

PAST PAPERS

<i>Faculty</i>	<i>Department / Section/Division</i>
<i>Not Applicable</i>	<i>Learning Resource Centre</i>

Past Papers

Faculty of maritime science
Department of Marine Engineering
Engineering Class III
(Orals)
2015-2022

<i>Document Control & Approving Authority</i>	<i>Senior Director – Quality Management & Administration</i>
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ED Class 01 orals.

Akhila Mahasal

Class 3 Orals

3rd attempt - Pass

- 1) How to calculate SFOC? what is the importance of calculating it?
- 2) How to take crankshaft deflection? why the deflection is taken?
- 3) What are the reasons for main bearing failure?
- 4) How the lube oil get contaminated with water?
- 5) What is the immediate action during lube oil low pressure alarm?
- 6) Draw and explain motor starting arrangement of a standby pump?
- 7) Draw and explain DOL system?
- 8) What are the functions and competencies at the operational level?
- 9) What are your duties as 3rd engineer during bunkering?
- 10) How to take over a watch?

NAME-D.D.K SENANAYAKE

EXAME-CLASS 3 ORALS (ENG)

EXAMINER-YAPA SIR

DATE-20/02/2019

RESULTS-PASS

1. Tell me about your previous ship
2. Draw & explain purifier tube stack
3. Explain purifier working principle
4. Draw a centrifugal pump assembly
5. Draw centrifugal pump performance curve, reciprocating pump performance curve & reasons for the two different curves
6. What are the types of air compressor valves you know?
7. What are the parts in air compressor valve assembly, can you draw it?
8. What are the problems occur in these valves?
9. How do you check valves are working properly during air compressor running
10. Why thermal stability is important for lube oil in air compressor?
11. What are the types of steering gear?
12. Draw & explain 4 ram steering gear system?
13. Explain single failure criteria
14. What are the measurements or clearances you measure in this system?
15. What is rudder carrier bearing? How it is connected?
16. Connect a rudder angle indicator to this system
17. What is transmitter, receiver?
18. How is the generator engine main bearing lubricating? Which type of a pump used for that?
Draw how is generator lube oil pump connected
19. What are the things you checked in gear pump during overhaul?
20. Reasons for reduce discharge pressure in a gear pump?
21. He checked my record book & asked about boiler water control system? Reason for the PID controller used
22. What are the elements measure in this system? Reasons for it
23. When you are in watch you see a fire in main switch board, what are the actions you will take?
24. What can be the reasons for fire?
25. What are the protections in the switch board?
26. Importance of fuses, how it is working?
27. What are the types of over current relays? Draw & explain one of it
28. How do you taking over a watch
29. How do you take bunkering?
30. What is SOPEP
31. What are the SOPEP equipments?
32. From where do you can find SOPEP on board?

33. What is a enclosed space? How do you know where the enclosed spaces are situated in your ship
34. How do you enter a enclosed space
35. During your watch you see exhaust temperature is extremely high in one unit of a generator. What is your initial action?

- 1) What is load line convention.
- 2) What is in load line convention
- 3) What governs Load line
- 4) What is sill height
- 5) What is water tight
- 6) What is weather tight
- 7) Regulations of water tight doors
- 8) Suitable motor for water tight
- 9) How to prevent over tightness
- 10) Draw motor starting method with provisions to prevent over tightening
- 11) Draw provision for displaying light when door close.
- 12) Turbo charge lubricating oil system (center mounted)
- 14) Turbo charger surging
- 15/ causes of turbo charger vibration-
- 17/ Brinelling.
- 18/ How to check turbo charger performance.
- 19/ How to prevent surging.
- 20/ During maneuvering compressor high temperature alarm what to do?
- 21/ Compressor 2nd stage suction valve leak. what happens?
- 22/ Compressor valve materials.
- 23/ Compressor valve stresses & properties.
- 24/ Precautions during bunkering.

25/ Actions to be taken during oil pollution

26/ where are the actions stated

28/ where are copies of sopep kept -

29/ ISM manuals.

30/ where do you find your job description

31/ under which ISM manual.

32 2nd Day

32/ Describe each manual and its content.

33/ ISPS code. what is in it.

34/ Under which legislation (convention) ISM is established.

35/ what are the security levels & their names.

36/ Describe each security level.

37/ What is SOLAS Chapter XI-1

38/ SOLAS chapters.

39/ Types of bulkheads.

40/ Bulkhead insulation classes.

41/ Where class-c is used

42/ How they are categorized.

43/ Fire in steering gear room what to do?

1st Day

- (1) What is your training you had on board?
- (2) ~~Do you~~ Is your ship an UMS or watched ship?
- (3) When you are in the cabin, and it is your watch, the bilge alarm comes, what are your actions?
- (4) To where do you pump? (Bilges)
- (5) What are the recordings that you enter in the ORB?
- (6) When you are recording the time, which time do you going to enter? (Ship's time or OMD time)?
- (7) When you are in sea passage, your bilge holding tank level comes up/increase what are your actions?
- (8) What is a circuit diagram?
- (9) What is system diagram and ~~wiring~~ wiring diagram?
- (10) What are the differences between ~~wiring~~ system and circuit diagrams?
- (11) What are circuit symbols?
- (12) What is relay, Draw the symbols?
- (13) Have you work with digital calipers?
- (14) What is zero error?
- (15) What is plus error? What is (-) error?

~~(16)~~

2nd Day

- (16) Draw and explain the emergency electrical system (Distribution)
- (17) What are the Emergency switch board safeties?
- (18) ~~What~~ What is insolation?
- (19) How the insolation can be deteriorated?
- (20) What is high voltage?
- (21) How do carry out IR test?
- (22) What are the insolation ~~by~~ materials?
- (23) Why high voltage is useful?
- (24) How the electrical interlock between ESB (tie breaker) and E/G works? Draw and explain.

- How to connect shore power to Bus bars?
- (26) Any safeties regarding that?
 - (27) How the onload releasing mechanism works?
 - (28) When to release onload mechanism?
 - (29) What are the checks you carried out in onload releasing gear?
 - (30) Why there is a cam? How it's operated?
 - (31) What are the certificates you carry onboard?
 - ~~(32) If you have a chance to go onboard as a 3/E. What~~
 - (32) What are the types of pumps?
 - (33) How the centrifugal pumps works?
 - (34) How positive displacement pump works?
 - (35) When centrifugal pumps, in maximum head, there is no flowrate, why?
 - (36) How What is positively displacement? What is the basic principle?
 - (37) How do you comply with MARPOL Annex VI, If you have a chance to join a vessel as a 3/E?
 - (38) What are the parameters you check?
 - (39) Why do you check those?
 - (40) When you join as a 3/E, your A/E exhaust gas temperatures are fluctuating, what will be the reason?
 - (41) ~~How~~ How to take pump timing?
 - (42) What are the markings on flywheel you had?
 - (43) TDC, BDC and Any other markings other than TDC, BDC and degree markings?
 - (44) ~~What~~ When you go onboard, How do you take over your duties as a 3/E?
 - (45) What Do you check in your cabin?
 - (46) Who gives you safety familiarization?
 - (47) Why do you go to masters (ship's office)?

What are the things you take from previous 3LE?

1) Why to take spare part inventory?

(50) Suppose when you are in ECR boiler flame failure alarm comes, what would you do?

(51) What are the reasons for boiler flame failure?

(52) Why air fuel ratio is important?

(53) Why you check air fuel ratio?

(54) ~~Boiler~~ Boiler sequence?

(55) How the boiler load control system works?

PASS



B.P ISHAN MALITH

EXAMINER : CHANDANA

QUESTIONS

2018/04/26

1. what is your ship?
2. what is DWT?
3. what is GRT? Why its in m^3 ?
4. what are the precautions you take onboard for sail in cold weather?
5. Draw sea water system? explain control of temperature
6. Draw your LT system ? (should match record books one)
7. Explain fire main and protections?
8. What is draw card? Explain fault finding

2018/05/03

1. Explain how to start AE ? precautions to start AE after long time?
2. How to identify liner crack on running AE?
3. How to parallel 2 AEs?why keep one in bit of higher in frequency?
4. What happens if ones voltage reduced?
5. How to identify 2 AEs are in same phase?
6. What is phase angle?
7. What is power factor?
8. Draw power triangle and explain?
9. Explain manual synchronizing ?
10. What are the emergency power supplies and regulations?
11. Electrical distribution systems on ship?
12. Draw electrical system from generator to consumer?
13. What is on ORB "c" category? What you enter/on what number?
14. What do you do if ships sw line crack & flooding?CE&2nd engineer is drunk.(inform master and pump out by direct bilge injection line (direct decision making in case of ships safety is compromised,doesent even need to inform master)

Passed.....

(draw diagrams which you can explain,if you answer electrical questions satisfactorily thats all he wants,use colour pens to draw,be honest if you don't know) GOOD LUCK.....!!!!!!!1

Oral questions of D.G.K.E. Daluwathumulla 13/03/2018 Jayakodi sir

- What is your ship
- Draw and explain ows system
- Sounding pipe safeties
- Why marpol is there
- Marpol annex 3 describe
- Special areas of annex 5
- Discharge criteria of annex 5
- Draw and describe tank venting arrangement
- Onboard oil leakage how u r going to tackle
- Are u incinerating that saw dust
- How u record water evaporation in sludge in orb
- How u record oil discharge overboard
- What are the things that can not incinerate
- Special areas of annex 4
- What is BOD in STP
- How u come to know the things that can not incinerate
- What is the type of pump used in ows
- What are the protections it has
- Why the flushing water line in ows there (depend on the line drawing u draw)
- How many chapters in solas
- What is chapter 14 and why it is came into the force and explain
- When it came into force
- What are the recent regulations implemented (ballast water, garbage record book, new garbage categories)
- During your watch boiler flame failure alarm came.Reasons for that
- How the boiler fuel pressure is regulated
- Where you find the bunker tank capacity and limit
- Bunker line safeties
- Fire main safeties
- Draw your co2 system and explain
- Co2 system maintenance
- What is the purpose of the micro switch in the co2 cabinet
- What are the emergency stops and there machineries
- From where u can activate co2 for purifier
- Things to check in co2 room
- Explain how you test the co2 system
- Explain the water mist system
- What are the activation points
- How to test the flame and smoke detector
- How the water mist system motor operated section v/v works (depend on system)
- How many turns to rotate the valve manually
- Operation of the manual v/v

- How to test the water mist system
- System pump running but no water flow reasons
- How the water mist manual operation points are activated (system dependent)
- MSB safeties
- What are the things u check on generators
- Normal power factor onboard
- Power factor is 0.7 .Reasons
- How the inductance can be increased
- Generator low frequency reasons
- How the governor can fail
- What is the protection for low frequency
- How to remove A/E piston
- What is ur A/E type and model
- Is liner also coming with the piston
- How the liner is hold to the engine frame
- What are the checks in generator piston
- What are the clearances u take
- What is piston groove clearance
- What is undercut
- Why piston ring groove clearance is important
- Piston ring, piston materials
- Checks in con rod bolt and why
- When u r doing a decarb
- How many orings in between the cylinder head and the liner
- What is the use of sealing ring there
- What is you're a/E T/C type
- Nozzle ring is blocked. Indications
- T/C running in high rpm. Reasons
- How to take out the liner
- How to measure the piston pin and bush clearance
- Is there a bushing in the piston
- What is your purifier
- Function of the paring tube
- If PT4 is low. Reasons
- Water supply to the purifier
- How u make sure required rpm is achieved
- What is ur purifier driving assembly
- How to change the belt of the purifier
- What are the water supplies to the purifier
- What are the thread standards
- How to order A/E exh manifold bolt
- What r the things you mentioned
- What is M10

- How to fine spanner size for M10
- How to make sure the purifier special tools are available onboard
- How many manuals in Alfa laval purifier and what r those
- How to order spares for A/E O/H
- Bunker line test pressure
- How you get that test pressure (design pressure *1.5 times)
- Bunker line design pressure
- Bunker line safeties
- How many samples you take onboard
- What r they
- What is the sampling method
- Where is the bunker line pressure and the tank filling capacity is mentioned
- What is pour point and fire point
- Does the liquid is flowing in pour point
- Things mentioned in bunker analysis report
- Pour point is 6 degree Celsius.what is your action
- What are the onboard tests for LO
- What r the TBN values for A/E and cyl oil
- Draw your ship mid ship section
- How ur cargo hatches are opened
- Deck machinery hyd system
- Construction of the hyd system piping
- Specialty of the hyd system pipe flanges
- What are things u check on M/ E after u take over the watch
- What r the things u inform to chief engineer
- One life boat propeller is missing.ur action (inform to C/E and bridge)
- What r the M/E slowdown alarms
- How u take piston bushing diameter
- What is your rescue boat and maintenance
- What if the MSB overloaded. Describe situation (PMS and preferential tripping)
- Ref plant discharge pressure is high. Reasons
- Why the back pressure from the condenser is high
- Draw screw pump and describe.what r the clearances u take
- Difference between screw pump and gear pump
- O/H of the centrifugal pump
- How to fix the mechanical seal.

COC CLASS 3 ORALS ENGINE

MR. JAYAKODI

22/23 - 02 - 2018

Hasitha - CINEC

1. What are the ships you have sailed?
2. Engine type?
3. Difference between ME and MC?
4. How the pump is changed from electrical to engine driven?
5. Main engine critical alarms (slowdowns and shut downs)
6. What is fiva valve and operation?
7. Suppose one fiva valve is failed. Actions to be taken?
8. What is the cylinder lubrication system and explain operation.
9. What actions you can take if one unit cylinder lubrication failed?
10. What will be your rank after this exam?
11. What are the things you have to do?
12. What are the key functions and competencies?
13. How to take over watch?
14. Example for equipment failure and adverse ship condition?
15. What are the engine room lifesaving appliances?
16. How to escape from engine room during fire?
17. Then is EEBD not a lifesaving appliance?
18. What are the other things on FSS?
19. What is the firefighting arrangement for your cargo holds?
20. How to release CO2 to the engine room?
21. What are the actions you take if you see an unconscious person lie on deck?
22. How to give CPR?
23. From where you can find out the lsa and ffa?
24. Where you can find the fire plan?
25. What are the other plans you are having and what are the things including those plans?
26. What are the checks on engine room LSA and FFA when you taking engine room round?
27. UMS procedure?
28. Suppose a hydrant hand wheel is missing? What are actions before UMS?
29. Chief engineer standing orders?
30. What are the things you need to inform to CE during your watch?
31. The actions to be taken when entry into restricted area? The machineries you need to start?
32. Forward cargo hold bilge during UMS. Actions?
33. Suppose oil spill on deck and you are putting saw dust. How to dispose it?
34. Incinerator safeties?
35. How to operate incinerator?
36. What are the spares for incinerator?
37. What are the types of life jackets?
38. What is your life boat type? Rescue boat?
39. Type of engine? Is it petrol or diesel?
40. How to start your life boat?
41. Explain life boat hook releasing methods?
42. Starting methods of emergency generator?
43. Explain hydraulic starting arrangement.

44. Type of your boiler?
45. Boiler safeties? How to check FD fan failure?
46. Importance of Boiler water treatment?
47. What test you carried out and limits?
48. Suppose cl level high, what actions you will take?
49. What is priming?
50. Boiler water low level alarm during ship is running, what are the reason and actions?
51. How to reduce the steam consumption from economizer? (reduce the engine rpm)
52. Draw your fuel oil system?
53. Which pumps in module?
54. Why do you use screw pump? Draw a screw pump.
55. Type of bilge pump?
56. Can you use gear pump? Reason?
57. Type of main engine lub oil pump? Reason?
58. You found crack on sea water pump housing. Actions?
59. What are the checks on generator engine head after overhaul?
60. How will you take valve guide clearance?
61. How to prevent exhaust leakage from valve guide?
62. Generator engine exhaust temperature high in all units. Reason?
63. One unit temperature low reason?
64. Reasons for low compression pressure?
65. How the exhaust valve can leak?
66. What is high temperature corrosion?
67. How to identify blow past?
68. Foundation arrangement of generator engine?
69. What are the check in resilient mountings? Time interval for checking?
70. Type of your purifier?
71. What is the bowl driving mechanism?
72. How to replace a broken belt?
73. Purpose of the pairing tube?
74. What is the arrangement for temperature controller?
75. If automatic controller fails, how to control the temperature?
76. How to operate 3 way valve?
77. How many solenoid valve in the air block and functions?
78. How many solenoids in water block and operations?
79. MSB safeties?
80. What is your power management system?
81. How the preferential trip comes into action?
82. When two generators are running parallel, if load reduces what will happen?
83. What are the safeties after commencement of bunkering?
84. Which pressure will you maintain? Where is it mentioned?
85. Draw a mid ship section of your ship with all steel members.
86. What is the function of torsional box?
87. Explain your boiler water level controller.
88. Purpose of square root extractor.
89. How to check the water mist system?
90. Fire line safeties
91. How many SCBA sets you had?

