Maritime and Coastguard Agency

MARINE GUIDANCE NOTE

MGN 209 (M)

Training and Certification Guidance – PART 15 Certification of Inshore Tug Personnel

Notice to Owners, Masters, Deck and Engineer Officers and Ratings of Merchant Vessels and those concerned with Maritime Training.

This Note supersedes Marine Guidance Note 117 (M), Part 15 of this series.

Summary

This Marine Guidance Note (MGN) is part of a series which gives guidance regarding the application of the Merchant Shipping (Training and Certification) Regulations 1997[1].

In order for the guidance to be easy to use and to keep up-to-date, the individual Parts will retain the same Part number but the MGN number may change if and when revisions are necessary.
The front sheet of any revised Part will list the latest MGN numbers. Any reference to "Part" in this Note relates to this series of Guidance Notes as listed below.

Key Points

This Note provides details of the training and certification requirements for personnel serving on United Kingdom registered inshore tugs wishing to obtain an STCW 95 Certificate of Competency (CoC). It covers:

- details of the BTA Marine Apprenticeship and VQ training scheme;
- details of operational areas;
- service requirements;
- ancillary training requirements;
- medical standards;
- qualifications criteria;
- testimonial pro-forma (Annex A and B);
- addresses of MCA Marine Offices and oral examination centres (Annex C);
- MCA deck and engineer oral examination syllabuses (Annex D to G).

[1] SI 1997/348 as amended by SI 1997/1911

LATEST INDEX TO PARTS

Part No.	Subject	Latest MGN/ MIN Number	Issue Date
1	General requirements for certification and medical fitness	MGN 91(M)	April 2000
2	Certificates of competency – deck department	MGN 92(M)	April 2000
3	Certificates of competency – engine department	MGN 93(M)	April 2000
4	Certificates of competency – radio personnel	MGN 94 (M)	July 1999
5	Special training requirements for personnel on certain types of ship	MGN 95(M)	April 2000
6	Emergency, occupational safety, medical care and survival functions	MGN 96(M)	April 2000
7	Alternative certification – dual certification	MGN 7(M)	April 2000
8	Education and training schemes	MGN 8 (M)	April 2000
9	Procedure for the issue and revalidation of certificates of competency, marine engine operator licences and tanker endorsements.	MGN 9 (M)	April 2000
10	Ratings	MGN 97(M)	April 2000
11	Conduct of MCA oral examinations	MGN 69 (M)	April 2000
12	Safety training for concessionaires working on passenger ships	MGN 120(M)	April 2000
13	Use of fishing vessel certificates of competency in standby, seismic survey and oceanographic research vessels – revised arrangements	MGN 121 (M)	April 2000
14	STCW 95 application to certificates of service	MGN 116 (M)	April 2000
15	Certification of inshore tug personnel	MGN 209 (M)	April 2002
16	Note for personnel serving on Inshore Craft and Inshore Tugs holding an STCW 78 Certificate of Competency (CoC), Certificate of Service (CoS) or a Boatmasters' Licence	MIN 123 (M)	April 2002
17	Certificates of competency or marine engine operators licences for service as an engineer officer on commercially and privately operated yachts and sail training vessels	MGN 156 (M)	Dec 2000
18	STCW 95 certificates of competency, conversion of tonnage limitations, GRT – GT	MGN 164 (M)	Jan 2001
19	Certificates of equivalent competency	MGN 179(M)	May 2001
20	Certificates of equivalent competency (Fishing Vessel)	MGN 204(F)	Mar 2002
21	Certificates of competency for service as deck officers and masters on commercially and privately operated yachts and sail training vessels	MGN 195(M)	Feb 2002

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MC 124/001/0036

Safer Lives, Safer Ships, Cleaner Seas

An executive agency of the Department for Transport, Local Government and the Regions

All references to "Parts" in this document are to other Parts of this series of Training and Certification Guidance Notes

1.0 Introduction

1.1 The Merchant Shipping (Training and Certification) Regulations 1997 (the Regulations), in the United Kingdom implement some of the requirements of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended in 1995 (STCW 95) and its' associated Code (STCW Code).

1.2 The qualification system described below is intended to enable tug personnel employed in the UK inshore towage industry to obtain an STCW 95 Certificate of Competency (CoC) through the British Tugowners Association (BTA), Marine Apprenticeship Training Scheme (MATS) or Vocational Qualification (VQ) training route.

1.3 Every candidate seeking an STCW 95 inshore tug certificate will be required to complete either the BTA Marine Apprenticeship scheme in full or the appropriate BTA portfolio and relevant VQ, ancillary training and MCA oral examination.

