MCA Course Criteria for

Small Ships Navigation and Radar Course:

"Small Ships Electronic Charting System (approved) and Bridge Watchkeeping"
and
"Small Ships Radar & Meteorology"

Maritime & Coastguard Agency

1st. edition – November 2023

Section One: Introduction

1. What this document is about

1.1 This document provides the MCA criteria which will cover the mandatory minimum requirements for the safe use of Radar, Electronic Charting System(s) (approved for navigation) and the application and intent of the International Regulations for Preventing Collisions at Sea 1972, as amended.

1.2 Training courses developed in line with these criteria and delivered at centres approved by the Maritime and Coastguard Agency (MCA), will cover:

.1 Small Ships Electronic Charting System (approved) and Bridge Watchkeeping course.
.2 Small Ships Radar & Meteorology Course.

1.3 The specifications described in this document have been developed by the Maritime and Coastguard Agency (MCA).

1.4 The MCA has made the specifications described in this document that will satisfy the requirements for training. Small Ships Radar and Meteorology, and Electronic Charting System (ECS) and Bridge Watchkeeping course training shall be approved by the MCA in accordance with the approval process described in **Annex A.**

1.5 Guidance on simulator exercises can be found at **Annex C** (Small Ships Electronic Charting System (approved) and Bridge watchkeeping) and **Annex H** (Small Ships Radar and Meteorology).

2. Why these criteria have been developed

2.1 These criteria have been developed to deliver education and training covering the requirements for mandatory training for holders of a Workboat/Small Vessels/Police boats Certificate of Competency requiring radar endorsement, and additional training for other seafarers serving in ships of limited size (e.g Boatmaster License holders) requiring familiarisation or updating/refresher training in use of Electronic Charting System (Approved) and Bridge watchkeeping and in the use of radar and obtaining metrological information.

2.2 **Annex B** provides a copy of the IMO performance standards for the use of simulators for training and assessment.

2.3 The use of simulators, performance standards and other requirements is referred to in Regulation I/12 of the STCW Convention, 1978, as amended and its associated STCW Code. The requirements apply to all mandatory simulator-based training, any assessment of competency carried out by means of a simulator and any demonstration of continued proficiency by means of a simulator.

2.4 The up-to-date IMO performance standards apply to the training and assessment covered by this document:

- Radar simulation equipment
- Electronic Charting system (approved)

3. Aims of the training.

Electronic Charting System (approved) and Bridge Watchkeeping - to give candidates the essential education and training needed to keep a safe navigational watch and to use electronic charts, and other electronic aids to perform effective Bridge Watchkeeping in small vessels.

Small Ships Radar and Meteorology - to give candidates the essential education and training needed to use radar and obtaining Metrological information to maintain safety of navigation in small vessels.

4. Training plans

4.1 Centres will need to present their training plans as part of the approval process. Centres are encouraged to fully engage learners in the learning processes using interactive teaching methods supported by appropriate use of one or more of the following:

- Practical demonstration
- Simulation
- Team exercises
- Continuous assessment
- Summative assessment (theory and practical)
- Any appropriate methodology of teaching approved by the MCA.

5. Training day

5.1 A training day has been defined as one which has no more than **eight contact hours** and cannot be in excess of ten hours in total.

6. Assessment requirements

6.1 Assessment shall be organised so that learners can, through demonstration and examination, show that they meet the competences stipulated, as identified in **Annexes D and I**

6.2 The assessment system, methods and practice shall be valid, reliable, and authentic.

6.3 Each learner shall receive an assessment plan at the start of the training.

6.4 The assessment system shall support appeals made by learners against assessment decisions.

6.5 A variety of sources of evidence may be used and shall include evidence of learners' ability to meet the criteria for evaluating competency.

6.6 A range of written examinations, oral questioning, and direct observation of practical simulation are considered ideal approaches to generating much of the evidence required.

