



Maritime and Coastguard Agency

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## TRAINING AND CERTIFICATION GUIDANCE – PART 17

### Certificates of competency or Marine Engine Operator Licences for service as an Engineer Officer on commercially and privately operated yachts and sail training vessels.

Notice to Owners, Masters, Deck Officers, Engineer Officers and Crews of Commercially and Privately Operated Yachts and Sail Training Vessels, and those concerned with Maritime Training

*This Notice should be read in conjunction with Merchant Shipping Notices numbers: MSN 1692(M), MSN1750(M), MGN 14(M), and other Parts of this series*

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#### *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.<sup>1</sup>

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 Part describes a system for harmonising the "large yacht" (sometimes called "megayachts") certification in accordance with the requirements of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended in 1995 (STCW 95)<sup>2</sup> and its associated code (STCW Code).

It provides details of a certification system for engineer officers and personnel serving on:

- a) yachts or sail training vessel, in excess of 24 metres loadline length which are in commercial use for sport or pleasure and which do not carry cargo and do not carry more than 12 passengers, covered by the Maritime and Coastguard Agency's (MCA) Code of Practice for Safety of Large Commercial Sailing and Motor Vessels; and
- b) privately operated yachts in excess of 24 metres loadline length used for sport or pleasure and which do not carry cargo and do not carry more than 12 passengers.

The certification system comprises a series of training modules, ancillary training, yacht service, and for certain qualifications an MCA oral examination. Success leads to the issue of a Marine Engine Operator's Licence (Yacht) or STCW 95 Engineer Officer (Yacht) certificates of competency. The Guidance Note covers:

Details of the certification system  
The criteria for certification  
Details of Training Modules  
Ancillary training requirements  
Manning scales for motor or sailing yachts (Annex A)  
Testimonial pro-forma (Annex B)  
Addresses of MCA Marine Offices and oral examination centres (Annex C)  
Training module syllabuses (Annex D)  
Addresses of Scottish Qualification Authority (SQA) written examination centres (Annex E)  
Oral examination syllabuses (Annex F)

This system came into effect on 1 September 2000.

<sup>1</sup>SI 1997/348 as amended by SI 1997/1911 and SI 2000/836

<sup>2</sup> Available from the Publications Department, International Maritime Organization, 4, Albert Embankment, London SE1 7SR.

## LATEST INDEX TO PARTS

<u>Part No.</u>	<u>Subject</u>	<u>Latest MGN Number</u>	<u>Issue Date</u>
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
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14	STCW 95 application to certificates of service	MGN 116 (M)	April 2000
15	Certification of inshore tug personnel	MGN 117 (M)	April 2000
16	Certification of inshore craft personnel (other than tugs)	MGN 126 (M)	November 2000
17	Certificates of competency or marine engine operator licences for service as an engineer officer on commercially and privately operated yachts and sail training vessels	This Note	
18	STCW 95 certificates of competency - conversion of tonnage limitations from GRT to gt	MGN164(M)	To be issued shortly

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*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 MCA's Code of Practice for Safety of Large Commercial Sailing & Motor Vessels, published in 1997, requires that engineering personnel serving on yachts and sail training vessels of less than 3,000 gt should be qualified in accordance with the UK's current Training and Certification Regulations.
- 1.2 However, since the introduction of STCW 95, which comes fully into force on 1 February 2002, it has become apparent that some engineering personnel serving on yachts of this type, may be unable to meet the full UK Merchant Navy requirements, as set out in the Merchant Shipping (Training and Certification) Regulations 1997.
- 1.3 In order to meet the international requirements and address the needs of professional seafarers serving on yachts and sail training vessels of less than 3,000 gt and under 9,000 kW propulsion power, and also privately operated yachts of a similar size not covered by the Code, the MCA, in consultation with the "large yacht" industry, sail training organisations and United Kingdom maritime colleges, has developed an alternative route to the gaining of engineer certification specifically limited to service in this sector of industry.
- 1.4 The route makes use of a series of training modules which include tuition, written examinations and ancillary training, and these, in conjunction with suitable engineering practical training and yacht service, permit entry to an MCA oral examination. Success in the MCA oral examination leads to the issue of either a STCW 95 certificate of competency limited to service on yachts and sail training vessels, or a Marine Engine Operator Licence limited to service on yachts and sail training vessels. No MCA oral examination or written examination is required for candidates taking the Approved Engine Course certificate.
- 1.5 The qualifications available through this route are:
  - a. MCA Approved Engine Course certificate (AEC); as required by the Code. These certificates are issued directly by MCA-approved Training Providers (details of these are available from the MCA's Seafarer Standards Branch, at the address at the front of this Note);
  - b. Marine Engine Operator Licence (Yacht) (MEOL(Y)). These licences are issued by the MCA after the candidate has satisfied the criteria set out in paragraph 6.2 below and has undertaken the approved education and training described in Annex D;
  - c. Chief Engineer Reg III/3 certificate of competency [referred to as "Yacht 4" or "Y4"];
  - d. Chief Engineer Reg III/2 certificate of competency (Chief Engineer "Service Endorsement") [referred to as "Yacht 3" or "Y3"];
  - e. Chief Engineer Reg III/2 certificate of competency [referred to as "Yacht 2" or "Y2"]; and
  - f. Chief Engineer Reg III/2 certificate of competency ("Large Yacht Endorsement"), [referred to as "Yacht 1" or "Y1"].
- 1.6 These qualifications, except the AEC and MEOL, will be issued in accordance with the requirements of STCW 95. The AEC and MEOL are not STCW certificates.
- 1.7 The certificates of competency listed in 1.5 above will be annotated with the following limitations and capacities:

**1.7.1 Chief Engineer Reg III/3 Certificate of Competency - (Yacht 4) or (Y4)**

<u>Capacity</u>	<u>Limitations Applying</u>
<b>Chief Engineer</b>	Commercially and privately operated yachts and sail training vessels less than 200 gt and less than 1,500 kW propulsion power.
<b>Second Engineer</b>	Commercially and privately operated yachts and sail training vessels less than 500 gt and less than 3,000 kW propulsion power.
<b>OOW Engineering</b>	Commercially and privately operated yachts and sail training vessels only.

**1.7.2. Chief Engineer Reg III/2 Certificate of Competency - (Yacht 3) or (Y3)  
(Chief Engineer "Service Endorsement")**

<u>Capacity</u>	<u>Limitations Applying</u>
<b>Chief Engineer</b>	Commercially and privately operated yachts and sail training vessels less than 500 gt and less than 3,000 kW propulsion power.
<b>Second Engineer</b>	Commercially and privately operated yachts and sail training vessels less than 3,000 gt and less than 3,000 kW propulsion power.
<b>OOW Engineering</b>	Commercially and privately operated yachts and sail training vessels only.

**1.7.3. Chief Engineer Reg III/2 Certificate of Competency - (Yacht 2) or (Y2)**

<u>Capacity</u>	<u>Limitations Applying</u>
<b>Chief Engineer</b>	Commercially and privately operated yachts and sail training vessels less than 3,000 gt and less than 3,000 kW propulsion power.
<b>Second Engineer</b>	Commercially and privately operated yachts and sail training vessels less than 3,000 gt and less than 6,000 kW propulsion power.
<b>OOW Engineering</b>	Commercially and privately operated yachts and sail training vessels only.

**1.7.4 Chief Engineer Reg III/2 Certificate of Competency - (Yacht 1) or (Y1)  
("Large Yacht Endorsement")**

<u>Capacity</u>	<u>Limitations Applying</u>
<b>Chief Engineer</b>	Commercially and privately operated yachts and sail training vessels less than 3,000 gt and less than 9,000 kW propulsion power.
<b>Second Engineer</b>	Commercially and privately operated yachts and sail training vessels only.
<b>OOW Engineering</b>	Commercially and privately operated yachts and sail training vessels only.