2.0 Definitions

2.1 For the purpose of this MGN, the following definitions apply:

"Tug Service Only" means time served in the inshore towage industry following a structured training scheme aboard a vessel constructed solely for the purpose of, and normally used for, providing external motive power for floating objects or vessels;

"Inshore" means tug operations up to 30 miles from a safe haven on the coast of the United Kingdom and Ireland;

"Safe Haven" means a harbour or shelter of any kind which affords safe entry and/or protection from the force of weather.

3.0 BTA Marine Apprenticeship Training Scheme and VQ Training Scheme

3.1 On application to the BTA a candidate will be issued with the appropriate VQ training portfolio. The portfolio explains the requirements and provides the means for the candidate to collect the necessary evidence of proficiency needed for the proposed qualification. The portfolio requires a candidate to:

- complete tasks and assignments related to work on board tugs; and
- demonstrate an appropriate level of knowledge and understanding of appropriate subjects.

Candidates enrolled in the BTA Marine Apprenticeship Training Scheme (MATS), which is primarily designed for younger new entry candidates, use the same portfolios but follow a more structured route measured against milestones of time and achievement. MATS covers progression up to Inshore Tug Watchkeeper level.

3.2 The following are the titles and levels of VQs available:

Inshore Tug – Tughand	VQ Level 2
Inshore Tug – Bridge Watchkeeper	VQ Level 3
Inshore Tug – Master	VQ Level 4
Inshore Tug – Engine Room Watchkeeper (tugs less than 6000kW)	VQ Level 3
Inshore Tug – Tug Engineer (tugs less than 6000kW)	VQ Level 3

3.3 A candidate completing a portfolio and obtaining the relevant VQ (which in the case of a Watchkeeping CoC will be either by following the MATS or VQ training route), the required tug service and ancillary training, will be able to submit him/herself for an MCA oral examination which if passed will lead to the issue of the appropriate CoC. These certificates are limited to service in tugs and are titled as follows:

- Master (Inshore Tugs) – Reg II/3 (tugs less than 500gt, limited to 30 miles from a safe haven);
- Watchkeeper (Inshore Tugs) – Reg II/3 (tugs less than 500gt, limited to 30 miles from a safe haven);
- Engineer (Inshore Tugs) – Reg III/2 (tugs less than 6,000kW, limited to 30 miles from safe haven);
- Engine Room Watchkeeper (Inshore Tugs) – Reg III/1 (tugs less than 6,000kW, limited to 30 miles from a safe haven).

3.4 Deck certificates will be valid only aboard tugs under 500gt, and restricted to operations up to 30 miles from a safe haven on the coast of the United Kingdom and Ireland.

3.5 Engineering certificates will be valid only aboard tugs under 6,000kW restricted to operations up to 30 miles from a safe haven on the coast of the United Kingdom and Ireland.

3.6 VQ portfolios can be obtained through a sponsoring company or from:

British Tugowners Association
Dockland Business Centre
10 – 16 Tiller Road
London E14 8PX

Tel: 020 7345 5122
Fax: 020 7345 5722

3.7 All Certificates of Competency issued or recognised under STCW 95 are required to be revalidated at intervals not exceeding five years. Holders of inshore tug CoCs will be required to demonstrate 12 months service employed in an appropriate capacity in the inshore towage industry or appropriate sea service or revalidation routes as detailed in MGN 9 (M).

4.0 Tug Service

4.1 For an Inshore Tug Master and Bridge Watchkeeper CoC, tug service must be performed on tugs over 24 metres in length. For an Inshore Tug Engine Room Watchkeeper CoC, tug service must be performed on tugs over 350kW main propulsive power and for an Inshore Tug Engineer CoC on tugs over 750kW main propulsive power.

4.2 For examination as an Inshore Tug – Bridge Watchkeeper, a candidate must have completed 36 months service in the inshore towage industry whilst following a structured training course and serving onboard tugs operating in the inshore area. The candidate also needs to have completed the Inshore Tug – Bridge Watchkeeper Level 3 portfolio and have been awarded the relevant VQ.

4.3 For examination as an Inshore Tug – Engine Room Watchkeeper, a candidate must have completed 36 months service in the inshore towage industry whilst following a structured training course and serving onboard tugs operating in the inshore area. The candidate also needs to have completed the Inshore Tug – Engine Room Watchkeeper Level 3 portfolio and have been awarded the relevant VQ.

4.4 For issue of a dual Bridge and Engine Room Watchkeeping CoC, a candidate must complete a further 18 months service in the inshore towage industry, whilst following a structured training course onboard tugs operating in the inshore towage area whilst serving in the second discipline that is sought. They must also complete the applicable Level 3 portfolio and have been awarded the relevant VQ as well as completing the appropriate MCA oral examination.

4.5 For examination as an Inshore Tug – Master the candidate must have completed a further 36 months service in the inshore towage industry whilst following a structured training course onboard tugs operating in the inshore area whilst holding the Inshore Tug -Watchkeeper CoC and have completed the Inshore Tug – Master Level 4 portfolio and have been awarded the relevant VQ.