92. How to fill BA bottle?
93. Steering gear checks before departure?
94. What are checks on generator engine panel board when you enter the ECR?
95. Suppose your frequency drop in to 58Hz, What are the action?
96. What are the Sulphur limits in ECA? What are the other area?
97. How to make sure that your changeover has completed?

Examiner: mr. bandula and mr.jayakodi
DEVINDA MADUSHAN JAYALATH
07/11/2017

- 1) What is your Ship?
- 2) What did you do in Dockyard?
- 3) How many months were you in Dockyard?
- 4) What is the emergency fire pump regulation?
- 5) What are the fire main regulations?
- 6) What are the fire main safeties?
- 7) What is preferential trip?
- 8) How you test the trip?
- 9) What are the supplies colors coding?
- 10) What are red supplies?
- 11) How you close ventilation slips?
- 12) What are remote closing methods?
- 13) How you load check the Generator?
- 14) What is the function of load bank?
- 15) What are emergency switch board safeties?
- 16) When in a blackout how the ESB get powers supply?
- 17) Where is the battery for ESB located?
- 18) Draw EG manual starting method?
- 19) What are red color tagged breakers on MSB and how they are behave after blackout?
- 20) What is fixed fire fighter systems on board?
- 21) Draw CO₂ system?
- 22) How it works?
- 23) Tell me pressures of each branch testing?
- 24) How the level is measured?
- 25) How many years after you do it?
- 26) How you weight the CO₂ Bottles?
- 27) Why they are connected with copper pipes?
- 28) How you release CO₂ to cargo holds?
- 29) How your water mist system works?
- 30) What are the types of smoke defectors flame and heat?
- 31) How you test those detectors?
- 32) What is the pressure of the pump?
- 33) How to test?
- 34) Types of pump?
- 35) How you release CO₂?
- 36) In case of small fire what you do?
- 37) What is fire triangle?
- 38) What is fire tetrahedron?

Examiner: mr. bandula and mr.jayakodi
DEVINDA MADUSHAN JAYALATH
07/11/2017

- 39) How CO₂ and water mist extinguish fire?
- 40) Why there are two CO₂ bottles?
- 41) What are the types of hatch cover used on your vessel?
- 42) Draw and explain how it works?
- 43) What are the lifesaving appliances in the engine room?
- 44) I asked lifesaving appliances not firefighting?
- 45) You sailed on me?
- 46) Draw the hydraulic power supplying system?
- 47) Draw exhaust and fuel v/v operation?
- 48) Draw fire main system?
- 49) What are the safeties?
- 50) What is a dresser coupling?
- 51) Draw and explain.
- 52) What is **marpol** and its special areas?
- 53) Tell me one by one of the annexes (special areas).
- 54) What is polar code?
- 55) What are the conventions it relates to?
- 56) What is NO_x technical code?
- 57) What are the things you **incinerate** on board?
- 58) As a third engineer how you comply with annex VI?
- 59) What are the machinery parts?
- 60) What are the things you record?
- 61) What is technical file?
- 62) In your watch you get a bilge high in cargo hold, what you do?
- 63) What is the reason for bilge getting high?
- 64) What is stability and why it is important?
- 65) What is damage stability?
- 66) What is cross flooding?
- 67) How is affect the loading condition of the ship?
- 68) What is shearing force and bending moment?
- 69) It is for lording how it effects the flooding?
- 70) What are the couplings types?
- 71) How to test fire pump?
- 72) What are the regulations?
- 73) What are steering gear safeties?
- 74) What are alarms provided in steering gear?
- 75) What is a single failure criteria?
- 76) Draw and explain?

Examiner: mr. bandula and mr.jayakodi
DEVINDA MADUSHAN JAYALATH
07/11/2017

- 77) What is your purifier?
- 78) What are the water types provided?
- 79) What are the pressures?
- 80) Why closing water pressure is less?
- 81) What is centripetal pump?
- 82) What is the principle of working?
- 83) Does your purifier detect water in oil outlet?
- 84) What is secondary brine?
- 85) Why it is used?
- 86) What is the type of your bilge pump?
- 87) When you go to control room what are the things you check?
- 88) What the things on generator?
- 89) Why KW and KVA. Explain?
- 90) What is power factor?
- 91) What you check locally in the generator?
- 92) Safeties of generator?
- 93) What are the parameters?
- 94) What is the exhaust gas deviation?
- 95) Why is measured from average?
- 96) Ok, now you get the alarm what is the problem?
- 97) No. it is not in the fuel pump.
- 98) Compression pressure is ok. What is the problem?
- 99) Valve seat corrosion, how?
- 100) What is hot corrosion?
- 101) How you change a valve seat?
- 102) How you measure the angle of valve?
- 103) No, problem is not in the valve seat?
- 104) How you check the exhaust valve timing?
- 105) How you compare it with others?
- 106) What is the other timing adjustments mentioned in the manual?
- 107) Tell me how to weld a cracked jacket cooling pipe?
- 108) What is the material?
- 109) What is hot work permit and risk assessment?
- 110) Exhaust valve manifold bolt is broken. How to order?
- 111) No time to do that how to make it in lathe?
- 112) What are the thread standards?
- 113) No need to cut bolt thread can be repaired. How to repair?
- 114) What is you OWS?

Examiner: mr. bandula and mr.jayakodi
DEVINDA MADUSHAN JAYALATH
07/11/2017

- 115) What is chemical separation?
- 116) What is STCW?
- 117) Explain you take over perform your duties as 3rd engineer.
- 118) What are the table competencies?
- 119) Are you competent to work onboard?

CLASS III Orals examination

Candidate – Keshan De Silva

Examiner – Mr. Kithsiri Jayakody

Date - 2017/10/04

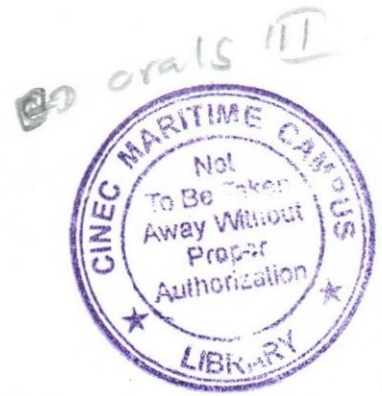
Mr. Chandana came and introduced himself and the new examiner Mr. Jayakody.

Mr. Chanda started asking questions.

1. Explain about yourself.
2. He stressed about the industrial training and asked me about workshop theory and started asking questions during my cadet period at Cinec.
3. What did you learn from Cinec workshop practice?
4. How to measure a stud?
5. What is the calculation of torque and the pitch on a stud if there's calculation (I didn't know the answer it was sort of a rhetorical question)
6. Difference between workshop theory and practice?

And then he left handing over my examination to Mr Jayakody.

1. What type of your ship?
2. Engine
3. How to measure a stud?
4. How to measure the pitch?
5. Type of studs?
6. Classification of them.
7. Suppose a stud has broken on the generator what would you do?
8. What if the fitter is not available in the ship?
9. Maintenance in gen cylinder head?
10. How do you proceed for cylinder head overhaul?
11. What are clearances you are measuring on the Piston?
12. What are the measurements you are taking on the Piston ring?
13. How do you measure the butt clearance?
14. In which part you will put the ring to measure on the liner?
15. How do you check the valve guide clearance?
16. Damages you can see on the cylinder head?
17. How do you know when to replace valve guide?
18. How burning can occur on the cylinder head (valve)?
19. What is hot corrosion?
20. How does this affect the valve seat?
21. How does the valve rotates?
22. How does the valve hold in place?
23. How to take tappet clearance?
24. What will you do if oil not coming from rocker arms?





25. Generator safety cut outs?
26. How do you test alarms?
27. How do you test over speed?
28. What is three element controller?
29. Draw me your bilge system.
30. What kind of a pump is your bilge pump?
31. Why we don't use gear pumps?
32. What is your fuel oil transfer pump?
33. Why we use screw pump for fuel oil transfer?
34. How do you start transferring bilges?
35. What is the priming method?
36. What will you do if the pump doesn't take suction, indications?
37. How will you identify a hole in the bilge pipe?
38. As a 3rd Eng. how would you take over a watch?
39. How would you discharge sewage?
40. What are new local regulation in discharging sewage?
41. Draw me engine fuel oil system?
42. What is the pressure?
43. Why do we have two electrical driven pumps and engine driven pumps?
44. What mounting in emergency generator?
45. Why we need priming?
46. Regulations?
47. How to test the fire pump?
48. Where will you fix the fire hoses?
49. What is the distance the water jet should reach?
50. What is the pressure?
51. Safeties in fire main?
52. Purpose of deck isolation valve?
53. As a third how would you make sure water tight integrity in engine room?
54. What are the safeties in the sounding pipes?
55. What is a water tight bulk head?
56. What is A60 bulk head?
57. What are other type of bulk heads?
58. Where can u find C type bulk heads?
59. What are equipment power supplied by the emergency generator?
60. What are the starting methods?
61. Explain hydraulic starting, sketch and explain?
62. Operation of the hydraulic starter's?
63. What will you do if there is an exhaust gas deviation?
64. Suppose you are maneuvering what will you do?
65. How lift up the fuel pump?
66. Where is the switch for that?
67. What are the critical alarms in main engine?
68. Why you do boiler water treatment?

69. What will you do for sludge accumulation?
70. What is your purifier?
71. What is the difference between ALCAP and the conventional purifier?
72. Why don't we use a gravity disc?
73. Purpose of the paring arm?
74. Can we use oil more than specific gravity of water?
75. Purpose of the operating water?
76. How does the three way valve operates?
77. How many solenoid block for pneumatic operation?
78. What is the purpose of the PT4?
79. What are the abnormalities in PT4?
80. How do you adjust the back pressure valve?
81. What is your ships fixed firefighting extinguishing method?
82. How many bottles?
83. What are the places you can operate?
84. Do you have extinguishing method only for engine room?
85. How will you release co2?
86. What is the purpose of the two co2 pilot bottle?
87. Why do we have a time delay?
88. Why do we have a bypass valve?
89. What are the ism manuals?
90. Where can you find them?
91. What is code of safe working practice?
92. How you make a risk assessment?
93. What should be your competency?
94. What are the key functions?
95. What is water mist, draw the system.
96. How to test?
97. What kind of valves are there? Operation of the valves.
98. What is on the nox technical file?
99. What are we filling on that?
100. What are the engine parts?
101. How would you identify the part?
102. How many bunker samples you take?
103. What is the global sulfur content?
104. What is the minimum sulfur content in ECA areas?
105. What the new requirement on China and Hong Kong?
103. Write down the questions on a piece of paper?
105. What are questions you couldn't answer?

I am satisfied with your answers!!

Congratulations you have passed your examination!! Good luck!

1. What is your ship
2. GRT, NET tonnage.
3. What is mean of GRT.
4. What is your M/E
5. What is the mean of ME and m.c.
6. Bore of the engine.
7. Stroke of the engine
8. What is your generator.
9. Power of generator.
10. How to take over a watch.
11. What you can see in funnel.
12. What is the mist box
13. What are comes to mist box
14. Draw the boiler gas path.
15. What are the clearances you take in piston
16. What are the important of clearance.
17. How to calibrate cylinder liner
18. Draw the calibrating points
19. Draw the wear down profile.
20. IS there thrust bearings in generator engine.
21. What are the boiler mountings.
22. How to open steam in to service tank, tank.
23. How many ~~are~~ valves are there.
24. How many valves in boiler feed water line.
25. Types of valves.



27. Why we use that type of valves,
28. Draw a fuel oil service tank.
29. What are the reasons for water in service tank.
30. Incident / any accident happened on board.
31. How to overhaul generator.
32. What are the manuals you read,
33. What are the reports you send to company,
34. What do you check before start generator after overhaul,
35. What is the importance of lub oil analysis report
36. ~~How~~ What is running in procedure.
37. How to take bunker
38. How many samples you take
39. What is BDN
40. What are the content of it,
41. What do you check in lab report,
42. What ~~the~~ can be happen if there is Na, Va,
43. What is high temp corrosion,
44. What is low temp corrosion.
45. What do you check if there is cathodic lines
46. How do you identify purifier leaking
47. How to check purifier performance,
48. How to overhaul purifier.
49. Dry docking procedure.
50. What do you check in main switch board.
51. Draw earth lamp connection.
52. Draw power distribution system
53. If ~~ear~~ there is ear fault to whom do you inform
53. What do you check in emergency switch board.

86. To whom you inform electrical faults
87. Who is responsible for that
88. What is importance to know electrical system as 3e
89. Requirements for paralleling 2 generators
90. Type of governor used
91. What is the droop
92. Why droop is important
93. Type of main engine governor
94. What are the routine checks for generator
95. Preparation for auxiliary engine major overhaul
96. After aux de carb what things u should check
97. Safeties for generator
98. How to stop generator in case of over speed and tachometer failure
99. Why so importance to check previous records
100. What are the checks done in emg generator
101. Methods of starting
102. What u going to check in batteries
103. When ur testing emg generator
104. How much load give to emg generator
105. Where the evidence you will show about test
106. Emergency supplies from ESB
107. How u find out problems in machineries
108. What is the importance of leadership onboard
109. Why teamwork needed
110. How u going to manage ur people
111. Ur responsibilities as a 3/E
112. What is the behavior reporting system
113. To whom u inform 1st
114. How to train ur cadet
115. How u evaluate him
116. Suppose he is not a hard worker and how advise him
117. To whom u report about E/C
118. What is the importance of managing resources onboard
119. If need to do temporary repair hw u carry out that
120. What is the control systems onboard
121. What is PID
122. Hw u prepare for drydocking
123. What u do 1 year before drydocking
124. What is CMS
125. What is HSSC



4. What do you check in M/E
- 5 M/E alarms.
- 56 M/E Slow downs and shut downs
- What ~~do~~ will you do if familiar of remote operator,
- 57 what ~~do~~ will you do if engine room control failure.
- 59 Alarms and saddles of generator.
- 60 What will you do when person in smoke.
- What is your first action when engine room fire.
62. How many ERBD in ECR.
63. How to train your cadets.
- 64 what is risk assessment.
- 65 what is the chapter
- 66 what is the safety management system of on board.
- 67 How many chapters are there.
- 68 what is SOLAS
- 69 How many chapters are there.
- 70 How carry out a boiler survey.
- 71 what are the documents to be ready.
- 72 what are the boiler water tests on board.
- 73 what are the Mappoh Annexes.
- 74 what is document ~~is~~ under annex 1
- 75 what is the certificate under annex 1.
- 76 what is annex IV.
- 77 How to ensure annex IV is not violating by ship.
- 78 what do you check
- 79 Alarms in sewage plant
80. what is annex VI

CLASS 3 ORAL EXAM

Examiner: Mr. Bandula Kariyawasam

Examinee: P.P.K. Perera (CINEC)



1. What is your ship
2. What your engine type
3. Difference between RT-FLEX and ME
4. Difference between ME and MC
5. Howur engine exhaust valve works
6. How much pressure build up in servo rail
7. Which type of pump used
8. Which type of lube oil used
9. Type of filter used and filter size
10. Properties of sys oil, ref plant oil, high pressure system oil
11. Difference between system oil and cylinder oil
12. What is STCW key functions
13. Functions under engine department
14. Explain columns in functions
15. Draw dual cycle with temp and pressures
16. If scavenge pressure low what will be reasons
17. Checks u carry out in t/c and parameters
18. Take t/c performance
19. Any other than T/C cause to low scavenge air pressure
20. Air cooler parameters and performance
21. Effects if scavenge air pressure and temp low
22. How compression pressure get low
23. Which region fuel injection and commence in dual cycle
24. How to carry out scavenge inspection
25. Checks in piston rings
26. What is reason for piston ring scratch
27. Which clearances u check in piston rings
28. Why cyl. oil is used
29. Why high TBN value
30. What is high temp corrosion
31. Which chemicals caused for high temp corrosion and its ratio
32. Where and effects of high temp corrosion
33. Which type of pumps used onboard
34. What is the type of bilge and OWS pump
35. Why is positive displacement
36. OWS pump stator material
37. When ER flooding what is ur 1st action
38. Main bearing inspection and overhaul
39. Checks in main bearing