## 2.0 MANNING SCALES

- 2.1 The manning scales for the engineering personnel to be carried on motor or sailing yachts are laid out in Annex A. The suffix "Y" in the tables denotes certificates limited to yacht service. The Chief Engineer "Y" suffix is given an additional numerical designation of either 1, 2, 3 or 4; the number 1 indicating the highest category of Chief Engineer (Yacht), and number 4, the lowest. The equivalent STCW 95 Merchant Navy qualifications are denoted by the suffix "MN".
- 2.2 The equivalencies between STCW 95 and STCW 78 certificates of competency are shown below in paragraph 3.1, Table 1. Holders of STCW 78 certificates of competency may use these qualifications to continue in service in the equivalent ranks indicated in the manning scales in Annex A, until 1 February 2002. From this date STCW 78 certificates of competency MUST have been revalidated under STCW 95 to enable the holder to remain in service.
- 2.3 It should be noted from the manning scales shown in Annex A, that in addition to holding the requisite certificate of competency, MEOL, or AEC certificate, dependant upon the power of the yacht concerned, the engineer officer may have to attend an approved engine manufacturer's course appropriate to the engine type and power of the yacht.
- 2.4 For all yachts between 6,000 and 9,000 kW propulsion power and those over 3,000 kW propulsion power operating over 150 miles from a safe haven, the engineer officers will be required to hold a Chief Engineer Reg III/2 certificate of competency (Yacht 1) ("Large Yacht Endorsement"). Holders of United Kingdom Merchant Navy Second Engineer III/2 certificates of competency will be required to have these certificates endorsed with the additional Chief Engineer III/2 (Yacht 1) (<3,000 gt; <9,000 kW ) capacity and limitation. The award of this qualification is dependant upon successfully passing an MCA oral examination.

## 3.0 UK AND NON-UK EQUIVALENT MERCHANT NAVY QUALIFICATIONS

- 3.1 UK STCW 78 certificates of competency will be considered as equivalent to the STCW 95 certificates as shown below in Table 1.

**Table 1**

<b>STCW 95 Certificates of Competency</b>	<b>STCW 78 Certificates of Competency</b>
EOOW Reg. III/1 (Unlimited)	Class 4
Second Engineer Reg. III/3 (<3,000kW)	Class 4 E or Class 3
Chief Engineer Reg. III/3 (<3,000 kW)	Class 3 E
Second Engineer Reg. III/2 (Unlimited)	Class 2
Chief Engineer Reg. III/2 (Unlimited)	Class 1

**Note: STCW 78 certificates of competency MUST be revalidated to meet STCW 95 standards by 1 February 2002**

- 3.2 Non-UK STCW certificates of competency will be considered on their merits for entry to the UK yacht examination system.

#### **4.0. ELIGIBILITY REQUIREMENTS FOR “YACHT ” CERTIFICATES OF COMPETENCY AND LICENCES**

##### **4.1 Qualifying Yacht Service**

4.1.1 The qualifying yacht service specified for any particular engineer officer (yacht) certificate of competency or licence must be performed in the engineering department and is reckoned from the date of engagement to the date of discharge. At least 6 months of the qualifying yacht service must have been performed within the 5 years preceding the application. During the qualifying yacht service there is a requirement to complete a specified period of “actual” sea service. This “actual” sea service may be accumulated on a day by day basis. (A day at sea is any day when the vessel leaves port or is already at sea.)

4.1.2 Candidates will be required to present documentary proof of yacht service. Such proof should be in the form of any of the following:

- a. Merchant Navy Discharge Book; or
- b. Certificates of Discharge; or
- c. Professional Yachtsmen’s Service Record Book; or
- d. International Yachtmaster Training and Deliveries Personal Seetime Log Book; or
- e. similar MCA approved service record book.

4.1.3 Signed testimonials from owners, masters, chief engineers or superintendents should also be submitted. The testimonials must contain a statement confirming the candidate’s ability to speak and write in the English language. This ability will be confirmed during the MCA oral examination. The testimonials should be submitted in the format given at Annex B.

##### **4.2 General**

4.2.1 Candidates must be at least 19 years of age (18 years of age for the MEOL or AEC).

4.2.2 Sea service or other industrial training completed before the age of 16 years will not be accepted.

4.2.3 Candidates with significant experience but whose circumstances do not comply with the eligibility requirements, will be considered on their merits.

4.2.4 Candidates holding MN qualifications should consult the manning scales in Annex A to establish their eligibility for service on yachts appropriate to their qualifications. STCW 78 certificates of competency must be revalidated to STCW 95 standards by 1 February 2002.

#### **5.0. MEDICAL STANDARDS**

5.1 It is a UK and international requirement that all licensed or certificated officers meet certain medical and eyesight standards. Seafaring is a potentially hazardous occupation which calls for a high standard of health and fitness for those entering or re-entering the industry. All candidates should therefore arrange to be medically examined by an MCA approved medical practitioner (currently listed in Merchant Shipping Notice MSN 1750(M) and will be issued with a certificate (currently form ENG 1). Alternatively, those issued by a National Administration in compliance with the requirements of Article 2(a)(iii) of the Convention Concerning Minimum Standards in Merchant Ships, Convention 1976 (ILO No 147), under Regulations accepted as equivalent to Medical Examination (Seafarers) Convention 1946 (No 73) may be accepted.

5.2 The ENG 1 must specify the period of validity, from the date of the medical examination, subject to the following maximum periods:

Under 18 years	1 year
18 years and under 40	5 years
40 years and over	2 years

## 6.0. ENTRY AND EXAMINATION REQUIREMENTS

### 6.1 Approved Engine Course Certificate (AEC)

#### 6.1.1 Entry Requirements

Candidates must be:

- a. not less than 18 years of age;

and have successfully completed:

- b. (i) for candidates with no formal engineering craft training, not less than 1 month's service as a yacht engineer; or  
(ii) for candidates with MN MEOL basic engineering craft skills training or MCA - approved formal engineering craft training, no yacht engineer service is required.
- c. an Approved Engine Course (AEC) of not less than 30 hours duration;
- d. the ancillary courses listed in paragraph 9.1 below.

#### 6.1.2 Examination Requirements

- a. no written examination;
- b. no MCA oral examination required.

### 6.2 Marine Engine Operator Licence (Yacht) (MEOL(Y))

#### 6.2.1 Entry Requirements

Candidates must be:

- a. not less than 18 years of age; and
- b. hold a valid ENG 1 medical fitness certificate;

and have successfully completed:

- c. (i) 36 months service as a dual purpose deck/engineer officer responsible for the maintenance and servicing of the vessel, whilst holding an AEC certificate; or  
(ii) 24 months service as a yacht engineer responsible for system maintenance whilst holding an AEC certificate; or

- (iii) an MN MEOL basic engineering craft skills training or MCA-approved formal engineering craft training plus 18 months service as a yacht engineer responsible for system maintenance and repair;
- d. the ancillary courses listed in paragraph 9.2 below .

### **6.2.2 Examination Requirements**

- a. success in the MCA oral examination.

## **6.3 Chief Engineer Certificate of Competency - (Yacht 4)**

### **6.3.1 Entry requirements**

Candidates must be

- a. not less than 19 years of age; and
- b. hold a valid ENG 1 medical fitness certificate;

and have successfully completed:

- c.
  - (i) 42 months service as a yacht engineer which must include at least 6 months accumulated actual sea service; or
  - (ii) an MN MEOL basic engineering craft skills training or MCA approved formal engineering craft training plus 36 months service as a yacht engineer which must include at least 6 months accumulated actual sea service; or
  - (iii) a UK engineering craft apprenticeship acceptable to the MCA plus 12 months service as a yacht engineer which must include at least 6 months accumulated actual sea service; or
  - (iv) 12 months service as a yacht engineer which must include at least 6 months accumulated actual sea service; whilst holding a MEOL(Y); or
  - (v) 12 months service as a yacht engineer whilst holding a MEOL( MN); or
  - (vi) 6 months service as a yacht engineer whilst holding a MN Senior Marine Engine Operator licence;
- d. the ancillary courses listed in paragraph 9.2 below .

### **6.3.2 Examination Requirements**

- a. completion of the yacht engineer officer training modules including success in the written examinations;
- b. success in the MCA oral examination.



## **6.4 Chief Engineer Certificate of Competency - (Yacht 3)** (Chief Engineer "Service Endorsement")

### **6.4.1 Entry Requirements**

Candidates must hold

- a. a valid ENG 1 medical fitness certificate;

and have successfully completed:

- b. 9 months service as a yacht engineer which must include at least 3 months accumulated actual sea service whilst holding a Chief Engineer certificate of competency (Yacht 4).

### **6.4.2 Examination Requirements**

- a. completion of the Yacht Module – "Chief Engineer Statutory and Operational Requirements" including success in the module written examination;
- b. success in the MCA oral examination.

Note: A Chief Engineer holding the Chief Engineer certificate of competency (Yacht 3) will not be required to retake this module if he/she subsequently wishes to obtain a Chief Engineer certificate of competency (Yacht 2).

