE PASSENGER SHIPS

Class IV	Vessels engaged only on voyages in waters of category A, B, C or D
Class V	Vessels engaged only on voyages in waters of category A, B or C
Class VI	Vessels carrying not more than 250 passengers engaged in voyages to sea or in waters of category A, B, C or D, in favourable weather and during restricted period, in the course of which the vessels are at no time more than 15 miles (exclusive of waters of category A, B, C or D) from their point of departure or more than 3 miles from land
Class VI(A)	Vessels carrying not more than 50 passengers engaged on voyages over a distance of not more than 6 miles to or from isolated communities on the islands or coasts of the United Kingdom and in the course of which they are never more than 3 miles from land

B. VESSELS WHICH ARE NOT PASSENGER SHIPS

Class IX(A)	Vessels other than passenger ships and tankers which do not proceed to sea
Class IX(A)(T)	Tankers which do not proceed to sea

Annex 2

Vessels outside the scope of The Merchant Shipping (Boatmasters' Qualifications, Crew and Hours of Work) Regulations 2014

Masters operating vessels considered to be engaged in low risk operations do not need to comply with these Regulations. Vessels operating in low risk conditions are:

1) an unpowered vessel, including oared and poled vessels less than 24 metres in load line length and carrying not more than 12 passengers.

2) a horse drawn vessel less than 24 metres in load line length and carrying not more than 12 passengers.

3) vessels in use primarily as a home for the owner, where
   a. any trade carried out from the vessel is ancillary to its use as a home, and
   b. the vessel is not licensed or registered for commercial purposes by the competent navigation authority.

4) vessels licensed as 'Low Risk Roving Traders' by the Canal & River Trust (formerly known as 'British Waterways' where
   a. trade is only conducted whilst the vessel is securely moored in locations with firm and safe pedestrian access to the vessel,
   b. customers do not board the vessel,
   c. the combined weight of goods, materials and tools necessary for trade is less than 1 tonne;
   d. no fuel, waste or hazardous substances are carried or sold,
   e. the vessel is not used to carry out boat maintenance works or tow other boats as part of the vessel's trade,
   f. power tools are not used as part of the trading activity, and
   g. no operations are undertaken that have the capability of causing harm to any other water user.

5) subject to conditions i-iii, vessels not normally used for commercial purposes, or are only used very occasionally for commercial purposes and, if not so used would be pleasure vessels;

6) subject to conditions i-iii, small vessels[34] in use as a working platform for works in non-navigable waters[35] or in waters where there is no other commercial traffic

7) subject to conditions i-iii, small vessels in use

[34] "small vessels" means a vessel which does not carry more than 12 passengers (if any) which in the judgment of the Secretary of State does not pose a risk to other vessels operating in the same area.

[35] "non-navigable waters" means waterways which are not open for the normal passage of vessels but admit the access of vessels for maintenance works and similar limited purposes.

a. within a marina, dock or similarly enclosed or partially enclosed premises, or
b. for occasional trips in support of the operation of the business in those premises within the local area but not proceeding to sea.

The conditions are:

i. the company or organisation has carried out a favourable risk assessment of the operation—
   - In accordance with the Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 ("the 1997 Regulations"), or
   - (where the 1997 Regulations do not apply) in a manner which would comply with the 1997 Regulations if they did apply; and

ii. the [company or organisation] runs an in-house training scheme which covers safe operation of such vessels, meeting the requirements of workplace safety; and

iii. the person serving as the master of the vessel has received appropriate training or experience to minimise the risks identified.

Annex 3

Alternative qualifications for masters of small vessels

Masters of small vessels (i.e. under 24m in loadline length which carries no more than 12 passengers and is not certificated to operate under the MCA's Small Commercial Vessel and Pilot Boat (SCV) Code) may hold one of the following qualifications in lieu of a BML.

The possession of a Certificate of Competency or Service should not, on its own, be regarded as evidence of the ability to serve in a particular rank on a specific vessel. The owner(s)/managing agent(s) must ensure that there are sufficient trained personnel on board to work the vessel having due regard for the nature and duration of the voyage.

Certificate	**Valid for Categories of Waters / Limitations**	**Evidence of Medical Fitness[36]**
British Wakeboard & Ski Federation (BWSF) Ski Boat Driver Level 2 Certificate	Powerboats of not more than 375 kilowatt engine power and not more than 8.5m in length; within inland waterways or in sheltered waters within one mile from the coast; for the towing of water skiers only	None
British Wakeboard & Ski Federation (BWSF) Ski Boat Driver Level 3 Certificate	Powerboats of not more than 375 kilowatt engine power and not more than 8.5m in length; within inland waterways or in sheltered waters within one mile from the coast; for the towing of inflatables or water skiers only.	None
Boatman's licence issued by a Competent Navigation Authority	Areas specified in the licence	ML5 or ENG1
Inland Waterways Association (IWA) Certificate of Boat Management	A only	None
International Yachtmaster Training Master of Yachts 200 tons (Coastal)	A, B, C & D and limited coastal areas	ML5 or ENG1
National Community Boats Association Certificate in Community Boat Management	A and B only	None
RYA/MCA Coastal Skipper Certificate of Competency or Service with commercial endorsement and 12 month relevant experience	A, B, C & D and limited coastal areas	ML5 or ENG1
RYA/MCA Day Skipper Certificate (theory and practice) with commercial endorsement and 12 month relevant experience	A, B, C & D and to sea, within 3 miles from a nominated departure point(s) named in the certificate and never more than 3 miles from land, in favourable weather and daylight.	ML5 or ENG1
RYA/MCA Advanced Powerboat CoC with commercial endorsement and 12 month relevant experience	A, B, C & D and to sea, within 3 miles from a nominated departure point(s) named in the certificate and never more	ML5 or ENG1

[36] With the exception of the Thames Sailing Bargemaster's Certificate, the following qualifications are also accepted as meeting the medical fitness requirements: (a) Civil Aviation Authority Commercial Pilot's Licence; (b) Health and Safety Executive (HSE) Diving Medical Certificate; and (c) Driver Vehicle Licensing Agency (DVLA) Group 2 Driver's Licence.

	than 3 miles from land, in favourable weather and daylight.	
RYA/MCA Powerboat Level 2 with commercial endorsement and 12 month relevant experience	A, B, C & D and to sea, within 3 miles from a nominated departure point(s) named in the certificate and never more than 3 miles from land, in favourable weather and daylight.	ML5 or ENG1
RYA/MCA Powerboat Level 2 without commercial endorsement and 12 month relevant experience	A and B only	None
RYA Inland Waterways Helmsman Certificate	A and B only	None
Thames Sailing Bargemaster's Certificate	For use on Thames Sailing Barges only. Categories A, B, non-linked C, C and D waters. Must be endorsed by MCA. When used in Categories C or D waters three months additional relevant experience is required	ML5 or ENG1

Annex 4

Alternative qualifications for masters of all vessels

Subject to a practical boat handling examination conducted by an MCA official[37], the Regulations allow equivalent or higher sea-going qualifications to be used in lieu of the BML to vessels in scope of the Regulations (Annex 1 refers). The accepted qualifications are listed below:

Certificate	Limitations[38]	Medical Fitness Certificate
Canal & River Trust Helmsman Certificate[39]	For Canal & River Trust Employees only, within the Canal & River Trust waters specified by the licence	Canal & River Trust medical
Rhine navigation licence	For type of vessel specified in the licence only. Must not be used at sea.	ML5 or ENG1
Skipper Full		ENG 1
Second Hand Full		ENG 1
Second Hand Special		ENG 1
UK Certificates of Competency[40] (STCW Class II/1, II/2 or II/3, except Master Code Vessel less than 200gt)		ENG 1
UK Certificates of Equivalent Competency (STCW Class II/1, II/2 or II/3)		ENG 1
UK Fishing Deck Certificates of Competency Class 1 or 2 (or pre 1984 equivalent)		ENG 1
UK Inshore Tug Certificate	For use on inshore tugs only	ENG 1
UK Master, Category D (STCW Class II/3)	For vessels with a gross tonnage of less than 500 tonnes in waters of category C or D only	ENG 1
UK Master Yacht 500gt or 3000gt Certificates of Competency		ENG 1
UK Royal Navy Certificates of Competency (STCW Class II/1 or II/2)		ENG 1
UK VQ Level 3 Fishing Vessel Operations (Skipper (Fishing)-Inshore)		ENG 1
UK VQ Level 4 Fishing Vessel Operations		ENG 1

[37] Paragraph 4.4 of this MSN refers.
[38] As per para. 4.5 of this MSN, holders of these alternative qualifications must still comply with specialist operation or local knowledge requirements where applicable. Details of these endorsements are contained within Annex 5.
[39] Holders of these qualifications do not require a practical boat handling examination conducted by an MCA official to be used on vessels in scope of the Regulations.
[40] Service time accumulated serving as a master of vessels on inland waterways is accepted for the revalidation of a master's or officer's Certificate of Competency issued in accordance with STCW '78, as amended. Please refer to MGN 9, as amended, for further details.