6.7 Assessment shall be formally documented and be made available for verification audits.

7. Qualifications of instructors and assessors

7.1 Instructors and assessors are required to be qualified in accordance with the requirements of Section A-I/6 of the STCW Code. Additional requirements are provided at **Annex K.**

8. Facilities and equipment

8.1 Training centres seeking approval will need to demonstrate availability of suitable facilities for practical, general, and theoretical instruction, appropriately equipped with teaching and learning aids and designed to enable each learner to fully engage in the learning process and shall have a Quality Management System in accordance with STCW Convention regulation 1/8.

8.2 All facilities shall be maintained and where appropriate, inspected and tested in accordance with applicable regulations, current standards, and manufacturers recommendations.

8.3 The minimum range of equipment for training and assessment are at **Annexes E and J.**

8.4 The performance standards for Radar/ARPA as per IMO resolution MSC.192(79). The latest performance standards for ECDIS - IMO resolution MSC.232(82) (as amended). The performance standard and guidance for approved ECS and Mini-ECDIS can be found in MGN 319 (as amended).

9. Certification

9.1 The training centre will issue a certificate to learners who have successfully demonstrated competence in all specified areas. The certificate will be in the relevant format provided in the **Annex L (i) and L (ii)** of this document, which has been designed to ensure it will meet the requirements of Port State Control. A certificate cannot be issued prior to approval of the course by the MCA.

10. Health and Safety: conduct of training

10.1 All training centres shall adhere to applicable regulations made under the Health and Safety at Work Act 1974, as amended, and take proper account of the advice given in associated guidance documents and 'Approved Codes of Practice'. Outside the UK, training centres shall adhere to relevant national legislation.

10.2 Training centres are required to make assessments of any potential risks to the health and safety of staff and learners that may be associated with their activities. They are also required to identify, implement, monitor, and review effective measures for minimising and controlling risks.

10.3 Centres are required to make effective arrangements for dealing with any emergency, incident or accident that may occur during the course of the training. In the UK, the foregoing is required in accordance with the Management of Health and Safety at Work Regulations 1999, as amended.

10.4 The safety of learners and staff delivering training shall be ensured at all times.

10.5 Practical exercises should be designed and delivered solely to meet the course criteria.

10.6 Centres shall draw up their own safe working procedures to meet statutory Health and Safety obligations.

11. Conduct of the training

11.1 The training shall be structured around the outcomes although centres shall devise their own training schedules and detailed plans for individual sessions to ensure effective and logical delivery of the subject matter to achieve the objectives of the training.

11.2 Prior to candidates attending the course they should be capable of basic chartwork principles and have a basic knowledge of The International Regulations for Preventing Collisions at Sea 1972, as amended.

11.3 Guidance on training programmes can be found at **Annex C and F**

12. Quality Standards

12.1 The arrangements for delivering the training and assessing competency must be continuously monitored through a quality standards system to ensure achievement of defined objectives.

12.2 Training centres are required to maintain a quality standard through documented procedures that shall be inspected at intervals not exceeding five years.

12.3 The quality standards systems and evaluation arrangements may be part of a centre's overall quality assurance system.

13. The UK General Data Protection Act 2018/GDPR

13.1 The training centre must provide individuals with information including: the purpose for processing personal data, retention records for that personal data, and who it will be shared with. The MCA call this a 'privacy notice' which must be provided at the time of data collection. The training centre must ensure that candidates' Passport, National Insurance, Driving Licence, Birth Certification numbers, etc, is not displayed on documentation, e.g., the certificate issued to successful candidates.

14. Certification and documentation

14.1 On achievement of the desired standard of competence, a certificate will be issued by the centre in the format shown in **Annex L (i) and L(ii)**

Section Two: Small Ships Electronic Charting system (approved) and Bridge watchkeeping

1. Aim

To give candidates the essential education and training needed to keep a safe navigational watch and to use electronic charts and other electronic aids to maintain safety of navigation in small vessels, meeting the knowledge, understanding and proficiency (KUP) requirements set out below.

2. Competence:

Plan and conduct a coastal passage and determine position.
Maintain a safe navigational watch.