## **6.5 Chief Engineer Certificate of Competency - (Yacht 2)**

### **6.5.1 Entry Requirements**

Candidates must hold

- a. a valid ENG 1 medical fitness certificate;

and have successfully completed:

- b. (i) 24 months service as a yacht engineer which must include at least 12 months accumulated actual sea service whilst holding a Chief Engineer certificate of competency (Yacht 4); or
- (ii) 15 months service as a yacht engineer which must include at least 9 months accumulated actual sea service whilst holding a Chief Engineer certificate of competency (Yacht 3) (Chief Engineer "Service Endorsement"); or
- (iii) 9 months service as a yacht engineer which must include at least 3 months accumulated actual sea service whilst holding a UK Merchant Navy STCW 95 Engineer Officer of the Watch, Reg III/1 certificate of competency or UK recognized equivalent; or
- (iv) 6 months service as a yacht engineer whilst holding a UK Merchant Navy STCW 95 Second Engineer, Reg III/3 (less than 3,000 kW) certificate of competency or UK recognized equivalent;
- c. the ancillary courses listed in paragraph 9.2 below .

## 6.5.2 Examination Requirements

- a. completion of the yacht engineer officer training modules including success in the written examinations
- b. success in the MCA oral examination.

## 6.6 Chief Engineer Reg III/2 Certificate of Competency - (Yacht 1) ("Large Yacht Endorsement")

### 6.6.1 Entry Requirements

Candidates must hold

- a. a valid ENG 1 medical fitness certificate;

and have successfully completed:

- b. 12 months service as a yacht engineer on a motor yacht of between 500 to 3,000 gt and not less than 3,000 kW propulsion power, whilst in possession of the Chief Engineer certificate of competency (Yacht 2); or
- c. 12 months service as a yacht engineer on a sailing yacht of between 1,000 to 3,000 gt and not less than 1,500 kW propulsion power, whilst in possession of the Chief Engineer certificate of competency (Yacht 2); or
- d. 6 months service as yacht engineer on a yacht of between 500 to 3,000 gt and not less than 3,000 kW propulsion power, whilst in possession of a UK Merchant Navy STCW 95 Second Engineer, Reg III/2 (unlimited) certificate of competency.

### 6.6.2 Examination Requirements

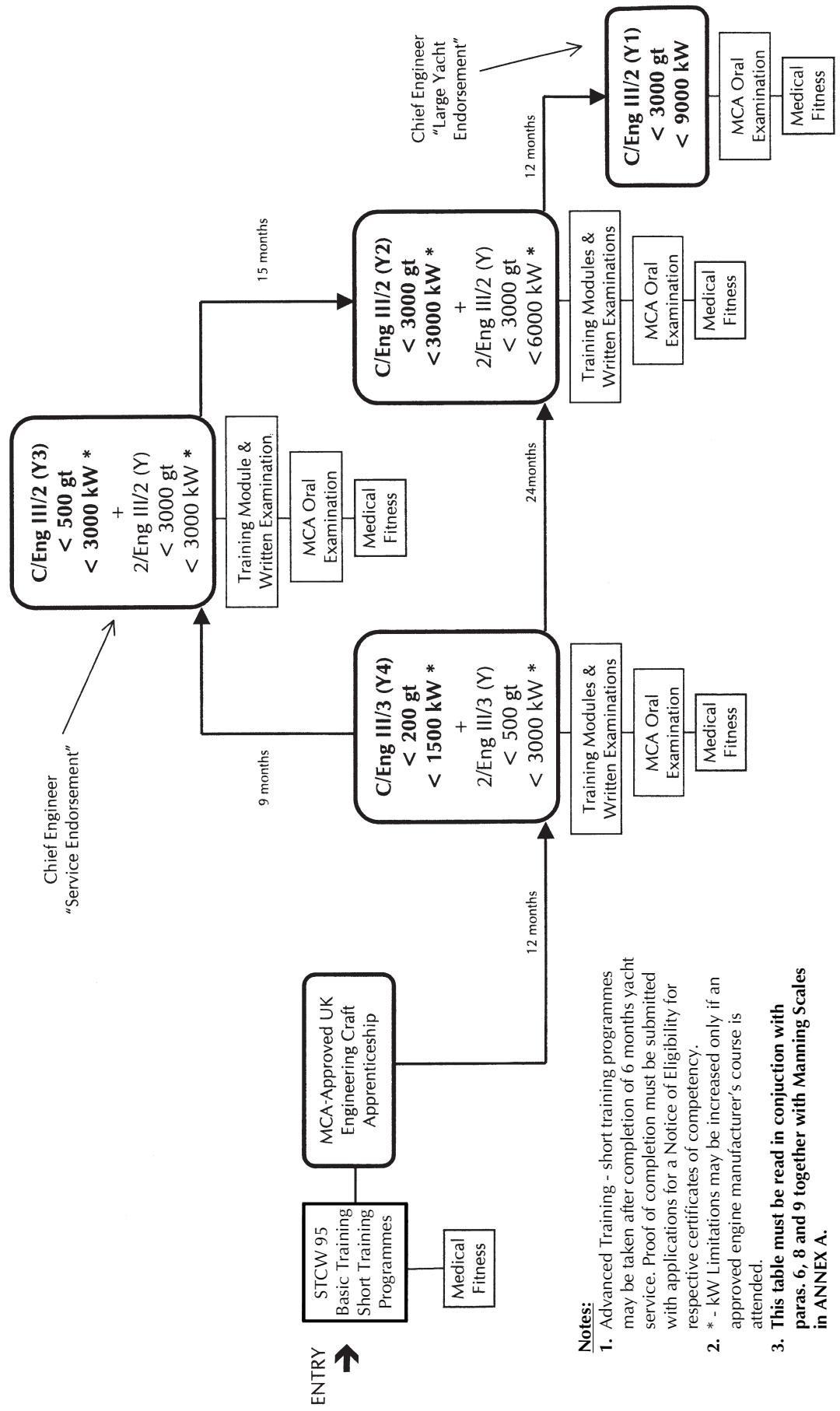
- a. success in the MCA oral examination.

## 6.7 Engineer Officer (Yacht) Certification Progression

6.7.1 There are two routes for progression to engineer officer (yacht) certification: one relates to personnel who have completed a UK craft apprenticeship, and the other to non-UK personnel or UK personnel who have not completed a UK craft apprenticeship. Further information on the various requirements for progression to each level of certification is illustrated in Tables 2 and 3 overleaf (pages 11-12).

Table 2

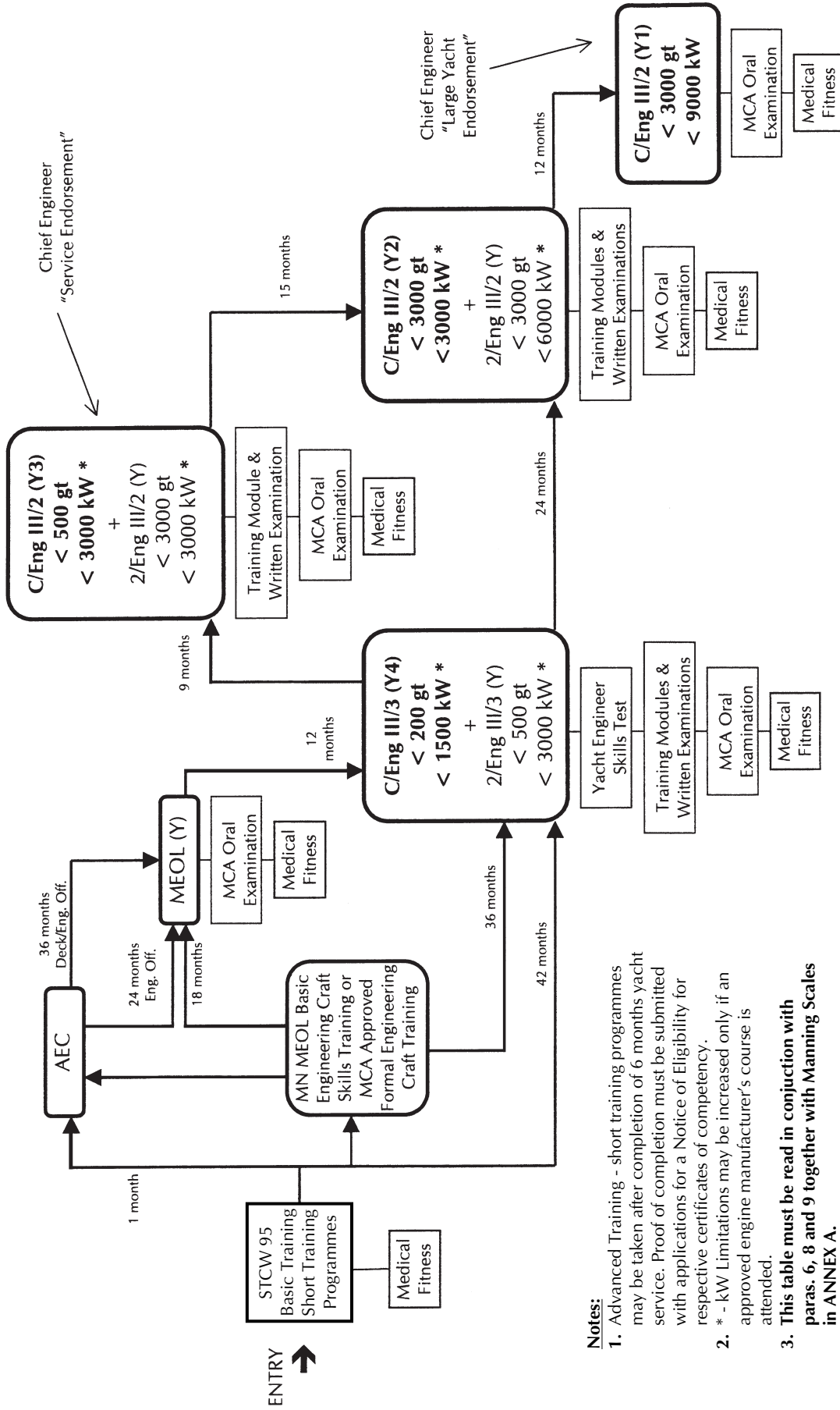
Progression to Engineer Officer (Yacht) Certification  
by the UK - Craft Apprenticeship Entry Route