Annex 5

Qualifying requirements for Tier 1 Boatmasters Licences and endorsements

Table A. GENERIC BOATMASTERS LICENCE

			Qualifying Service Time (QST)	
Generic Licence[41]	**Waters**	**Min. age**	**Min. no. of days**	**Min. qualifying period**
Tier 1 Level 2	Tidal[42] and Non-Tidal[43]	18	120	12 months
Tier 1 Level 1	Non-Tidal	18	240	24 months

Table B. LOCAL KNOWLEDGE ENDORSEMENT (LKE)

In addition successfully passing a local knowledge test (paras. 7.6 and 7.7 refer), candidates for certain areas must also have completed qualifying service for the issue of an LKE. The qualifying service requirements are specified below:

Area	**Min. age**	**Qualifying service[44]**
Bristol Port	18	N/A
Caernafon and Menai Strait	18	N/A
Dee Conservancy	18	N/A
Dover Harbour	18	N/A
Fowey Harbour	18	N/A
Gloucester Harbour	18	N/A
Medway	18	Not less than 80 days' qualifying service with the last day of that service being undertaken not more than 5 years after the first day.
Padstow Harbour	18	6 voyages outward from the harbour and 6 voyages inward to the harbour under the supervision of a person authorised by Padstow Harbour Authority.
Port of Liverpool	18	N/A
Port of London	18	Not less than 60 days' qualifying service, undertaken in varying conditions including trips in different directions and trips during the hours of darkness, with the last day of that service being undertaken not less than 6 months after the first day.
Portsmouth Harbour	18	Not less than 60 days' qualifying service with the last day of that service being undertaken not less than 6 months after the first day.
Isles of Scilly	18	Not less than 60 days' qualifying service with the last day of that service being undertaken not less than 6 months after the first day.
Teignmouth	18	N/A

[41] Holders of a generic Tier 1 BML are permitted to carry no more than 12 passengers and undertake any operations which do not require a specialist operations endorsement. They may operate nationally in the waters determined by the level of their licence subject to local knowledge requirements.
[42] Tidal waters = Inland waters of categories C and D. Limited coastal = Outside of categorised waters, but no more than 15 miles from point of departure and 3 miles to sea.
[43] Non-tidal waters = Inland waters of categories A, B and non-linked C.
[44] With the exception of qualifying service for the Port of London LKE which must be counted consecutively (in addition), qualifying service for other LKEs may be counted concurrently to the QST for the generic BML.

Table C. SPECIALIST OPERATIONS ENDORSEMENT

Candidates must in addition to a generic BML, obtain a specialist operation endorsement to undertake certain operations. The qualifying service requirements are specified below:

Operation	Min. age	QST[45]		BML Endorsement Qualifying Conditions	Accepted Equivalent[46] to the BML Endorsement Qualifying Conditions
		Min. no. of days	Min. qualifying period		
Passenger Operations (General) – non-tidal waters	21	60	6 months	The candidate must be working in an appropriate deck capacity on a passenger ship. At least half of the required number of service days should be undertaken in the relevant category of waters.	Either: • Crisis Management and Human Behaviour Certificate and Passenger Safety Certificate; or • Passenger safety, cargo safety and hull integrity certificate; or • Company ISM/DSM Code Safety Management System training[47] for passenger operations.
Passenger Operations (General) – tidal and limited coastal waters	21	120	12 months		
Large Passenger Operations	22	60	6 months	The candidate must hold a general passenger operations endorsement, and either: (1) have at least 12 months experience operating as the master of a passenger vessel (carrying no more than 250 passengers); or (2) have aggregated 120 service days in an appropriate deck capacity on a large passenger vessel. In addition to meeting the large passenger QST, at least half of the required number of service days should be undertaken in the relevant category of waters.	Either: • Crisis Management and Human Behaviour Certificate and Passenger Safety Certificate; or • Passenger safety, cargo safety and hull integrity certificate; or • Company ISM/DSM Code Safety Management System training[47] for passenger operations.

[45] QST for all specialist operation endorsements is in addition to the QST for the generic BML.

[46] The successful completion of the relevant Maritime Studies Qualification unit (para. 16.5 refers) will be accepted as an equivalent to the BML endorsement requirements for the corresponding specialist operation.

[47] The following conditions apply for all ISM/DSM Safety Management System training accepted as equivalent to the respective BML endorsement:

- The company ISM/ DSM Code system must detail the appropriate competencies and how these are demonstrated during assessment.
- The appropriate assessment is carried out before command is taken.
- The master has the relevant qualifying service time for the endorsement as given in the Regulations.
- The company must keep record of the training and qualifying service time which will be available for auditing by the MCA as part of any routine inspection or ISM/DSM audit.

Operation	Min. age	QST[45]		BML Endorsement Qualifying Conditions	Accepted Equivalent[46] to the BML Endorsement Qualifying Conditions
		Min. no. of days	Min. qualifying period		
Oil Cargoes	18	60	6 months	The candidate must be working in an appropriate deck capacity on a vessel carrying oil cargoes. At least half of the required number of service days should be undertaken in the relevant category of waters.	UK STCW CoC or CEC with Oil endorsement
Chemical Cargoes	18	60	6 months	The candidate must be working in an appropriate deck capacity on a vessel carrying chemical cargoes. At least half of the required number of service days should be undertaken in the relevant category of waters.	UK STCW CoC or CEC with Chemical endorsement
Liquefied Gas	18	60	6 months	The candidate must be working in a suitable deck capacity on a vessel carrying liquefied gas cargoes. At least half of the required number of service days should be undertaken in the relevant category of waters.	UK STCW CoC or CEC with Liquefied Gas endorsement
Cargo – on vessels under 40m overall length	18	60	6 months	The candidate must be working in an appropriate deck capacity on a cargo vessel. At least half of the required service days should be undertaken in the relevant category of waters.	UK STCW CoC or CEC with Function 2 for Cargo Handling
Cargo – on vessels of 40m and over, overall length	21				
Ro-Ro Operations[48] – tidal and limited coastal waters	18	60	6 months	The candidate must be working in an appropriate deck capacity on a Ro-Ro vessel. At least half of the required number of service days should be undertaken in the relevant category of waters.	Either: • Company ISM/DSM Code Safety Management System training[47] for Ro-Ro operations; or • Crisis Management and Human Behaviour Certificate and Passenger safety, cargo safety and hull integrity certificate
Fast Craft Operations[48]	21	As per the requirement for the other operations undertaken (i.e. cargo and/or passenger operations)		The candidate must be working in an appropriate deck capacity on: (a) a vessel undertaking the same operations as the vessel on which they will normally serve as master; and (b) voyages following a route on which that vessel would normally take.	Either: • Company ISM/DSM Code Safety Management System training[47] for fast craft operations.; or • A Type Rating Certificate that is specific to the vessel and route being operated.

[48] QST for Ro-Ro and Fast Craft endorsements may be counted concurrently with QST for the Cargo or Passenger endorsements.

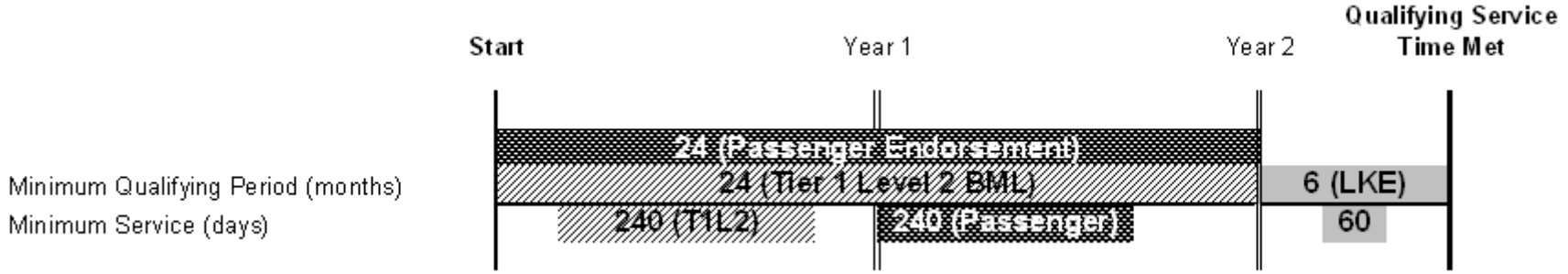
Operation	Min. age	QST[45]		BML Endorsement Qualifying Conditions	Accepted Equivalent[46] to the BML Endorsement Qualifying Conditions
		Min. no. of days	Min. qualifying period		
Dredging Operations	18	60	6 months	The candidate must be working in an appropriate deck capacity on a dredging vessel. At least half of the required number of service days should be undertaken in the relevant category of waters.	Company ISM/DSM Code Safety Management System training[47] for dredging operations.
Radar	18	N/A	N/A	The candidate must have completed one of the following courses: • MNTB Small Ships Navigation and Radar • Navigation, Radar and ARPA Simulator (NARAS) (Operational or Management level) • Navigation Aids, Equipment and Simulator Training (NAEST) (Operational or Management level) • Fishing Electronic Navigation Systems (ENS) Certificate • Fishing Navigation Control Certificate (NCC) • Seafish Bridge Watchkeeping Certificate (five-day course) • Navigation, Radar and ARPA Simulator (Master Yachts) • Navigation and Radar (Officer of the Watch Yachts)	One of the following: • UK Merchant Navy CoC or CEC • UK Master Yacht 500gt or 3000gt CoC • UK Fishing Deck CoC Class 1, 2 or pre-1984 equivalent
Towing and Pushing Operations – non-tidal waters	21	60	6 months	The candidate must be working in an appropriate deck capacity on a vessel engaged in towing or pushing, with at least half of the required number of service days should be undertaken in the relevant category of waters.	Either: • Company ISM/DSM Code Safety Management System training[47] for towing and pushing operations; • UK STCW CoC or CEC with a tug endorsement; or • General Towage Endorsement issued in accordance with the Voluntary Towage Endorsement Scheme[49]
Towing and Pushing Operations – tidal waters	21	120	12 months		

[49] Details for the Voluntary Towage Endorsement Scheme is contained within MGN 468, as amended.