3. Entry Requirements

This course is intended for all Masters and any crew responsible for navigation on commercially operating small vessels (<24m). It is essential for candidates to have a basic understanding of navigational principles prior to attendance. Candidates are recommended to have experience navigating small vessels and hold a level of certification that permits commercial operation in Area Category of Operation 6 or above.

Students shall verbally confirm on the day that they are fit and well enough to participate in practical exercises.

4. Outcomes

Outcome 1: The learner can explain the functions and applications of electronic charts and electronic charting systems (Approved), and how principles of safe navigation are used with them.

Outcome 2: The learner can apply knowledge of bridge watchkeeping procedures.

5. Staff to learner ratio

The trainer to learner ratio shall not exceed 1:12 for practical sessions and 1:12 for non-practical sessions. **The minimum number of candidates for this course shall be 3.**

The training centre, having due regard to health and safety and the objectives of the training, shall determine other staffing requirements.

6. Training duration

The training shall be not less than 20 hours duration over three days. This period can be split into short sessions to suit local needs by arrangement with the training centre concerned; and flexible methods of training delivery are encouraged wherever this is possible.

7. Facilities and equipment

The list of facilities and equipment can be found at **Annex E**

8. Outcomes (continued)

Outcome 1: The learner can explain the functions and applications of electronic charts and electronic charting systems (approved), and how principles of safe navigation are used with them.

- **Charts**
  - Differences between vector, raster, official, and non-official charts.
  - Chart ordering and updating.
  - Data sources and category of zone confidence (CATZOC).
  - Symbology and interrogating chart features (pick reports).

- **Electronic Charting Systems**
  - Key types (approved/non-approved) and associated standards/regulations.
  - Required inputs and outputs including and sensor setup.

- **Device Setup**
  - Chart loading and selection (scales).
  - Orientation, zoom levels, base, standard and custom displays, vectors/trails.
  - Overlays, to include ARPA and AIS.

- **Safety settings**
  - Safety depth/contour calculations.
  - Contours and safety depth settings.
  - Anti-grounding.
  - Alarms and indications.
  - Man-overboard functions.

- **Position monitoring**
  - Methods of position fixing and application to electronic charting systems.
  - Monitoring global navigation satellite systems (GNSS) integrity, verification of position and datums.
  - Suitable actions and alternate fixing methods in situations of GNSS denial.

- **Tides**
  - Tidal calculations using digital means
  - Using tidal calculations with electronic charts and routes]

- **Routes**
  - Requirement for route planning.
  - Route planning, validation, and editing.
  - Route monitoring.

Outcome 2 The learner can apply knowledge of bridge watchkeeping.

- Set up procedures for global navigation satellite systems and navigational aids other than those previously referred to.
- Operational limitations and errors in the use of bridge equipment.
- Echo sounder use including operational misunderstandings and use of warning limits.
- Use of relevant M Notices and Bridge Procedures Guide (BPG).
- Use of radio communication equipment.
- Use of Automatic Identification Systems (AIS).
    - Different system types and performance characteristics.
    - Any limitations, benefits, and the reliability of data.
    - The use of AIS when complying with the Convention on the International Regulations for Preventing Collisions at Sea, 1972.
- Sources of navigation warning data.
- Passage plan development including the use of all relevant publications.
- Compass errors, and corrections.
- Effective monitoring of courses by hand steering or autopilot.
- Watchkeeper briefing and handover procedures.
- Bridge record keeping.

Section Three: Small Ships Radar & Meteorology

1. Aim

to give candidates the essential education and training needed to use radar and obtaining Metrological information to maintain safety of navigation in small vessels.

2. Competence

Maintain a safe navigation watch by using Marine Radar and metrological information.

3. Entry Requirements

This course is intended for all Masters of commercially operating small vessels (<24m) using Radar, and any crew responsible for radar working on these vessels that have not undertaken approved training in the use of radar.

Candidates for this module are recommended to have completed the Electronic Chart Systems and Bridge Watchkeeping module prior to attendance, have experience working on small vessels, and hold a level of certification that permits commercial operation of small vessels in Area Category of Operation 6 or above.

Students shall verbally confirm on the day that they are fit and well enough to participate in practical exercises.