40. What types of firefighting systems onboard
41. What is back up firefighting system
42. How it operates
43. For which machineries the mist detection system fitted
44. How to test and how often u test
45. What types of fire detectors onboard
46. Where can u find heat detectors
47. If fire is in ER what ur going to do
48. How to escape from fire
49. If there is causality and lots of smoke what u going to do
50. How to release co2 ER
51. Operation procedure for co2
52. Co2 bottle gang releasemechanism
53. Explain marpol annex 4
54. What do u checks for this annex
55. How to ensure ur plant is working correctly
56. Howto maintain the bacteria
57. Which chemicals u added to maintain purity of water
58. Explain marpol annex 5
59. How u segregate garbage under this annex
60. Any records onboard for garbage
61. Explain marpolannex 6
62. Which records under annex 6
63. How u maintain nox level generator as a 3/e
64. What is the certificate under annex 1
65. What are the certificates u carried onboard
66. The aux engine sump tank transfer to sludge tank how u keep records of this transfer
67. Orb under which annex
68. Boiler survey
69. At what pressure thevent should open
70. What is urboiler working, design, safety valve lifting pressure
71. What are the boiler alarms
72. How oftenthat u checks
73. how to check boiler alarms in front of survey
74. boiler safety valve construction
75. how to calibrateremote water level indicator
76. difference between safety valve and relief valve
77. what dou checks in SG room
78. how to ensure SG working properly
79. motor protections and types of starters
80. how ucometoknow that motors working properly and checks
81. protections in MSB and ESB
82. the metrology of finding electrical faults
83. what things PSC checks in MSB
84. how toavoid generator from overload condition
85. explainabout preferential trip and items

86. to whom you inform electrical faults
87. who is responsible for that
88. what is the importance of knowing electrical system as 3e
89. requirements for paralleling 2 generators
90. type of governor used
91. what is the droop
92. why droop is important
93. type of main engine governor
94. what are the routine checks for generator
95. preparation for auxiliary engine major overhaul
96. after aux de carb what things you should check
97. safeties for generator
98. how to stop generator in case of over speed and tachometer failure
99. why so important to check previous records
100. what are the checks done in emg generator
101. methods of starting
102. what you going to check in batteries
103. when you testing emg generator
104. how much load give to emg generator
105. where the evidence you will show about test
106. emergency supplies from ESB
- 107.



Name : Kanchna isanka CHEMICAL TANKER (0717434019)

Examiner : Mr Kingsly

Date : 26/05 /2017



1. Why did you choose this career
2. Tell me about your self
3. Did you train in dock yard
4. What are the jobs did you involve
5. Briefly explain about welding
6. Types of files ,shape patterns ,draw and explain
7. What is the use of rasp file
8. Draw plan view of hacksaw blade, what is rake angle, can you cut stainless steel
9. Type of ship, draw cross section
10. Which cargo did you transport
11. Tell me about tank coating
12. What are things inside the tank
13. How tank heating arrangement fixed into the tank
14. What is p.v valve and p.v breaker in IG line
15. Requirement for location of the p.v valve
16. How do you adjust tappet clearance in aux engine
17. How many revolution it will take explain briefly (2 revolution ,do it with firing oder)
18. Draw cross section of centrifugal pump
19. What is purpose of wear ring
20. What you will do when fire occurs inside engine room
21. Where can you escape from engine room in emergency Situation(specially tell him about steering gear room exit)
22. Which kind of bulbs are fitted in emergency escape route
23. If it is labeled ,which color is it
24. Tell me about deck lights, how do you identify those as flame proof lights
25. Can you repair this bulb
26. Briefly explain about immersion suits
27. Should all ships carry immersion suits
28. can you pumpout bilge water
29. what are thing wirte in CRB
28. Which type of

Isuru Udara Silva

Examiner: Mr. Kinsley Wijeratne

25.04.2017

1. What types of ships have you sailed on?
2. What are the build years?
3. Have you worked on an UMS ship?
4. How would you take over a UMS watch?
5. Can you enter the engine room?
6. How do you know that you are the duty engineer?
7. What can you find on the UMS panel in the cabin?
8. How many types of alarms are there?
9. How can you identify them?
10. What other information does it indicate?
11. How do you Man the Engine room?
12. Sketch a Mid ship section of a container ship.
13. What is the purpose of the Torsion box?
14. Sketch and show how the torsion acts on the ship.
15. Is it only the top part strengthened? What about the bottom?
16. Sketch the ballast line.
17. How does the remotely operated valves operate?
18. How would you know the valve is opened or not?
19. Does it indicate the percentage of valve open or close position?
20. What types of generators have you worked on?
21. Sketch the connecting rod.
22. How the stresses act on the connecting rod? Sketch and Explain.
23. What would you inspect on the connecting rod during overhaul?
24. How do you carry out the dp test?
25. Is it an effective way to inspect the mating surface of the big end halves?
26. How do you carry out a magnetic particle test?
27. Is it effective?
28. Where would you give the most attention on the big end bearing? And on the Small end bearing?
29. What do you check on the connecting rod bolts?
30. Where can you find Gear pumps in the engine room?
31. What type of pump is the Main engine lube oil pump?
32. What is the engine model?
33. What is the L.O pressure?

34. How the L.O Supplied to the crosshead? What is the pressure?
35. Sketch a gear pump.
36. What is Backlash clearance?
37. What is the purpose of the Backlash clearance?
38. How the gears in the Winch lubricated?
39. What are the special properties of this oil?
40. What is the difference between Cylinder lubrication oil and crankcase oil?
41. What is TBN?
42. When you are in the Engine room there is a fire in the bottom platform. What will you do?
43. If the fire cannot be controlled, what will you do?
44. Explain the Hyper-mist sprinkler system.
45. From where does it take suction?
46. When you on watch, you get bilge alarm. What will be your actions?
47. If you have to pump out the bilge holding tank, how will you do it?
48. Will you pump out inside a port?
49. Explain about the Sewage Treatment Plant.
50. Will you pump this effluent overboard?
51. If you are in a port will you pump out?
52. You are in New York and your Holding tank is getting filled up, what will you do?
53. How will your discharge to the reception facility?
54. During bunkering there is an oil spill. What will be your actions?
55. You are assigned to change a M/E injector. How will you do it?
56. What is the important document?
57. There is a total blackout. What will happen?
58. What can be the reasons for the emergency generator to not come on-load?
59. What are the electrical interlocks in the emergency generator?

Interviewer: Mr. Chandana.

ED Class III

- 1) Tell me about your self?
- 2) What type of ship you sail on. [Name, type, details of Machinery etc.]
- 3) Tell me your vessel trading route's.
- 4) What are the things you did when enter this Area?
[ECA area].
- 5) What is ECA?
- 6) How you change over to L.S.F.O?
- 7) What are the things coming under ECA?
I said SO_x and NO_x - He told to write down on a paper.
only SO_x and NO_x what else come ~~up~~ under Annex 6?
- 8) What is ~~part~~ PM [Particular Matter]. (I said unburnt fuel)
- 9) What is the limit?
- 10) Tell me what PM is and its composition?
- 11) How PM affect the humans what are the research done?
* I said breathing problems and said I don't know for research.
He wanted to know how the PM affect the human health
- 12) If there is a problem with ~~not~~ 2 motorman during your watch what is your action?
- 13) How you manage a situation like this?
- 14) Tell me what are your Saturday routines as a 3/E?
- 15) How to start Emergency generator?
What are the checks?
- 16) What type of fuel is used?
Regulations for the type of fuel?
I said F.P > 43°C and should start at 0°C
- 17) Tell me about the polar code?
 - * SOLAS what chapter
 - * when it is coming into force
 - * why it is coming into force
- 18) What are the measure you take when entering cold area?
- 19) Why you drain fire lines?
- 20) Where space heater's were installed in your ship?

- 24) How do you test the Emergency bilge suction?
 What are your weekly and Monthly checks on it?
 * I couldn't answer this question properly.
- 25) Tell me what type of purifiers you had onboard?
- 26) Any problems you encountered?
 I said spring breaking in Alfa laval purifier.
- 27) What does this spring do?
- 28) How it is attached?
- 29) How the arm assembly is attached?
- 30) How the paring tube is held in place?
- 31) How the paring tube is balanced?
 * He said to learn and come from a week.
- 32) What couldn't you answer last time?
- 33) Draw and show me how paring tube, disc and oil inlet/outlet pipe is connected? - simple block diagram would do.
- 34) How does the paring tube work / function?
 function of the paring disc.
 How to Remove the paring tube [He was looking at my project and asking questions?]
- 35) Tell me How to Overhaul the purifier from top to bottom?
- 36) How you remove oil inlet/outlet pipe?
- 37) Where you put the nuts? What you check?
- 38) What you check in the conditioning water inlet hose? N/R V/V.
- 39) How you remove the connection housing?
- 40) How when removing frame hood what you check?
- 41) What type of special tool you used to Remove the bowl hood, tightening torque?
- 42) How the bowl hood is set with the bowl body?
- 43) Draw and explain the Desludge mechanism?
- 44) What is interface? When it is formed?

3) A/cap principle? How you monitor the water content in the bowl?

4) How the water transducer sensors water?

7) Tell me How small quantity of water is discharge through the water outlet ulv before a desludge during running?

18) Are you sure that the water outlet ulv is kept closed during normal operation and why?

9) What are the parts in your bowl assembly.

50) How the operating slide work?

51) What are the factors essential for separation?

* I couldn't tell height of separation

2) What is the smallest size of particle able to go through.

3) Draw and explain the limit size particle. Factors affecting it.

* I drew the diagram but when I went to explain I got stuck since I panicked.

54) How to take out discharge slide?

55) What are your actions if the special tool is broken?

* Here the examiner needs practical answers, not answers like inform 2/E etc.

56) How the rpm sensor work's ~ I said proximity sensor and I could answer the working principle.

Fail.



STCW - ~~key~~ key functions

- * Level of Responsibilities

brief explanation. He generally asked about the competence - just a

My 1st attempt failing Reason was purifier. He asked to explain a purifier overhaul from top to Bottom [without preparation part]

cross questions (Alfa laval type)

- * Purpose of micro-switch interlock in flame hood.
- * How to Remove locking ring if stuck?
- * What you check on the Disk Stack?
- * Why No of Disc is so important?

$$V_g = \frac{d^2}{18\mu} \left[\frac{\rho_{particle} - \rho_{phase}}{\rho_{fluid}} \right] r\omega^2$$

— just used the equation and explained.

- * What type of cleaning agents used?

- * Draw a purifier bearing arrangement, - Type of bearing used - How load is taken [during discharge the load is given where].

- * How you remove the purifier belt?

- * Asked about air deflector purpose in Alfa laval purifier.

- * * How $r\omega^2$ can reduce? Centrifugal clutch working? why it is installed, How rpm reduce if friction pads are worn.

- * Where you note down sump oil transfer in ORB?

3) Air compressor - Explain Air comp overhaul without preparation, from cylinder to con-rod.

- * What are the things you check.

- * What are the things you put under the

"Remarks" column.

- * Daily checks.

A) Generator Overhaul - How to remove cylinder head, what are the checks
- How to adjust tappet clearance - yoke balancing is important.

* If 8 units are present, 2 units are coming simultaneously to unit?
TDC, without flywheel marking how you know which unit?

Answer Expecting: opening fuel pump cam case cover and checking which plp cam is at it's peak.

* fuel plp timing - only the method and at what crank angle - He doesn't like the preparation part.

* ~~what~~ How to adjust? "Thrust plates" / shims.

* He pays attention to materials of components.

B) Draw a ballast water system - Basic system, pay attention to sea suction - no need anti-heeling system. He only gives 1 or 2 minutes to complete the whole drawing - so draw fast!

* sea suction (strainer) material.

C) Draw fuel oil transfer system - operation of system (rant to tank transfer, port to stb or vice versa but port to port or stb to stb not possible).

D) What is ISPS?

* Ro? ~~Answer~~

8) Levels of ISPS? who decides the security level.

9) ISPS Equipment? ship alert system, metal detectors, Bomb search mirror, Barb wire, fire hoses etc.

10) ISM manuals.

11) Pay attention to ship certificates and load line mark.

D) Draw a cross-section of a mid-ship arrangement. what is stored in D.B tanks [what we draw in Naval arch] - transverse section

1) What is the type of lights used in paint store - [He wanted to know a marking code I didn't know]

How painter locker protected against fire.

2) How to take over a watch? Funnel to funnel. - roughly the things you check during taking over on watch.

3) Emergency generator starting methods - what are the loads supplied. - Draw and explain.

4) Brief explanation of CO₂ system

How to calculate the amount of CO₂.

$$\text{CO}_2 \text{ required} = \frac{\text{gross volume} \times \text{mixing ratio}}{0.56}$$

mixing ratio 40%
35%
30%

1 CO₂ bottle = 45kg.

5) What are the critical equipment onboard?

6) OWS operation - Draw and explain system.

- How to make a record in ORB.

OWS Regulations

- What is entrained condition? He was very specific about the question - asked me if pilot leaves the ship after zoom from port can you discharge - "no". Then How far and speed?

7) Where Bunkering entered?

8) How to train your cadet - solar training manuals, COSOP.

9) COSOP - chapters - only important ones. like risk assessment PPE fire prevention etc.

10) Draw 4 stroke - 2-stroke timing Diagram

11) With how many revolutions can you keep the tappet of all the units [2 rev]. every 90' an unit coming to TPC according to no of units.

12) Draw centrifugal pump.

- what are the materials.
- what things you check routinely.

~~Gugs~~

End.

CLASS III ORALS

Examiner - Mr. Bandula Kariyawasam.

Examinee - U.S.S. De Silva.

01/12/2016

- 1) How many ships you have sailed ?
- 2) Details of the ships? { build year,(M/E model & KW), (G/E model & KW), BT KW, Containers & ref capacity, Number of blades in propeller and diameter, Bunker capacity }
- 3) Type of your M/E turbocharger(radial or axial) & how many T/Cs?
- 4) Special incidents onboard vessel?
- 5) Under STCW, key principals ?
- 6) Watch arrangements?
- 7) Taking over a watch?
- 8) Performing watch?
- 9) Who will take readings for the log book & who will log it on?
- 10) Columns of the table
Competence of 3/E , AB, Rating, Electrical officer required....
- 11) Draw and explain M/E fuel oil system. (More interest about mixing column)
- 12) Size of M/E fuel oil filter? (for me it was 150 micrometers)
- 13) Fuel oil viscosity for M/E and G/Es?
- 14) How do you close f.o to M/E during maintenance?(Isolation valves are provided at inlet and outlet of the lines)
- 15) Draw boiler firing sequence (Block diagram)
- 16) What are the boiler water tests and limits?
- 17) Jacket cooling water tests ? (just asked the test, not the procedures)
- 18) Boiler water side scales?
- 19) what are the chemical treatments?
- 20) How Cl⁻ can enter into the boiler?
- 21) What type of boilers are more effective ? (water tube or Fire tube)
- 22) Boiler Safeties? How often we are checking boiler alarms?
- 23) Type of boiler blowdowns and reasons for both?
- 24) How to test boiler L.O L.O water level alarm and trip when survey come? (Complete blowdown expecting , No simulation)
- 25) Difference between L.o water level and L.o L.o water level alarm?
- 26) How to detect salinity and oil in the boiler feed water system?
- 27) What is the boiler cascade tank temp?, what are the reasons?
- 28) Boiler firing up procedure (from cold condition)?
- 29) How to start T/G? (one of the my ships we had a T/G)
- 30) How to prepare Aux.engine main bearing report? , Draw G/E bearing.
- 31) If abnormal sound coming from G/E how you identify it?
- 32) Reasons for G/E vibration?
- 33) How you prepare for G/E overhaul?
- 34) How you check lifting tools are in good condition? (expecting visual inspection first. Don't say checking certificates at first)
- 35) When equipment malfunction will certificate valid???
- 36) Documents prepare before start generator overhaul?
- 37) What are the checks you carry out on cylinder head before start overhaul?
- 38) Who will be with you during overhaul?
- 39) How you make sure you have done it properly ?
- 40) How G/E valves rotates and how to check rotation of the G/E valves?
- 41) How you make sure positive closing of the valves?

