

COMPETITION STUDY GUIDE

1. Knowledge of the operation of marine mechanical, hydraulic and electrical equipment and systems.

- PARALLEL GENERATORS
- S/U AFTER O/H
- VARIOUS FAILURES

2. Knowledge of ship's construction.

- DEFINITIONS
- GENERAL FRAME SPACING
- NAVAL ARCH ie M/E STIFFENING

3. Knowledge of engine room and deck machinery maintenance and repair programs and procedures, associated regulations and regulatory authorities.

- ESTABLISH A MAINTENANCE PROGRAM
- TIMELINE
- DIRECT / SUPERVISE
- ANNUAL INSPECTIONS
- PATROL ROUTINES
- CARDEX MANUFACTURERS SPECIFICATIONS
- WELDING STANDARDS TP 6151 E
- SAYSAR
- VARMINT, CBM (CONDITION BASE MONITORING), PUMPS, PASS
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4. Knowledge of vessel refit technical and administrative procedures.

- VESSEL LIFECYCLE PROCEDURAL MANUAL
- PREPARE A DEFECT LIST, PLAN O/H FOR M/E ORGANIZE WORKFORCE TOOLS, CGSSB, SAFETY, TIMELINE etc..
- INSPECTION PRINTOUT
- DOCKING PROCEDURES
- REQUISITION RAISING / COMMITMENT CONTROL/ FAA SECTIONS

5. Knowledge of shipboard safety practices and procedures.-

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| - WATCHKEEPING STANDARDS | - HELO PROCEDURES |
| - SAFE WORKING PRACTICES | - ACTS, LIST 10 ACTS |
| - OIL POLLUTION PREVENTION PLAN | - SUPERVISORS HANDBOOK |
| - ISO / ISM | |
| - 9172 FILE | |
| - FIRE DRILLS / BOAT PLANS | |
| - STANDING ORDERS | |

Personnel Suitability

1. Scenario given: -port shaft due for survey
 -you have been chief for 2 patrols
 -refit meeting is next week
 -3 yards have bid on proposal
 -Yard "A" did stbd shaft 2 years ago and had to make a
 special jig to remove the coupling.
of -ROC has been in contact with Yard "A" about the length
 the refit (probably a bid to speed up the process and get the
 ship out early)
 -your vessel is alongside and the foreman of Yard "A" is
 down for a morning coffee.
 -Over talk at coffee you find out about the phone call from
 the ROC
 -The yard foreman then asks the captain for the ships only
 drawing of the jig
 -the captain says "sure" and proceeds to go and get it.
 What would you do?
2. Explain a situation where you were particularly creative with a job project?
3. Describe a situation where you were required to perform duties beyond your job description?
4. Its crew change day on the Arrow Post and she's going into a out of water refit. The oncoming chief, who has 5 years on the boat, has called in sick. The office asks you to stay until the other chief is well. You have no major plans in the next few weeks. What would you do?

MAO - 03 /04 WRITTEN EXAM, 1997

1. Why is the oil pressure higher than raw water in a cooler ?
2. Connect shore cable
Manually connect shore power with ships power.
Manually connect another generator.
3. Functions of a hydraulic storage tank in a system. What factors should be considered to determine size for a system ?
4. Indications of main engine overload ?
5. What problems with operating main engine at low loads ?
6. Causes of a crankcase explosion and what means are adopted to prevent damage and injury ?
7. Oil record book entries ?
Check list for fueling ?
SOPEP 3 main steps ? - stop, contain, clean-up
8. Replace a leaking fitting on a crane ?
9. Run a electrical wire through a fiberglass bulkhead, how ?
10. Find TDC on a engine with no timing marks ?
11. Precautions when dumping CO₂ in engine room ?
12. Mountings on a air receiver ?
13. Where would you find relief valves in a air system ?

