# 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, 20 JUNE 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 MARPOL Convention 73/78:

   (a) list the four annexes that apply to the operation of large motor yachts; (4)

   (b) detail the limitations that are presently in force regarding the supply and use of hydrocarbon fuels in diesel engines. In special areas, vessels have to comply to the .01% sulphur admission in those areas. Outside those areas it can be 4.5% sulphur admissions. (6)

2. List TEN ways in which good engineering practices and housekeeping within the machinery spaces of a yacht may reduce the risk of fire. Engine room log, machinery treanting, clean and tidy machinery spaces,empty trash bins at end of each shift, remoe any oily rags etc at end of each shift, clean bilges, standing orders by chef engineer to be followed, Health and safety prosecdures to be followed, service equipment at regular interevals as by mainufactures spec's. Test fire alarm system weekley. Have emergencey fire and evacuation drills on a regular basis. (10)

3. (a) List FOUR reasons why the machinery of a large yacht should be covered by a planned maintenance system. To improve machinery reliblety, reduce machinery down time, lower running costs, planned maintence system cuts down on having sparts shipped in at short notice. (4)

   (b) List SIX factors that should be taken into account when setting up a typical planned maintenance system. Storeage space of spare parts, freight costs of spare parts shipped. Recommended service hours. The schedule of the vessel is very important to planned maintenance. Engineering budget. (6)

4. Classification Societies allow vessels to be examined *in-water* in lieu of normal dry-docking.

   (a) List FOUR requirements that need to be fulfilled in order for an in-water survey to take place. The classification societies has to allow it. Good visiblty. Safet for personal. Deapth, permit to work and risk assement, check list to make it safe to dive. (4)

   (b) List SIX parts of the vessel's underwater hull and machinery that would receive special attention during an in-water inspection., rudder and rudder stem, shaft bearings, stern tube, thursters, though holes, hull plates,stabilizers,propeller, transducers, (6)

5. The Maritime and Coastguard Agency (MCA) gives guidance to vessels by means of 'M' notices.

(a) Describe the THREE different types of 'M' notice, explaining the purpose of EACH type. (6)

Merthant shipping Notice .
Marine Information, Notice
Marine guidance Notice (4)

(b) State the mandatory requirements for the carriage of 'M' notices on board British flagged vessels. stored 2 copies on board in different places and easy accessible by crew.

6. With reference to the classification of bulkheads:

(a) list the FOUR types of Class A bulkhead; A-60 A-30 A-15 A-0 (4)
collistion bulkhed,
transverise bulkhead (4)
water tight bulkhead
Aft bulkhead.

(2)

(b) describe the standard fire test that is applied to insulated bulkheads; has to withstand smoke for a required amount of time, must with stand temperature for a required amount of time, Must with stand flames for a required amount of time.

(c) state TWO examples of where the highest class of insulated bulkhead would be used on a vessel. forward engine room bulkhead and aft engine room bulkhead

7. (a) A vessel has bunkered fuel for a forthcoming voyage. List the details that would need to be known in order to calculate the safe steaming range of the vessel. You need to know is, total bunker amount. Total fuel consumption is per day at different rmp. Vorage time frame. Displacemt of vessel, fuel capacity. Any stability concerns. (6)

(4)

(b) List the factors that would be taken into consideration when assessing the spare parts requirements for the vessel. Space, availablty of parts, cost of shipping parts, lead time on when part are available. Quality of parts,

8. The Code of Safe Working Practice for Merchant Seamen states that a *Permit to Work* must be obtained before certain tasks can be undertaken.

(a) State the purposes of a *Permit to Work*. To help Insure the safety and persons and vessel. To proform the task in the correct maner, to insure correct tools are being used for that job, to insure a time frame is present and worked towards. (4)

(6)

(b) List SIX items that need to be included on a *Permit to Work*. Date, time, name of person, work to be carried out. Location of the work. And procedure of work to be carried out, Senior officer in charge and Sigirure of senior officer. Any special tools to be used, hot work permit used

9. With reference to the classification of a vessel:

(a) (i) state what is meant by the term *special hull survey*; carried out at 4 years, all annual surreys carried out in the 4 years may get a 1 year extension. It should incude any rigging,anchors cables cranes. Vessel must be dry docked. (3) (2)

(ii) state the time intervals over which the special hull surveys take place; 2.5 years in water, and 4 years with a 1 year extention alloweed (5)

(b) List FIVE parts of the vessel that would be examined during a special hull survey. Thought holes, shaft struts,rigging,hull, stern tube.thurster housings, stabilizers,

10. With reference to the International Convention for the Safety of Life at Sea (SOLAS'74) Chapter XI section 2 – the *International Ship and Port Security Code*:

(a) list the FOUR basic requirements for ships in order to comply with the code; ships security cert, ships security plan, (4)

(b) list the basic procedures that will be required to be put in place in order for the vessel to operate at security level one. . Limit and control acsses to the vessel. Lock unintended areas of the vessel, must be dock in an ISPS port, be in contact of the shore side security office ships security alarm system. 24hr watch required. (6)