- 42) What are the checks you do before start G/E after overhaul?
- 43) What are the reports you handover after overhaul? (Specially Pressure report , Clearances report and etc...)
- 44) What are the clearances you measure during overhaul?
- 45) What you check on con rod small end bearing? (ovality)
- 46) In G/E ,Other than deflections what you measure on crankshaft? (Crank pin diameter with micrometer)
- 47) Who will give you permission to try out the G/E after overhaul?
- 48) Checks on G/E fuel oil system? (Injectors, f.o pumps, accumulators)
- 49) How many holes on G/E & M/E fuel injectors and arrangement of them? (he asked me to draw it and show)
- 50) If G/E one unit having problem with injection system how you identify? (Exhaust gas temp and flu gas colour)
- 51) How many exhaust funnel outlets at the top?
- 52) G/E injector opening pressure?
- 53) How to check G/E fuel pump timing?
- 54) Draw 4 stroke timing cycle (Show fuel injection period, Crank angel of fuel injection, how long exhaust valve will remain in open condition (degree)
- 55) Draw duel cycle (mark the points, T and P values at each point, point of fuel injection and injection end)
- 56) Reasons to reduce pressure at point 1 and 2 ?
- 57) Draw, power card and draw card. (Axis of the cards pressure, volume, crank angle)
- 58) Show late injection on draw card
- 59) What are the inputs for the electronic performance analyzing system? (Crank angel & r.p.m)
- 60) How crank angle measured ? (angle encoder)
- 61) How to measure T/C performance?
- 62) What are the onboard tests for L.O?
- 63) What are the things in L.O analysis report?
- 64) What are the materials you will find on that report?
- 65) How these materials come to lube oil?
- 66) Material of piston rings?
- 67) Material of crankshaft?
- 68) Explain explosion vs fire?
- 69) Draw flammability curve and limits of that?
- 70) Type of fire extinguishers onboard?
- 71) What are the fixed fire systems onboard ship?
- 72) Which plan will show the F.F.A onboard?, Which places those documents are available?
- 73) What you do in case of engine room fire?
- 74) What you do if causality is there in danger?, (When engine room full of smoke)
- 75) Checks on fire lines
- 76) What are the types of controllers? Examples for them?
- 77) What is the type of controlling system in steering gear system?
- 78) What will you if control for M/E fails from the bridge?
- 79) If remote indication for exhaust gas temp , what will you do ?
- 80) How the aux. gen. alternator voltage produce? (Explained the system only by words, initial excitation , current flowing path , etc...)
- 81) Things to be consider before synchronizing?
- 82) Why voltage important when synchronizing ?, How to change frequency when synchronizing?
- 83) If auto synching fail including synchroscope, what will you do? (dark lamp method)
- 84) what will happen if one G/E become over load? (preferential trip then overload)
- 85) Explain preferential trip vs sequential starting.
- 86) Switch board safeties?
- 87) During under/Over voltage what can happen?

- 88) High voltage safeties? (live line tester)
- 89) Supplies from emergency generator?
- 90) How you carry out IR test for a motor?(Draw and explain it)
- 91) What is the minimum acceptable value for IR test? (at least 1 Mega ohm)
- 92) Arrangement for Star and delta connections at terminal box? (draw and explained it, by showing 6 terminals)
- 93) Duties as a 3/E during bunkering?
- 94) Stages of Bunkering?
- 95) How many samples?
- 96) what are the corrections you do? (related to fuel oil)
- 97) How you make sure correct quantity has received?
- 98) Documents under MARPOL annex VI.
- 99) Fuel oil standard in use?
- 100) What are the things contained in f.o analysis report?
- 101) What will happen if Na and Va with f.o?
- 102) fuel oil Sulphur limits?
- 103) How you identify if f.o leaking from one unit? (asked related to M/E , leak off alarm)
- 104) How you comply with SOLAS as a 3/E?
- 105) SOLAS chapter 1 explain?
- 106) Checks on steering gear system?
- 107) Why C/E and 2/E always important?
- 108) When you sign-on to the vessel, how you take over the things?
- 109) How you make sure those machineries are working fine?
- 110) If any defect find what you will do?
- 111) How long you have to check the things after you sign on? (within 3days)
- 112) Who will come onboard ship? (surveys , psc, etc..)
- 113) What is the management system onboard ?
- 114) What is COSWP?
- 115) Name the sections of COSWP?
- 116) What is Team work?
- 117) Importance of Team work?
- 118) What is Situational awareness?
- 119) What is Leadership?
- 120) What is effective communication?
- 121) How you make sure cadet is doing job properly?
- 122) How you going to evaluate him? (Evaluate him by using column 4 of STCW)
- 123) Explain flow chart vs trouble shouting table?
- 124) Enclosed space entry procedure ?
- 125) What are the checks you carry out?
- 126) Composition of the atmosphere?
- 127) How you check the atmosphere(Use integral sampling pump of the analyzer and collect samples through sampling tube at top , middle, bottom levels of the tank)
- 128) Speciality of electrical equipment use in enclosed space? (Intrinsically safe)
- 129) Responsibilities as 3/E during dry dock?
- 130) Checks during dry dock?

Examiner- Mr. BANDULA KARIYAWASAM

Candidate- W.M.A.M. MUDANNAYAKE

1. Definition of GRT
2. If GRT is a volume why give it in tonnes
3. What is the Definition of Net Weight
4. What is the Definition of Dead Weight
5. What is the Definition of displacement
6. What is the Definition of L.O.A.*
7. What is length on water line – this was asked since i answered the above question wrong
8. What are the deck machineries on the ship
9. What is windlass
10. What are the crane movements
11. What is your ship's crane capacities
12. What is SWL and its unit
13. What are the checks done in crane during your watch ----- expected answer send the rating to make the checks because not answered asked about stcw Aiii/5

Next day

14. What is the ship main engine model
15. What does it stand for
16. What are the special incidents occurred when you were on board
17. What checks you make on fire main
18. What are the EMG fire pump requirements
19. Draw a pump
20. What's pump performance*
21. Draw its performance curve
22. To whom you inform about the emg pump ovhl
23. How to align pump with motor
24. What are the checks you make in them*
25. what happens if air is taken in from suction
26. how do you prime it
27. what is the requirement for that (emergency fire pump should have a priming unit)
28. in case the pump won't turn what will you do after ovhl* expected answer inform second and chief engineer
29. what do you in case of a fire
30. what do you inform the bridge*
31. what is effective communication and normal communication
32. why it is so important
33. what are the places that can cause fire *
34. what are the motor protections
35. why you need fuses
36. what do you do in case of a fire
37. what will you do in case there is a casualty
38. where are eebd's
39. what are its regulations
40. how many should there be in the control room
41. why it's more than one
42. what are the fire fixed fighting equipment



43. In water mist system how does it detect
44. What are the types of detectors
45. How do you take over a watch
46. In case a another engineer is doing maintenance work during your watch why you should know and what are your duties * i didn't know to answer this so A STCW book was handed over to me to read aloud chapter 8 , performing the engineering watch number 74
47. What are the boiler safeties
48. What are the shut down alarms
49. What are the scales in boiler
50. What do you put to prevent it
51. How does scales come into boiler
52. How does sludge accumulate in boiler
53. How a blow down is carried out
54. Where sludge is accumulated draw and show , extremely simple,one tube diagram expected only
55. What happens when sludge is not blown down*,,, expected only to say it will corrode and water will leak
56. How to check safety valve working * expected only to say will release with use of easing gear
57. How steam is opened to a tank?
58. What observation you make in it
59. What is the important thing when starting up and shutting down boiler * didn't understand the question properly , expected answer open air purge valve
60. Why is air purge valve opened during these operations
61. What are the safeties in the air compressor
62. What are its regulations
63. Air bottle regulations what are they
64. What is follow up and non follow up in steering gear
65. what are its regulations
66. how do you carry out emergency steering
67. how often do you have to carry it out
68. how often do you carry out fire and abandon ship drills
69. where is it mentioned the alarms * expected answer in ISM manual
70. how often do you carry out enclosed space entry drill
71. as a 3rd engineer how do comply according to marpol , what are the equipment
72. what are the documents to be filled before enclosed space entry
73. what are the function test in oil water separator * expected answer check 15 ppm equipment and the three way v/v should stop ovd discharge within 20s
74. Who comes to check OWS at port
75. Where do you make this record under ORB CODE * answered wrong , an ORB was handed over to me to check and answer again , the answer is code (I)
76. What reports do you make before doing bunkering
77. What do you check before taking bunkers
78. What are the tests you do before bunkering
79. What are the stages in bunkering
80. What do you check during bunkering
81. What are the factors you consider before taking sounding
82. Why it is important to do temperature correction * expected answer because it is not allowed to have more than 1% correction difference between actual bunkers and reported bunkers
83. Where is it mentioned about bunker tanks* solas chapter 2 part 1



84. Before an ovhl of generator what are the reports you make
85. Why you take performance
86. Draw power and performance cards
87. What are things you can identify from a performance card
88. Draw dual cycle?* i didn't remember this, and hints were given saying that its thermo dynamics, still didn't come to my mind. but then i was asked to draw the diesel cycle after i remembered and drew it .
89. Why take deflection ,what can you identify from it
90. What observation do you make before ovhl of generator * expected to answer- noise, vibration , Power output and power factor
91. Why it is important to change ^{Con}rod bolts in A/E
92. What do you check in them * when i answered cracks , asked what that cracks were called since i didn't know the answer I was asked the types of stresses acting upon the bolts , which answers the question. It's called fatigue cracks.
93. How do you make A/E filter cleaning report
94. What is active and reactive power
95. Is it advantages to have reactive power
96. Why is it advantages
97. What are the switch board protections
98. How can a black out occur* the answers I gave was incorrect
99. What is preferential tripping- which answers the previous question
100. How do you know what are the Non essential and non essential loads – simple answer to say its mentioned the switch board
101. What are the three terms of PID controllers
102. What are the examples
103. What is 2 term and 3 term controlling * didn't answer
104. how is the boiler water level controlled* gave a complete answer which was ultimately the answer to the above question
105. what is the time period for docking , asked about the extension also which is 2.5 years
106. How do you prepare for Docking?
107. At the dock what are the main equipment to be checked
108. Who decides this
109. What are the special tools used at the docking
110. What do you measure with poker gauge , draw and explain – very simple diagram only required .
111. what is the difference between flow charts and troubleshooting*
112. How do you report in case the PMS is not carried out by the previous 4th engineer * put a remark in handing over report and get him to sign it.

Tips

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Examiner- Mr. BANDULA KARIYAWASAM

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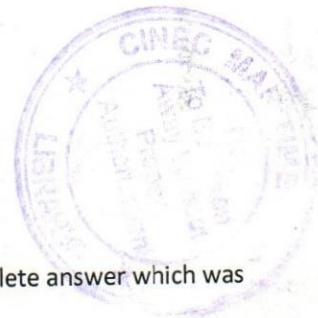
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69. where is it mentioned the alarms * expected answer in ISM manual
70. how often do you carry out enclosed space entry drill
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EXAMINAR :- Mr. BANDULA KARIYAWASAM

EXAMINEE : DINIDU MADHURANGA

DATE : 17 - 11 - 2016

ENG. - CLASS

III

orals

- 1) Types of ships you have sailed and their Ages?
- 2) Duties you carried out on your first ship.
- 3) What actions you have taken when bilge level increased, as a trainee?
- 4) What are the minimum requirements, to be an Engine Rating?
- 5) What are the functions related to Rating a Engine AB as STCW?
- 6) What are the functions related to O.I.C. of an Engineering watch?
- 7) What are the columns in the Table?
- 8) Competences related to marine Engineering?
- 9) Total number of competences related to O.I.C.?
- 10) Boiler firing sequence, describe with a block diagram.
- 11) Indications in a boiler panel board?
- 12) Electrical diagram of the boiler (Power supply from main bus bar, with all the safeties)
- 13) Draw boiler combustion control system
- 14) What are the types of fire detectors on board?
- 15) What are the places fitted with flame detectors?

- 16) How you find a fire?
- 17) What actions you will take?
- 18) What are the fire classes?
- 19) What are the E/R fixed fire fighting systems?
- 20) In tankers what are the fixed fire fighting systems on deck?
- 21) What are the other precautions in a tanker to avoid a fire?
- 22) Draw flammability curve
- 23) What are the meanings of LEL, UEL?
- 24) What is the importance of ^{knowing} flammability curve in other ships? (apply to F.O. tanks)
- 25) Overhaul of centrifugal pump
- 26) Draw a centrifugal pump and mark positions of taking clearances.
- 27) Draw p/p performance curve
- 28) Materials of p/p shaft, impeller
- 29) Draw a mechanical seal.
- 30) How the p/p shaft's wear can take place?
- 31) How you find the performance of the p/p?
- 32) What are the regulations related to main fire p/p?
- 33) What is the p/p pressure to be maintained?
(depend on the highest fire hose position & hydrant pressure in SOLAS)
- 34) How many EEBDs in ECR?
- 35) From where you can get fire fighting equipment details on board?
- 36) Maintenance & checks on fire main

- 37) How you take over a watch?
- 38) Key principles in STCW
- 39) What is the bunker procedure you carried out?
- 40) How you calculate correctly the quantity?
- 41) What is SOPEP?
- 42) Content of BDN
- 43) Content of Bunker Analysis report
- 44) Effect of higher Al+Si
- 45) ISO standard 8217 Limitations
- 46) What are things you checked in T/C Overhaul
- 47) Draw an End mounted bearing arrangement
- 48) Bearing cross section.
- 49) How you check Hydraulic Jacks?
- 50) How you check pressure gauges?
- 51) What is the maximum deviation you accept to use a pressure gauge and where it is written?
- 52) Draw the Thrust block arrangement in a main Engine
- 53) Thrust bearing arrangement in A/E
- 54) How you prepare for a A/E Overhaul?
- 55) How you carry out the Overhaul?
- 56) How you that, it is correctly assembled?
- 57) How you carry out ~~to~~ running-in period?
- 58) On board L-O tests
- 59) How the metal particles enter in to the system?
- 60) Size of L-O filters.
- 61) Monthly reports of 3/E
- 62) How you do a black out test?
- 63) ISM manuals

- 64) In A/E, how you check Crankpin bearing clearance, main bearing clearance
- 65) After the overhaul if the Engine not started what you will do?
- 66) What are the reports ~~to~~ related to MARPOL Annex VI
- 67) Equipment related to NO_x
- 68) What are the recent Emission Control Areas?
- 69) How you find, statutory requirements for Emissions
- 70) Location of fuel quality regulations in MARPOL
- 71) Importance of SOLAS as 3/E
- 72) Content of Chapter I, in SOLAS
- 73) What is COSWP & how many chapters, important chapters
- 74) How you prepare a Risk Assessment.
- 75) Flow diagram & flow chart
- 76) materials of - Gudgeon pin, Crankshaft, piston, Liner, Piston ring, Propeller.
- 77) Preparation for dry dock.
- 78) Checks in Dry dock.
- 79) Do you go with class surveyor to check the Hull condition?
- 80) Why it is important to check hull condition as a 3/E
- 81) Other checks on shaft, Hull (Anodes)

82) Draw stress-strain curves

83) What is the main on board application of stress-strain curves

84) Motor starting methods.

85) Large motors starting method.

86) How you ascertain performance of Purifier, Compressor, Boiler.

87) How the E/R Highfog system come in to operation?

88) Reports you prepare related to a A/E overhaul.

89) Maximum deviation of bunker quantity you will accept?

90) What are systems essential to keep in operation in the dry dock?

91) E/cy switch board supplies

92) How you train a cadet?

93) If u can't open purifier bowl, what you will do?