4.6 For examination as an Inshore Tug – Tug Engineer, the candidate must have completed a further 36 months service in the inshore towage industry whilst following a structured training course on board tugs operating in the inshore area whilst holding the Inshore Tug – Engine Room Watchkeeper CoC and have completed the Inshore Tug – Tug Engineer Level 3 portfolio and have been awarded the relevant VQ.

4.7 For issue of a dual Inshore Tug – Master and Inshore Tug – Tug Engineer CoC a candidate must complete a further 36 months service in the inshore towage industry whilst following a structured training course onboard tugs operating in the inshore towage area whilst serving in the second discipline that is sought. They must also complete the applicable Level 3 portfolio and have been awarded the relevant VQ, as well as completing the appropriate MCA oral examination.

4.8 Candidates, or potential candidates entering the inshore towage industry with alternative and relevant qualifications and experience or prior professional/academic achievement or technical training, may be allowed a reduction in the service requirements for an appropriate inshore tug CoC, or exemption from the MCA examination. These candidates will be considered on their merits on a case by case basis upon application. Similarly, Merchant Navy CoCs may be recognised for Inshore Tug Service as appropriate to the level of the CoC held.

5.0 Ancillary Training

5.1 Ancillary training is an integral part of the training requirement and structured as part of the VQ. All STCW 95 short-course ancillary training required for issue of an MCA CoC must be completed at an MCA approved training centre.

5.2 Candidates who hold equivalent pre STCW 95 ancillary training certificates may be exempt from the requirements to retake these courses.

5.3 All tug hands (deck and engine room) will be required to complete the following training prior to commencing onboard service:

- Personal Survival Techniques (STCW A-VI/1-1);
- Fire Prevention and Fire Fighting (STCW A-VI/1-2);
- Elementary First Aid (STCW A-VI/1-3); and
- Personal Safety and Social Responsibility (STCW A-VI/1-4).

5.4 All candidates for an Inshore Tug – Bridge Watchkeeper and Inshore Tug – Engine Room Watchkeeper CoC will be required to have completed the following ancillary training:

- Proficiency in Survival Craft and Rescue Boats (CPSC&RB) (STCW A-VI/2);
- Training in Advanced Fire Fighting (STCW A-VI/3); and
- Proficiency in Medical First Aid (STCW A-VI/4-1).

Additionally, candidates for an Inshore Tug – Bridge Watchkeeper CoC will be required to have completed:

- GMDSS Restricted Operators Certificate (ROC).

5.5 All candidates for an Inshore Tug – Master CoC will be required to have completed the following ancillary training:

- Navigation and Radar Course (Small Vessels);

- GMDSS Restricted Operators Certificate (ROC);
- Proficiency in Survival Craft and Rescue Boats (CPSC&RB) (STCW A-VI/2);
- Training in Advanced Fire Fighting (STCW A-VI/3); and
- Proficiency in Medical First Aid (STCW A-VI/4-1).

5.6 All candidates for an Inshore Tug – Tug Engineer CoC will be required to have completed the following ancillary training:

- Proficiency in Survival Craft and Rescue Boats (CPSC&RB) (STCW A-VI/2);
- Training in Advanced Fire Fighting (STCW A-VI/3); and
- Proficiency in Medical First Aid (STCW A-VI/4-1).

5.7 Deck Officers are reminded that the requirement for Automatic Radar Plotting Aid (ARPA) training is dependant on the status of the vessel concerned as follows:

.1 if the vessel is compulsorily fitted with ARPA, all operators must have undertaken ARPA training;

.2 if the vessel is fitted with ARPA, the MCA strongly recommends the Owner and Master to ensure that all operators have undertaken ARPA training;

.3 if the vessel is not fitted with ARPA, radar operators need not undertake ARPA training.

6.0 Medical standards

6.1 All candidates for any Certificate of Competency must meet the medical fitness and eyesight standards as required by the Merchant Shipping (Medical Examination) Regulations 1983, as amended. These are currently described in Merchant Shipping Notice MSN 1746(M).

6.2 All candidates for any Certificate of Competency must produce a valid UK medical fitness certificate currently known as an ENG 1, issued by an MCA approved medical practitioner. Details of approved medical practitioners are published annually in a Merchant Shipping Notice (currently MSN 1760(M)) which also lists countries whose medical certificates are considered to be an equivalent to the ENG 1 and which are therefore acceptable. A 'live' list of approved medical practitioners is also maintained on the MCA website at www.mcga.gov.uk/publications/statutory information.

6.3 The medical fitness certificates must specify the date of examination and the period of validity.

7.0 Proof of Tug Service

7.1 Applicants must provide evidence to satisfy the requirement for the specified periods of qualifying service as outlined in Section 4.