Outcome 1: The learner can explain radar theory and practical
Outcome 2: The learner can understand and explain weather reports, predictions, and compass.

4. Staff to learner ratio

The trainer to learner ratio shall not exceed 1:12 for practical sessions and 1:12 for non-practical sessions. **The minimum number of candidates for this course shall be 3.**

The training centre, having due regard to health and safety and the objectives of the training, shall determine other staffing requirements. The training centre, having due regard to health and safety and the objectives of the training, shall determine other staffing requirements.

5. Training duration

The training shall be not less than 16 hours duration over two days. This period can be split into short sessions to suit local needs by arrangement with the training centre concerned; and flexible methods of training delivery are encouraged wherever this is possible.

6. Facilities and equipment

The list of facilities and equipment can be found at **Annex J.**

7. Outcomes

Outcome 1 The learner can explain radar theory and demonstrate the practical operation of radar.

- Types of Radar and differences in use.
- Using Radar as a ranging device.
- Use and limitations of radar for bearing measurement.
- Effect of horizontal bandwidth, particularly on land targets.
- Use of Sea and ground stabilised modes of operation.
- Display set up procedures including the use of performance monitoring facilities.
- Understanding of the heading marker and its alignment.
- Sea and rain clutter settings.
- Relative and true motion displays.
- True and relative trails and vectors.
- Head-up (unstabilised) and North-up (stabilised) displays.
- Shadow sectors and blind arcs.
- False echoes.
- Plotting as an aid to collision avoidance.
- Position fixing and radar navigation.
- Use of parallel indexing techniques.
- Semi-automatic and automatic plotters
- Errors associated with automatic plotting aids.

Outcome 2 The learner can understand and explain weather reports and predictions, and the effect on navigation, the vessel, and equipment.

- How to obtain weather information.
- Use of weather reports in relation to a proposed passage plan.
- Actions upon encountering reduced visibility.
- An appreciation of voyage limitations imposed by reduced visibility.
- Possible effect of wind on tracks made good.
- The effect of wind on tides and tidal streams.
- Local weather anomalies.
- Effect on sensors/equipment of weather.

Annex A: Conditions for MCA Approval of Short Courses

1. Training centres offering training and assessment leading to the issue of a certificate of training must be approved by the Maritime and Coastguard Agency. Full details of approval are listed in Annex F of MSN 1865 (Amendment 1) and MIN 643. The course is not suitable for peripatetic delivery.

2. MCA approval requirements are for a functional Quality Management System to be in place that ensures:

   .1 continued satisfactory delivery of the programme to the current MCA standards, reflecting changes of technology and best practice;

   .2 the training programme entry standards are met;

   .3 the agreed assessment process is maintained;

   .4 only those who complete the training programme and meet any other necessary requirements are issued with certificates/documentary evidence;

   .5 specimen certificates are issued in a format that meets the MCA requirements, as per the examples provided within the appropriate sections of this document;

   .6 records of certificates issued are securely maintained until the 70th birthday of the certificate holder or five years from the date of issue whichever is the longer;

   .7 the record system enables authenticity of certificates to be verified and replacement certificates issued;

   .8 the approving MCA Office is informed of dates, timing and venues of all courses delivered;

   .9 any changes made to the course content, facilities, equipment, training staff or other matter that may affect the delivery of the programme are reported to the approving Marine Office without delay;

   .10 compliance of STCW Regulations I/6, I/8 and the UK General Data Protection Act 2018/GDPR.

   .11 The fees will be charged as per the MCA Surveyor hourly rate for approval and reapproval. The actual costs of a course approval will depend on the total allocated time required for MCA resources to review and approve a course. Poor submissions and/or extra time required for MCA resources to consider an approval application may incur increased fees as the MCA will need to recover the costs.

3. Re-approval audit by the MCA is carried out within 5 years of the initial approval or re-approval. Such approval and re-approval will incur costs in line with the fees in force at that time.