94) If there is a deviation in the Handing over report, will you take over?

95) What is the procedure to be followed for that?

96) What is your next stcw table?

97) Draw Dual combustion cycle & mark the positions temp & pressures

98) Draw In phase & Draw diagram

99) Mark the position of fuel injection in phase diagram & on the Dual cycle.

- 100) material of Exh. v/u of H/S & 2/S
- 101) Type of light fittings in paint locker
- 102) Risk associated in paint locker.
- 103) If you want a ~~fe~~ modification to be done on piping system, what is the procedure to be followed?
- 104) How you evaluate the competences of a cadet according to the ~~fe~~ different functions
- 105) What are the documents and Equipment related to MARPOL ANNEX I?
- 106) If there is a alarm on boiler panel what actions ~~you~~ you will take?
- 107) What is effective communication?
- 108) What are the things you have to check in H/S cylinder head in overhauling time?
- 109) Electrical systems, Electronic system in Purifier?
- 110) What is Electrical diagram & electronic diagram?
- 111) What is the insulation resistance value of a motor while it is running?
- 112) How you check the performance of Electrical distribution system?
- 113) ~~How~~ Who will check the lifting appliance on board?

② C/ASS - III

EXAMINER: BANDULA KARIYAWASAM

DATE: 09/11/2016

CANDIDATE: INDRAJITH DHARMAGE

DURATION: 1530HRS-2130HRS

TANKER

1. What is u r ship?
2. If u are a tanker man make sure that u know about the IG system clearly. Specially about safeties, trips & alarms. Hundreds of cross questions were came upon IG system.
3. Pump room safeties?
4. Safeties what u need to take working with electrical systems on board tanker. Specially on deck
5. Enclose space entry
6. Flammability curve.

FUEL SYSTEM

7. Draw the system and explain.

FIRE

8. In case of fire what would u do? (Don't tell him that u will activate the alarm & escape. u need to fight with fire.)
9. Action in case of fire
10. If there is a casualty what would u do?
11. What are the things u do when u observe the fire?
12. How long it will take to cause fire after generating smoke
13. If there is hydrocarbons, oxygen and an electrical fault what would happen. (Explosion)
14. What is the difference between fire & explosion?
15. What are LEL & HEL?

MAIN ENGINE

16. What are the shut downs of the main engine.
17. What are the controlling positions of it

AUTOMATION

18. What is electrical diagram. Electronic diagram. Give examples.
19. Draw 2 term control system.
20. Basic controlling actions
21. Basic controlling methods.
22. Difference between 2 term controllers & cascade controllers

PURIFIER

23. Purifier controlling system.
24. Purifier electrical system.
25. Purifier alarms
26. Purifier control system
27. Purifier manual desludging
28. Separate purifier electrical and electronic system.
29. As an engineer what would u check over purifier.
30. What are the causes for abnormal noises & vibrations
31. Did u trace electrical systems of purifier onboard

BOILER

32. Type and manufacturer.
33. Steam temperature & pressure.
34. Boiler trips & shut downs
35. Boiler scales, treatments, tests
36. What will happen if there is scale accumulated in it.
37. Boiler water level controller failure. What would u do?(don't tell him that u would inform electrician. Tell only that u put the controller into manual)

STCW

38. STCW regulations
39. Principals
40. Arrangements
41. Taking over watch
42. Functions
43. Columns
44. A3 2 table
45. How to take over the watch
46. Watch keeping arrangement
47. What is the difference between marine engineering & electrical, electronic & control engineering
48. Explain leadership, assertiveness, leadership and all explanations about human resource management
49. How to train u r cadet.
50. How u train him electrical.

SOLAS

51. SOLAS chapters and briefly explain them.
52. How SOLAS is important to 3rd engineer.

BUNKERING

53. Bunker documents
54. As the third engineer how would u comply with bunkering operation.
55. Bunker difference allowance
56. What are the things u had on your bunker checklist
57. What is the standard for fuel
58. Why bunkering is divided into 3 stages

MARPOL

59. Marpol annexes
60. No_x technical code
61. Annexes regarding bunkering
62. ORB description
63. Anti-pollution equipment on board

AUXILIARY ENGINES

64. Deference between alarm & trip
65. What is the time duration between alarm & trip
66. Generator full overhaul
67. All the tests of overhaul
68. Reports after & before overhaul
69. How u identify certain part, which someone changed before in A/E
70. Running in of the generator
71. Piston ring side, what is the importance of it
72. Who will give authorization for it
73. AE started no voltage showing. What is the fault(think of an answer except AVR)
74. Why u take photo evidences
75. Where u note down vibration
76. How u take performance
77. What are the inputs that u take for it
78. How speed sensor working & angle encoder working
79. What are the things u do before taking performance
80. How do u know that u have correctly assembled the parts.
81. What is the main bearing clearance
82. What the stresses in a AE.
83. Why connecting rod bolts are changed.
84. What is maintenance schedule.

ELECTRICAL

85. Voltages of bridge equipment.
86. Specially gyro compass
87. High voltage systems safeties
88. How u test a high voltage system.(Expected answer was live line tester & IR tester for HV)
89. Bow thruster starting method
90. Why such arrangement is used.
91. Bow thruster interlocks
92. IR testing
93. What are the switchboard safeties

STEERING GEAR

94. Steering gear tests
95. How many hours before u do that.
96. What is importance of it?
97. Where u can find relevant regulations.

EMERGENCY GENERATOR

98. Emergency generator checks
99. Emergency generator indicators
100. Emergency generator starting methods
101. How emergency generator battery connected

CODE OF SAFE WORKING PRACTICES

102. How many chapters over there.
103. What are the chapters important for u?
104. What is the importance of chapter 1
105. What is the enclosed space entry procedure
106. What is permit to work & sanction to test

OTHERS

- 107. CPP operation
- 108. Dry-docking procedure
- 109. What are things u check during dry docking

LSA

- 110. What are u r duties as a 3rd engineer during emergencies.
- 111. Where u can find LSA & FFA on board.
- 112. How u r prepared for emergencies(drills)
- 113. What is muster list
- 114. Where u can find them.
- 115. Where u can find solas training manual.
- 116. How many EEBD s in ECR.

- Guys it is important to note that he is not a stubborn person that we are thinking of him.
- Give him full solid answers. Don't keep half in u r mind & tell half for him.
- Don't worry about the questions u don't know. He will grab it somehow by asking lots of cross questions.
- Exam situation is totally different what u does it at home. So practice diagrams 100 times each. Even though I forgot O₂ analyzer BOOM BOOM BOOM.
- Practice oral questions with a guy who is having proper knowledge.
- Check the pattern of questions before going to orals.
- Study reeds series, dennis t hall book thoroughly if u want to pass the exam.....Then only u can hear CONGRADULATIONS YOU HAVE CLEARED UR CLASS 3 ORALS.
- At any time we would be there to help u guys.....

Class III Engineering-Oral

Date-01/11/2016

Examiner-Mr.P.V.T.P.Chandana

Examinee-W.Kalana Lakshan



**oral started with previous attempt last question

- (1) If there is no emergency generator how power is supplied to emergency fire pump
- (2) As a 3/E how you are going to carry out Saturday routine
- (3) What are the checks on emergency generator
- (4) How many starting methods for start emergency generator
- (5) What is spring starter,how engine start by spring starter,explain
- (6) How to carry out emergency generator load test
- (7) What are the emergency loads
- (8) How power is supplied to emergency switchboard through emergency switchboard
- (9) How you know bus tie is open,what is the indication
- (10) What are the checks on emergency fire pump
- (11)How much is the minimum discharge pressure of emergency fire pump

for that I gave him 6.5bar ,that is my ships emergency fire pump.but he didn't accept my answer ,then I told him in cargo ships it is necessary to have 2.7bar pressure at fire hydrants,then he accepted it

- (12) Where you can find those regulations
- (13)What is SOLAS CHAPTER 2-II
- (14) Inside that there is special code ,what is that(FSS CODE)
- (15)What is meaning of FSS,have you refer it
- (16) What type of lifeboat you have on your ship(free-fall lifeboat in my ship)
- (17)What are the checks on lifeboat
- (18)Explain lifeboat lowering procedure
- (19)There is some situations you have to lower the lifeboat by using davit,what are those situations(free-fall lifeboat)

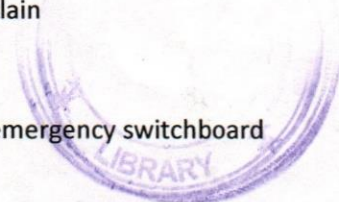
answer

i-high trim by astern

ii-when ship is grounded

iii-if there is any floating obstructions on sea

(20) What was your last ship



- (21) As a 3/E what are the important factors you have to consider when loading containers.(I told him about reefer containers it effect to generator load)
- (22) Tell me what are the different temperatures you maintain in reefer in different products
- (23) Tell me the brand names of reefer units(thermoking, DAIKIN, carrier)
- (24) How many reefer points in your ship
- (25) How many generators you have to parallel when fully loaded
- (26) Generator capacity
- (27) Other than reefers, what are the things you have to consider as a 3/E

***I didn't get his question that time, so he guided me to MARPOL ANNEX III

- (28) What is MARPOL ANNE III
- (29) What is IMDG code, classifications
- (30) When IMDG cargo onboard as a 3/E what are the factors you have to consider
- (31) What you understand by anti-heeling system
- (32) Explain how the system works
- (33) What is the minimum liquid level you have to maintain in anti-heeling tank
- (34) Your generator is not taking load, what are the reasons
- (35) Explain generator fuel oil system
- (36) How fuel oil pressure can reduce in fuel system
- (37) How to check fuel pump injection timing(I have explained him Yanmar hair line method/match mark method)
- (38) Draw a fuel pump and show me that markings
- (39) How you regulate the amount of fuel
- (40) What is the mechanism(rack and pinion)
- (41) What was your first ship, what are the cargo you carried onboard(my first ship was general cargo ship)
- (42) As a 3/E what are the important things you have to consider when working on a general cargo ship
- (43) What you understand by PMS (I told him about generator power management system)
- (44) What is that? explain it
- (45) What are the data you have to feed into pms
- (46) Do you know how to feed data into pms
- (47) What is PLC(Programmable logic circuit)
- (48) Explain me how it works

Congratulations you have pass class III orals. best of luck

**Thank you very much for my friends and C/E, 2/E, 3/E who supported to get me through orals. Good luck guys

* A. D. Silva.

→ Class III - Orals

→ Examiner - Mr. Bandulas Kariyawasam.

→ Date - 20/10/2016

→ result - pass.

- 1) What is your ship?
- 2) G/T & NT, with Reefers capacity & why it is so important.
- 3) Engine type → full description.
- 4) How you ensure your engine is performing well.
- 5) Draw a performance curve; (I couldn't draw it.)
- 6) Draw indicator diagrams; draw card & power card.
- 7) How was the crank angle is measuring, where you can find it in the engine.
- 8) Draw dual cycle for your M/E; with all temp. & pressures.
- 9) What is the No. 1 # point.
- 10) How it can get into a low value.
- 11) Draw the gas path from T/C compressor side to economizer out let with all the temp.
- 12) Why you cooling the T/C air; Expected answer is to explain from equation $pV = mRT$.
- 13) How much is the typical temp. drop at efficiently working economizer.
- 14) What is hot corrosion; What are the reasons, What are the consequences of it.
- 15) With the dual cycle at which place fuel injection begins & at what point firing will get start; Show the points at power card & draw card as well.
- 16) How you going to measure the T/C RPM; instrumentation & control system; (He expected only the answer from words)
- 17) What was your M/E & A/E T/C RPM's.
- 18) How you going to measure the load of your M/E
- 19) How was the load signal come to the load indicator & from where.
- 20) What are the factors affecting on the load of your M/E.
- 21) What are the other indicators which you can measure the M/E load.
- 22) How you remove the soot does the efficiency of economizer get reduced.
- 23) How you remove the soot.
- 24) What low temp. corrosion.

- 25) How was the temp. readings from M/E is carried out from to remote indicators in ECR.
Sketch one of them; { I drew a thermo couple & system in it }
- 26) How are you going to monitor the purifier efficiency
- 27) What are the checks you do in Normal clay rounds on Purifier?
- er.?
- 28) Purifier RPM & bearing arrangement & how the axial & radial loads were taken
- 29) What is the frequency of changing the overhauling the vertical shaft.
- 30) What is the reason of changing the bearings on these major overhauls
- 31) What are the other places where you find the fatigue & tell me another example which you are changing due to fatigue.
- 32) What are checks on Con. Rod bolts.
- 33) Tightening torque of your engine. (Con Rod. Bolts.)
- 34) What are the G/E safeties; (trips or Shut downs).
- 35) How you going to start the overhaul of your G/E
- 36) What are the things you need for the overhaul.
- 37) Who will give permission for overhaul.
- 38) Who's advices you will take in to count when you planning the overhauls; { tell him every member @ E/R who's having experience on the machinery can give advices & they should be add to your account for further safety and optimized the condition of the job }
- 39) How you make sure your LO is in good condition as an engineer.
- 40) { give your answer like this: } checks in daily rounds → visually
→ smell
→ lubricity

when ever you come to contact with machinery)

- 2) Onboard testing
- 3) Lab tests:

- 40) Why are you concerning about differential pressure gauges.
- 41) Why are you putting cartridge or disposabal type filters to G/E & candle filters to M/E indicator filters.
- 42) What is the size of the indicator filter; (typically around 60µm)
- 43) What are the Onboard tests.

- 44) How you Segregate the impurities, metal particles
- 45) How you Segregate the metal particles; ferrous & non-ferrous.
- 46) What is the facility provided in filter to catch metal particles.
- 47) How you check the condition of you LSO & monitor about your Machinery as an Engineer.
- 48) Why you are taking photo evidences during overhauls.
- 49) ~~What are the etc~~ Who interest on the photo evidences.
- 50) What is your preparation for bunkering.
- 51) Why you Split it in to few parts, & How many & what are they?
- 52) What are the documents you're ready for bunkering.
- 53) What are the duties of A/E engineer during bunkering.
- 54) What are Main parameters you will concern under ISO 8217 with regards to you BDN.
- 55) What is the ^{ax} minimum amount of water content you going to accept.
- 56) What is the price of a T. of heavy oil these days? Cap
- 57) What responsibilities you got as an engineer if you found excessive water content in fuel.
- 58) How the performance of your Air compressor get reduce.
- 59) What can you do for it.
- 60) What MSB Safeties.
- 61) What is live line tester, how to use it.
- 62) What are the Safeties for HV.
- 63) How you going to trace ^{an} electrical problems. (methodology).
- 64) What are the checks in Steering gear room.
- 65) Who would you suggest to send there.
- 66) As an engineer what are the observations you going to carry out in Steering Compartment.
- 67) What are the reasons for vibrations in the system (Steering gear).
- 68) What are competences of the "Able Seafarer" engine?
- 69) How you going to take over the watch.
- 68) If you see excessive vibrations in Purifier, What is your action
- 69) ~~69)~~ what are the reasons.

Alloys how to made? Where u use it?
Alarm & shutdown deference?

- 70) What is STCW Watch arrangement.
- 71) What comes under Marpol Annex (VI) & what are the things you record under it.
- 72) What are the harmful effects of
 - 1) CO
 - 2) Unburn (Carbon particles)
 - 3) SO_x
 - 4) NO_x
- 73) What are the new developments for reduce the NO_x.
- 74) What is there in BDN.
- 75) What is the importance as to A/E.
- 76) What is SOLAS, why it is so important, How many chapters.
- 77) What is Chapter I, What is the content,
- 78) What ^{who comes} comes to do the surveys
- 79) Who enforces class to do Surveys.
- 80) What is HSSC.
- 81) What is Min. flash point maintain in E/R.
- 82) Where you find the limits for them.
- 83) What ~~is~~ will you do if you purifier bowl is not coming out.
- 84) What is the G/E running plan for your last Ship. ~~etc~~
(gave a full description according to manual he was satisfied).
- 85) What is the action if you find any deficiency in Hand over report.
- 86) How you prepare your self for dry docking.
- 87) What are the area you going to inspect during a dry dock.
- 88) What is team work.
- 89) What is recourse management.
- 90) Why it is so important when you are onboard.
- 91) Why you have to cooperate with other nationalities.
- 92) What is your action during an E/R fire.
- 93) What will you do if you find a casualty during a heavy smoke.
- 94) How long you can survive with EEBD.
- 95) Checks, ~~the~~ pressure, duration of ~~SABA~~ SABA set.
- 96) How you going to train your cadet.