Illustrations of calculating Service Time:

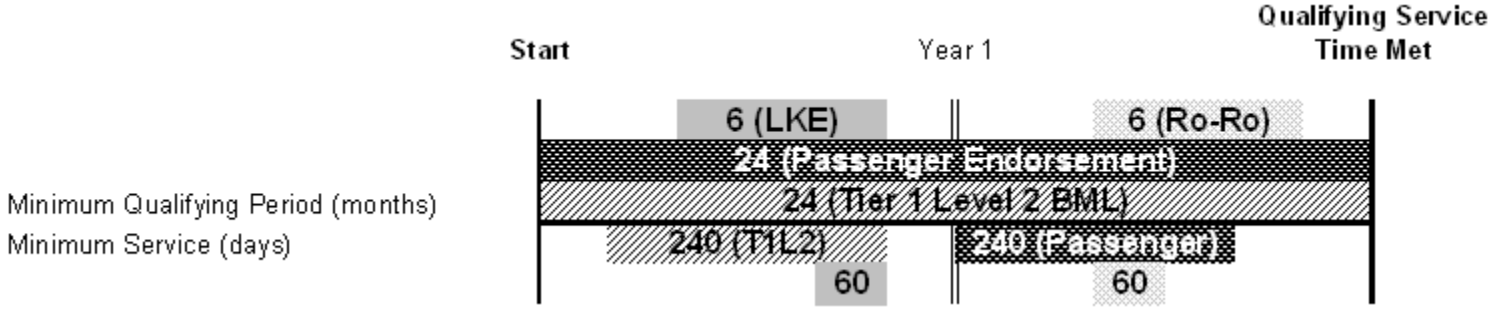
(i) To obtain a licence to for the Thames to carry no more than 250 passengers, the candidate must complete:
QST for a Tier 1 Level 2 BML with a Port of London LKE and passenger endorsement

a. A minimum 240 days qualifying service within a minimum of 24 months to qualify for the T1L2 BML;
b. A minimum 240 days qualifying service (which must be after the qualifying service for the T1L2 BML) within a minimum of 24 months on a passenger vessel to qualify for the passenger endorsement; and
c. A minimum 60 days qualifying service within a minimum of 6 months to qualify for the Port of London LKE (which must be after the qualifying service for the T1L2 BML).



(ii) To obtain a licence to for Portsmouth Harbour to carry no more than 250 passengers on a Ro-Ro/Passenger vessel, the candidate must complete:
QST for a Tier 1 Level 2 BML with Portsmouth Harbour LKE and passenger and Ro-Ro endorsements

a. A minimum of 240 days qualifying service within a minimum of 24 months to qualify for the T1L2 BML, of which if 6 months is in the Portsmouth Harbour area with 60 days qualifying service, this can be counted towards the Portsmouth Harbour LKE (concurrent); and
b. A minimum 240 days qualifying service within a minimum of 24 months on a passenger vessel to qualify for the T1L2 BML; of which if 6 months is on a Ro-Ro with 60 days qualifying service, this can be counted towards the Ro-Ro endorsement (concurrent).



Annex 6

Qualifying requirements for Tier 2 Boatmasters Licences

Tier 2 licences are not required to have endorsements for specific operations, nor do they require specific qualifying service time for issue. However, the table below is for the guidance of Masters, Owners and Surveyors as to the experience considered necessary for the licence holder to undertake specific operations.

Generic Licence		Min. age	Guideline Qualifying Service Time
For the issue of a Tier 2 licence		18	40 days in a minimum of 6 months
Tier 2 Level 2[50] (tidal and non-tidal)	Passenger carrying operations:		
	- up to 100 passengers	18	40 days in a minimum of 6 months
	- 101 to 250 passengers	20	80 days in a minimum of 6 months
	Other operations:		
	Towing operations	18	80 days in a minimum of 12 months
	Cargo operations	18	60 days in a minimum of 9 months
	Oil cargoes operations	18	60 days in a minimum of 9 months
	Chemical cargoes operations	18	60 days in a minimum of 9 months
	Liquefied gas cargoes operations	18	60 days in a minimum of 9 months
	Dredging operations	18	60 days in a minimum of 9 months
	Fast craft operations	18	60 days in a minimum of 9 months
	Radar	18	N/A - on completion of an accepted radar course[51]
	Ro-Ro operations	18	60 days in a minimum of 9 months
Tier 2 Level 1 (non-tidal)	Passenger carrying operations:		
	- up to 100 passengers	18	40 days in a minimum of 6 months
	- 101 to 250 passengers	20	40 days in a minimum of 6 months
	- more than 250 passengers	21	40 days in a minimum of 6 months
	All other operations	18	40 days in a minimum of 6 months

[50] Holders of a Tier 2 Level 2 BML may carry a maximum of 250 passengers. Masters must obtain a Tier 1 Level 2 BML with a large passenger vessel endorsement to carry more than 250 passengers in tidal waters.

[51] The list of accepted radar courses is found in Table C of Annex 5.

Annex 7

Qualifying requirements for UK Boatmasters Certificates and Specialist Operations

Table A. TYPES OF UK BOATMASTERS CERTIFICATES

		Qualifying Service Time (QST)[52]		Qualifying Conditions
General Certificates	**Min. age**	**Min. no. of days**	**Min. qualifying period**	
Group A	21	480	4 years	Tier 1 Level 2 BML with cargo and towing and pushing endorsements.
Group B	21	480	4 years	Tier 1 Level 1 BML with cargo and towing and pushing endorsements.

Note 1: Holders of a generic BMC are permitted to:

- carry no more than 12 passengers;
- undertake operations which do not require specialist operation endorsements; and
- operate on Member State waterways determined by the level of their certificate subject to local knowledge requirements.

Note 2: Holders of a BMC may not carry dangerous goods in other EC countries, except where the holder is certificated under the European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway (ADN).

Table B. SPECIALIST OPERATIONS CERTIFICATES

Candidates must in addition to a general BMC, obtain a specialist operation certificate to undertake certain operations. The qualifying service requirements are specified below:

Operation	**Qualifying Conditions**
Certificate attesting competence in radar navigation	Group A or B BMC plus radar endorsement
Certificate attesting competence in passenger transport	Group A or B BMC plus general and large passenger endorsements
Certificate attesting competence of local navigation requirements	Group A or B BMC plus the relevant local knowledge endorsement for the waters specified in the certificate

Note 3: A list of UK waters requiring a local knowledge endorsement can be located in Table B of Annex 5 to this notice.

Note 4: Candidates wishing to use their UK BMC in other Member States will need to contact the relevant authority for waters requiring a local knowledge endorsement in that particular country.

[52] This may include QST undertaken towards the issue of the Tier 1 BML.

Annex 8

Syllabus for Ancillary Safety Training

1. Personal Survival/Water Safety

a) Demonstrates an awareness of safe practices and accident prevention in order to minimise risks including
- the types of emergency situations which may occur, such as collisions, fire, grounding and man overboard
- the need to adhere to the principles of survival

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
c) Describes the correct utilisation of appliances to aid another crew member, or self in the water
d) Demonstrates a knowledge of effects of immersion in water including hypothermia and how to treat affected persons
e) Demonstrates a knowledge of recovery procedures in man-overboard situations

Additional elements for categories C and D, and adjacent coastal sea
a) Demonstrates a knowledge of types of lifejackets likely to be carried on board including the donning and use of lifejackets
b) Demonstrates an awareness of the types of life rafts likely to be carried and encountered on board including
- Stowage and deployment
- Maintenance and servicing requirements
- Hydrostatic release units
- Distress signals
- helicopter strop
- portable radio equipment or set (if any)

2. Fire Safety

a) Demonstrates a knowledge of the theory of combustion
b) Demonstrates a knowledge of types and sources of ignition likely to be encountered on vessels including
- classification of fires (A, S, C and D)
- correct extinguishing equipment and methods for each type

c) Demonstrates an awareness of flammable materials, fire hazards and the spread of fire on board including
- The knowledge of best practice precautions arid the need for vigilance

d) Demonstrates a knowledge of correct sequence for fire detection and raising the alarm ("FIRE"): find, inform, restrict and extinguish
e) Demonstrates a knowledge of types of extinguishers including
- Water
- Dry powder
- Foam
- C02
- Fire blanket

f) Describes how to extinguish fire including practical demonstration of the use of extinguishers
g) Demonstrates a knowledge of correct location of fire-fighting equipment on a vessel

Additional elements for categories C and D, and adjacent coastal sea

a) Demonstrates an awareness of types and use of fixed fire fighting installations on large vessels

3. First Aid

a) Demonstrates an awareness of body structure and functions

b) Demonstrates a knowledge of the measures to be taken in cases of emergency, including

- How to position a casualty
- How to apply resuscitation techniques and maintain clear airway
- How to control bleeding
- How to apply appropriate measures of basic shock management

c) Describes the appropriate measures in the event of burns and scalds including accidents caused by electric current

d) Describes how to improvise bandages and use materials in emergency kit

e) Demonstrates how to raise the alarm efficiently and effectively for accidents or medical emergencies in different situations

Additional elements for categories C and D, and adjacent coastal sea

a) Describes how to rescue and transport casualty (e.g. use of stretchers for Class VI vessels)

b) Demonstrates how to identify promptly the probable cause, nature and extent of any injuries

c) Demonstrates awareness of ‘Category C’ medical stores, and when they should be carried

Annex 9

Generic Syllabus for Tier 1 Level 1 BML Underpinning Knowledge (Categories A, B and non-linked C)

Contents

Introduction

The mandatory requirements for the issue of Boatmasters' Licence and the standards of competence to be achieved are set out in relevant Merchant Shipping Notice. The Maritime and Coastguard Agency (MCA) as agreed with the relevant sector that the specifications described in this document will satisfy those requirements for Boatmasters' training and certification undertaken in the United Kingdom.

Health and Safety: Conduct of training
Training relevant to the certification and if undertaken must adhere to applicable regulations made under the Health and Safety at Work etc Act 1974 and take proper account of the advice given in associated guidance documents and 'Approved Codes of Practice'.

Organisations or Centres providing related training are required to make assessments of any potential risks to the health and safety of staff and trainees that may be associated with their activities. They are also required to identify, implement, monitor and review effective measures for minimising and controlling them. In addition, centres will be required to make effective arrangements for dealing with any emergency, incident or accident that may occur during the course of training. In the UK, the foregoing is required in accordance with the Management of Health and Safety at Work Regulations 1999.

Training Guidance
It is expected that participants would spend at least 150 hours of full time study to complete the syllabus.