4. If, as the result of an audit, or the MCA otherwise becomes aware that the Training Centre is no longer complying with the conditions of approval or has serious non-compliance issues as regards health and safety, the MCA reserves the right to suspend or cancel the approval of the course.

5. Should the training establishment cease to trade then all records of certificates issued shall be sent to the MCA to enable them to carry out the verification and replacement functions.

Annex B: IMO performance standards for the use of simulators for training

Use of simulators

The performance standards and other provisions set out in section A-I/12 and such other requirements as are prescribed in part A of the STCW Code for any certificate concerned shall be compiled with in respect of:

.1 all mandatory simulator-based training;

.2 any assessment of competency required by part A of the STCW Code which is carried out by means of a simulator; and
.3 any demonstration, by means of a simulator, of continued proficiency required by part A of the STCW Code

Section A-I/12 of the STCW Code

Standards governing the use of simulators

PART 1 – PERFORMANCE STANDARDS

General performance standards for simulators used in training

Each Party shall ensure that any simulator used for mandatory simulator-based training shall:
.1 be suitable for the selected objectives and training tasks;
.2 be capable of simulating the operating capabilities of shipboard equipment concerned, to a level of physical realism appropriate to training objectives, and include the capabilities, limitations and possible errors of such equipment;
.3 have sufficient behavioural realism to allow a trainee to acquire the skills appropriate to the training objectives;
.4 provide a controlled operating environment, capable of producing a variety of conditions, which may include emergency, hazardous or unusual situations relevant to the training objectives;
.5 provide an interface through which a trainee can interact with the equipment, the simulated environment and, as appropriate, the instructor; and
.6 permit an instructor to control, monitor and record exercises for the effective debriefing of trainees.

General performance standards for simulators used in assessment of competence

Each Party shall ensure that any simulator used for the assessment of competence required under the Convention or for any demonstration of continued proficiency so required shall:
.1 be capable of satisfying the specified assessment objectives;

.2 be capable of simulating the operational capabilities of the shipboard equipment concerned to a level of physical realism appropriate to the assessment objectives, and include the capabilities, limitations and possible errors of such equipment;

.3 have sufficient behavioural realism to allow a candidate to exhibit the skills appropriate to the assessment objectives;

.4 provide an interface through which a candidate can interact with the equipment and simulated environment;

.5 provide a controlled operating environment, capable of producing a variety of conditions, which may include emergency, hazardous or unusual situations relevant to assessment objectives; and

.6 permit an assessor to control, monitor and record exercises for the effective assessment of the performance of candidates.

Annex C: Guidance on training programmes Small Ships Electronic Charting Systems (approved) and Bridge Watchkeeping.

Introduction

The training covers the basic principles of coastal navigation, passage planning and the use of electronic aids to navigation commonly found on small vessels. The training is designed to be mainly practical and includes simulator-based exercises representative of real situations and tailored wherever possible to local navigational circumstances. The exercises will be appropriate to the maturity and experience of the participants and will seek to promote high standards of safe navigation and watchkeeping. The group discussion and analysis after every exercise is regarded as a significant contribution to achieving the aims of this training.

1. The training must include the programme of simulator exercises described in this annex, but training centres are free, within the following general guidelines, to design the details of their own exercises.
2. The conduct of the simulator exercises and of the training must be adapted as appropriate to take account of the prior experience of the participants.
3. The format of practical exercises will consider the following:
    I. The principles of safe navigational watchkeeping.
    II. The use of typical navigational equipment including correct set up procedures.
    III. Sound principles of chartwork using electronic means.
    IV. Selection of navigational data appropriate to prevailing circumstances.
    V. Use of other electronic aids to navigation including AIS.
    VI. Effective bridge watchkeeping organisation.
    VII. The planning and execution of passages in confined and open waters, including the use of relevant navigational publications.

Exercises

The practical exercises will be designed and conducted around three main themes and will emphasise the importance of the principles of keeping a safe navigational watch and bridge procedures as applied to small vessels.

Theme 1 – Passage planning in coastal water.