— You have pass your Orals for Class III. —

— always give full answers for what you know very well. Grab him towards your strengths, try to avoid unuseful words, be friendly & humble, it v

~~Handwritten~~
ED CLASS UP

Examinee - A.H. Ratnayake (batch 27)

Examiner- Mr. BandulaKariyawasam

Exam Date – 19th April 2016

Exam time – 1445hrs to 1850hrs (4 hours)

1. What is your ship (type of vessel)
2. Where did you sail
3. Give me details of the main engine and the auxiliary engines
4. Give me details of the ship (NT, GT)
5. Tell me some incidents that happened in the ship
6. What measures did you take to reduce the impact
7. What measures did you take to prevent it from happening in the future
8. Draw the 4 stroke timing diagram
9. Draw the dual cycle with temperatures pressures and the important coordinates
10. Draw the power card and explain
11. Compare the power card and the dual cycle
12. Draw the stress/ strain curve and explain all points
13. What is the importance of the stress/ strain curve in the vessel
14. What was your purifier type on board the vessel
15. Draw the purifier bearing arrangement
16. explain the self-centring bearing in the purifier
17. why would there be vibration in the purifier
18. how do you check purifier performance
19. what are the things you check (parameters)
20. how do you plan for bunkering as a 3rd engineer
21. what are your responsibilities
22. what are the details that you include in the pre-requisition bunker request form
23. what are the details in the BDN and what is the regulation that sets BDN standards
24. what is the ISO regulation for bunker fuel standards
25. why is the flash point important
26. how do you take samples when bunkering
27. how many samples do you take
28. what are the important parameters on the fuel analysis report
29. if there is a deviation what will you do (fuel analysis report)
30. what is the maximum water percentage you will accept when bunkering
31. what is the sulphur percentage you will accept
32. what is the regulation regulating the sulphur content in fuels
33. tell me all the regulations in MARPOL
34. explain in brief all regulations
35. what are the daily checks that you carry out on the boiler
36. what is your boiler pressure and temperature
37. why do you do chemical treatment
38. what are the types of scale and explain



39. how will you start a generator overhaul
40. what is the pre overhaul report and what is included in it
41. how is the risk assessment carried out on AE overhaul
42. why do you carry out AE overhaul
43. who is present for the overhaul
44. why is the cadet important
45. why is the electrical officer important for the AE overhaul
46. what are the special tools that you need
47. where do you find the special tools for AE
48. explain how you do the AE overhaul on the day
49. why are the power cards draw cards important
50. why id deflection important for AE
51. how do you inspect cylinder head
52. what are the important things to check in cylinder head
53. what are the things you check on liner
54. what are the tools you need for liner calibration
55. what are the things you check for in the crank shaft
56. how do you check for cracks and explain how you do it
57. how is lube oil purification carried out
58. what are the important aspects of lube oil for the 3rd engineer
59. what tests do you carry out on lube oil
60. what are the parameters you check on lube oil
61. spot test is important why
62. how do you take lube oil samples
63. what are the parameters you check for in the lube oil analysis report
64. explain in details the metals in the report and from where did it enter the oil
65. what are the lube oil properties and explain their importance
66. what are the daily checks you carry out on the steering gear
67. what is so special about steering gear motor
68. what are the types of steering gear control
69. explain auto pilot with ECDIS
70. explain NFU and FU
71. what are the regulations for steering gear
72. where are these regulations
73. what are the daily checks you carry out on AE
74. what are the gauges on the generator panel
75. what are the generator safeties
76. what are the generator electrical safeties
77. what is the automation report
78. how do put back the AE in to service
79. why is running in important
80. how do you do running in
81. who should be present for AE testing
82. what CE responsibilities in AE test



83. what are switch board safeties
84. how do you check the safeties of the generator
85. what are the checks you carry out for EG
86. what are the safeties for EG
87. what are EG regulations
88. where do you find them
89. what are the checks for EFP
90. what are the pump pressures and the regulations
91. How many chapters in SOLAS??
92. Explain what they are
93. Explain in detail chapter 2 part 1
94. Explain in details chapter 2 part 2
95. What will you do if there is a fire in the engine room
96. Who do you inform
97. What are the details you inform
98. What will you do if there is a casualty on the floor
99. What are the regulations for EEBD
100. How will you escape the fire
101. What are the regulations for water mist system
102. What type of fire detectors in the vessel
103. Where do you find heat detectors
104. Why are smoke detectors bad
105. How will you guide the fire party if there is a casualty
106. Where do you get all the duties for emergencies
107. Where is it displayed
108. Where do you get MARPOL and SOLAS in the vessel
109. Explain ISM
110. What is SMS and explain
111. What are the SMS manuals
112. What manuals are important to you
113. Where do you find them
114. What are the important documents regarding ISM
115. What is MARPOL annex 1
116. What are the documents that are in that annex
117. What are the regulations for the OWS and its sensor
118. Why is STCW important
119. What are the chapters of STCW
120. What chapters are important to you
121. What parts in those chapters are important for you
122. What are the regulations for AB engine in STCW
123. Why are those regulation important to you
124. Which table is important to you now
125. What are the columns in that
126. Explain column 1,2,3,4



127. How do you combine column 3 with 2 when it comes to electrical and electronic maintenance
128. What are the key functions in STCW
129. What functions are important to you
130. What functions are important to the chief and 2nd engineer
131. What functions are important for AB engine
132. What functions are important for electrical officer
133. Explain each function in regard to ME and AE
134. How will you take over watch
135. What are the 13 things you check before going to watch
136. How will you carry out watch
137. Explain all the regulations in STCW with regards to carrying out watch
138. How will you train your cadet
139. What are the important regulations for him
140. Explain how you will train him with regards to functions of STCW
141. How will you train him with regards to column 4 of STCW
142. What table of STCW will you check next
143. What extra things will you learn
144. How will you prepare for class 2

Congratulations you have passed.



MARINE ENGINEERING CASS III

EXAMINER : MR. BANDULA KARIYAWASAM

CANDIDATE: T.R DANUSHKA

1. What is your ship??
2. GT?
3. NT?
4. Main engine?
5. Generators?
6. Any special incidents? (I explained about our generator fuel pump fuel rackstucking problem.. and he asked some questions about that. I was fully aware about that problem that's why I told him. If there was any incident and u don't know about it thoroughly, say no incidents.)
7. STCW watch arrangements?
8. Taking over the watch
9. Performing the watch
10. Key functions
11. What is the table under STCW?
12. What are the columns?
13. What u do if there is an engine room fire?
14. There is a casualty so what u do?
15. U have EO to help u, how u manage the situation?
16. Where are the engine room EEBD locations?
17. How u escape from engine room?
18. What will u explain to the fire parties?
19. What is the importance of that?
20. How u overhaul generator?



21. Why u take performance before overhaul?
22. Why u do automation test?
23. What else u check..(I said crank shaft deflection and condition of lub oil)
24. What is in lub oil?
25. What is the type of generator lub oil?
26. When u check lub oil check other than before an overhaul?
27. Why?
28. How u overhaul the generator? (dismantling procedure)
29. What u check in cylinder head?
30. What are the test on cylinder head?
31. How to pressure test and what is the pressure?
32. What u check in cylinder liner?
33. Draw and explain piston taking out procedure. (in there the assembling the eye bolt is very important.. draw it very clearly and correctly)
34. What is ur purifier?
35. Draw and explain the bearing arrangement of purifier.
36. Which bearing will take the thrust?
37. Which bearing will take the load?
38. Draw and explain generator thrust bearing.
39. Draw full generator crank shaft and name the bearings.
40. What is big end bearing?
41. What is small end bearing?
42. Type of main bearing?
43. How you prepare for dry dock?
44. What is ur duty as 3rd engineer when preparing for dry dock?
45. How you prepare generator for dry dock?
46. How you prepare boiler for dry dock?
47. Why boiler survey carried out?
48. How to prepare boiler for survey?



49. Boiler blow down procedure?
50. What are the checks in boiler survey?
51. What are the corrosions in boiler?
52. How corrosion can happen?
53. Where are the boiler cracks?
54. How it happens?
55. What is galvanic corrosion?
56. Why u blow down boiler regularly?
57. What is scum blow down?
58. How oil can enter into the boiler?
59. What is the chemical use to remove oil?
60. What are the other treatments and importance ?
61. What are permanent hardness salts?
62. How they form?
63. How sludge form in boiler?
64. What is boiler water temperature?
65. What is super heated steam..explain?
66. What is super heated steam temperature?
67. Why super heated steam used in ships?
68. What are the hazardous of it for watch keepers
69. How to check boiler low water level alarm?
70. What are the reports on boiler?
71. All the lights in the ship are suddenly dimming..what can be the reason?
72. AVR is working fine and what can be the other reasons?
73. only one generator is running so no problem about synchronizing.. what can be the reason?
74. E/O is not there..what is ur action as watch keeper? (then I said I start another AE and change the load and shut dow the faulty set so I can check where the fault, like main switch board or the generator)



75. Draw and explain how power distribute from the generator to a motor through main switchboard? (my electrical knowledge is very poor so I couldn't draw it so he again asked about AVR)
76. Draw and explain AVR.
77. Draw and explain brushless excitation system.
78. Motor protections
79. What is thermistor protection?
80. How u prepare for bunkering?
81. What is ur duty in bunkering?
82. How u take soundings?
83. What are the documents regarding bunkering?
84. What are the things in BDN?
85. What is the importance of BDN information?
86. Where u record bunkering?
87. How to check high voltage lines?
88. How to work on high voltage lines? (HV permit and certified person for work, these two points are very important)
89. Where u had high voltage in ur ship?
90. When u come to engine room u detect a fire..how u get to know the cause without going to inspect? (smell)
91. Where u smell burning rubber in ER?
92. What are the other burning smells in engine room?
93. When u carry out fire drill?
94. Importance of drills?
95. When will you carry out the meetings?
96. Why after the drill?
97. How you fill the gaps in the procedure ?
98. How you carry out black out test?
99. What are the risks in blackout?

100. How u do generator over speed trip?
101. What is the speed percentage?
102. What are the generator engines safeties?
103. What are the shut down alarms?
104. What is ISM?
105. What are the chapters?
106. Where you have ISM documents onboard?
107. Importance of PMS system?
108. What are the SOLAS chapters?
109. What is general provision..explain?
110. How u comply with the SOLAS as 3rd engineer?
111. What is MARPOL?
112. How you comply with the MARPOL as 3rd engineer?
113. How u start OWS?
114. Where will u record it?
115. How do u record it?
116. How u record generator sump oil transfer to waste oil?
117. How u record purifier sump oil transfer?
118. How to train ur cadet?
119. From where u get the guide lines?
120. What table of STCW ?
121. What are the functions, columns and what level?
122. How you know cadet has competency?
123. How u know he has column 2?
124. How u know cadet has competency to start purifier?
125. How u know cadet has competency to overhaul purifier?
126. What u get from relieving 3rd engineer?
127. Why handing over notes important?
128. What if he has not updated PMS properly?



Class 3 Orals.

Examiner- Mr. Bandula Kariyawasam.

Examinee- Nishad Sirimanna.

Date- 19.02.2016

First the Examiner went through my project. For printed material he is OK but make sure you have attached relevant materials to your ship & your manuals if those just things grabbed from the internet that will be a disaster.

You should have ability to explain things which the examiner asking from your project.

1. Where you have heat detectors in the E/R?
2. Why you have heat detectors in those places?
3. Alarm temperature of the heat detector?
4. What is the power supply for that?

5. What kind of an oily water separator fitted onboard your vessel?
6. How the separation is done?

7. Location of your battery room?
8. What kind of batteries you had?
9. Dangers in the battery room?
10. Safety measures regarding battery room?

**Questioning from project finished.*

11. Draw purifier bearing arrangement & explain.
12. Explain the driving mechanism.
13. Draw air compressor bearing arrangement.

(Ppl who knows me know the drawing ability of me :P. So don't worry if you can draw a simple sketch & explain it thoroughly it will be fine.)

14. Use of purifiers.
15. How you know the purification is done properly?
16. Your service tank getting low what you'll do?
17. What is the capacity of your purifier?
18. Properties of lubrication oil?
19. As a third engineer how you manage lube oil on board?
20. When dismantling purifier you find that the bowl can't be removed, what you will do?



(Clever lads applying rocket science & try to remove the bowl ??? :P the answer is "In any case I know that I can't apply heat to remove the bowl so I take assistant from my superior engineer")

21. When in doubt why you should always ask help from superior engineers?
22. You observe a vibration on purifier what will you do?
(Press emergency stop & suddenly evacuate from the purifier room then inform superior engineer.)
23. Properties of lube oil?
24. Why you using high TBN oil for A/E?

25. How you overhaul a generator?
26. How you know the current condition of the generator?
27. Why it is important to take performance?
28. Other than overhaul time how often do you check performance?
29. How you know spare parts which may needed?
30. How you know availability of spares?
31. How you order spares?
32. During overhaul which parts will be discarded?
33. Who will give authorization to discard them?
34. Why you discard them?
35. How you ensure overhaul is done properly?
36. How you ensure parts assembled correctly?
37. How to ensure nothing is missed when overhaul?
38. What checks you do after overhaul?
39. What is automation report?
40. Why you take photo evidence?
41. Who is interest in photo evidence?
42. Who will give authorization to test the engine?
43. Who will be there when you test the generator? *(CE,2E, Guys don't forget Cadet)*
44. How to test the generator?
45. Why the governor is been adjusted?
46. Why the engine is fitted with a governor?
47. What are the checks you do in the governor?
48. What are the safeties on generator?
49. What are the alarms on generator?
50. What are the trips on generator?
51. Why L.O low pressure cut off is important?
52. What are the lube oil tests you have done onboard?
53. What is spot test?
54. What you can identify from spot test?



55. Why you send lube oils to lab test?
56. If lab test contain so many details why you do onboard test?
57. How do you do bunkering?
58. Why bunkering operation is split into stages?
59. What are they?
(Pre-Bunkering, While bunkering, Post bunkering)
60. When you taking soundings what you will consider?
(List & Trim)
61. What are the other factors you need to do bunker calculations?
62. Why it is so important to consider those factors?
63. If wrongly calculated what can be the consequences?
64. If there is a difference between ordered quantity & what physically received on board what will you do?
65. What percentage of difference will your company allow?
66. What is BDN?
67. What are the details in BDN?
68. What is the grade of fuel you take onboard?
(RMK 180 to 700)
69. What is the standard of fuel?
(ISO 8217)
70. Why the percentage of Sulphur is important?
71. Where you find that regulations?
72. What are the limitations on that?
73. How many bunker samples you taken? What are they?
74. What is the importance of doing a lab test?
75. What you have in the report?
76. What you will do after reading this report?
77. Why temperature is so important while bunkering?
78. Why flash point of the fuel in the lab test report is important?
79. Where do you find related regulations?
80. What are heavy metals?
81. Why it is important to know the quantity of heavy metals in fuel?
82. What are catalytic fines?
83. How they come to fuel?
84. What is the effect of catalytic fins on engine?

85. What are the controller actions?
86. What are the controllers on board?
87. What is PID?



- 88. Where you had PID onboard?
- 89. Where you had PI controllers?
- 90. What you will do if a controller fails in operation?
- 91. Suppose boiler firing control is not working what you will do?

- 92. Why you doing purging?
- 93. Why you doing boiler water test?
- 94. Why you doing chemical treatments?
- 95. What are permanent hardness salts?
- 96. How you avoid them?

97. What is the difference between Shore power & Ship power?
(Guys this is not giving shore power to the ship (Cold ironing) this is just difference between two systems that is the earthing system)

- 98. Why ship's earth is insulated?
- 99. How you know if there's an earth faults?

100. What will be your action?
(Identify the system & switching off the breakersEtc, NOPE....! That is not your business; your action is to inform Electrician & 2E)

- 101. What are in your switch board?
- 102. What are the switch board protections?
- 103. What is Sequential starting?
- 104. What are the supplies from emergency power supply?