GENERIC SYLLABUS

1. Bridge watchkeeping

a) Demonstrates a knowledge of securing a vessel for departure
b) Describes the process of pre-sailing/pre-arrival checks
c) Describes the procedures for relief, maintenance, takeover and handover of a watch
d) Demonstrates a knowledge of good navigational practice while underway
e) Recognises sound and light signals
f) Explains the responsibilities of a lookout
g) Describes routine communication procedures with other team members of the watch on matters relating to watchkeeping duties
h) Recognises the relative movement of other vessels.
i) Demonstrates a knowledge of maintaining an anchor watch including checks made for anchor dragging
j) Describes the duties expected of a watch-keeper
k) Demonstrates the working knowledge of the English language in marine terminology

2. Meteorology

a) Explains meteorological terms in sufficient depth to interprets weather conditions
b) Explains use of non-instrumental observations
c) Describes types of cloud, cloud cover and precipitation
d) Identifies on surface charts the main synoptic patterns and describes the associated weather including local winds (UK only)
e) Defines visibility including horizontal visibility

3. Ship Manoeuvring

<u>Helm orders and Vessel Steering</u>

a) Demonstrates a knowledge of steering a vessel/boat
b) Demonstrates a knowledge of the process of maintaining course by shore marks and boat compass
c) Explains the effect of weather, ship's speed and condition of loading on steering

<u>Steering Systems and their Function</u>

a) Describes the component of steering systems and states their function
b) Demonstrates an ability to deal with minor malfunctions

<u>Ship Manoeuvring</u>

a) Demonstrates the knowledge of manoeuvring vessel under normal condition, including stopping and going astern; coordinating helm and engine.
b) States the effects on manoeuvring/boat handling, turning circles and stopping distances on the handling of vessel of transverse thrust, single, twin, controllable pitch and fixed propellers
c) Describes the procedures for rigid and small tug towing
d) Describes the effects of wind, current on vessel manoeuvring
e) Describes the effects of underkeel clearance, squat and shallow water on vessel manoeuvring
f) Describes the effects of vessel to vessel and vessel / bank interaction
g) States the precautions to be taken prior to after grounding, collision and , minimising collision damage

h) Demonstrates a knowledge of the manoeuvres for turning short round, emergency stop and man overboard

Visual Signalling

a) 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 and Z)
b) States the distress signals as applicable to International Code

Communications and alarm systems

a) Describes routine and emergency communication procedures
BML Tier 1-Level 1 Rev 5.0 Jan 2007 5
b) Demonstrates the use of telephones, hand held radios and emergency signals

4. Vessel Handling in Extreme Weather

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
b) Demonstrates a knowledge of turning a vessel in adverse weather including manoeuvring an un-powered vessel

5. Mooring and Unmooring a Vessel

a) Describes the use of heaving lines and messengers including precautionary measures
b) Demonstrates the use and safe handling of ropes in mooring operations
c) Explains the procedures for making fast to fixed terminals and jetties, mooring to buoys, single point moorings and exposed location buoys
d) Demonstrates a knowledge of adjusting moorings when alongside, warping along a quay
e) Explains the use of lines to assist vessels or to tie-up to a vessel for cargo operations
f) Demonstrates the use and handling of lines on passenger boats
g) 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
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
i) Identifies commonly used types of moorings
j) Demonstrates the use of fenders, overboard discharge covers and securing the mooring area on departure
k) Explains the need to secure the mooring area on departure

6. Rope work, Access and Lifting Gears

a) Explains the characteristics, safe handling and use of ropes in mooring operations
b) Demonstrates a knowledge of safe use of man-made fibre, wire and combination ropes
c) Demonstrates a knowledge of correct use of knots, splices, bends, hitches and stoppers
d) Describes the use of fenders and overboard discharge covers
e) Explains the need to secure the mooring area on departure

f) Describes the gangways, accommodation ladders and other approved means of access to the vessel
g) Describes how safe means of access to a vessel is achieved
h) Describes the methods available to ensure safe movement onboard ship
i) States the precaution to take when using lifting gears
j) States the precautions to be taken when fork-lift trucks or similar devices are used
k) States that all cargo gear should be inspected before the start of operations each day
l) Identifies lubrication schedules for deck machinery and equipment including correct lubrication of moving parts

7. Ship Knowledge

a) Describes the basic principles of ship stability including the principles of floatation
b) Defines mass, volume, density, relative density, displacement volume, buoyancy, waterline length, breadth, draught and freeboard
c) Defines Centre of buoyancy, Centre of Gravity, up-righting moment at small angle of heel
d) Explains stable, neutral and unstable equilibrium, stiff and tender vessels
e) Explains the causes of stress in a ship's structure
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
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
h) Demonstrates a knowledge of ship construction features for various ship types sufficient to assist with ensuring watertightness and sea worthiness
i) 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
j) Demonstrates a knowledge of terms and definitions used in connection with watchkeeping, vessel operations and vessel construction
k) Identifies paint types, coverage, drying times and prepares surfaces for coating including methods of application and processes involved
l) Explains the maintenance of fire fighting and life saving equipment
m) Demonstrates a knowledge of the need for preparation of work area and resources for maintenance
n) Identifies work area, tools and materials including safe stowage and use of materials
o) Explains `Permit to Work' procedures
p) Identifies plans, specifications, materials and equipment and the need to ensure availability

<u>Publication and General</u>

a) Explains the relationship between law, codes and other forms of guidance
b) Demonstrates a knowledge of legislation, Codes of Practice and M Notices
c) demonstrates a knowledge of an awareness of the law, codes, principles and procedures and other forms of guidance relating to:

- Maintaining a safe working environment on board ship
- safe movement to, from and around the vessel
- using powered cleaning devices
- using lifting gear and a working at a height
- reporting of accidents and dangerous occurrences
- risk assessment

- using chemicals or other hazardous materials, COSHH Regulations
- personal protective clothing and equipment

d) Appreciates the requirements of record keeping for legal or commercial purpose including

- the recording methods available – written records requirement for accuracy in record keeping

8. Basic Engineering Knowledge and Machinery

a) Plans engineering practices and procedures for small vessel propulsion machinery auxiliaries and services including system operation and principles involved
b) Explains preparation of machinery and auxiliaries and knows how to carry out operations according to plan
c) States the causes of machinery malfunctions and actions to be taken
d) Describes how to locate common faults
e) Describes how to operate the control systems, possible problems and how to identify and correct minor deviations
f) Describes emergency shut down sequence, timing and hazards
g) Describes how to make adjustments to achieve and safe operation
h) Demonstrates a knowledge of the relevant safety regulations, machinery operating instructions, conditions and manufacturer's instructions

<u>Pumping and associated Control Systems</u>

a) Describes Planning for pumping operations
b) Describes routine pumping operations, bilge, ballast and operational pumping systems, equipment and machinery operations and possible problems that could occur
c) Describes how to use instruments to monitor conditions
d) Demonstrates a knowledge of relevant safety regulations, conditions, manufacturer's instructions and maintenance schedules

<u>Electrical Equipment</u>

a) Describes electrical systems protection arrangements, circuits and circuit breakers, instruments to monitor conditions
b) Describes the maintenance of electrical supply within given conditions, possible problems and irregularities that could occur
c) Explains fault detection system operation and isolating procedures
d) Describes simple fault diagnosis, location of common faults on plant and control systems and actions to prevent damage

9. Health and safety

a) Demonstrates a knowledge of the safety precautions, regulations, codes of practice and guidelines relating to:
b) use of powered cleaning devices, hand and powered tools
c) working at a height or over side
d) operating lifting plant and the slinging of heavy equipment
e) use and storage of chemical or other hazardous materials
f) entry into and working in enclosed spaces
g) protective equipment and clothing
h) cargo access equipment
i) maintenance of batteries

10. Emergency Action

a) States using appropriate documentation (Muster List) the alarm signals and emergency duties

b) Describes the assistance which may be given by authorities around the coast of the United kingdom, and on inland waterways in addition to assisting other vessels

c) 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.

11. Pollution Prevention and handling and waste management

a) Describes how current guidance and legislation provides knowledge of the precautions and procedures to be taken to prevent pollution of the marine environment

b) Demonstrates a knowledge of pro-active and re-active policies, vessel operations, bunkering, hazardous substances on board, garbage and tank residual disposal, noise and clean air

Section 2

12. Generic Chartwork and Navigation

a) Demonstrates a knowledge of the use of waterways guides, maps and charts

b) States the direction of buoyage, recognition of marks from shape, colour top mark and light

c) Explains the correct action on meeting the marks

13. Locks and Bridges

a) Demonstrates knowledge of entering and leaving a dock or a lock in all stream conditions

b) Demonstrates a knowledge of passing through (under) bridges and navigating in close proximity within a canal

Generic Syllabus for Tier 1 Level 2 BML Underpinning Knowledge (Categories A to D, and to Limited Coastal Sea Waters)

Contents

Introduction

The mandatory requirements for the issue of Boatmasters' Licence and the standards of competence to be achieved are set out in relevant Statutory Instrument. The Maritime and Coastguard Agency (MCA) has agreed with the relevant sectors that the specifications described in this document will satisfy those requirements for Boatmasters' training and certification undertaken in the United Kingdom.

Health and Safety: Conduct of training
Training relevant to the certification and if undertaken must adhere to applicable regulations made under the Health and Safety at Work etc Act 1974 and take proper account of the advice given in associated guidance documents and 'Approved Codes of Practice'.

Organisations or Centres providing related training are required to make assessments of any potential risks to the health and safety of staff and trainees that may be associated with their activities. They are also required to identify, implement, monitor and review effective measures for minimising and controlling them. In addition, centres will be required to make effective arrangements for dealing with any emergency, incident or accident that may occur during the course of training. In the UK, the foregoing is required in accordance with the Management of Health and Safety at Work Regulations 1999.

Training Guidance
It is expected that participants would spend at least 180 hours of full time study to complete the syllabus.