**Notes:**

1. Advanced Training - short training programmes may be taken after completion of 6 months yacht service. Proof of completion must be submitted with applications for a Notice of Eligibility for respective certificates of competency.
2. \* - kW Limitations may be increased only if an approved engine manufacturer's course is attended.
3. **This table must be read in conjunction with paras. 6, 8 and 9 together with Manning Scales in ANNEX A.**

Table 3 Progression to Engineer Officer (Yacht) Certification by the Non - UK Entry Route or Non - Craft Training Entry Route



- Notes:**
- Advanced Training - short training programmes may be taken after completion of 6 months yacht service. Proof of completion must be submitted with applications for a Notice of Eligibility for respective certificates of competency.
  - \* - kW Limitations may be increased only if an approved engine manufacturer's course is attended.
  - This table must be read in conjunction with paras. 6, 8 and 9 together with Manning Scales in ANNEX A.**

## **7.0. EXPERIENCED YACHT ENGINEERS (UNCERTIFICATED)**

- 7.1 Existing uncertificated yacht engineers who have not less than 5 years yacht service including 12 months accumulated actual sea service prior to 1 September 2000, which can be verified, may be eligible to take the Chief Engineer (Yacht 2) certificate of competency examinations directly without having to take the Chief Engineer (Yacht 4) certificate of competency examinations. Eligibility will be assessed upon application to the Seafarer Standards Branch of the MCA as detailed in paragraph 11 below. In addition, candidates will be required to take the Skills Test Module, as detailed in Annex D, for the Chief Engineer (Yacht 4) certificate of competency, unless they have completed a UK engineering craft apprenticeship or equivalent acceptable to the MCA, or have completed the UK MN MEOL basic engineering craft skills training.
- 7.2 The qualifying yacht service specified for any particular engineer officer (yacht) certificate of competency or licence must be performed in the engineering department and is reckoned from the date of engagement to the date of discharge. At least 6 months of the qualifying yacht service must have been performed within the 5 years preceding the application.
- 7.3 Dual Purpose (deck/engineer) officers who have not less than 3 years yacht service prior to 1 September 2000, which can be verified, may be eligible to take the MEOL(Y). These candidates will not necessarily hold an AEC course certificate.
- 7.4 Yacht engineers and dual purpose (deck/engineer) officers who qualify under this category MUST submit their applications by 1 February 2002 and complete all written and oral examinations by 31 August 2004.

## **8.0 TRAINING MODULES**

- 8.1 The modules required to be completed for the various certificates of competency are as follows:

### **8.2 Chief Engineer Certificate of Competency - (Yacht 4)**

- a. Skills test – exemption may be given to those candidates who have completed a UK engineering craft apprenticeship acceptable to the MCA, or have completed the UK Merchant Navy Marine Engine Operator licence (MEOL) basic engineering craft skills training;
- b. Marine Diesel Engineering;
- c. Auxiliary Equipment and Basic Ship Construction;
- d. Operational Procedures and Basic Hotel Services.

### **8.3 Chief Engineer Certificate of Competency - (Yacht 3)**

- a. Chief Engineer Statutory and Operational Requirements.

### **8.4 Chief Engineer Certificate of Competency - (Yacht 2)**

- a. General Engineering Science I;
- b. General Engineering Science II;
- c. Applied Marine Engineering;
- d. Advanced Hotel Services;
- e. Chief Engineer Statutory and Operational Requirements.

## 9.0. ANCILLARY COURSES

- 9.1 All new entrant yacht engineers and those who have completed less than 6 months yacht service on 1 September 2000 must successfully complete the following elements of approved basic training:
- a. Personal Survival Techniques (STCW Code A-VI/1-1);
  - b. Fire Prevention and Fire Fighting (STCW Code A-VI/1-2);
  - c. Elementary First Aid (STCW Code A-VI/1-3);
  - d. Personal Safety and Social Responsibilities (STCW Code A-VI/1-4).
- 9.2 All yacht engineers having gained the basic training courses listed in 9.1 above and who have completed 6 months yacht service may gain entry to the “advanced” ancillary training courses listed below. Successful completion of these “advanced” courses will be an entry requirement for applicants for MCA certificates of competency or licences.
- a. Proficiency in Survival Craft and Rescue Boats (PSC & RB)(STCW Code A-V1/2-1), or Sea Survival for Yachtsmen (as described in MGN 14 (M));
  - b. Training in Advanced Fire Fighting (STCW Code A-V1/3);
  - c. Proficiency in Medical First Aid (STCW Code A-V1/4-1).
- 9.3 Existing yacht engineers who have completed more than 6 months yacht service prior to 1 September 2000 may be exempt from the basic training courses listed in 9.1 above at the discretion of the training providers, following assessment. However, existing yacht engineers must successfully complete the “advanced” training courses listed above, as they are an entry requirement for applicants seeking MCA certificates of competency or licences.
- 9.4 Training providers may require yacht engineers to undertake a smoke test using compressed air breathing apparatus (CABA) prior to taking the Training in Advanced Fire Fighting Course in 9.2 above. In addition they may be required to undertake a wet drill including the righting of a life raft prior to taking the Proficiency in Survival Craft and Rescue Boat Course in 9.2 above.
- 9.5 Alternatively, existing yacht engineers may be exempt from taking certain of the courses listed in 9.2 above provided they have successfully completed an equivalent ancillary course listed below, prior to the 1 September 2000. These ancillary courses are an alternative entry requirement for existing yacht engineers applying for MCA certificates of competency and licences.
- a. Certificate of Proficiency in Survival Craft (CPSC);
  - b. Lifeboatman Certificate;
  - c. Sea Survival for Yachtsmen (described in MGN 14 (M));
  - d. Merchant Navy Training Board Stage 2 (4-day) Fire Fighting;
  - e. First Aid at Sea.

## 10.0 EXAMINATIONS – GENERAL INFORMATION

- 10.1 All written and oral examinations will be in the English Language.
- 10.2 **Written Examinations** - the written examinations are administered on behalf of the Maritime and Coastguard Agency (MCA) by the Scottish Qualifications Authority (SQA). They are held at their examination centres in the United Kingdom or by special arrangement at Overseas Centres. Annex E lists the SQA centres where the written examination may be taken. A Marine Information Note will be issued annually giving details of examination dates.
- 10.3 Annex D gives details of module syllabuses and indicate which ones are examined by in-course assessment and written examination. The duration of the written examination is two hours which will normally be held on the final day of the module course.
- 10.4 All module written examinations (except the academic subjects of General Engineering Science I and II) and the MCA oral examination, must be passed within a three year period prior to the date of issue of a certificate of competency or licence.
- 10.5 The Chief Engineer certificate of competency (Yacht 2) academic modules of General Engineering Science I and II may be taken prior to completion of the necessary yacht service time for this certificate.
- 10.6 Candidates who have obtained a United Kingdom Marine or Mechanical Engineering National or Higher National Diploma/Certificate may be exempted from the academic module written examinations General Engineering Science I and II on a subject for subject basis, and should apply for an assessment to the Seafarer Standards Branch of the MCA as described in paragraph 11 below.
- 10.7 Information with respect to establishments which are approved to conduct the ancillary training courses may be obtained from the Seafarer Standards Branch or from any MCA Marine Office listed in Annex C.
- 10.8 **Oral Examinations** - Candidates for yacht certificates of competency or Marine Engine Operator Licences (Yacht) are required to take an oral examination conducted by an MCA examiner at an MCA Marine Office as described in paragraph 12 below. Annex C lists the offices in the United Kingdom where the oral examinations are held. Oral examinations will only be conducted Monday to Friday during normal office hours, not at weekends or public holidays. Oral examinations may be held at overseas centres by special arrangement. The oral examination is aimed at the candidates ability to undertake the duties of Marine Engine Operator or Chief Engineer as appropriate. All candidates must demonstrate an adequate knowledge of the English language.