7.2 The required evidence of service must be presented in the form of testimonials and discharge book entries where possible and for the higher grade CoCs Watchkeeping certificates. Watchkeeping certificates should be provided by the Master of the vessels served on. Testimonials should be provided by the Master of the vessels served on or by a responsible person who should hold a managerial position within the company served.

7.3 The application form includes a section confirming the name(s) and details of the vessels served on. This should reflect the entries in the candidates discharge book. The owner/operator must verify this service in a separate written statement that accompanies the application.

7.4 Testimonials should be submitted in the form given in Annex A (deck) and B (engineering) as appropriate.

8.0 Application procedure

8.1 Application forms can be obtained from MCA Marine Offices (see Annex C). Completed forms with the appropriate fee, evidence of required ancillary training and of medical fitness, and testimonials, must be sent to the MCA's Seafarers Standards Branch at the address on the application form. Applicants eligible to attend the MCA oral examination will be issued with a Notice of Eligibility as detailed in Part 11 of this series.

9.0 MCA Oral Examination

9.1 The oral examination syllabuses for deck candidates are at Annexes D and E. The oral examination syllabus for engineering candidates is at Annexes F and G. Full details of MCA oral examination procedures are given in Part 11 of this series of Guidance Notes.

10.0 Further information

10.1 Further information, if required, is available from the MCA at any MCA Marine Office or at the address given at the beginning of this Guidance Note.

INSHORE TUGS

MASTER & DECK OFFICER TESTIMONIAL

This is to certify that:

Full Name . . . . . .

Date of Birth . . . . . .

has served with this Company between __/__/__ and __/__/__. During this period of service, Mr/Ms has served in the following capacity(s)

Tug service as Deckhand (Inshore Tugs) for ____ months/years

Tug service as Watchkeeper (Inshore Tugs) for ____ months/years

My report on the service of the above during the period is stated as follows:

Conduct:

Experience/ability:

Behaviour/sobriety:

Signed . . . . . .

Name (Print) . . . . . .

Master or position in Company . . . . . .

Name of Company . . . . . .

Company Stamp

Date

INSHORE TUGS

ENGINEER OFFICER TESTIMONIAL

This is to certify that:

Full Name: . . . . . .

Date of Birth: . . . . . .

has served with this Company between __/__/__ and __/__/__ . During this period of service, Mr/Ms has served in the following capacity(s)

Tug service as Engineer Watchkeeper on tugs over 750kW but less than 6000 kW power for _____ months/years

My report on the above during this service period is stated as follows:

Conduct:

Experience/ability:

Behaviour/sobriety:

Signed . . . . . .

Name (Print) . . . . . .

Position in Company . . . . . .

Name of Company . . . . . .

Company Stamp

Date

Annex C

ADDRESSES OF MCA MARINE OFFICES WHERE ORAL EXAMINATIONS ARE HELD

1.	Aberdeen Marine Office Blaikies Quay Aberdeen AB11 5EZ	Tel: 01224 597 900 Fax: 01224 573 725
2.	Belfast Marine Office Bregenz House Quay Street, Bangor BT20 5ED	Tel: 028 9147 5310 Fax: 028 9147 5321
3.	Beverley Marine Office Crosskill House Mill Lane, Beverley North Humberside HU17 9JB	Tel: 01482 866 606 Fax: 01482 869 989
4.	Cardiff Marine Office Oxford House Hills Street Cardiff CF1 2TD	Tel: 02920 229 556 Fax: 02920 229 017
5.	Glasgow Marine Office 6000 Academy Park Gower Street Glasgow G51 1TR	Tel: 0141 427 9400 Fax: 0141 427 9401
6.	Leith Marine Office 1, John's Place Leith Edinburgh EH6 7EL	Tel: 0131 554 5488 Fax: 0131 554 7689
7.	Liverpool Marine Office Hall Road West Crosby Liverpool L23 8SY	Tel: 0151 931 6600 Fax: 0151 931 6615
8.	Orpington Marine Office Central Court, 1B Knoll Rise, Orpington Kent BR6 0JA	Tel: 01689 890 400 Fax: 01689 890 446
9.	Newcastle Marine Office Compass House Unit 1, Tyne Dock South Shields Tyne and Wear NE34 9PY	Tel: 0191 496 9900 Fax: 0191 496 9901
10.	Plymouth Marine Office Fish Market Baylys Wharf, Fish Quay Plymouth PL4 OLH	Tel: 01752 266 211 Fax: 01752 225 826
11.	Southampton Marine Office Spring Place 105 Commercial Road Southampton SO15 1EG	Tel: 023 8032 9329 Fax: 023 8032 9351

DECK ORAL EXAMINATION SYLLABUSES FOR MASTER (INSHORE TUGS) Reg III/2

SYLLABUS – Y

MASTER (INSHORE TUGS) STCW Reg – III/2 tugs less than 500gt limited to operations up to 30 miles from a safe haven on the coast of the United Kingdom and Ireland.