MAO - 05 ORAL EXAM
ABILITIES AND SKILLS

1. You wish to take annual leave as chief engineer of the Arrow Post. What items would you consider while planning such leave?
2. Your vessel struck an object and you're make Bella Bella under your own power but with lots of vibration. Divers have been down and report no hull damage but the prop is bent. What would you do from now until fully operational?
3. Give 5 examples of a typical lube oil analysis and a brief description of what each one tells. Give 4 examples of ship board tests done on lube oil, there is no lab stuff on board?
4. You have just completed handover as chief engineer of the Arrow Post. What items would you expect to find on the consumable list?
5. Your vessel has been out of service for a period of time. Your boiler is a small harbor type. What items would you include in an inventory of boiler test and dosage chemicals?
6. A SSB bulletin indicates your fuel transfer system as fitted will be in contravention of the new regs. You don not wish to pay for the upgrade out of O&M funds, What would you include in a letter to the Engineering Supt requesting funds to cover the modification?
7. While reading the newspaper you come across a story about new air pollution regulations, and you think that you vessel will not comply. What would you do?

MAO-06 COMPETITION WRITTEN QUESTIONS

1. LIST ANNUAL SURVEY ITEMS IN THE ENGINE ROOM.
2. #1 MAIN AIR COMPRESSOR MAINTENANCE IS DUE.
 - WHAT WORK WOULD YOU EXPECT TO FIND
 - HOW WOULD YOU PLAN FOR THE WORK
 - HOW WOULD YOU DELEGATE THE WORK
3. TWO MAIN ENGINES ON LINE IN STBY SITUATION. FOUND A FAULTY INJECTOR HOW AND WHAT WOULD YOU DO TO BRING THE VESSEL BACK TO OPERATIONAL.
4. HOW WOULD A EXHAUST VALVE FAIL?
5. ELECTRICAL SCHEMATIC FOR A 600 VOLT MOTOR STARTING CIRCUIT. LIST ALL COMPONENTS THAT WOULD PREVENT THE MOTOR FROM OPERATING PROPERLY.
6. HYDRAULIC KNUCKLE BOOM CRANE SCHEMATIC. RELIEF VALVES.
7. WRITE A LETTER TO C/E ABOUT PROPULSION SYSTEM FAILURE. WHAT INFO WOULD YOU INCLUDE IN YOUR LETTER.
8. GROUND FAULT DETECTION, WHAT WOULD YOU DO, WHAT IS A MEGGER AND WHY ARE GROUNDS BAD ON A VESSEL.
9. WHAT IS ON A WHMIS MSDS SHEET.
10. HOW WOULD YOU DEVELOP A INVENTORY CONTROL SYSTEM AND WHAT INFORMATION WOULD BE ON A RECORD CARD. DECIDE WHAT SPARES TO CARRY
11. PREPARE A TANK FOR SURVEY, SAFETY ITEMS ETC...

12. MUST ENTER A TANK AT SEA WHAT WOULD YOU DO?
13. A ENGINE HAS JUST BEEN SURVEYED AND COMPLETELY OVERHAULED. EXPLAIN HOW AND WHAT YOU WOULD DO TO BRING THE ENGINE BACK TO FULLY OPERATIONAL AGAIN. Ie SEA TRIALS, CHECKS DURING FIRST STARTING
14. YOUR VESSEL HAS JUST BEEN DRYDOCKED. WHAT INSPECTIONS WOULD YOU DO?

SO-MAO-07 / 08 WRITTEN EXAM 1998

1. What precautions would you take when cleaning the davit winch brakes.(5)
2. Define essential services (2)
 - list 8 examples of essential services (8)
 - what is a preferential trip breaker (2)
 - List 3 circuits on a 440-trip circuit. (6)
3. List the engine problems when the following occur:
 - exhaust temp increases and firing pressure is normal(2)
 - exhaust temp decreases and firing pressure is normal(2)
 - exhaust temp is avg. firing pressure higher(2)
 - exhaust temp is avg. firing pressure lower(2)
4. When would you schedule crankshaft deflections for a main engine (2) and why do you take them and what do they indicate? (4)
5. What are the roles of the following people in a refit:
 - C/E (2)
 - Superintendent Technical Services (2)
 - CGSSB (2)
 - PWGSC (2)
 - Project Officer (2)
6. Describe a rotary vane steering gear construction (6)
 - list advantages and disadvantages (8)
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7. List 6 types of pollution regulations that fall under Pollution Prevention Regs (6)
Give examples of shipboard source (6)
8. Discuss a inclining experiment (3)
 - what conditions must be met (4)
 - what do the recordings note (1)
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9. What steps would you take in the event of a collision or grounding (10)