GENERIC SYLLABUS

1. Bridge watchkeeping

a) 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
b) Describes the process of pre-arrival checks and preparations
c) Demonstrates a knowledge of securing a vessel for departure
d) Describes the procedures for relief, maintenance, takeover and handover of a watch
e) Explains and describes the responsibilities of a lookout
f) Recognises sound and light signals
g) Describes the reporting procedures
h) Demonstrates a knowledge of good navigational practice while underway
i) Describes routine communication procedures with other members of the watch/crew on matters relating to watchkeeping
j) Demonstrates a working knowledge of the English language in marine terminology

2. Meteorology

a) Explains meteorological terms in sufficient depth to interpret weather conditions
b) Explains use of non-instrumental observations
c) Describes wind force, Beaufort scale, direction, true and apparent wind
d) Describes types of cloud, cloud cover and precipitation
e) Identifies on surface charts the main synoptic patterns and describes the associated weather (UK only)
f) Defines visibility including horizontal visibility
g) Describes waves, sea and swell state
h) Demonstrates a knowledge of the weather services available to shipping

3. Ship Manoeuvring

<u>Steering by compass</u>

a) Demonstrates a knowledge of steering a vessel including helm orders and altering course by helm orders
b) Demonstrates a knowledge of course keeping, altering course by compass and the procedure for making large alterations including maintaining of course by shore marks
c) Explains the effect of weather, ship's speed and condition of loading on steering

<u>Steering Systems and their function</u>

a) Demonstrates a knowledge of the components of steering systems and their function including selection of information from instruction manual
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 propeller
c) Describes emergency steering systems including the change over procedures

<u>Manoeuvring</u>

a) Explains the effects on manoeuvring, turning circles and stopping distances of deadweight, draught, trim, speed, rudder angle and propeller/transverse thrust
b) Explains the effects on vessel manoeuvring of single, twin, controllable pitch and fixed propellers
c) Describes the effects of wind, current and tidal stream on vessel manoeuvring/handling

d) Describes the effects of underkeel clearance, squat and shallow water on vessel manoeuvring
e) Demonstrates the knowledge of manual depth finding
f) Describes the effects of vessel to vessel and vessel / bank interaction
g) States the precautions to be taken when grounding and; during and after a collision including minimising of collision damage
h) Demonstrates a knowledge of the manoeuvres for turning short round, emergency stop and man overboard

Regulations and systems for the safe movement of vessels
a) Demonstrates a 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.
b) Describes IALA Buoyage System A
c) Demonstrates a knowledge of the direction of buoyage, recognition of marks from shape, colour, top mark and light
d) Describes the procedure for taking the correct action on meeting marks

Visual Signalling
a) 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)
b) Identifies `Distress Signals'
c) Describes the use of phonetic alphabets

Communications and alarm systems
a) Describes routine and emergency communication procedures
b) Demonstrates knowledge of the use of telephones, hand held radios, other signalling devices and emergency signals

4. Vessel Handling in Extreme Weather

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
b) Describes how and when to make report on the conditions of seaworthiness
c) Demonstrates a knowledge of pitching, pounding, rolling, racing and broaching to (turning sideways or having stern sea in surf)
d) Demonstrates a knowledge of turning a vessel in rough sea

5. Mooring and Unmooring a Vessel

a) Demonstrates a knowledge of the safety precautions and safe working practices to be observed in securing the vessel when mooring/unmooring including mooring terminology
b) Demonstrates a knowledge of relevant sections of Merchant Shipping and HSE regulations, M notices, Company regulations and requirements, manufacturers recommendations
c) Explains the need for personal safety equipment during mooring and safe positions when towing and mooring ropes under strain
d) Explains the dangers of rope bights during towing, securing and mooring operations
e) Explains the characteristics, safe handling and use of ropes including heaving lines in mooring operations

f) Explains preparation and safe operation of winches, windlass, drum ends and similar machineries in all weather situation
g) Identifies head and stern ropes, breast ropes, towing springs, back springs, shore moorings, mooring bitts, fairleads and Panama roller leads
h) Describes routine and emergency communication procedures
i) Explains the need to keep moorings clear of thrusters and propellers
j) Explains the procedures for making fast to fixed terminals and jetties, mooring to buoys, single point moorings and exposed location buoys
k) Demonstrates a knowledge of adjusting moorings when alongside, warping along a quay, use of fenders, overboard discharge covers

6. Rope work, Access and Lifting Gear

a) Demonstrates a knowledge of safe use of man-made fibre, wire and combination ropes
b) Demonstrates a knowledge of correct use of basic knots, splices, stoppers, friction turns in stopping and mooring a vessel
c) Demonstrates a knowledge of the safety requirements to rig, recover and maintain gangways and other safe means of access to a vessel
d) Describes the methods available to ensure safe movement onboard ship
e) Describes the effects of tide, wind, waves, swell, changes of draught, trim and passing vessels while alongside
f) Outlines the care and maintenance of lifting gears including derricks, cranes and other gears
g) States the precaution to take when using lifting gears
h) States the precautions to be taken when fork-lift trucks or similar devices are used
i) States that all cargo gear should be inspected before the start of operations each day
j) Identifies lubrication schedules for deck machinery and equipment including correct lubrication of moving parts

7. Ship Knowledge and Publications

Ship Knowledge

a) Demonstrates a knowledge of terms and definitions used in connection with vessel operations and vessel construction
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
c) Prepares surfaces for coating i.e. steel, aluminium and wood
d) Explains the maintenance of fire fighting and life saving equipment
e) Demonstrates a knowledge of the need for preparation of work area and resources for maintenance
f) Identifies work area, tools and materials including safe stowage and use of materials
g) Explains `Permit to Work' procedures
h) Identifies plans, specifications, materials and equipment and the need to ensure availability

Stability and structure

a) Describes the basic principles of ship stability including the principles of floatation
b) Defines mass, volume, density and relative density
c) Defines 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

d) Defines Centre of buoyancy, Centre of Gravity, free surface, transverse metacentre, up-righting lever, up-righting moment at small angle of heel
e) Explains stable, neutral and unstable equilibrium, stiff and tender vessels
f) Explains the effect on Centre of Gravity (G) on loading, discharging, moving weights, ballasts or bunkers and changes (if any) in stability during voyage
g) Explains the dangers and effect of free surface at small angle of heel
h) Explains the causes of stress in a ship's structure including loads that create stress and strain in still water and a seaway
i) Describes water and weather tightness, watertight integrity and reserve buoyancy, watertight doors, ports, windows, deadlights and doors
j) 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
k) 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
l) 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
m) Explains the methods of ensuring watertightness/ 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

Publication and General
a) Explains the relationship between law, codes and other forms of guidance
b) Demonstrates a knowledge of legislation, Codes of Practice and M Notices
c) Demonstrates an awareness of the law, codes, principles and procedures and other forms of guidance relating to:

- maintaining a safe working environment on board ship
- safe movement to, from and around the vessel
- reporting of accidents and dangerous occurrences
- safety management systems
- risk assessment
- using chemicals or other hazardous materials, COSHH (Control of Substances Hazardous to Health) Regulations
- personal protective clothing and equipment

d) Appreciates the requirements of records for commercial and legislative process
e) Describes the recording methods available – written records
f) Explains the requirement for accuracy, brevity and clarity in record keeping

8. Basic Engineering Knowledge and Machinery

a) 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).
b) Explains system operation and principles involved including the appropriate sequence and timing of activities for machinery and auxiliary operations
c) Describes how to locate common faults including the causes of machinery malfunctions and actions required to be taken
d) Describes measures to avoid pollution of the marine environment
e) Describes how to operate the control systems, possible problems and how to identify and correct minor deviations

f) Describes emergency shut down sequence, timing and hazards
g) Describes how to make adjustments to achieve and safe operation including the use of instruments to monitor conditions

Pumping and associated Control Systems
a) Describes routine pumping operations, bilge, ballast and operational pumping systems, equipment and machinery operations and possible problems that could occur
b) Demonstrates a knowledge of precautions to prevent pollution of the marine environment, anti-pollution procedures and associated equipment
c) Demonstrates a knowledge of relevant safety regulations, conditions, manufacturer's instructions and maintenance schedules with respect to pumping and associated control systems

Electrical Equipment
a) Describes the basic principles and operation of electrical machines (to include alternators or generators and control systems)
b) Describes electrical systems, protection arrangements, circuits and circuit breakers, instruments to monitor conditions
c) Describes the maintenance of electrical supply within given conditions, possible problems and irregularities that could occur
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

9. Health and Safety

a) Demonstrates a knowledge of the safety precautions, regulations, codes of practice and guidelines relating to:

- use of powered cleaning devices, hand and powered tools
- working at a height or over side
- operating lifting plant and the slinging of heavy equipment
- use and storage of chemical or other hazardous materials
- entry into and working in enclosed spaces
- protective equipment and clothing
- cargo access equipment
- the section of MARPOL relating to the disposal of waste
- maintenance of batteries

10. Emergency Action

a) Identifies the nature of emergency and takes initial action to conform to the vessel's emergency procedure
b) 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
c) Communicates information to the relevant personnel promptly and accurately
d) Explains the operation of distress signalling devices including pyrotechnics including precautions to take when using signalling devices.
e) Describes how to avoid sending false distress signals and the remedial action to take if false signal is sent
f) Demonstrates a knowledge of basic Search and Rescue as would be applicable to inland waterways, harbours and coastal sea waters.

g) Describes the assistance which may be given by authorities around the coast of the United kingdom, and on inland waterways in addition to assisting other vessels
h) 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

11. Pollution Prevention and handling and Waste management

a) Describes how current guidance and legislation provides knowledge of the precautions and procedures to be taken to prevent pollution of the marine environment
b) Demonstrates a knowledge of pro-active and re-active policies, vessel operations, bunkering, hazardous substances on board, garbage and tank residual disposal, noise and clean air

Section 2

12. Generic Chartwork and Navigation

a) Demonstrates a knowledge of Navigation and routeing charts, sailing directions, chart catalogue, notices to mariners, nautical almanac, tide tables and tidal atlases carried aboard the vessel including distance tables
b) Describes the procedures for and makes necessary corrections to update charts and publications including ECDIS.
c) Demonstrates a knowledge of the use of Navigation drawing instruments, parallel rulers, dividers and compasses
d) Describes natural scale, distance measurement and chart co-ordinates
e) 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
f) Demonstrates a knowledge of the meaning of chart symbols and abbreviations
g) Explains the effects of set, drift and leeway (drift due to wind) and how to counteract
h) Explains navigational terms, international nautical mile, position line and position circle
i) Identifies charted objects/shore marks suitable for position fixing
j) Calculates dead reckoning (DR) and estimated position (EP)
k) Demonstrates a knowledge and use of regulations and systems for the safe movement of vessels
l) Explains and describes the procedures for appraisal, planning, execution and monitoring of a passage plan
m) Describes the basic operational features and controls of marine Radar and ARPA
n) Demonstrates a knowledge of the use of radar and ARPA to maintain safety of navigation
o) Demonstrates a knowledge of the use of satellite positioning systems such as GPS
p) Demonstrates a knowledge of the proper use of Echo sounder and Electronic Log
q) Describes reliability, common errors and limitations of Radar, ARPA, Satellite positioning systems, Echo sounder and electronic log