During the course of this examination the examiner may require certain questions to be answered in writing by the candidate. Such written questions will be restricted to those deemed necessary to establish the competence of the candidate in this subject and will not detract from the basically oral nature of the examination.

Candidates should demonstrate the ability to apply the knowledge outlined in this oral examination syllabus, by appropriate responses and reactions to a range of routine, non-routine and contingency scenarios as presented by the examiner, from the perspective of **Master (Inshore Tugs)**.

TOPIC 1 – NAVIGATION

.1 Plan and conduct safe navigation

a) Demonstrate an ability to identify detail found on Admiralty navigation charts, including:
   i) meaning of symbols and abbreviations, depth and height contours, recognition of buoys, lights, range of visibility, use of leading lights, transits and light sectors, sounding lines, and obtain the approximate direction of the tidal stream at any given time;
   ii) the identification of suitable anchorages, depths and nature of bottom;
   iii) knowledge of chart corrections;
b) Demonstrate an ability to plan a passage utilising navigational publications such as sailing directions, light lists, tide tables and radio navigational warnings;
c) Demonstrate an ability to correct magnetic compass courses;
d) Maritime buoyage system – IALA region 'A';
e) The requirements of ship routeing and mandatory reporting systems;
f) Knowledge of the weather information available to shipping in the United Kingdom;
g) Demonstrate the ability to find the times of high and low water at any standard British port using Admiralty Tide Tables.

.2 Maintain a safe navigational watch

a) Knowledge of the principles of navigational watchkeeping at sea, including watchkeeping at anchor and in port;
b) A thorough knowledge of the content, application and intent of the International Regulations for the Prevention of Collision at Sea, and of those Annexes concerned with safe navigation, during the hours of daylight, darkness and in restricted visibility;
   [Candidates will not be placed in the position of handling a sailing craft, but will be expected to recognise the lights carried by such craft and to have knowledge of her possible manoeuvres according to the direction of the wind];
c) Demonstrate the use of an azimuth mirror (terrestrial bearing only);
d) Knowledge of compasses commonly fitted on board tugs – variation and deviation, causes and effects;
e) Basic precautions to be taken with automatic pilot;
f) Steering control systems, operational procedures and change-over from manual to automatic and vice-versa;
g) The International Code of Signals – recognition of the meaning of the single flags A, B, D, G, H, J, K, L, M, O, P, Q, U, V and Z;
h) Ability to read and understand a barometer.

.3 Manoeuvre the vessel

a) Helm orders, the effect of propellers on the steering of a ship (other than a tug), turn short round, bringing a tug to single anchor in an emergency;
b) Action in event of failure of: bridge control, engine telegraph or steering, emergency steering arrangements;
c) Towing: the danger of girting, and being towed;
d) The effects of interaction and squat on ships in general.

TOPIC 2 – RESPONSE TO EMERGENCIES

.1 Respond to navigational emergencies

a) Initial action following: man overboard, collision, grounding, flooding or major mechanical damage, protection of the marine environment;
b) Assisting a ship in distress, the use and care of distress rockets and rocket apparatus carried aboard tugs;
c) Action when in distress, correct use of distress signals and awareness of penalties for misuse;
d) Use of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual (Volume III).

.2 Respond to other emergencies

a) Fire prevention, the use and care of fire-fighting appliances including shut-down and isolation of plant and equipment, escape and breathing apparatus, fire and safety plans;
b) Action to be taken to prevent the spread of fire;
c) The use and care of life saving appliances and equipment, including portable radios, EPIRBs, SARTs, immersion suits and thermal protective aids;
d) The operation of survival craft and rescue boats.

TOPIC 3 – ONBOARD SHIP OPERATIONS

.1 Compliance with pollution prevention requirements

a) Precautions to be taken to prevent pollution of the marine environment, including Garbage Management Plans;
b) Appropriate action in response to pollution incidents onboard and encountered at sea;
c) The Master's duties, obligations and liabilities, including the keeping of records;
d) Measures to be taken to prevent pollution during bunkering.

.2 Seaworthiness of the tug

a) Preparations for heavy weather; ensure and maintain watertight integrity;
b) Use and care of all deck appliances and fittings including winches, capstans, windlasses, cable compressors and cable ends, and bilge pumping arrangements;
c) Stability:
    i) a general understanding of the contents of the tug stability book;
    ii) the danger of slack tanks and necessity of securing against down flooding;
    iii) preparation for dry-docking and undocking.