- 105. What is High Voltage?
- 106. High voltage precautions?
(Work permit is very important)

107. How U ensure that the line is dead?
(Live line tester)
(There should be a special insulation resistant tester (Magger) to test HV systems the voltage it gives is 5000V)

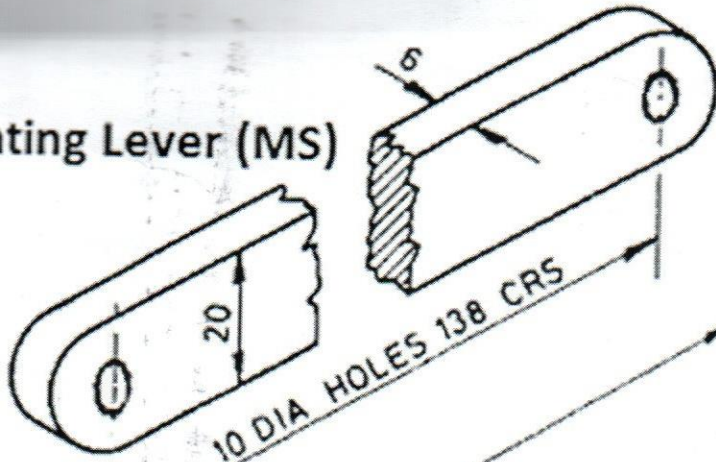
- 108. What is a risk assessment?
- 109. Why it is important?
- 110. Where you find risk assessment?
- 111. What is ISM?

(For this kind of question giving one complete solid answer will lead examiner to tick it up and move to a new section)

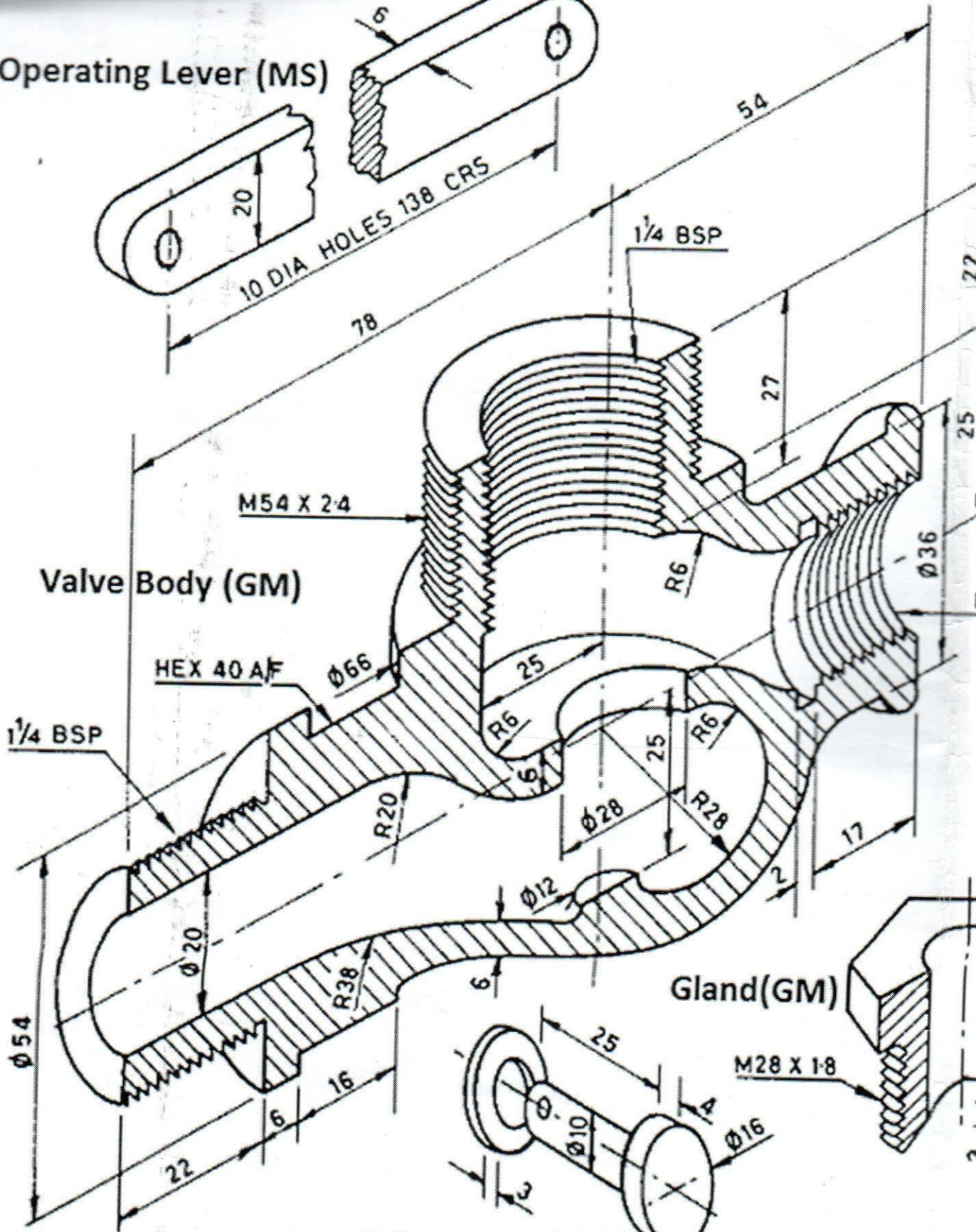


112. What you check in steering gear?
113. What you check in steering gear motor?
(Over load alarm)
114. Why it is important?
(It does not have tripping mechanism as steering gear is a critical equipment)
115. What you will check in a motor?
(Not relevant to Steering gear generally what you check?)
116. You see a fire in the E/R, what you'll do first?
(Activate the fire alarm by manual call point)
117. Then what you will do?
(Report)
118. How many hours you take for reporting?
(As soon as possible I'll report)
119. What you will report?
(Guys I didn't tell anything regarding try to fighting fire using portable extinguisher. It's up to you I don't know what will be Examiner's response upon that)
120. What are the firefighting equipment & systems you have?
121. What is in fire main?
122. There is a smoke in E/R, you feel a breathing difficulty, what you will do?
123. You see a casualty lying in the floor in this situation, there is a heavy cloud of smoke but not a fire what you will do?
124. Why you do so?
125. How you will go out from the E/R?
126. How you find the emergency exit?
127. What you will do then?
128. How you will take out the casualty?
129. What is the importance of having drills?
130. How often you have fire drills?
131. How you prepare the ship for dry docking?
132. Who will be coming onboard?
133. What he will do?
134. What is the importance of receiving spares 3 months before?
135. What you check as 3E?
136. What are the checks in hull?
137. What are hull protections?
138. What you check in ICCP?
139. What you check in propeller?

Operating Lever (MS)



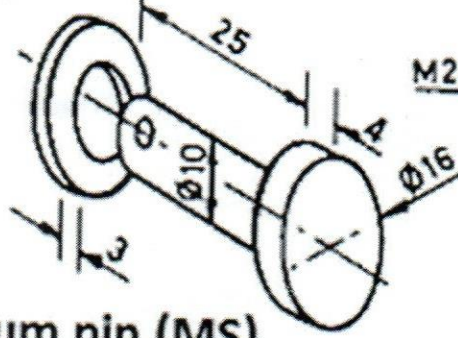
Valve Body (GM)



Gland (GM)



Fulcrum pin (MS)

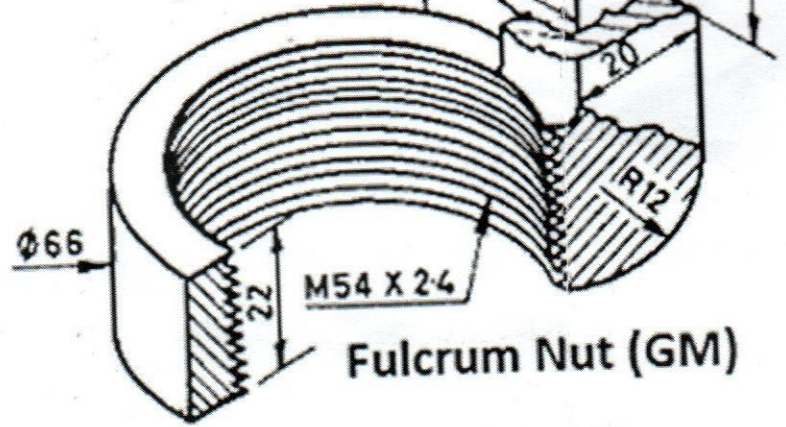
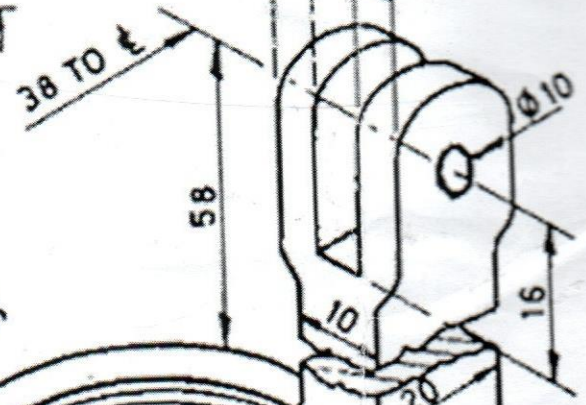
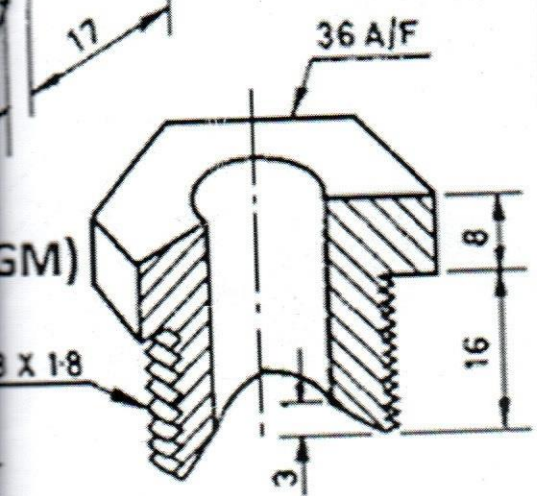
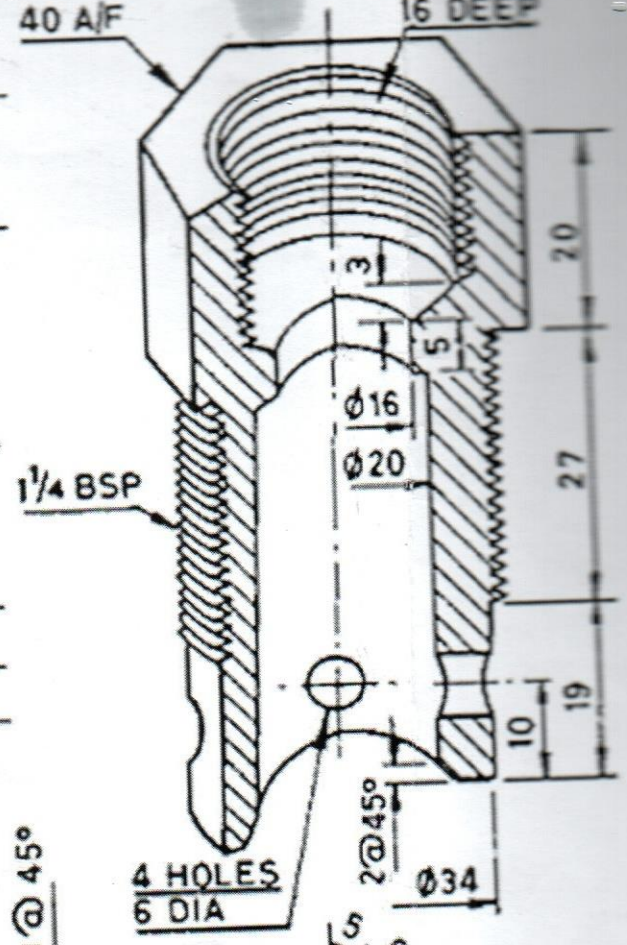
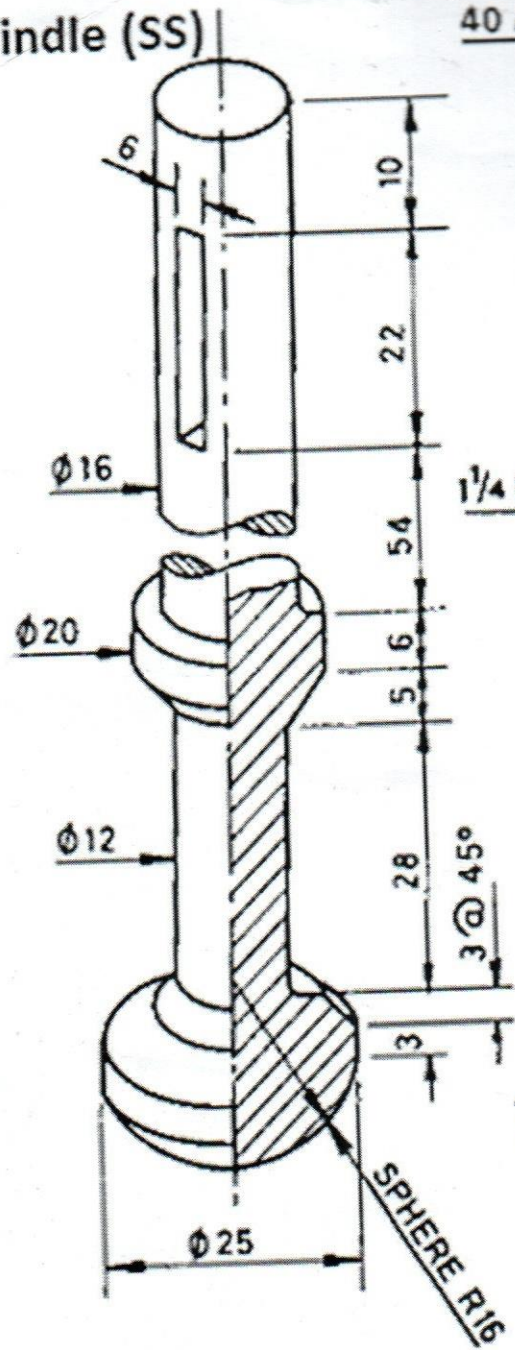
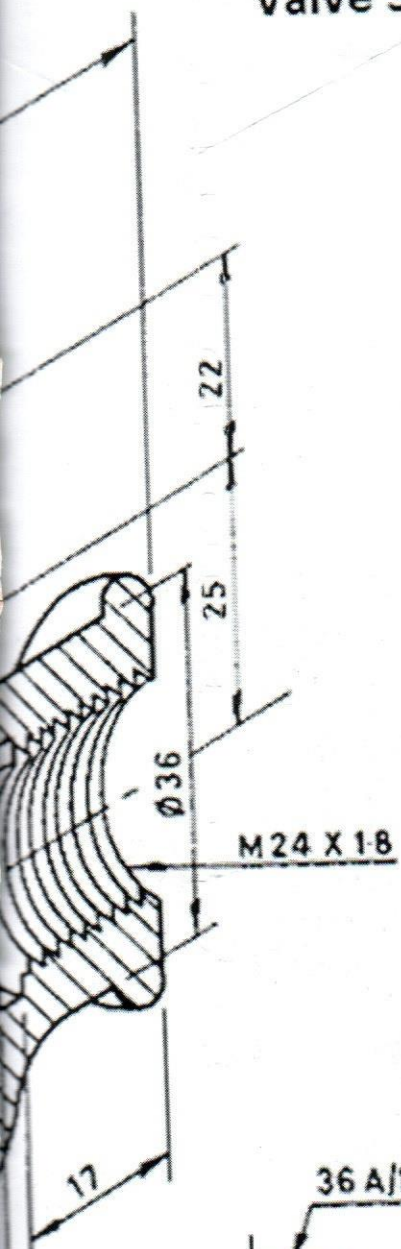


library

Valve Spindle (SS)

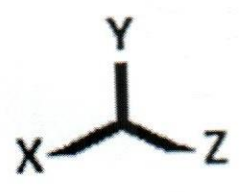
Valve Seat (Monel)

M28 X 18
16 DEEP



Fulcrum Nut (GM)

CONTROL VALVE



140. What are the defects which may in the propeller?
141. How you know the defects?
142. Why a DP test is important?
143. How you identify propeller blades? (How to number blades)
144. What you check in the shafting system?
145. How you check the wear down?
146. How you know if shaft seal leaks?
147. How to repair a pipe line onboard?
148. How you know the material?
149. Importance of knowing the material?
150. If material is not in the drawing what you will do?