Objectives

i. Setting up ECS(approved) to produce a passage plan in coastal water.
ii. Monitoring of the ship's track on ECS(approved) in coastal waters.
iii. Position fixing on ECS(approved) using electronic aids to navigation.

Theme 2 – Navigation in Coastal Water and Collision Avoidance

Objectives

i. To make a passage plan to show all relevant details including: margins of safety, clearing lines, limits, etc., and include pre-arrival and departure briefing to enhance bridge teamwork;
ii. Enhance the candidate's ability to work as part of a bridge team when making landfall and navigating in coastal waters;
iii. To apply the principles of effective bridge resource management procedures;
iv. To evidence effective and explicit communication including the keeping of a communications log.

Theme 3 – Passage through areas of heavy traffic with navigational restrictions.

Objectives

i. Collision avoidance manoeuvres.
ii. Interaction with vessel traffic services.
iii. Limitations of ECS and AIS in the navigational role;
iv. The occasional malfunction of equipment used in navigation and collision avoidance, including alarm management.

Annex D: Assessment requirements – Electronic Charting Systems (approved) and Bridge Watchkeeping

General

The principal aim of assessment is to ascertain whether the candidate achieves the stated objectives of the training to a level which, in the opinion of the assessor(s) and taking account of the criteria below, is considered satisfactory. The assessor(s) must evaluate the performance of each candidate progressively over the entire duration of the training. In most cases weaknesses will be highlighted during de-briefing sessions and due account must be made of any subsequent improvement in performance. It is vital that a failed assessment should be considered where a candidate does not show a significant improvement in performance after initially reacting to potentially dangerous situations in an unacceptable manner. The certificate should be withheld until satisfactory re-training and assessment have been undertaken. Relevant weak points must be discussed between the assessor(s) and the candidate concerned.

Criteria

At the end of the training the candidate shall demonstrate the knowledge and skills as per the aims and objectives of the course.

Note

Failure to comply with the foregoing criteria at specific points during the training shall not imply a failed assessment if the candidate is subsequently aware of their mistake(s) and gives positive indications that subsequent performance has improved to an acceptable level. The final performance will be an indication of the competence level achieved and the issue of the certificate shall reflect an acceptable level of competence. Particular attention shall be paid to the fact that this may be the only simulator training within the training scheme, and an opportunity to present to an assessor a level of competence in certain navigational skills.

Annex E: Equipment specification – Small ships Electronic Charting Systems (Approved) and Bridge Watchkeeping

The training must be undertaken using the following minimum range of equipment, which may be live or simulated. Simulators should meet the same minimum functionality of the equipment mentioned below:

I. A global navigational satellite system (GNSS) receiver.
II. An echo sounder.
III. Automatic Identification System (AIS)
IV. ECS approved for navigation, including those designed and approved for carriage on coded vessels.

Annex F: Guidance on training programme – Radar and meteorology course

Introduction

The training covers the basic principles of radar operation and meteorology using equipment that may be found on small vessels. The training is designed to be mainly practical and includes simulator-based exercises representative of real situations and tailored wherever possible to local navigational circumstances. The exercises will be appropriate to the maturity and experience of the participants and will seek to promote high standards of safe navigation and watchkeeping. The group discussion and analysis after every exercise is regarded as a significant contribution to achieving the aims of this training.

1. The training must include the programme of simulator exercises described in this annex H but training centres are free, within the following general guidelines to design the details of their own exercises.

2. The conduct of the simulator exercises and of the training as a whole must be adapted as appropriate to take account of the prior experience of the participants.

3. The format of practical exercises will consider the following:
   I. The use of radar and navigation methods
   II. The use of radar plotting aids including automatic aids.
   III. Selection of navigational data appropriate to prevailing circumstances.

Annex G: Guidance regarding the use of simulators

Radar simulator training

Extract of relevant paragraphs of Section B-I/12 of the STCW Code.

1. When simulators are being used for training or assessment of competency, the following guidelines should be taken into consideration in conducting any such training or assessment.

Training and Assessment in Radar Observation and basic plotting

2. Training and assessment in radar observation and plotting should:

   i. incorporate the use of radar simulation equipment; and
   ii. conform to standards not inferior to those given in paragraphs 3 to 5 below.