.3 Legislative requirements

a) Contents and use of MCA Merchant Shipping Notices, Marine Guidance Notes, Marine Information Notes and Annual Summary of Admiralty Notices to Mariners and the Code of Safe Working Practices for the Safety of Merchant Seamen;
b) Knowledge of the application of the current Merchant Shipping Health and Safety at Work legislation and the main elements of risk assessment;
c) Use of, and entries appertaining to, the Official Log Book and accident reports;
d) The Certificate of registry and its legal significance;
e) Certificates required to be carried by British tugs, the procedures for obtaining certificates including surveys and inspections and periods of validity;
f) The law relating to the reporting of dangers to navigation;
g) Purpose and application of the International Safety Management (ISM) Code.

Annex E

DECK ORAL EXAMINATION SYLLABUSES FOR WATCHKEEPER (INSHORE TUGS) Reg II/3

SYLLABUS DECK – Z

WATCHKEEPER (INSHORE TUGS) STCW Reg – II/3 tugs less than 500gt – limited to operations up to 30 miles from a safe haven on the coasts of the United Kingdom and Ireland.

During the course of this examination the examiner may require certain questions to be answered in writing by the candidate. Such written questions will be restricted to those deemed necessary to establish the competence of the candidate in this subject and will not detract from the basically oral nature of the examination.

- Candidates should demonstrate the ability to apply the knowledge outlined in this oral examination syllabus, by appropriate responses and reactions to a range of routine, non-routine and contingency scenarios as presented by the examiner, from the perspective of **Watchkeeper (Inshore Tugs)**.

TOPIC 1 – NAVIGATION

.1 Plan and conduct safe navigation

a) Demonstrate an ability to identify detail found on Admiralty navigation charts, including:
   i) meaning of symbols and abbreviations, depths and height contours, nature of bottom, recognition of buoys, lights, range of visibility of lights, use of leading lights, transits and light sectors, sounding lines, obtaining the approximate direction of the tidal stream at any given time;
   ii) the identification of suitable anchorage;
   iii) chart correction systems;
b) Demonstrate an ability to plan a passage utilising Admiralty navigational publications such as sailing directions, light lists, tide tables and radio navigational warnings;
c) Demonstrate an ability to correct magnetic compass courses;
d) Maritime buoyage system – IALA region 'A';
e) The requirements of ship routeing and mandatory reporting systems;
f) Knowledge of the weather information available to shipping in the United Kingdom;
g) Demonstrate an ability to find the times of high and low water at any standard British port using Admiralty tide tables.

.2 Maintain a safe navigational watch

a) Knowledge of the principles of navigational watchkeeping at sea, including watchkeeping at anchor and in port;
b) A thorough knowledge of the content, application and intent of the International Regulations for the Prevention of Collision at Sea and of those Annexes concerned with safe navigation, during the hours of daylight, darkness and in restricted visibility.
   [Candidates will not be placed in the position of handling a sailing craft but will be expected to recognise the lights carried by such a craft and to have knowledge of her possible manoeuvres according to the direction of the wind.]
c) Demonstrate the use of an azimuth mirror (terrestrial bearings only);
d) Knowledge of compasses commonly fitted on board tugs – a basic understanding of the use, care and precautions; apply variation and deviation to a compass course;
e) Basic precautions to be taken with the automatic pilot;
f) Steering control systems, operational procedures and changeover from manual to automatic and vice-versa;
g) The International Code of Signals – recognition of the meaning of the single flags A, B, D, G, H, J, K, L, M, O, P, Q, U, V and Z.

.3 Manoeuvre the tug

a) Helm orders, the effect of propellers on the steering of a ship, turn short round, bringing a vessel to single anchor in an emergency;
b) Action in event of failure of: bridge control, engine telegraph or steering, emergency steering arrangements;
c) Towing, the danger of girting and being towed;
d) The effects of interaction and squat on ships in general.

TOPIC 2 – RESPONSE TO EMERGENCIES

.1 Response to navigational emergencies

a) Initial action following: man overboard, collision, grounding or flooding, protection of the marine environment;
b) Use of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual (Volume III);
c) Use and care of distress rockets and rocket apparatus carried aboard tugs;
d) The correct use of distress signals and awareness of penalties for misuse.

.2 Response to other emergencies

a) Fire prevention, the use and care of fire-fighting appliances including shut-down and isolation of plant and equipment, escape and breathing apparatus, fire and safety plans;
b) Action to be taken to prevent the spread of fire;
c) The use and care of life saving appliances and equipment, including portable radios, EPIRBs, SARTs, immersion suits and thermal protective aids;
d) The operation of survival craft and rescue boats.

TOPIC 3 – ONBOARD SHIP OPERATIONS

.1 Compliance with pollution prevention requirements

a) Precautions to be taken to prevent pollution of the marine environment;
b) Measures to be taken to prevent pollution during bunkering.