151. How you do watch keeping on board?

(Try to give your answer accordingly with STCT Chapter 8, long procedure of taking over watch which we all know will not make an effect. The examiner knows that anyone can read it and repeat as a parrot)

152. If you decide not to hand over watch what will be your action?

(Reporting to Chief Engineer)

153. Why? You don't have a second engineer onboard?

(I have sir. But according to STCW Chapter 8 overall in charge of an Engineering watch is the CE, and it clearly mentioned in there in any case he should be noted & in any case that it is obvious the watch taking over officer is not fit for the job we should note that to the CE)

(I know that this is not a question to mentioned but I've mentioned the above question to bring you an idea how the real situations of the exam, depending on answers you have given Examiner will ask questions. To that you should have solid answers. That's why ppl say not to keep on telling lies or things which doesn't know @ the orals)

154. What the Chief Engineer may do?

155. What is MARPOL?

156. What is Annex 1?

157. What are the records you should keep as per Annex 1?

158. What is Annex 6?

159. What are the records you should keep as per Annex 6?

160. What is SOLAS?

161. What are the chapters?

162. What is General Provision?

163. How the certification is done? Are they just come onboard & issue certificates?

164. What is Chapter 2?*(I gave the answers & examiner was not satisfied he asked me to write it on a paper, then the SOLAS was given to me & asked to compare what I've written & what is on the publication. Both was same then it was OK)*



165. What if a single word missing from that?

166. What if the word "Construction" is missing?

(Guys this is the fact Examiner is concern about when explaining chapter 2 if you missed the word Construction that means you will appear for the orals again in another day :(So make sure you know the full)

167. How to train your cadet?

168. How you know that he is competent?

169. What are the methods to demonstrate the competency?

170. What is the table on STCW that he should refer?

171. How you know the cadet is competent to overhaul a purifier?

172. What are the STCW key functions?

173. What are the key functions to the ratings?

174. What are the key functions to the AB engine?

(Guys Rating & AB engine are totally different, Rating should be above 16 years of age and has got 6 months training and only one key function is applicable (See STCW page 163). But AB engine is one above 18 years and he should have 12 months experience or 6 months experience + 6 months training, applicable key functions four (Refer STCW page 165-168))

175. What is the importance of knowing competency column of AB engine?

176. What is the table that you should refer?

(A-III/2)

177. What is your next level?

178. What table contains management level functions?

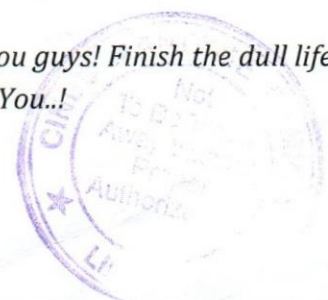
179. When you should learn & get familiar about management level competence?

(When answering question on STCW, you need not to tell everything by heart, for certain things examiner will give you the publication & will ask you to show them. Don't behave as you are seeing the publication for the first time of your life, show that you are familiar with the publication.

Note -

This is something I have to tell you guys & some facts examiner want me to let you know. Rumors about the examiner are all bullshit. If examiner's mood effect for the result I'm the first guy to fail because examiner was in a very bad mood that day. But through my experience I'm sure that he is not messing up his mood & private life with the job. What examiner told is, if he satisfied about the level of competent you have, you will be pass. Anything other than that is irrelevant for that. If 100 candidates appear for the day, & if all are competent, all will pass @ once. If not, he will fail all 100 without any hesitation.

Work hard & prepare nicely, show your competence. Best of luck for you guys! Finish the dull life here & join the deep blue sea where we belong, asp. May Triple Gems Bless You..!



Examiner- Sir Jagath Silva, Sir Bandula Karaiyawasam

Examinee- Lahiru Wickramasinghe

Sir Jagath Silva's questions

1. Your shipboard experience
2. Engine room watch keeping
3. How do you know your boiler safety valve is leaking or not while taking safety rounds in the engine room?
4. What you check in engine control room during safety rounds?
5. What are the high voltage installations in your ship?
6. What is high voltage?
7. What happened if AVR fails?
8. How would you identify a failed AVR?
9. What is your action if an earth fault alarm comes?
10. How do you carry out a generator overhaul?
11. Why do you test generator alarms before and after overhaul a generator?
12. Regulations regarding prevention of pollution by sewage and special areas?
13. Checks carried out in your sewage treatment plant?
14. How to test coliform count?
15. Where do you discharge cooking oil?
16. How do you prepare for bunkering?
17. How to pressure test bunker lines?
18. Bunker tank calculation?
19. STCW key functions?
20. What is droop?
21. Why generator droop is important?



Sir Bandula Kariyawasam's questions

1. How to carry out a generator load test?
2. Who's responsible for the above test and who should be present during the test?
3. What should you observe during the test?
4. What things you should consider when ordering a hacksaw plate?
5. How to order a bolt?
6. What are the month end reports you send for the company?
7. Draw stress strain curve
8. Why is so important stress strain curve in normal engine room work?
9. What are the bad practices people have used so far when tightening and loosening a bolt?
10. Under which convention your training has been carried out?
11. How to train your cadet?

EXAMINERS- Mr.Bandula Kariyawasam and Mr. Fernando

Examinee- H.S.K Perera

Date-26/11/2015



1. What are the ships you have sailed with?
2. Main engine type,A/E type
3. What is the purpose of governor
4. What is the manufacture of your AE governor?
5. How it works ,how it is connected to generator engine,draw how it is linked to engine
6. Draw how the generator governor looks from front view,what are the knobs,what are the functions of those?
7. How you take over watch?
8. As a 3rd engineer what is the procedure to take over watch in your first day onboard?what you will ask from ongoing 3 rd engineer
9. What are the reports you ask from him?what you will note down?
- 10.What are the checks in the boiler?
- 11.What are the maintenance of boiler in port and while running?
- 12.Boiler water treatments and limits
- 13.How chloride level goes high?
- 14.What are the actions you do after boiler water tests?how you add dosage according to test results?
- 15.What you check in the control room?
- 16.If bridge control fails what you do?
- 17.Steering gear room checks?how much hyd oil tank level you maintain?
- 18.How to carry out ballasting operation?if chief officer inform you he wants to start ballasting what are your actions?
- 19.What is the document regarding ballasting?who is responsible for that?
- 20.Air compressor safeties?
- 21.Ref plant safeties?
22. Draw and explain fresh water generator?
- 23.Draw and explain sewage treatment plant onboard?
- 24.What are the regulations for sewage?

25. What chemicals you add to sewage plant?
26. Main switchboard protections?
27. Draw and explain AVR
28. Draw brushless alternator?
29. Draw the stuffing box arrangement?
30. Purpose of main engine thrust pad?
31. As a 3rd engineer what are the responsibilities for main engine?
32. If bilge alarm comes what you do?
33. How u transfer bilges?
34. How to operate ows?
35. Which type of pump use in ows
36. Which type of pumps use in steering gear?
37. What psc will check in ows?
38. Who is the responsible person for ows and oil record book?
39. How you write transferring sludge in ows ?under which code?
40. What is code D oil record book?
41. Explain MARPOL Annex 6, NOX regulations, sox regulations, what is nox technical code?
42. What you do for cooking oil?
43. What things you burn in incinerator?
44. Do u burn plastic?
45. Do u run incinerator in ums condition?
46. What are the psc checks in incinerator
47. Can you burn cooking oil? what you will do if u give cooking oil to shore?
48. Who is the responsible person for garbage record book?
49. What are the AE maintenances? overhaul and checks?
50. If one unit exhaust tem deviates what you will do? what will be the possible reasons?
51. If all unit exhaust tem deviates what you do? causes?
52. What are the injector maintenances?
53. Turbocharger maintenances while running and when engine stop?
54. AE safeties?
55. If large motor starts suddenly what happen to you generators?
56. If deck people inform you that they want to start winch motors what you will do?

57. Bow thruster how to start?
58. Emergency generator power supplies?
59. What is the type of engine room vent fan? (reversible)
60. If lub oil analyziz report gives high water content what you will do?
61. How you manage your purifier for that?
62. What are the temp of HFO and LO purifiers?
63. What are the checks for lub oil?
64. How water can go to your AE sump?
65. Dry docking preparations? checks?
66. If overboard valve leaks what you will do?
67. What you will do if sea water pipe leaks?
68. How to order pipes?
69. How to order cutting wheel for a grinder?
70. How to check torque rench?
71. How to order bolt?
72. Bunkering procedure?
73. SOPEP equipments?
74. What is your actions incase of oil spill?
75. Fire extinguishers in control room and galley?
76. What are the fire fighting systems onboard?
77. What is the back up fire fighting system onboard?
78. How you check it?
79. What are areas covered from it?
80. How it works?
81. What you will do if your motorman falls in purifier room in case of fire?
82. How you check flame sensors
83. What is EEBD .time duration?
84. How to ware SCBA set? checks>how much pressure?
85. What you will check in steam trap? how it works? important of it?
86. How much tem you maintain in cascade tank? importance?
87. What are the work permits?
88. Under what these permits come from?
89. How you plan your jobs? what is the most important thing?
90. Where you will find safety procedures onboard?
91. Explain code of safe working practice?



92. What is the most important chapter?
93. What is ISM, explain?
94. What is SEEM?
95. What is team work? importance of it?
96. What are the checks as per solas?
97. How you train your cadet?



78. Use of sending the sample for laboratory test
79. Properties of L.O
80. Methods of purification
81. How u do the batch purification
82. Bunkering procedure
83. Use of checklist
84. How to train ur cadet
85. How many familiarization assignment he should fill
86. How do u know he was well trained
87. What is ur first action if u find excessive vibration in M/E
88. How to report to the bridge regarding the situation
89. Procedure for minor repair in pipe line
90. What to discuss with fitter
91. Who will give the approval and if not approve who will detain the ship



CLASS 3 ORAL EXAM

Examiner: Mr. Bandula Kariyawasam

Examinee: P.P.K.Perera (CINEC) (31/08/2015)



1. What is your ship
2. What your engine type
3. Difference between RT-FLEX and ME
4. Difference between ME and MC
5. How your engine exhaust valve works
6. How much pressure build up in servo rail
7. Which type of pump used
8. Which type of lubrication oil used
9. Type of filter used and filter size
10. Properties of sys oil, ref plant oil, high pressure system oil
11. Difference between system oil and cylinder oil
12. What is STCW key functions
13. Functions under engine department
14. Explain columns in functions
15. Draw duel cycle with temp and pressures
16. If scavenge pressure low what will be reasons
17. Checks u carry out in t/c and parameters
18. Take t/c performance
19. Any other than T/C cause to low scavenge air pressure
20. Air cooler parameters and performance
21. Effects if scavenge air pressure and temp low
22. How compression pressure get low
23. Which region fuel injection and commence in duel cycle
24. How to carry out scavenge inspection
25. Checks in piston rings
26. What is reason for piston ring scratch
27. Which clearances u check in piston rings
28. Why cyl. oil is used
29. Why high TBN value
30. What is high temp corrosion
31. Which chemicals caused for high temp corrosion and its ratio
32. Where and effects of high temp corrosion
33. Which type of pumps used onboard
34. What is the type of bilge and OWS pump
35. Why is positive displacement
36. OWS pump stator material
37. When ER flooding what is ur 1st action
38. Main engine Main bearing inspection and overhaul
39. Checks in main bearing

40. What types of firefighting systems onboard
41. What is back up firefighting system
42. How it operates
43. For which machineries the mist detection system fitted
44. How to test and how often u test
45. What types of fire detectors onboard
46. Where can u find heat detectors
47. If fire is in ER what ur going to do
48. How to escape from fire
49. If there is causality and lots of smoke what u going to do
50. How to release CO₂ ER
51. Operation procedure for CO₂
52. CO₂ bottle gang release mechanism
53. Explain marpol annex 4
54. What do u checks for this annex
55. How to ensure ur plant is working correctly
56. How to maintain the bacteria
57. Which chemicals u added to maintain purity of water
58. Explain marpol annex 5
59. How u segregate garbage under this annex
60. Any records onboard for garbage
61. Explain marpol annex 6
62. Which records under annex 6
63. How u maintain nox level generator as a 3/e
64. What is the certificate under annex 1
65. What are the certificates u carried onboard
66. The aux engine sump tank transfer to sludge tank how u keep records of this transfer
67. Orb under which code and section
68. Carry out Boiler survey
69. At what pressure the vent should open
70. What is ur boiler working ,design ,safety valve lifting pressure
71. What are the boiler alarms
72. How often that u checks
73. How to check boiler alarms in front of surveyor
74. Boiler safety valve construction
75. How to calibrate remote water level indicator
76. Difference between safety valve and relief valve
77. What do u checks in SG room
78. How to ensure SG working properly
79. Motor protections and types of starters
80. How u come to know that motors working properly and checks
81. Protections in MSB and ESB
82. The metrology of finding electrical faults
83. What things PSC checks in MSB
84. How to avoid generator from overload condition
85. Explain about preferential trip and which under items

CLASS 3 ORAL EXAMINATION

Examiner:-BandulaKariyawasam

Examinee:- R.M.D. Cassim

2015 -09-12

1. What is ur ship & engine type
2. What is MC-C
3. Incident in ur ship (3 incidents)
4. Key functions
5. Columns in functions
6. NOx technical code
7. Risk assessment under which code and ism manual
8. If u find a fire what will u do and how u report
9. What to do if casualty in smoke area
10. Which CODE & SOLAS chapter regarding EEBD and other LSA
11. Use of priority
12. What is SOLAS chapter 11-2
13. Types of fixed fire fighting installation onboard
14. Types of fire pump
15. Types of portable fire extinguishers on board ur ship
16. How many assignment in new record book
17. Important of new training assignment
18. Checks in fire fighting system
19. Fire pump pressure
20. How to ensure pump taking suction
21. MARPOL annexes
22. What ar the checks regarding MARPOL annex 4
23. How to test the sewage treatment plant
24. What is the operation of the plant
25. Alarms in the sewage treatment plant
26. Draw a pressure guage and how it operates
27. Draw a FW generator pressure guage and unit of it
28. Draw a suction pressure guage of AC plant and units
29. How u take over ur watch
30. Why using of U tube instead of using two press. Gauges in economizer
31. Different between economizer in and out temperatures
32. What ar the reasons for expansion tank getting low
33. Turbocharger performance
34. Control stations in ur ship
35. M/E control system (PID)



36. What are the parameters in switchboard
37. Switchboard protections
38. Use of earth fault lamp
39. What is the unit of earth fault lamp, value of when insulation fail
40. If one generator load getting low, what will happen and protection
41. What is the sequential starting when get blackout
42. Emergency generator starting methods
43. Life boat checks
44. How often do the lowering
45. Lowering and hoisting rate
46. Draw and explain the boiler and tube arrangement
47. Alarms and trips in the boiler
48. How u check the low low water level alarm
49. How u soot blow, which angle u turn
50. Important of boiler blow down
51. What is forming and priming and how it occur
52. What is steam hammering
53. Draw a FO service tank
54. Use of steam trap
55. Boiler corrosions and explain
56. What are the scale and how to remove
57. Use of guage glass blow down
58. How u know chloride level high(other than testing), chloride level
59. How u check safety valve operation (easing gear)
60. Need of purging
61. Boiler firing sequence
62. How u check the combustion condition
63. Maintenance in burner
64. Types of valves in feed check valve and use of it
65. Preparation for dry dock
66. Who will come and check onboard before 3months
67. How u carried out bottom survey
68. Methods of hull protection
69. Overhaul the generator
70. Load testing after overhaul
71. How u come to know generator overhaul or not
72. What do u check & make report regarding fuel pump, cylinder head valves and crankshaft
73. Draw stress strain curve and uses onboard
74. Which chapter u refer in ISM regarding generator overhaul
75. Effects of contamination of L.O and How
76. What are the check on filters
77. Onboard L.O test methods