3. Demonstration of and practice in radar observation should be undertaken, where appropriate, on live marine radar equipment, including the use of simulators. Basic Plotting exercises should preferably be undertaken in real time for the safe execution of collision-avoidance manoeuvring under actual seagoing conditions.

General

Factors affecting performance and accuracy.

4. An elementary understanding should be attained of the principles of radar, together with a full practical knowledge of:
   i. range and bearing measurement, characteristics of the radar set which determine the quality of the radar display, radar antennae, polar diagrams, the effects of power radiated in directions outside the main beam, a non-technical description of the radar system.
   ii. the effects of the siting of the radar antenna, shadow sectors and arcs of reduced sensitivity, false echoes, effects of antenna height on detection ranges and of siting radar units and storing spares near magnetic safe distances; and
   iii. radiation hazards and safety precautions to be taken in the vicinity of antennae and open waveguides.
   iv. Detection of misrepresentation of information, including false echoes and sea returns

5. A knowledge of the limitations of radar and the following factors should be emphasised:
   i. brilliance, gain and video processor control settings;
   ii. radar horizon;
   iii. size, shape, aspect and composition of targets;

iv. effects of the motion of the ship in a seaway;
v. propagation conditions;
vi. meteorological conditions; sea clutter and rain clutter;
vii. anti-clutter control settings;
viii. shadow sectors; and
ix. radar-to-radar interference.

Annex H: Guidance on simulator exercises

The practical exercises will be designed and conducted around two main themes and will emphasise the importance of the principles of keeping a safe navigational watch and bridge procedures as applied to small vessels.

The initial exercise shall introduce the candidate to the equipment and consolidate knowledge of the use of radar. Adequate familiarisation time on the simulator and its equipment should be allowed before any assessment commences.

Theme 1 – Navigation in clear visibility.

Objectives:

i. To refresh candidates' knowledge and skills in utilising radar special emphasis on exercising: modes of display, orientation, stabilisation, Parallel Indexing.
ii. To illustrate the need to ascertain the position of own ship.
iii. To monitor progress of own ship by using parallel index techniques when making a landfall and navigating in coastal waters.

Theme 2 – Navigation and collision avoidance in clear and in poor visibility through an area of heavy traffic

Objectives:

i. To ascertain the position of own ship and monitor progress when making a landfall and navigating in coastal waters.
ii. The production and execution of a navigational voyage plan using, the concept of parallel index techniques, the effects of tidal streams and wind prediction and allowances, the recognition and response to malfunction of equipment.
iii. To produce and execute a passage plan through an area containing focal points for traffic and traffic separation zones.

Outline of Exercises

The exercises shall include scenarios which enable demonstration and practice of modes of display, orientation, stabilisation and gives the opportunity to the candidates to use Parallel Indexing.

Annex I: Assessment requirements – Small Ships Radar and meteorology Course

General

The principal aim of assessment is to ascertain whether the candidate achieves the stated objectives of the training to a level which, in the opinion of the assessor(s) and taking account of the criteria below, is considered satisfactory. The assessor(s) must evaluate the performance of each candidate progressively over the entire duration of the training. In most cases weaknesses will be highlighted during de-briefing sessions and due account must be made of any subsequent improvement in performance.

It is vital that a failed assessment should be considered where a candidate does not show a significant improvement in performance after initially reacting to potentially dangerous situations in an unacceptable manner. The certificate should be withheld until satisfactory re-training and assessment have been undertaken. Relevant weak points must be discussed between the assessor(s) and the candidate concerned.

Criteria

At the end of the training the candidate shall demonstrate the knowledge and skills as per the aims and objectives of the course.

Note

Failure to comply with the foregoing criteria at specific points during the training shall not imply a failed assessment if the candidate is subsequently aware of mistake(s) and gives positive indications that subsequent performance has improved to an acceptable level. The final performance will be an indication of the competence level achieved and the issue of the certificate shall reflect an acceptable level of competence.