.2 Seaworthiness of the vessel

a) Preparations for heavy weather, ensure and maintain watertight integrity;
b) Use and care of all deck appliances and fittings including bilge-pumping arrangements.

.3 Legislative Requirements

a) Contents and use of MCA Merchant Shipping Notices, Marine Guidance Notes and Marine Information Notes and Code of Safe Working Practices for the Safety of Merchant Seamen;
b) Knowledge of the application of the current Merchant Shipping Health and Safety at Work legislation and the main elements of risk assessment;
c) Use of, and entries appertaining to the Official Log Book and accident reports;
d) Purpose and application of the International Safety Management (ISM) Code.

Annex F

ENGINEER ORAL EXAMINATION SYLLABUS FOR ENGINEER OFFICER (INSHORE TUGS)
STCW Reg – III/2

Candidates should demonstrate the ability to apply the knowledge outlined in this oral examination syllabus, by the appropriate responses and reactions to a range of routine, non-routine and contingency scenarios, as presented by the examiner, appropriate to the level of certification to be obtained and respective kW power.

TOPIC 1 – MARINE ENGINEERING

.1 Machinery operations and records

a) Awareness of the records maintained on board a tug to verify operational efficiency, including the use of the Engine Log Book, Oil Record Book, pumping of bilges, safety inspection check lists and completed permit to work forms; the role of the classification society; survey periods; and recording of surveys undertaken;
b) Scheduled maintenance procedures for machinery and equipment on board a tug, relating particularly to maintaining operating efficiency by filter changes and cleaning; the significance of pressure drop in systems and the potential danger of damage to rotating machinery;
c) Ability to monitor machinery condition by comparing log records; the use of correct procedures when starting engines and ancillary equipment; the need for routine surveillance of the engine room, including knowledge of the correct operating pressures and temperatures under normal working conditions; instrumentation commonly installed to indicate condition of machinery and systems; the procedure for reporting defects on board the Tug concerned in the event of malfunction or breakdown to the responsible personnel on shore;
d) The type of machinery to be found on board a tug; the operating cycle of the main engine and its major components, the importance of lubrication and how this takes place; safety devices fitted to engines or equipment subjected to high pressures; fuel injection arrangements and methods of speed control; combustion air supply to the engine, routine maintenance required to ensure that efficiency and power are maintained;
e) Types of propulsion systems commonly found on a tug and the main differences between the types; methods of steering and steering systems; back-up systems, emergency operation arrangements and changeover procedures;
f) Fuel stocks and tank contents in relation to consumption;
g) Identification of electrical generation requirement, starting generators and putting on the board including synchronisation and load sharing arrangements; battery charging and emergency 24 volt supply arrangements; describe what systems receive a supply from the 24 volt circuit, what occurs in the event of a black out, testing of batteries; describe typical “dead ship” first start arrangements;
h) Stopping and shutting down of machinery, procedure for isolating cooling water systems and ensuring the tug is safe;
i) common causes of performance variation in diesel engines, causes of emergency shutdown of machinery, communication and recording of events and defects; rectification of defects and safety considerations.

.2 Maintenance of engines and machinery

a) Knowledge of the type of maintenance schedules on board a tug;
b) Understand precautions to be taken when repairing machinery; procedure for ensuring machinery to be maintained is isolated; watertight integrity of the tug is ensured; shut-off devices are in place and the Master is advised of repair; dangers of ignition and explosion when gas freeing, and associated certification;
c) Working knowledge of machinery assemblies, air compressors, hydraulic pumps, fuel injectors, filters, valves, coolers; use of correct tools, understanding of torque, jointing and good fitting practice;
d) Understand the precautions necessary when returning equipment to operational readiness after: dismantling of safety barriers, removal of stops, permit to work sign off and system start up;

e) Understand safety precautions applying to the maintenance of electrical plant;
f) Basic knowledge of electrical distribution systems onboard the tug concerned i.e.
- basic knowledge of volts, amps, hertz and kilowatts,
- switchboard instrumentation and information given,
- reverse current protection,
- earth monitoring systems;
g) Knowledge of safety devices found in electrical systems. i.e. the use of breakers, fuses, isolating switches; have awareness of dangers of automatic start-up systems, reverse current protection and preferential trips;
h) Testing of level, pressure and temperature sensors (frequency and reason).

TOPIC 2 – RESPONSE TO EMERGENCIES

.1 Response to an onboard emergency

a) The methods of isolating fuel supply to the engines, the position and method of operating quick closing valves;
b) The emergency stops for machinery and closing down of machinery spaces to stop the spread of fire; fixed fire-fighting installations (if fitted);
c) The fire-fighting equipment available on board the tug concerned including, activation, how the equipment is used and what type of fire would it be used on;
d) Actions to be taken to minimise flooding in the event of damage to the hull in way of the engine room.