## 11.0 APPLICATION PROCEDURE

- 11.1 All candidates for certificates of competency and MEOLs must have their eligibility assessed by the MCA and be issued with a Notice of Eligibility (NOE) prior to undertaking any approved education and training modules defined in Annex D. Candidates are also required to hold an NOE prior to taking any written or oral examination.
- 11.2 Application forms for a NOE, together with an information pack, may be obtained from the MCA Seafarer Standards Branch at the address given in this Guidance Note.
- 11.3 Completed application forms, accompanied by the appropriate fee, evidence of required ancillary training, medical fitness, details of yacht service and/or sea service, yacht and/or sea service testimonials, and craft apprenticeship details, if any, and other documents listed in the application form, must be sent to the Seafarer Standards Branch, allowing 28 days for processing.

## 12. ORAL EXAMINATIONS

- 12.1 In order to arrange an MCA oral examination, the candidate should send the NOE to the MCA examination centre of choice listed in Annex C, to arrange a suitable oral examination appointment time and date.
- 12.2 When attending for examination the following documents should be produced for scrutiny by the examiner:
- a. Notice of Eligibility;
  - b. an Approved Engine Course (30 hour diesel) certificate (AEC), (if held);
  - c. Professional Yachtsmen's Service Record Book; or
  - d. International Yachtmaster Training and Deliveries Personal Seetime Log Book; or
  - e. similar service record book;
  - f. certificate of competency (if held).
- 12.3 Examiners will use the appropriate examination syllabuses, as detailed in Annex F.
- 12.4 The result of the oral examination will be entered on the NOE by the MCA examiner. A candidate failing the oral examination will receive verbal feedback from the examiner, indicating the functions(s)/topic(s) in which the candidate was deemed to have failed.
- 12.5 A candidate passing the oral examination, will have the NOE returned to him or her. The NOE should be retained until all other requirements have been met and should then be sent together with relevant documentation and existing certificate of competency (if held) to the Seafarer Standards Branch. A new certificate of competency or licence will then be issued or if appropriate, an existing one will be endorsed.
- 12.6 If a candidate fails the oral examination and wishes to re-sit the examination, the NOE (showing the "failed" entry) together with the relevant fee, should be sent to the Seafarer Standards Branch, and a new NOE will be issued. Candidates will not be re-examined within two weeks of having failed.
- 12.7 A candidate failing the oral examination through serious weakness may, at the examiner's discretion, be given a time penalty which may include a requirement to complete a period of sea service before becoming eligible to re-sit the examination.
- 12.8 A candidate not appearing for an oral examination at the appointed time may be failed by default unless reasonable proof can be provided that the failure to attend was unavoidable.
- 12.9 Any candidate involved in irregular behaviour (such as cheating) will be failed in the oral examination, and the circumstances reported to the MCA's Chief Examiner. The circumstances of reported cases will be considered individually, and such consideration may result in the candidate being barred from sitting the oral examination, either for a specific period, or until further sea service has been completed by the candidate.

## 13.0 REVALIDATION

- 13.1 Every engineer officer holding a certificate of competency issued or recognised under STCW 78 or STCW 95 who wishes to serve at sea, is required to revalidate the certificate at intervals not exceeding 5 years .



13.2 Officers holding certificates (and marine engine operator licences) issued under STCW 78 have two options for revalidation. One is to revalidate under the requirements of STCW 78, in which case the certificate will cease to be valid on 1 February 2002. Alternatively, the certificate may be revalidated for five years under the requirements of STCW 95. These alternatives are explained in Part 9 of this series and on the revalidation application form, which may be obtained from any MCA Marine Office, or the Seafarer Standards Branch.

13.3 All candidates for revalidation must:

- 1 meet the medical fitness requirements of the Merchant Shipping (Medical Examination) Regulations 1983 and produce a valid medical fitness certificate (see Part 1 for further details); *and*
- 2 for service in the **engine** department, have served as an engineer officer on yachts and sail training vessels of less than 3,000gt and under 9,000kW propulsion power, of any flag for at least 12 months (which need not be continuous) during the preceding 5 years.

13.4 Engineer officers who do not meet the requirements of paragraph 13.3 above may serve on yachts and sail training vessels, in a supernumerary capacity for 3 months before applying for revalidation of the certificate. During this period officers are expected to update their professional knowledge. Officers who have served at sea in an engineering capacity, on vessels described above, for at least 3 months immediately prior to the expiry of their certificate may also apply for revalidation within 3 months after the expiry date.

13.5 Engineer officers who do not meet the revalidation criteria above may, alternatively sail in a lower rank than that for which they are certificated, for 3 months before applying for revalidation of their certificate. In order to do this they must first contact an MCA Marine Office and apply on form MSF 4258 for a revalidation oral examination by an MCA examiner. Successful candidates, who must present a valid medical fitness certificate to the examiner, will be issued with a certificate of **dispensation**, which may be presented to interested parties as confirmation of their eligibility for service at a lower rank. Those who wish to restrict their service to a certain type of vessel may elect to be examined only on that type of vessel, in which case the certificate of dispensation will indicate any such limitation.

#### 14.0 Further Information

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

14.2 Additional contacts:

- (i) Professional Yachtsmen's Association (PYA)  
BP 41  
06601 ANTIBES  
France  
Tel: (33) 0493349116  
Fax: (33) 0493342183
- (ii) International Yachtmaster Training and Deliveries  
1510 South East 17th Street  
Suite 200  
FORT LAUDERDALE  
Florida  
33316  
USA  
Tel: 00 1 954 779 7764  
Fax: 00 1 954 779 7165

**MANNING SCALE FOR COMMERCIALLY AND PRIVATELY OPERATED MOTOR YACHTS  
OVER 24 M**

**ENGINEER OFFICERS**

AREA	VESSEL					
	RANK	>24 m <200 gt < 1500 kW	>24 m 200 – 500 gt <3000 kW	>24m 500 - 3000 gt <3000 kW	>24 m 500 - 3000 gt >3000 kW - <6000 kW	>24 m 500 - 3000 gt >6000 kW - <9000 kW
UP TO 60	CHIEF ENGINEER	AEC <sup>1 3</sup>	EOOW (MN) (Reg III/1) or C/Eng (Y4) <sup>1</sup> (Reg III/3)	C/Eng (MN) (Reg III/3) or C/Eng (Y3) (Reg III/2)	C/Eng (MN) (Reg III/3) or C/Eng (Y2) <sup>2</sup> (Reg III/2)	2/Eng (MN) <sup>4</sup> (Reg III/2) or C/Eng (Y1) (Reg III/2)
	SECOND ENGINEER	-	-	EOOW (MN) (Reg III/1) or C/Eng (Y4) (Reg III/3)	EOOW (MN) (Reg III/1) or C/Eng (Y3) <sup>2</sup> (Reg III/2)	2/Eng (MN) <sup>2</sup> (Reg III/3) or C/Eng (Y3) <sup>2</sup> (Reg III/2)
UP TO 150	CHIEF ENGINEER	MEOL (MN) or MEOL(Y) <sup>1 3</sup>	2/Eng (MN) (Reg III/3) or C/Eng (Y3) <sup>2</sup> (Reg III/2)	C/Eng (MN) (Reg III/3) or C/Eng (Y2) (Reg III/2)	C/Eng (MN) (Reg III/3) or C/Eng (Y2) <sup>2</sup> (Reg III/2)	2/Eng (MN) <sup>4</sup> (Reg III/2) or C/Eng (Y1) (Reg III/2)
	SECOND ENGINEER	-	-	EOOW (MN) (Reg III/1) or C/Eng (Y3) (Reg III/2)	EOOW (MN) (Reg III/1) or C/Eng (Y3) <sup>2</sup> (Reg III/2)	2/Eng (MN) (Reg III/2) or C/Eng (Y2) <sup>2</sup> (Reg III/2)
OVER 150	CHIEF ENGINEER	2/Eng (MN) (Reg III/3) or C/Eng (Y4) <sup>1</sup> (Reg III/3)	C/Eng (MN) (Reg III/3) or C/Eng (Y3) <sup>2</sup> (Reg III/2)	C/Eng (MN) (Reg III/3) or C/Eng (Y2) (Reg III/2)	2/Eng (MN) <sup>4</sup> (Reg III/2) or C/Eng (Y1) (Reg III/2)	2/Eng (MN) <sup>4</sup> (Reg III/2) or C/Eng (Y1) (Reg III/2)
	SECOND ENGINEER	MEOL (MN) <sup>3</sup> or MEOL (Y) <sup>3</sup>	EOOW (MN) (Reg III/1) or C/Eng (Y4) (Reg III/3)	EOOW (MN) (Reg III/1) or C/Eng (Y3) (Reg III/2)	2/Eng (MN) <sup>2</sup> (Reg III/3) or C/Eng (Y3) <sup>2</sup> (Reg III/2)	2/Eng (MN) (Reg III/2) or C/Eng (Y1) (Reg III/2)

