

# **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”**

**054-02 ADVANCED HOTEL SERVICES AND SHIP CONSTRUCTION**

**FRIDAY, 28 NOVEMBER 2008**

**1400 - 1600 hrs**

Examination paper inserts:

--

Notes for the guidance of candidates:

- |   |
|---|
| <ol style="list-style-type: none"><li>1. Non-programmable calculators may be used.</li><li>2. All formulae used must be stated and the method of working and ALL intermediate steps must be made clear in the answer.</li></ol> |
|---|

Materials to be supplied by examination centres:

Candidate's examination workbook
----------------------------------



## ADVANCED HOTEL SERVICES AND SHIP CONSTRUCTION

Attempt ALL questions

Marks for each question are shown in brackets

1. Write a procedure for charging a refrigeration system, stating reasons for EACH stage. (10)
  
2. Explain the cause and effect of vibration on a vessel. (10)
  
3. Explain why air compressors are constructed to compress air in multiple stages in preference to compressing the air in a single stage. (10)
  
4. Describe a maintenance schedule for a hydraulic system. (10)
  
5. Explain, with the aid of a sketch, the operation of a *Vacuum Chamber Water Generator*. (10)
  
6. State the specific hazards that must be taken into consideration when maintaining or operating *Sewage Treatment and Storage Plants*. (10)  
  
*Note: Disregard the general mechanical and electrical hazards associated with machinery and systems.*
  
7. Describe, with the aid of a sketch, the construction and operation of an *Active Controlled Tank* roll damping system. (10)

8. (a) With reference to *Air Conditioning*, explain the operation of EACH of the following: (2)
- (i) a dry bulb Thermometer; (2)
  - (ii) a wet bulb Thermometer. (6)
- (b) Describe the possible results, when comparing the dry and wet bulb temperatures taken at the same place and at the same time. (6)
9. Describe the construction of tanks suitable for the storage of aviation fuel on board yachts, including the safety requirements for the storage tanks. (10)
10. (a) Explain, with the aid of sketches, the terms *hogging* and *sagging*, with reference to vessels meeting waves having the same length as the vessel. (8)
- (b) State the parts of the structure that resist the stresses described in Q10(a). (2)