TOPIC 3 – ONBOARD SHIP OPERATIONS

.1 Compliance with pollution prevention requirements

a) The restrictions on pumping bilges within the restricted areas and the procedures used in the port concerned, the requirements relating to the Oil Record Book and the equipment fitted on board the tug concerned to separate oil and water, its' use and allowable discharge concentrations;
b) Fuel bunkering and special requirements to prevent oil spills and the layout of fuel tanks and transfer arrangements;
c) Sewage plant operation and potential health risks.

.2 Seaworthiness of the Inshore Craft

a) Understand the general arrangement of a tug including: tankage, machinery spaces, propulsion system and steering arrangements;
b) The function of watertight bulkheads and doors and good practice while towing;
c) The location and maintenance of the watertight integrity of deck openings;
d) Understand the tank venting arrangement, vent pipes and float shut-off heads on board the tug concerned, how they work, why they are there;
e) Understand effect of pressure caused by a head of liquid or a vacuum, on tanks, valves and pipes;
f) Familiarity with maintenance requirements of emergency release mechanisms and the tow hook, brakes and release mechanism on the tow winch;
g) Understanding of the effect of "free surface" on the stability of a tug.

.3 Care for persons onboard

a) Emergency signals and muster alarms; communications with engine room and wheelhouse;
b) The principle hazards and areas of risk in the machinery spaces on board a tug; main causes of fires in the engine room, what precautions are taken to minimise risk;
c) The general layout of safety equipment on board a tug;
d) Safety and survival equipment carried on board tugs and correct maintenance procedures;
e) Operating manuals, instructions and codes commonly held on board; the Code of Safe Working Practices for Merchant Seamen and knowledge of where these records and instructions are normally kept;
f) The accident reporting procedure and the need to analyse how the accident occurred; corrective actions to be taken and how these are advised to the responsible person ashore;

g) Permit to work documentation and the method of ensuring safe access to enclosed spaces, appreciate associated dangers including Oxygen depletion, noxious gases and explosive mixtures;
h) A working knowledge of lifting plant and equipment, an understanding of safe working loads, certification of equipment and records of proof testing;
i) A working understanding of the COSHH requirements and their practical application to the tug;
j) Outline knowledge of the International Safety Management (ISM) Code.

ENGINEER ORAL EXAMINATION SYLLABUS FOR ENGINE ROOM WATCHKEEPER (INSHORE TUG) STCW Reg – III/1

Candidates should demonstrate the ability to apply the knowledge outlined in this oral examination syllabus by the appropriate responses and reactions to a range of routine, non-routine and contingency scenarios as presented by the examiner, appropriate to the level of certification to be obtained and respective kW power.

TOPIC 1 – MARINE ENGINEERING

.1 Machinery operations and records

a) Awareness of the records maintained on board a tug to verify operational efficiency, including the use of the Engine Log Book, Oil Record Book, pumping of bilges, safety inspection check lists and completed permit to work forms;
b) Scheduled maintenance procedures for machinery and equipment on board a tug, relating particularly to maintaining operating efficiency by filter changes and cleaning; the significance of pressure drop in systems and the potential danger of damage to rotating machinery;
c) Ability to monitor machinery condition by comparing log records; the use of correct procedures when starting engines and ancillary equipment; the need for routine surveillance of the engine room, including knowledge of the correct operating pressures and temperatures under normal working conditions; instrumentation commonly installed to indicate condition of machinery and systems;
d) The type of machinery to be found on board a tug; the operating cycle of the main engine and its major components, the importance of lubrication and how this takes place; safety devices fitted to engines or equipment subjected to high pressures; fuel injection arrangements and methods of speed control; combustion air supply to the engine, routine maintenance required to ensure the efficiency and power is maintained;
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h) Common causes of performance variation in diesel engines, causes of emergency shutdown of machinery, communication and recording of events and defects; rectification of defects and safety considerations.

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b) Working knowledge of machinery assemblies, air compressors, hydraulic pumps, fuel injectors, filters, valves, coolers; use of correct tools, understanding of torque, jointing and good fitting practice;
c) Understand the precautions necessary when returning equipment to operational readiness after: dismantling of safety barriers, removal of stops, permit to work sign off and system start up;
d) Understand safety precautions applying to the maintenance of electrical plant;
e) Basic knowledge of electrical distribution systems on board the tug concerned i.e.
- basic knowledge of volts, amps, hertz and kilowatts,
- switchboard instrumentation and information given,
- reverse current protection,
- earth monitoring systems;

f) Knowledge of safety devices found in electrical systems. i.e. the use of breakers, fuses, isolating switches; have awareness of dangers of automatic start up systems, reverse current protection and preferential trips.

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