## NOTES

Superscripts indicated in the above table are defined as follows:

- 1 Over 1,500 kW and less than 3,000 kW propulsion power: certificate holder is required to have attended an approved engine manufacturer's course appropriate to the engine type and power range.
- 2 Over 3,000 kW and less than 6,000 kW propulsion power: certificate holder is required to have attended an approved engine manufacturer's course appropriate to the engine type and power range.
- 3 Can be dual purpose (deck/engineer) if the yacht has been assigned a classification society UMS notation for unmanned machinery space operation or fulfils the following criteria:
  - (i) it has full bridge control of main engine manoeuvring;
  - (ii) it is fitted with high level bilge alarms in the machinery space;
  - (iii) the engine room alarm system, including the fire alarm if fitted, is relayed to the accommodation and/or the bridge.
- 4 Holders of United Kingdom Merchant Navy Second Engineer III/2 certificates of competency are required to have these certificates endorsed with the additional Chief Engineer III/2 (Yacht 1) (< 3,000 gt; < 9,000 kW) capacity and limitation ("Large Yacht Endorsement").

EOOW - Engineering Officer of the Watch

### MERCHANT NAVY CERTIFICATES OF COMPETENCY EQUIVALENCY

STCW 95 Certificates of Competency	STCW 78 Certificates of Competency
EOOW Reg. III/1 (unlimited)	Class 4
Second Engineer Reg. III/3 (<3,000 kW)	Class 4E or Class 3
Chief Engineer Reg. III/3 (<3,000 kW)	Class 3E
Second Engineer Reg. III/2 (unlimited)	Class 2
Chief Engineer Reg. III/2 (unlimited)	Class 1

#### Note:

STCW 78 certificates of competency MUST be revalidated to meet STCW 95 standards by 1 February 2002.

### GAS TURBINE POWERED YACHTS OVER 24 M

On ALL yachts with gas turbine propulsion, or gas turbine propulsion in addition to diesel engine propulsion, the Chief Engineer is required to have attended an approved gas turbine manufacturer's course.

The manning scale for yachts with gas turbine propulsion, or gas turbine propulsion in addition to diesel engine propulsion, is identical to the above table for motor yachts.

**MANNING SCALE FOR COMMERCIALY AND PRIVATELY OPERATED SAILING YACHTS  
OVER 24 M**

**ENGINEER OFFICERS**

AREA	VESSEL				
	RANK	>24 m <200 gt <750 kW	>24 m 200 - 500 gt <1500 kW	>24m 500 - 1000 gt <1500 kW	>24 m 1000 – 3000 gt <3000 kW
UP TO 60	CHIEF ENGINEER	AEC <sup>1</sup>	EOOW (MN) (Reg III/1) or C/Eng (Y4) (Reg III/3)	2/Eng (MN) (Reg III/3) or C/Eng (Y3) (Reg III/2)	C/Eng (MN) (Reg III/3) or C/Eng (Y2) <sup>2</sup> (Reg III/2)
	SECOND ENGINEER	-	-	-	-
UP TO 150	CHIEF ENGINEER	MEOL (MN) or MEOL(Y) <sup>1</sup>	2/Eng (MN) (Reg III/3) or C/Eng (Y3) (Reg III/2)	2/Eng (MN) (Reg III/3) or C/Eng (Y3) (Reg III/2)	C/Eng (MN) (Reg III/3) or C/Eng (Y2) <sup>2</sup> (Reg III/2)
	SECOND ENGINEER	-	-	MEOL (MN) or MEOL(Y) <sup>1</sup>	EOOW (MN) (Reg III/1) or C/Eng (Y3) <sup>2</sup> (Reg III/2)
OVER 150	CHIEF ENGINEER	MEOL (MN) or MEOL(Y) <sup>1</sup>	2/Eng (MN) (Reg III/3) or C/Eng (Y3) (Reg III/2)	2/Eng (MN) (Reg III/3) or C/Eng (Y3) (Reg III/2)	2/Eng (MN) <sup>3</sup> (Reg III/2) or C/Eng (Y1) (Reg III/2)
	SECOND ENGINEER	-	MEOL (MN) or MEOL(Y) <sup>1</sup>	MEOL (MN) or MEOL(Y) <sup>1</sup>	EOOW (MN) (Reg III/1) or C/Eng (Y3) <sup>2</sup> (Reg III/2)

## Notes

### Superscripts indicated in the above table are defined as follows:

- 1 Can be dual purpose (deck/engine) if the yacht has been assigned a classification society UMS notation for unmanned machinery space operation or fulfils the following criteria:
  - (i) it has full bridge control of main engine manoeuvring;
  - (ii) it is fitted with high level bilge alarms in the machinery space;
  - (iii) the engine room alarm system, including the fire alarm if fitted, is relayed to the accommodation and/or the bridge.
- 2 Over 3,000 kW and less than 6,000 kW propulsion power: the certificate holder is required to have attended an approved engine manufacturer's course appropriate to the engine type and power range.
- 3 Holders of United Kingdom Merchant Navy Second Engineer III/2 certificates of competency are required to have these certificates endorsed with the additional Chief Engineer III/2 (Yacht 1) (<3,000 gt; <9,000 kW) capacity and limitation ("Large Yacht Endorsement").

### MERCHANT NAVY CERTIFICATES OF COMPETENCY EQUIVALENCY

STCW 95 Certificates of Competency	STCW 78 Certificates of Competency
EOOW Reg. III/1 (unlimited)	Class 4
Second Engineer Reg. III/3 (<3,000 kW)	Class 4E or Class 3
Chief Engineer Reg. III/3 (<3,000 kW)	Class 3E
Second Engineer Reg. III/2 (unlimited)	Class 2
Chief Engineer Reg. III/2 (unlimited)	Class 1

#### Note:

STCW 78 certificates of competency MUST be revalidated to meet STCW 95 standards by 1 February 2002

TESTIMONIAL PRO-FORMA

COMMERCIALLY AND PRIVATELY OPERATED YACHTS AND SAIL TRAINING VESSELS

ENGINEER OFFICER TESTIMONIAL

This is to certify that:

Full Name:.....

Date of Birth:.....

has served on the yacht/sail training vessel\* (name).....

Motor/Sail\* Length (m)..... Gross Tons(gt)..... Propulsion Power (kW).....

Type of main engines.....Type of auxiliary engines.....

between ...../...../..... and ...../...../.....

During this period of service, the above-named officer served in the following capacity(s) (complete as appropriate)

Chief Engineer for ..... months

Second Engineer for ..... months

Engineer Watchkeeper for ..... months

The above yacht service includes ..... months ..... days of actual sea service time.

The above-named officer is able to converse and write in the English language.

Signed:.....

Name (Print).....

Position on yacht or in owning/managing company\* .....

Name of owning/managing company\* .....

Yacht/Company Stamp\*

Date:.....