13. Locks and Bridges

a) Demonstrates knowledge of entering and leaving a dock or a lock in all stream conditions
b) Demonstrates a knowledge of passing through (under) bridges and navigating in close proximity within a canal

Section 3

14. Tides and Currents

a) Demonstrates a knowledge of tide tables and tidal stream atlases
b) States the causes of spring and neap tides
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
d) Describes the use of tidal diamonds when using charts
e) Finds the height and time of high water and low water using tide tables
f) Calculates the height of tide at a given time using tide tables and tidal curves
g) Calculates the time the tide will reach a given height using tide tables and tidal curves
h) Calculates the correction of soundings to chart datum

15. Compass Work

a) Demonstrates a knowledge of Magnetic Compass:
- card graduation in degrees
- compass bowl and binnacle
- dangers of magnetic material in the vicinity of the compass
- standard compass/steering compass

b) Calculates compass error and deviation by means of transits
c) Demonstrates a knowledge of Gyro compass and repeaters
- compass alarm and off course alarm

d) Converts compass or gyro courses to true courses
e) Determines variation and deviation using charts, curves and tables
f) Demonstrates the use of azimuth mirror, pelorus etc. for taking bearings

16. Anchor Work

a) Describes the types of anchor in common use on vessels operating in inland waterways, harbours and coastal sea areas.
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.
c) Demonstrates a knowledge of connections and markings of anchor cables, chain lockers and connections
d) Explains the securing of anchors and cables for passage and the importance of ensuring watertight integrity
e) Explains anchoring terminology and describes lights, shapes and sound signals for vessels at anchor
f) Demonstrates a knowledge of preparations and procedures for anchoring operations including in an emergency
g) Demonstrates a knowledge of maintaining an anchor watch including checks made for anchor dragging
h) Describes the safety precautions when anchoring, securing anchors including the safe use of machinery

Annex 10

Syllabus for Specialist Operations

Contents

1. General Passenger Operations Endorsement

1.1 Passenger Operations

a) Explains the planning and operational procedures for carrying passengers
b) Describes how to carry out or manage effective pre-voyage procedures including pre-voyage checks, crew briefing, passenger safety announcements
c) Describes the means of providing safe passenger access
d) Describes accurate passenger counting and reporting
e) Identifies the correct locations that passengers should be guided to
f) Describes the correct procedure for the control of unruly passengers
g) Describes how to give efficient safety briefings/advice to passengers while underway
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
i) Demonstrates knowledge of procedures for opening, closing and securing of bow, stern, side doors and ramps and to correctly operate the related systems

1.2 Emergency Response

a) Describes how to control and manage passengers in emergency situations, including the importance of clear identification of crew members
b) Explains the passenger care duties to allocate to crew members in an emergency
c) Demonstrates an effective knowledge of procedures following an emergency including recovery from the water, running aground, collision damage, fire and explosion
d) 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
e) Demonstrates an outline knowledge of SAR plan for co-ordinating with local emergency/SAR services
f) Demonstrates an awareness of control plan for life saving appliance fitted on vessels
g) Demonstrates a knowledge of safety instructions and mandatory information signs that should be located on the vessel, and how to maintain them in good order including instructions related to
h) Emergency exits

i) Gangway
j) Fire and evacuation plans and routes

1.3 First Aid and Fire Prevention

a) Demonstrates a knowledge of First Aid equipment carried on board and action required pertaining to the care of passengers
b) Demonstrates an awareness of fire prevention on passenger vessels including
- Fire fighting equipment fitted on vessel
- Designated `No Smoking' areas

1.4 Regulations

a) Demonstrates an outline knowledge of Domestic Safety Management Code requirements
b) Explains the importance of carrying principal documents including the Passenger Ship Certificate
c) Explains the importance and requirements of carrying other statutory certificates

2. Large Passenger Vessel Endorsement

2.1 Passenger and Crew Management

a) Demonstrates a knowledge of crew pre-voyage briefing and passenger safety announcements
b) Explains passenger management and control techniques including procedures in emergency situations
c) States the importance of clear identification of crew members
d) Describes the procedures for control of unruly passengers in large numbers
e) Describes how to deal with extreme weather conditions

2.2 Human element

a) Demonstrates a knowledge of the control of passengers and other personnel in emergency situations including;
- General reaction pattern of passengers
- Appreciation of panic resulting from separating families

b) Demonstrates a knowledge of stress and fear
c) Demonstrates a knowledge of the ability to lead and direct others in emergency situation

2.3 Emergency Response

a) Demonstrates a knowledge of awareness of life saving appliance and control plans including knowledge of
- emergency instructions ;
- emergency exits;
- restriction on the use of elevators;
- assist passengers to embarkation stations;
- control of passengers in corridors and staircases and passageways;
- maintaining escape routes clear of obstructions;
- methods available for evacuation of disabled persons and persons needing special assistance;
- search of accommodation spaces.

b) Describes the mustering procedures including
- muster list and passenger assisting team;

- the importance of keeping order;
- the use of, where appropriate, passenger lists for evacuation counts;
- that the passengers are suitably clothed and have donned their lifejackets correctly

c) Demonstrates a knowledge of the contents of first aid box and other first aid equipment

2.4 Communication

a) Describes the elements for effective communication

b) Demonstrates a knowledge of

- the use of public address system in an emergency
- communication in a crisis situation

c) Describes how to give clear and reassuring orders

2.5 Vessel management

a) Demonstrates a knowledge of berthing and un-berthing of large passenger vessel including

- Specific manoeuvring skills
- Steering, anchor handling and engine controls on large vessels

b) Describes the procedures for man overboard and recovery with larger vessels

c) Demonstrates a knowledge of bunkering procedures, distribution of fuel in tanks, weight distribution and storage capacity including pollution control measures during bunkering

d) Demonstrates an outline knowledge of

- engine capacity and type of engine
- KW power/bhp, reduction gearboxes
- power take-off uses
- generators- type, KVA, power supply
- familiarity with other machinery appliances
- monitoring equipment
- pumping system and pipelines

2.6 Regulations and Certificates

a) Demonstrates an effective knowledge of all routine and emergency procedures under the Domestic Safety Management Code

b) Explains the importance and legal meaning of principal documents, including the Passenger Ship Certificate

c) Explains the importance and requirements of carrying other statutory certificates

d) Explains the draught marks and their application

3. Oil Cargo Endorsement

Candidates will be tested from the perspective of oil tankers and barges operating on inland waterways.

3.1 Ability to safely perform and monitor all cargo operations

a) Knowledge of oil tanker design, systems and equipment, including:

- general arrangement and construction
- pumping arrangement and equipment
- tank arrangement, pipeline system and tank venting arrangement

- gauging systems and alarms
- cargo heating systems
- tank cleaning, gas-freeing and inerting systems
- ballast system
- cargo area venting and accommodation ventilation
- slop arrangements
- vapour recovery systems
- cargo-related electrical and electronic control system
- environmental protection equipment
- tank coating
- tank temperature and pressure control systems
- fire-fighting systems

b) Proficiency in tanker safety culture and implementation of safety-management system
c) Knowledge and understanding of monitoring and safety systems, including the emergency shutdown

3.2 Loading, unloading, care and handling of cargo

a) Ability to perform cargo measurements and calculations
b) Knowledge of the effect of bulk liquid cargoes on trim, stability and structural integrity
c) Knowledge and understanding of oil cargo-related operations, including:

- loading and unloading plans
- ballasting and deballasting
- tank cleaning operations
- inerting
- gas-freeing
- ship-to-ship transfers

d) Development and application of cargo-related operation plans, procedures and checklists
e) Ability to calibrate and use monitoring and gas-detection systems, instruments and equipment
f) Ability to manage and supervise personnel with cargo-related responsibilities

3.3 Familiarity with physical and chemical properties of oil cargoes

a) Knowledge and understanding of the physical and chemical properties of oil cargoes
b) Understanding the information contained in a Material Safety Data Sheet (MSDS)

3.4 Take precautions to prevent hazards

a) Knowledge and understanding of the hazards and control measures associated with oil tanker cargo operations, including:

- Toxicity
- flammability and explosion
- health hazards
- inert gas composition
- electrostatic hazards

b) Knowledge and understanding of dangers of non-compliance with relevant rules/regulations

3.5 Apply occupational health and safety precautions

a) Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to oil tankers:

- precautions to be taken when entering enclosed spaces, including correct use of different types of breathing apparatus
- precautions to be taken before and during repair and maintenance work
- precautions for hot and cold work
- precautions for electrical safety
- use of appropriate Personal Protective Equipment (PPE)

3.6 Respond to emergencies

a) Knowledge and understanding of oil tanker emergency procedures, including:
- ship emergency response plans
- cargo operations emergency shutdown
- actions to be taken in the event of failure of systems or services essential to cargo
- fire-fighting on oil tankers
- enclosed space rescue
- use of a Material Safety Data Sheet (MSDS)

b) Actions to be taken following collision, grounding, or spillage

c) Knowledge of medical first aid procedures on board oil tankers

3.7 Take precautions to prevent pollution of the environment

a) Understanding of procedures to prevent pollution of the atmosphere and the environment

3.8 Monitor and control compliance with legislative requirements

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

4. Chemical Cargo Endorsement

Candidates will be tested from the perspective of chamical tankers and barges operating on inland waterways.

