CERTIFICATES OF COMPETENCY FOR ENGINEERS (YACHT)

EXAMINATIONS ADMINISTERED BY THE
SCOTTISH QUALIFICATIONS AUTHORITY
ON BEHALF OF THE
MARITIME AND COASTGUARD AGENCY

STCW 95 CHIEF ENGINEER (REG. III/2) – "YACHT 2"
STCW 95 CHIEF ENGINEER (REG. III/2) – "YACHT 3"

051-02 STATUTORY AND OPERATIONAL REQUIREMENTS

FRIDAY, 7 NOVEMBER 2008

1400 - 1600 hrs

Examination paper inserts:

Notes for the guidance of candidates:

1. Non-programmable calculators may be used. 2. All formulae used must be stated and the method of working and ALL intermediate steps must be made clear in the answer.

Materials to be supplied by examination centres:

Candidate's examination workbook

STATUTORY AND OPERATIONAL REQUIREMENTS

Attempt ALL questions

Marks for each question are shown in brackets

1. With reference to the International Safety Management (I.S.M) Code:

   (a) state the THREE principles upon which the I.S.M. code is established; (6)
   Saftey, pollaution, laws and rules

   (4)

   (b) describe the role of the *designated person ashore.*
   To mangerage all aspects of the vessel in regards to safety and maintaining regulations and class rules that are updated

2. With reference to the periodical dry-docking of a vessel:

   (a) state FOUR reasons for dry-docking, planned maintence, bottom inspection, anitfoal paint the bottom, inspection of though holes and shaft bearings; inspection for corrosion, inspection of thursters,inspection of stabilizers, (4) (6)

   (b) Describe THREE methods of testing a hull for watertight integrity. X-ray of thought holes or problem areas, banging a rubber hammer along the haul while listening to the different tones, ultra sound areas of the hull,

3. With reference to the use of a CO_2 flooding system:

   (a) list the actions that should be taken before releasing CO_2 into the machinery spaces of a vessel; rise the alarm, do a head count, insure there is no one left in the space, close all dampers and doors charge system. (4)

   (b) (i) state the length of time that should be allowed to elapse, following the release of CO_2, before protected re-entry into the machinery spaces can be considered; 12 hours (2)

   (4)

   (ii) state the actions that should be taken before allowing unprotected personnel to re-enter the machinery space. The space has been properly ventalatered and all doors and dampers are open the the C02 level is at a safe level to enter. The fire has been extinguished

4. With reference to the International MARPOL Convention 73/78 Annex V pollution of the sea by garbage:

   (6)

(a) list SIX special areas that apply to the disposal of garbage; black sea,medeterainan sea,red sea, carribean sea, Antarctica, north west European sea area, gulf area sea, gulf of Aden.

(b) state the disposal restrictions that are placed on EACH of the following categories of garbage within the various special areas: (2)

(2)

(i) timber and packaging materials; Prohibited

(ii) ground-up food waste. Over 12 miles off shore and doing great than 4 knots of boat speed and should be ground to ¼ inch.

5. With reference to *classification societies*:

(a) list FIVE societies that are listed as members of the International Association of Classification Societies (IACS); (5)

(b) list FIVE separate types of machinery that are normally subject to Class survey. (5)

6. A vessel has bunkered 250 tonnes of diesel fuel of which 10% is assumed to be un-pumpable. The average combined sea load of the vessel is 2800kW with a stated specific consumption of 0.35 kg/kWh at a speed of 18 knots.

Calculate EACH of the following:

(a) the daily fuel consumption of the vessel; 23.52 tons per day (4)

(b) the safe steaming range of the vessel. 9.5 days @ 18knts (6)

7. With reference to the STCW'95 machinery space watchkeeping requirements, state EACH of the following:

(a) the purpose of *standing orders*; (3)

(b) FOUR examples of *standing orders*; (4)

(c) the circumstances under which it would be inappropriate for an officer in charge of an engineering watch to hand over responsibility to a relief watchkeeper. (3)

8. With reference to the ongoing machinery maintenance of a large motor yacht:

(a) state FOUR reasons why reliance on breakdown maintenance is generally considered to be unacceptable; (4)

(b) list THREE examples of condition monitoring, stating the benefits of using condition monitoring as part of a planned maintenance system. (6)

9. The Code of Safe Working Practice for Merchant Seamen specifies that a Safety Committee must be formed on board.

(a) State the FOUR people that have a legal right to sit on the committee. (4)

(b) State SIX of the functions of the committee. (6)

10. With reference to a vessel's seaworthiness:

(a) state FOUR reasons why it is important to isolate a vessel into floodable lengths by using watertight bulkheads; (4)

(b) state the precautions that should be taken, prior to departure from port, to reduce the risk of flooding. (6)