\* Delete as appropriate

## ADDRESSES OF MCA MARINE OFFICES WHERE ORAL EXAMINATIONS ARE HELD

- |     |                                                                                                      |                                          |
|-----|------------------------------------------------------------------------------------------------------|------------------------------------------|
| 1.  | <b>Aberdeen</b> Marine Office<br>Blaikies Quay<br>Aberdeen AB11 5EZ                                  | Tel: 01224 597 900<br>Fax: 01224 571 920 |
| 2.  | <b>Belfast</b> Marine Office<br>Queens Square<br>Belfast BT1 3ET                                     | Tel: 0289 056 2962<br>Fax: 0289 056 2960 |
| 3.  | <b>Beverley</b> Marine Office<br>Crosskill House<br>Mill Lane, Beverley<br>North Humberside HU17 9JB | Tel: 01482 866 606<br>Fax: 01482 869 989 |
| 4.  | <b>Cardiff</b> Marine Office<br>Oxford House<br>Hills Street<br>Cardiff CF1 2TD                      | Tel: 02920 229 556<br>Fax: 02920 229 017 |
| 5.  | <b>Glasgow</b> Marine Office<br>6000 Academy Park<br>Gower Street<br>Glasgow G51 1TR                 | Tel: 0141 427 9400<br>Fax: 0141 427 9401 |
| 6.  | <b>Leith</b> Marine Office<br>1, John's Place<br>Leith<br>Edinburgh EH6 7EL                          | Tel: 0131 554 5488<br>Fax: 0131 554 7689 |
| 7.  | <b>Liverpool</b> Marine Office<br>Graeme House<br>2nd Floor, Derby Square<br>Liverpool L2 7SQ        | Tel: 0151 471 1142<br>Fax: 0151 471 1143 |
| 8.  | <b>London</b> Marine Office<br>Central Court,<br>1B Knoll Rise, Orpington<br>Kent BR6 0JA            | Tel: 01689 890 400<br>Fax: 01689 890 446 |
| 9.  | <b>MCA Tyne</b><br>Compass House<br>Unit 1, Tyne Dock,<br>South Shields,<br>Tyne and Wear NE34 9PY   | Tel: 0191 496 9900<br>Fax: 0191 496 9901 |
| 10. | <b>Plymouth</b> Marine Office<br>Fish Market<br>Baylys Wharf, Fish Quay<br>Plymouth PL4 OLH          | Tel: 01752 266 211<br>Fax: 01752 225 826 |
| 11. | <b>Southampton</b> Marine Office<br>Spring Place<br>105 Commercial Road<br>Southampton SO15 1EG      | Tel: 023 80 329329<br>Fax: 023 80 329351 |

## MODULE SYLLABUSES

**APPROVED ENGINE COURSE CERTIFICATE (AEC)****Approved Engine Course - 30 hour diesel engine course**

To cover:           compression ignition engine (general principles);  
                           cycle of operation and constructional details;  
                           fuel system;  
                           role of air in the combustion process;  
                           cooling system;  
                           lubrication system;  
                           engine electrical systems;  
                           power transmission;  
                           hull fittings;  
                           pollution legislation;  
                           Code of Safe Working Practices;  
                           bottled LPG installations.

Note: Fault finding and rectification will be covered within each part of the syllabus as the individual topics are covered.

**MARINE ENGINE OPERATOR LICENCE (YACHT) (MEOL(Y))**

A 30 hour preparatory course to cover the MCA oral examination syllabus in Annex F may be obtained from the training providers.

**CHIEF ENGINEER CERTIFICATE OF COMPETENCY - (YACHT 4)**

**Skills Test - 10 days (Apprentices exempt)**

*Examined by in-course assessment*

To cover:           interpretation of drawings;  
                           use and care of hand tools  
                           use of measuring equipment;  
                           safe use of portable power tools;  
                           safe use of drilling machines;  
                           safe use of off-hand grinders;  
                           metal joining - welding, brazing, soldering;  
                           gas cutting;  
                           mechanical joints - gaskets, flanges, couplings;  
                           assembly skills;  
                           electrical testing and wiring.

**Marine Diesel Engineering - 5 day course**

*Examined in a 2 hour written examination, on the last day of the 5 day course*

To cover:           working principles of diesel engines and petrol engines;  
                           constructional details;  
                           operation and maintenance;  
                           heat exchangers and cooling systems;  
                           fuel oils and preparation;  
                           lubrication system;  
                           turbochargers;  
                           starting systems



**Operational Procedures and Basic Hotel Services - 5 day course**

*Examined in a 2 hour written examination on the last day of the 5 day course*

To cover:        keeping the log;  
                      taking over and accepting a watch;  
                      routine watchkeeping duties;  
                      bunkering and anti-pollution procedures;  
                      oily water separator - construction and use;  
                      principles of hydraulics and pneumatics;  
                      applications for hydraulics;  
                      principles of refrigeration/air conditioning;  
                      water generators - principles and maintenance;  
                      sewage treatment.

**Auxiliary Equipment and Basic Ship Construction - 5 day course**

*Examined by a 2 hour written examination on the last day of the 5 day course*

To cover:        steering and stabilizer systems;  
                      pumps - working principles and construction;  
                      valves - types and uses;  
                      generators - construction and use;  
                      gearboxes and clutches;  
                      shafting, seals and bearings;  
                      basic electrical theory and practice;  
                      batteries - maintenance and safety;  
                      basic ship construction technology;  
                      basic knowledge of hull stresses in motor and sailing vessels.

**CHIEF ENGINEER CERTIFICATE OF COMPETENCY - (YACHT 3)**

*("Chief Engineer Service Endorsement")*

**Chief Engineer Statutory and Operational Requirements - 5 day course**

*Examined by a 2 hour written examination on last day of 5 day course*

To cover:        health and safety at work;  
                      pollution control regulations;  
                      'M' notices;  
                      international conventions;  
                      dry docking procedures;  
                      planned maintenance;  
                      hull and machinery surveys;  
                      voyage planning;  
                      fire prevention, explosives mixtures and sources of ignition;  
                      ship construction (terminology and stresses);  
                      damage control, flooding and sub-division;  
                      fuel consumption.

**CHIEF ENGINEER CERTIFICATE OF COMPETENCY - (YACHT 2)**

**Marine Engineering Theory - Distance learning plus 10 day course**

*Examined by 2 written examinations on the last day of the 10 day course*

**General Engineering Science I**

To cover:        Mathematics    arithmetic;        algebra;  
                                                                                                 graphs;  
                                                                                                 trigonometry;  
                                                                                                 geometry;  
                                                                                                 mensuration.

Applied Mechanics	units; kinematics; dynamics; statics; friction; machines; strength of materials; fluids at rest; transverse stability.
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## General Engineering Science II

Applied Heat	heat energy; gas laws; combustion; refrigeration.
Electricity	nature of electricity; electric currents; electric circuits; resistance; secondary cells; magnetic fields; electromagnetic induction; measuring instruments and measurements.

### Applied Marine Engineering - 5 day course

*Examined by 2 hour written examination on the last day of the 5 day course*

To cover: materials technology and corrosion control;  
marine electrical practice;  
properties of fuels and lubricants;  
automation, instrumentation and control;  
engine starting systems.

### Advanced Hotel Services - 5 day course

*Examined by 2 hour written examination on the last day of the 5 day course*

To cover: air conditioning - forced air and chilled water;  
refrigeration;  
sewage treatment systems;  
hydraulics;  
fresh water systems;  
air compressors.

### Chief Engineer Statutory and Operational Requirements - 5 day course

*Examined by a 2 hour written examination on last day of 5 day course*

To cover: health and safety at work;  
pollution control regulations;  
'M' notices;  
international conventions;  
dry docking procedures;  
planned maintenance;  
hull and machinery surveys;  
voyage planning;  
fire prevention, explosive mixtures and sources of ignition;  
ship construction (terminology and stresses);  
damage control, flooding and sub-division;  
fuel consumption.