4.1 Ability to safely perform and monitor all cargo operations

a) Knowledge of chemical tanker designs, systems, and equipment, including:
- general arrangement and construction
- pumping arrangement and equipment
- tank construction and arrangement
- pipeline and drainage systems
- tank and cargo pipeline pressure and temperature control systems and alarms
- gauging control systems and alarms
- gas-detecting systems
- cargo heating and cooling systems
- tank cleaning systems
- cargo tank environmental control systems
- ballast systems
- cargo area venting and accommodation ventilation
- vapour return/recovery systems
- fire-fighting systems
- tank, pipeline and fittings' material and coatings

- slop management

b) Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation
c) Proficiency in tanker safety culture and implementation of safety management system
d) Knowledge and understanding of monitoring and safety systems, including the emergency shutdown system

4.2 Loading, unloading, care and handling of cargo

a) Ability to perform cargo measurements and calculations
b) Knowledge of the effect of bulk liquid cargoes on trim and stability and structural integrity
c) Knowledge and understanding of chemical cargo‑related operations, including:

- loading and unloading plans
- ballasting and deballasting
- tank cleaning operations
- tank atmosphere control
- inerting
- gas-freeing
- ship-to-ship transfers
- inhibition and stabilization requirements
- heating and cooling requirements and consequences to adjacent cargoes
- cargo compatibility and segregation
- high-viscosity cargoes
- cargo residue operations
- operational tank entry

d) Development and application of cargo‑related operation plans, procedures and checklists
e) Ability to calibrate and use monitoring and gas-detection systems, instruments and equipment
f) Ability to manage and supervise personnel with cargo-related responsibilities

4.3 Familiarity with physical and chemical properties of chemical cargoes

a) Knowledge and understanding of the chemical and the physical properties of noxious liquid substances, including:

- chemical cargoes categories (corrosive, toxic, flammable, explosive)
- chemical groups and industrial usage
- reactivity of cargoes

b) Understanding the information contained in a Material Safety Data Sheet (MSDS)

4.4 Take precautions to prevent hazards

a) Knowledge and understanding of the hazards and control measures associated with chemical tanker cargo operations, including:

- flammability and explosion
- toxicity
- health hazards
- inert gas composition
- electrostatic hazards
- reactivity
- corrosivity
- low-boiling-point cargoes

- high-density cargoes
- solidifying cargoes
- polymerizing cargoes

b) Knowledge and understanding of dangers of non-compliance with relevant rules/regulations

4.5 Apply occupational health and safety precautions

a) Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to chemical tankers:

- precautions to be taken when entering enclosed spaces, including correct use of different types of breathing apparatus
- precautions to be taken before and during repair and maintenance work
- precautions for hot and cold work
- precautions for electrical safety
- use of appropriate Personal Protective Equipment (PPE)

4.6 Respond to emergencies

a) Knowledge and understanding of chemical tanker emergency procedures, including:

- ship emergency response plans
- cargo operations emergency shutdown
- actions to be taken in the event of failure of systems or services essential to cargo
- fire fighting on chemical tankers
- enclosed space rescue
- cargo reactivity
- jettisoning cargo
- use of a Material Safety Data Sheet (MSDS)

b) Actions to be taken following collision, grounding, or spillage

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)

4.7 Take precautions to prevent pollution of the environment

a) Understanding of procedures to prevent pollution of the atmosphere and the environment

4.8 Monitor and control compliance with legislative requirements

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

b) Proficiency in the use of the IBC Code and related documents

5. Liquefied Gas Cargo Endorsement

Candidates will be tested from the perspective of gas carriers and barges operating on inland waterways.

5.1 Ability to safely perform and monitor all cargo operations

a) Knowledge of liquefied gas tanker design, systems, and equipment, including:

- types of liquefied gas tankers and cargo tanks construction
- general arrangement and construction

- cargo containment systems, including materials of construction and insulation
- cargo-handling equipment and instrumentation, including:
  - cargo pumps and pumping arrangements
  - cargo pipelines and valves
  - expansion devices
  - flame screens
  - temperature monitoring systems
  - cargo tank level‑gauging systems
  - tank pressure monitoring and control systems
- cargo temperature maintenance system
- tank atmosphere control systems (inert gas, nitrogen), including storage, generation and distribution systems
- cofferdam heating systems
- gas-detecting systems
- ballast system
- boil-off systems
- reliquefaction systems
- cargo Emergency Shut Down system (ESD)
- custody transfer system

b) Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation

5.2 Loading, unloading, care and handling of cargo

a) Knowledge of the effect of bulk liquid cargoes on trim and stability and structural integrity

b) Proficiency in tanker safety culture and implementation of safety management requirements

c) Proficiency to apply safe preparations, procedures and checklists for all cargo operations, including:

- post docking and loading:
  - tank inspection
  - inerting (oxygen reduction, dewpoint reduction)
  - gassing-up
  - cooling down
  - loading
  - deballasting
  - sampling, including closed-loop sampling
- en-route:
  - cooling down
  - pressure maintenance
  - boil-off
  - inhibiting
- unloading:
  - unloading
  - ballasting
  - stripping and cleaning systems
  - systems to make the tank liquid-free
- pre‑docking preparation:
  - warm-up
  - inerting

    - gas-freeing
  - ship-to-ship transfer

d) Proficiency to perform cargo measurements and calculations, including:
- liquid phase
- gas phase
- On Board Quantity (OBQ)
- Remain On Board (ROB)
- boil-off cargo calculations

e) Proficiency to manage and supervise personnel with cargo-related responsibilities

5.3 Familiarity with physical and chemical properties of liquefied gas cargoes

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:
- the chemical structure of gases
- the properties and characteristics of liquefied gases (including CO2) and their vapours, including:
  - simple gas laws
  - states of matter
  - liquid and vapour densities
  - diffusion and mixing of gases
  - compression of gases
  - reliquefaction and refrigeration of gases
  - critical temperature of gases and pressure
  - flashpoint, upper and lower explosive limits, auto-ignition temperature
  - compatibility, reactivity and positive segregation of gases
  - polymerization
  - saturated vapour pressure/reference temperature
  - dewpoint and bubble point
  - lubrication of compressors
  - hydrate formation
- the properties of single liquids
- the nature and properties of solutions
- thermodynamic units
- basic thermodynamic laws and diagrams
- properties of materials
- effect of low temperature – brittle fracture

b) Understanding the information contained in a Material Safety Data Sheet (MSDS)

5.4 Take precautions to prevent hazards

a) Knowledge and understanding of the hazards and control measures associated with liquefied gas tanker cargo operations, including:
- flammability
- explosion
- toxicity
- reactivity
- corrosivity
- health hazards
- inert gas composition
- electrostatic hazards
- polymerizing cargoes

b) Proficiency to calibrate and use monitoring and gas-detection systems, instruments and equipment
c) Knowledge and understanding of dangers of non-compliance with relevant rules/regulations

5.5 Apply occupational health and safety precautions

a) Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to liquefied gas tankers, including:

- precautions to be taken when entering enclosed spaces (such as compressor rooms), including the correct use of different types of breathing apparatus
- precautions to be taken before and during repair and maintenance work, including work affecting pumping, piping, electrical and control systems
- precautions for hot and cold work
- precautions for electrical safety
- use of appropriate Personal Protective Equipment (PPE)
- precautions for cold burn and frostbite
- proper use of personal toxicity monitoring equipment

5.6 Respond to emergencies

a) Knowledge and understanding of liquefied gas tanker emergency procedures, including:

- ship emergency response plans
- cargo operations emergency shutdown procedure
- emergency cargo valve operations
- actions to be taken in the event of failure of systems or services essential to cargo operations
- fire-fighting on liquefied gas tankers
- jettisoning of cargo
- enclosed space rescue

b) Actions to be taken following collision, grounding or spillage and envelopment of the ship in toxic or flammable vapour
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)

5.7 Take precautions to prevent pollution of the environment

a) Understanding of procedures to prevent pollution of the environment

5.8 Monitor and control compliance with legislative requirements

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
b) Proficient in the use of the OBC and IGC Codes and related documents

6. Cargo Operations Endorsement

6.1 General Cargoes

a) Demonstrates a knowledge of safe procedures to be adopted for opening and closing cargo holds such as wooden, pontoon and Mcgregor type hatch covers

b) Describes the operation of access equipment for hatches, hatch covers, rampways, side/bow/stern doors and ramps
c) Demonstrates a knowledge of ventilation of cargo holds
d) Explains the principles and safe working practices for the proper loading, and discharging of dry and bulk cargoes including powdery cargo
e) Describes the approval, maintenance and safe use of cargo handling equipment
f) Demonstrates a knowledge of rigging of cargo gear, proper and appropriate use of slings and other types of lifting equipment
g) Explains the procedures for the loading, stowage and securing of dry cargo
h) Demonstrates a knowledge of the effects on stability during/after loading and discharging of dry, bulk and liquid cargo
i) Demonstrates an awareness of free surface effect on stability at all stages of loading and discharging
j) Identifies and describes cargo care on passage for a given cargo

6.2 Inspection and Preparation of Holds

a) Outlines the reasons for inspection of holds including items to be inspected
b) Demonstrates a knowledge of:
- Cleaning holds before loading
- Cleaning after the discharge of cargo
- Use of dunnage including types and sizes

c) States that bilges, strum boxes or drain wells should be clean and suctions in working order

6.3 Separation of cargoes

a) Demonstrates a knowledge for the need of separation/segregation of different cargoes

6.4 Securing cargoes

a) Explains the need for a solid stow and securing of cargoes
b) Describes methods of blocking, lashing, shoring and tomming cargo
c) Describes the method of securing heavy loads, vehicles and trailers in accordance with securing arrangement manual

6.5 Deck Cargo

a) Outlines cargoes commonly carried on deck
b) Explains why efficient securing of deck cargo is essential for the safety of the ship as well as the cargo
c) Describes the reason for stowage to leave access to essential equipment and spaces and for unrestricted views for safe navigation
d) Explains that the weight of deck cargo should not exceed the permissible load
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

6.6 Packaged dangerous goods

a) States the safe stowing arrangements for hazardous cargo
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
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

d) Applies procedures for checking, loading, carriage and discharge of dangerous and hazardous cargo in packaged form

7. Ro-Ro operations *(currently under development)*

7.1 Stability

a) Demonstrates knowledge and application of stability and other information contained in the vessel's stability book.
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.
c) Have knowledge of any trim restrictions applicable to the vessel
d) Demonstrate awareness of the effect of flooding and damaged stability applicable to your vessel
e) Demonstrate knowledge of common loading conditions applicable to the vessel
f) Demonstrate awareness of point and axle weight loading as it applies to your vessel on vehicle decks and ramps.