Annex J: Equipment specification – Small Ships Radar and meteorology Course

The training must be undertaken using the following minimum range of equipment, which may be live or simulated. Simulators should meet the same minimum functionality of the equipment mentioned below.

I. A global navigational satellite system (GNSS) receiver.
II. Automatic Identification System (AIS)
III. A marine radar set.
IV. A radar/ARPA simulator of a type deemed appropriate by the Maritime and Coastguard Agency through course approval or as specified in Workboat Code Edition 3, as amended. The use of a training vessel to supplement the simulator would be at the discretion of the training centre.

Annex K: Qualifications of instructors and assessors for both courses

Training and assessment must be undertaken by persons qualified in accordance with the the provisions of Table A5.1, Appendix 5 of Workboat Code Edition 3, as amended, holding a minimum of a management level certificate that allows the holder to work commercially as a Master on a Small Vessel (<24m) in Area Category of Operation 1 or a recognised equivalent as may be accepted by the Maritime and Coastguard Agency (MCA).

The instructor/assessor shall:

1. Must have completed and passed both modules of the Small Ships Navigation and Radar course or demonstrate experience and certification to a level superseding this courses content, to the satisfaction of the MCA.
2. Have an acceptable teaching qualification[1] deemed suitable by the MCA during course approval or successfully completed the IMO train the trainer course Regulation I/6 and Section A-I/6 of the STCW Convention and Code 1978, as amended or equivalent.
3. Be familiar with the simulator equipment and characteristics of the models in use, including the application of simulators in training.

[1] Preparing to Teach in the Lifelong Learning Sector (PTLLS), • Certificate in Teaching in the Lifelong Learning Sector (CTLLS), • City and Guilds Level 3 Award in Education and Training • Diploma in Teaching in the Lifelong Learning Sector (DTLLS), • Certificate in Education Postgraduate, • Certificate in Education, • Scottish Vocational Qualifications (SVQs) levels 3 and 4 in Learning and Development, • Scottish Training Qualification for Further Education (TQFE), • Professional Graduate Diploma in Education (PGDE), • Professional Graduate Certificate in Education (PGCE).

Annex L(i): Specimen certificate – Small Ships Electronic Charting system (approved) and Bridge watchkeeping

(to be produced and registered locally by the Issuing Authority)

Certificate no: [Issuing Authority to allocate]	
MCA Approval Certificate No:	
Issuing Authority:	Address and contact details
Tel:	Email:
TITLE OF CERTIFICATE: Small Ships Electronic Charting System (approved) and Bridge Watchkeeping Course	
This is to certify that: [full name of candidate]	
Date of birth:	
has successfully completed small ships Electronic Charting system (approved) and Bridge watchkeeping course approved by the Maritime and Coastguard Agency. This Certificate is issued under the authority of the Maritime and Coastguard Agency of the United Kingdom of Great Britain and Northern Ireland, an executive agency of the Department for Transport.	
	Issuing Authority Stamp and Date
Signature and name of Principal or Authorised Representative of the Approved Training Centre	
Signature of person to whom this certificate was issued	

Inquiries concerning this certificate should be addressed to the Issuing Authority at the address above.

Annex L (ii): Specimen certificate – Small Ships Radar and Meteorology Course

(to be produced and registered locally by the Issuing Authority)

Certificate no: [Issuing Authority to allocate]	
MCA Approval Certificate No:	
Issuing Authority:	Address and contact details
Tel:	Email:
TITLE OF CERTIFICATE: Small Ships Radar and Meteorology Course	
This is to certify that: [full name of candidate]	
Date of birth:	
has successfully completed small ships “Radar and Meteorology” course approved by the Maritime and Coastguard Agency. This Certificate is issued under the authority of the Maritime and Coastguard Agency of the United Kingdom of Great Britain and Northern Ireland, an executive agency of the Department for Transport.	
	Issuing Authority Stamp and Date
Signature and name of Principal or Authorised Representative of the Approved Training Centre	
Signature of person to whom this certificate was issued	

Inquiries concerning this certificate should be addressed to the Issuing Authority at the address above.