## ADDRESSES OF SQA EXAMINATION CENTRES FOR MCA YACHT ENGINEER WRITTEN EXAMINATIONS

### United Kingdom

- North West Kent College  
Gravesend Campus  
Department of Marine Engineering  
Dering Way  
Gravesend  
Kent DA12 2JJ  
  
Tel 01322 629600  
Fax 01322 629687
- Warsash Maritime Centre  
Department of Marine Engineering  
Newtown Road  
Warsash  
Southampton  
Hampshire SO31 9ZL  
  
Tel 01489 576161  
Fax 01489 573988
- Glasgow College of Nautical Studies  
Faculty of Marine Engineering  
21 Thistle St  
Glasgow  
Scotland G5 9XB  
  
Tel 0141 565 2500  
Fax 0141 565 2599
- South Tyneside College  
Faculty of Marine and Mechanical Engineering  
St Georges Ave  
South Shields  
Tyne and Wear NE 34 6ET  
  
Tel 0191 427 3500  
Fax 0191 427 3646

### France

- Blue Water  
La Galerie du Port  
8 Boulevard d'Aguillon  
06600  
Antibes  
FRANCE  
  
Tel 00 33 493 343413  
Fax 00 33 493 343593

### Spain

- Freedom Yachting  
c/o Ocean Safety SL  
Cami Fondo s/n (Detras de Ikea)  
07007 Palma de Mallorca  
  
Tel 0033 493344773  
Fax 0033 493347774

### USA

- International Yachtmaster Training and Deliveries  
1510, South East 17<sup>th</sup> Street  
Suite 200  
Fort Lauderdale  
FLORIDA  
33316  
USA  
  
Tel 00 1 954 779 7764  
Fax 00 1 954 779 7165

**MCA ORAL EXAMINATION SYLLABUSES****MARINE ENGINE OPERATOR LICENCE (YACHT) (MEOL(Y))**

1. Understand the routine associated with taking over and accepting a watch, the duties to be performed during a watch and the routine associated with handing over to the following watch. Watchkeeping includes UMS/bridge control periods of duty.
2. Understand the safety precautions to be observed during a watch or period of duty and the immediate actions to be taken in the event of a fire, accident or malfunction of machinery or systems.
3. Understand the precautions to be taken to reduce the possibility of machinery space fires.
4. Be familiar with the machinery space fire fighting arrangements and their use.
5. Understand the reason for determining voyage needs: fuel, lubricants, water, stores, expendables etc.
6. Understand the necessity for routine maintenance and the reasons for maintaining records of machinery and its performance.
7. Demonstrate the ability to interpret the performance information with respect to defect diagnosis and be able to locate and rectify common faults in main machinery, steering systems and auxiliary equipment.
8. Understand the reasons for preparing the vessel for sea with respect to main machinery, steering systems and auxiliary equipment. Demonstrate the ability to test plant and equipment.
9. Understand the consequences of sailing with certain items of machinery inoperative and the risks involved in doing so.
10. Understand the (Chief Engineer's) responsibilities and duties concerning bunkering or refuelling operations.
11. Understand the routine pumping operations of fuel oil, fresh water and ballast water.
12. Understand bilge pumping operations and use of the oily water separator and the precautions to be observed to prevent environmental pollution.
13. Understand the operation of auxiliary heating boilers including combustion systems.
14. Understand how to prepare, start, couple and change over alternators or generators.
15. Understand how to connect/disconnect shore electrical power.
16. Understand the immediate actions necessary in cases of electrical shock.
17. Understand the principles of ensuring safe entry into tanks and other enclosed spaces and the safe systems of work which must be applied when occupying these spaces.

**CHIEF ENGINEER CERTIFICATE OF COMPETENCY - (YACHT 4)**

1. Understand the routine associated with taking over and accepting a watch, the duties to be performed during a watch and the routine associated with handing over to the following watch. Watchkeeping includes UMS/bridge control periods of duty.

2. Understand the safety precautions to be observed during a watch or period of duty and the immediate actions to be taken in the event of a fire, accident or malfunction of machinery or systems.
3. Understand the precautions to be taken to reduce the possibility of machinery space fires.
4. Be familiar with the machinery space fire fighting arrangements and their use.
5. Compilation of machinery space log book and understand significance of readings taken.
6. Preparation of main machinery and auxiliary equipment for sea. Testing of plant and equipment.
7. Routine pumping operations of fuel oil, fresh water and ballast water.
8. Use of oily water separator and precautions to be observed to prevent environmental pollution.
9. Operation of auxiliary heating boiler including combustion system.
10. Preparation, starting, coupling and changeover of alternators or generators.
11. Connection and disconnection of shore electrical power.
12. Immediate action necessary in cases of electrical shock.
13. Location and rectification of common faults in pumps and pumping systems.
14. Location and rectification of common faults in machinery and plant.

**CHIEF ENGINEER CERTIFICATE OF COMPETENCY - (YACHT 3)**  
**("Chief Engineer Service Endorsement")**

1. Understand the reason for determining voyage needs; fuel, lubricants, water, stores, expendables.
2. Understand the necessity for routine maintenance and the reasons for maintaining records of machinery and its performance.
3. Understand the consequences of sailing with certain items of machinery inoperative and the risks involved in doing so.
4. Understand the (Chief Engineer's) responsibilities and duties concerning bunkering or refuelling operations.
5. The methods of dealing with fire on board ship. Prevention of the spread of fire. The organisation and direction of fire fighting and life saving parties.

**CHIEF ENGINEER CERTIFICATE OF COMPETENCY - (YACHT 2)**

1. Care and management of auxiliary heating boilers.
2. Care and management of steering systems and bow thrusters.
3. Care and management of pumping systems.
4. Care and management of oily water separator equipment.

5. (a) Construction, maintenance and operation of fire-fighting equipment.
- (b) Fire detection and prevention.
6. (a) Codes of safe working practices in machinery spaces.
- (b) The dangers of entering enclosed spaces.
7. Routine operational duties and the effect of legislation on engine room operations.
8. Working principles and constructional details of marine engines, gears, clutches and ancillary equipment.
9. Fuel oil, lubrication oil, and cooling systems of marine engines together with ancillary systems including filters, pumps, heat exchangers and controls.
- 10 (a) Methods of manoeuvring, including bridge control systems, variable pitch propellers and bow thrusters.
- (b) Emergency controls.
11. Working principles and constructional details of air compressors, air receivers and associated equipment.
12. Operational testing and fault rectification of basic automatic control systems and alarm panels.
13. Assessment of engine power, the running adjustments to maintain performance.
14. Safe and efficient operation and maintenance of marine engines.
15. Understand the reason for determining voyage needs; fuel, lubricants, water, stores, expendables.
16. Understand the necessity for routine maintenance and the reasons for maintaining records of machinery and its performance.
17. Understand the consequences of sailing with certain items of machinery inoperative and the risks involved in doing so.
18. Understand the (Chief Engineer's) responsibilities and duties concerning bunkering or refuelling operations.
19. The methods of dealing with fire on board ship. Prevention of the spread of fire. The organisation and direction of fire fighting and life saving parties.

**CHIEF ENGINEER CERTIFICATE OF COMPETENCY - (YACHT 1)**

**("Large Yacht Endorsement")**

1. Principles and constructional details of sensing, monitoring and measuring devices associated with marine equipment.
2. Principles involved with the operation, testing and maintenance of propulsive transmission systems, including thrust and shaft bearings, stern tubes and propellers.
3. Principles involved with the operation, testing and maintenance of bilge and ballast pumps, pumping and priming systems including pollution prevention equipment and systems.

4. Principles involved with the operation, testing and maintenance of steering and stabilizing systems including bow thrusters.
5. Principles involved with operation, testing and maintenance of:
  - a. auxiliary steam boilers and associated equipment.
  - b. control and alarm systems associated with automatic operation of marine steam plant.
6. Methods of assessment of power, output and efficiency of steam plant and action to be taken to maintain safe and efficient operation of steam plant.
7. Methods of boiler water testing and conditioning and action to be taken to maintain safe conditions.
8. Principles involved with the operation, testing and maintenance of:
  - a. marine diesel engines (trunk type); gearing systems and clutches;
  - b. starting and reversing systems;
  - c. cooling and lubrication systems;
  - d. fuel oil preparation systems;
  - e. air compressors, receivers and associated equipment;
  - f. auxiliary diesel engines and associated equipment;
  - g. control and alarm systems associated with automatic operation of a diesel plant.
9. Methods of assessment of power output and diesel plant efficiency and action to be taken to maintain safe and efficient operation of plant.
10. Methods of testing fuel oil, lubrication oil and cooling water and action to be taken to maintain safe conditions.
11. Codes of Safe Working Practices as published and amended.
12. Types of information issued by the MCA with respect to safety at sea.
13. Legal powers and responsibilities of a chief engineer:
  - a. precautions against fire or explosions, explosive mixtures and sources of ignition;
  - b. principles and methods of fire prevention, detection and extinction in all areas of a ship;
  - c. principles of the operation, testing and maintenance of fire detection and extinguishing systems;
  - d. principles of the operation, testing and maintenance of fire pumps and associated pumping systems;
  - e. control and organization of fire and damage control parties.
14. Organisation and control procedures necessary for the safe and efficient operation in the UMS mode.

15. Principles of the operation, testing and maintenance of:
  - a. alternators, generators, motors, switch gear and batteries;
  - b. ac and dc distribution systems.
16. Fault finding and rectification of faults in electrical systems.
17. Administration duties of a chief engineer associated with:
  - a. organisation and training of staff for normal and emergency duties;
  - b. organisation of temporary and permanent repairs and surveys.
18. Ensuring ship is in seaworthy condition prior to sailing taking into account nature of voyage.
19. Dry docking, hull surveys and repairs.