7.2 Opening & Closing of Ramps and Hull Openings

a) Be able to apply vessel procedures for opening and closing vehicle ramps, including checks to ensure these are secure for the voyage
b) Demonstrate ability to check on watertight seals and securing devices
c) Demonstrate knowledge of procedures for closing and securing other hull openings as applicable
d) Demonstrate knowledge of visual and audible alarms relating to vehicle deck operations.
e) Demonstrate knowledge and recording of planned maintenance relating to the above opening and closing devices.

7.3 Vehicle Deck Operations

a) Demonstrate knowledge of the Company and Vessel's Safety Management System procedures relating to Vehicle Deck Operations
b) Demonstrate awareness of the requirements of the Merchant Navy Code of Safe Working Practices in relation to vehicle deck operations
c) Demonstrate awareness of the MCA Ro-Ro ships Stowage and Securing of vehicles Code of Practice.
d) Demonstrate awareness of the requirements of any risk assessments carried out under the Safety Management System.
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.
f) Ensure vehicles carrying dangerous goods are properly placarded and are acceptable for shipment.
g) Demonstrate awareness of any procedures to follow if livestock vehicles are carried.
h) Demonstrate knowledge of procedures to follow when vehicles and passengers embark your vessel using the vehicle ramp.
i) Demonstrate awareness of what personal protective equipment must be worn by Crew engaged in vehicle deck operations.
j) Ensure crew member s engaged in vehicle deck operations are able to give clear directions and instructions to vehicles and passengers embarking and disembarking

7.4 Carriage of Dangerous Goods

a) Demonstrate an awareness of the types of Dangerous Goods commonly carried on your vessel

b) Demonstrate knowledge of any requirements of a Document of Compliance for the Carriage of Dangerous Goods issued for your vessel *(if applicable)*

c) Demonstrate knowledge of the IMDG Code in relation to the Dangerous Goods commonly carried on your vessel.

d) Demonstrate knowledge of Company procedures for when carrying dangerous goods & undertaking any Company training requirement

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.

f) Demonstrate awareness of what classes of dangerous Goods are not permitted to be carried on Passenger Vessels

g) Demonstrate knowledge of emergency procedures to follow should any emergency arise involving Dangerous Goods and where to find the relevant information.

h) Demonstrate awareness of the need to maintain adequate spacing between vehicles on the vehicle deck to allow passenger access.

7.5 Vehicle Securing Arrangements

a) Demonstrate awareness of the requirements of any Cargo Securing Manual provided for your vessel

b) Demonstrate awareness of any Company procedures relating to the securing of vehicles

c) Demonstrate knowledge of, and how to correctly apply vehicle securing devices provided for your vessel and their limitations.

d) Demonstrate knowledge of what constitutes a securing point on a vehicle presented for shipment.

e) Demonstrate ability to inspect securing devices and points provided on your vessel and procedure to follow if any defects found.

f) Demonstrate awareness of any planned maintenance requirements for securing devices used on your vessel and what records are kept.

g) Demonstrate knowledge of the “Rule of Thumb” method for determining the securing requirements for heavy vehicles.

7.6 Ro-Ro Deck Atmosphere

a) Demonstrate awareness of any Company procedures for the ventilation of any enclosed ro-ro cargo spaces:

- during loading,
- whilst on passage)
- in an emergency

7.7 General

a) Demonstrate awareness of any safety signage and public announcements necessary for safe Ro-ro operations.

b) Demonstrate awareness of visual and audible alarms in use during vehicle deck operations.

c) Demonstrate awareness of any other safety measures required by statute or Company procedures.

8. Fast Craft Endorsement

8.1 Shipboard knowledge

a) Demonstrates a knowledge of on-board propulsion systems including;
- Communication and navigational equipment
- Steering, electrical, hydraulic and pneumatic systems
- Bilge and fire systems
- Failure mode of control, steering and propulsion systems
- Proper response to system failures

b) Explains handling characteristics of the craft and the limiting operational conditions
c) Describes the procedures for bridge communication and navigation including the methods of control and communication with passengers in an emergency
d) Demonstrates a knowledge of cargo and vehicle stowage and securing systems
e) Demonstrates an outline knowledge of loading and stability data
f) Demonstrates a knowledge of buoyancy, stability, sub-division, downflooding point and intact stability information
g) Demonstrates an awareness of the impact and damage stability and survivability of the craft in damaged condition

8.2 Life saving, fire fighting and damage control

a) Demonstrates an ability to locate and use the craft's life-saving appliances, survival craft equipment, escapes in the craft
b) Demonstrates an awareness of the procedures for passenger evacuation including the location and use of items listed in vessel's training manual
c) Demonstrates a knowledge of the location and use of fire protection and extinguishing appliances and systems in the event of fire on board
d) Demonstrates a knowledge of the location and use of damage control appliances and systems including the operation of watertight doors and bilge pumps

8.3 Regulations

a) Demonstrates an outline knowledge of the High Speed Craft Code and amendments including operational requirements

9. Dredging Operations *(currently under development)*

a) Describes the importance of the need for the planning of the operation on a vessel engaged in dredging operations.
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
c) Describes the need for briefing of crew and other personnel on a vessel engaged in dredging operations.
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
e) Describes the importance of the use of appropriate equipment on a vessel engaged in dredging operations.
f) Describes the types and procedure for dredging including ploughing, jetting, grab, cutter suction or trailer.
g) Describes the procedure for dealing with suspicious objects in spoil on a vessel engaged in dredging operations.

h) Describes the importance of and the procedure for the disposal of spoil on a vessel engaged in dredging operations.
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
j) Demonstrates knowledge of their organisation's and local navigation authorities' requirements for dealing with reports of hazards and obstructions within navigable channels.
k) Describes the function and purpose of VTS information and requirements on a vessel engaged in dredging operations.
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

10. Towing and Pushing Endorsement *(currently under development)*

PREPARATION FOR TOWING / PUSHING

10.1 Gathering Information prior to towing/pushing

a) Demonstrates a knowledge of:

- type of vessel to be towed/pushed
- dimensions of vessel to be towed/pushed
- type and quantity of cargo on board
- towing/pushing points – bitts, Smit brackets, lugs
- berth in departure port
- pilotage requirement
- agent's details
- towage assistance requirements
- consideration of bollard pull
- strength and suitability of towing gear including SWL, breaking strain and test certificate

10.2 Information to be prepared

b) demonstrates a knowledge of towage/pushing arrangement plan
c) Explains the passage planning
d) Explains the method of preparing departure information
e) Demonstrates a knowledge of the awareness of:

- turning circles
- wind and tide considerations
- stopping techniques
- bank effect
- operation in confines areas, basins and locks
- girting
- interaction of other vessels

10.3 Boat Handling

a) Describes the operation of anchoring with a tow
b) Describes boat handling operations with a vessel alongside
c) Describes the method of working with a tug – with special regard to communication

10.4 Checking of Documents

a) Demonstrates a knowledge of the requirement of:
- Carrying statutory certificates
- Towage Approval Certificate
- Insurance Certificate
- Skipper's responsibilities with special reference to the tow

b) Explains pre-departure discussions with crew on methods of leaving port with pilots and streaming of the tow

SECURING AND LETTING GO OF TOW

10.5 Securing and letting go of tow

a) Describes the preparations for towing another craft or vessel
b) Demonstrates a knowledge of:
- inspecting equipment prior to towage/pushing a craft/barge
- securing for voyage
- using emergency towlines
- ensuring watertight integrity

10.6 Towing/Pushing operations

a) Describe the streaming of adequate wire/rope for various conditions
b) Describes the securing and letting go of tow with respect to:
- connecting and disconnecting during passage /underway
- ranging and caring of towline during the voyage
- methods of passing lines and suitable securing points on tugs and tows
- presentation and securing of tug to various crafts including barges and lighters

10.7 Manoeuvring and managing tug and tow

a) Demonstrates a knowledge of operating a vessel with a tow
b) Describes the monitoring of weather forecast
c) Demonstrates a knowledge of keeping a log for the voyage
d) Demonstrates an understanding of navigation with regard to:
- Wind and tidal effects
- giving way
- traffic lanes requirements
- use of appropriate towing/pushing lights and shapes

e) Describes the method of checking wire/rope for chafe
f) Describes a knowledge of hazard of tow line touching sea bottom

10.8 Inspection of Tow on arrival at departure port

a) Demonstrates a knowledge of checking the following with tow Surveyor
- Seaworthiness of the vessel
- Trim
- Slack tanks
- Fuel and Lubricating oil on board
- Securing status of cargo
- Securing status of equipment – onboard and outboard
- Propellers - Rudder/s
- Openings such as vents, watertight doors, hatch/tank covers, windows/ports, deadlights, engine room sea water intakes/outlets.
- Noting of existing damage – photograph
- Dredger – hopper doors
- Areas around lifting points

- Securing of all connecting shackles, pinned nuts spot welded

b) Describes bridles and shackles hung over the tow, clear of all obstructions
c) Describes the placement of a gobline when required
d) Describes the method of rigging towing diamond
e) Demonstrates a knowledge of checking:
- towing lights being fitted and operational
- sighting of Load Line certificate
- weather forecast for appropriate areas
- anchoring arrangements on tow

10.9 Hazard identification and safety issues

a) Demonstrates an awareness of `snatching' and conditions where this would be most likely to occur
b) Describes the method of reducing 'snatching'
c) Explains emergency tow rigging outside of handrails, ships fixtures and fittings
d) Demonstrates an awareness with respect to
- Crew safety
- Vessel safety
- Safety of the vessel/barge/craft in tow