CLASS 1 ENG ORAL examination 2016 – (21.07.2016)

Attempt	-	1st
Name	–	Malaka Gamage
Examiners	–	Mr. Bandula Kariyawasam & Mr. P.V.T.P Chandana
Time duration	-	1 hr. and 10 minutes.
Results	-	Pass

1. **Tell me about your carrier**
   I've started from my school A/L and so on.....

2. **What was your last ship main engine?**
   MAN B&W 6S50MC-C, 9960 KW @ 127 rpm

3. **What are the documents related to an engine?**
   EIAPP, IAPP, NOx tech file, EEDI tech file, User manuals (operation, maintenance, accessories), PMS related docs, automation file, Shop trials

4. **What are the certificates you should carry on board?**
   Ships registry, Tonnage, Load line, Certificates under SOLAS and MARPOL (I've mentioned few certificates under SOLAS and MARPOL)

5. **What is the criteria of issuing a tonnage certificate?**
   Shall be issued to every ship, the gross and net tonnages of which have been determined in accordance with the International Convention on Tonnage Measurement of Ships by flag or RO.

6. **What is meant by gross tonnage? And its use,**
   GT is a function of the volume of all ship's enclosed spaces (from keel to funnel) measured to the outside of the hull framing. The numerical value for a ship's GT is always smaller than the numerical values for both her gross register tonnage and the GRT value expressed equivalently in cubic meters rather than cubic feet. (For example, 0.5919 GT = 1 GRT = 2.8316 m^3).
   GT is used to rank a ship for purposes of determining manning, safety, and other statutory requirements and is expressed simply as GT.

7. **What is meant by net tonnage? And its use,**
   NT is based on a calculation of the volume of all cargo spaces of the ship. It indicates a vessel's earning space and is a function of the moulded volume of all cargo spaces of the ship.
   Net tonnage is used to calculate the port duties and should not be taken as less than 30 per cent of the ship's gross tonnage.

8. **What is meant by multiple load lines?**
   Additional load line marking engrave on the hull other than the load line marking coming under LL convention. This is used, a ship to have different freeboard according to the owners requirements. The admin should approved the multiple load line marking and multiple load line booklet is issued.

9. **From where we can find the requirements, pertaining to certificates to be carried onboard?**
   Under SOLAS Part 2 – Annex 1

10. **What are the documents should carry onboard?**
    ORB, Log books (Deck, Engine), Garbage record book, Garbage management plan, Intact stability booklet, Damage control booklet, STS plan (only if applicable),.....

11. **What is intact stability booklet?**
    Stability booklet is a document to help master to calculate the vessels stability and attitude in varying conditions of load. It contain information which help to operate the ship in compliance with applicable requirements of the regulations.

    Purpose of this document is to ensure safe operation of ships with minimum risk to personnel on board, ship and the environment. It is according to SOLAS chapter 2-1 regulation 22 and Load line convention regulation 10.

12. **What contain in it?**
    General particulars of the ship (Name, flag, port of registry, yard, type of ship, IMO number, etc.)
    Plan of cargo spaces, store rooms and tanks
    Special notes regarding stability and different loading conditions.
    Metric conversions.
    Hydro static particulars.
    Hydro static curves
    Free surface corrections.
    Plimsoll marking details
    Inclining experiment reports.
    Information on loading restrictions.

13. **What are the codes coming under SOLAS?**
    ISM, ISPS, FSS, LSA, IBC, IGC, IMDG.....

14. ***ISM code, coming under what chapter?***
    Under chapter IX – Management for safe operation of ship

15. **Who is a manager? And who is a leader?**
    The main difference between leaders and managers is that leaders have people follow them while managers have people who work for them.

16. **ISPS code, coming under what chapter?**
    Under chapter XI – 2; Measures to enhance maritime security

17. **What is chapter XI-1?**
    Measures to enhance maritime safety

18. **What are the differences between chapter XI- 1 and chapter IX?**
The Chapter IX, makes mandatory the International Safety Management (ISM) Code, which requires a safety management system to be established by the shipowner or any person who has assumed responsibility for the ship (the "Company").

The Chapter XI – 1, clarifies requirements relating to authorization of recognized organizations (responsible for carrying out surveys and inspections on Administrations' behalves); enhanced surveys; ship identification number scheme; and port State control on operational requirements.

19. **What requirement came for bulk carriers and tankers?**
Enhanced survey program

20. **What is enhanced survey program?**
IMO adopted a resolution A 744 (18) in 1994 SOLAS conference with guidelines on the Enhanced survey program for inspection and surveys of bulk carriers and tankers.

Enhanced survey program is a guideline for shipping companies and owners to prepare their ship for special surveys to maintain the safety of the ship while at sea or at port. A survey program is to be prepared by the owner and is to be submitted to the recognized authorities like classification societies, 6 months prior to the survey.
A new chapter XI is added for special measures to enhance maritime safety under this resolution.
According to these guidelines, it has 2 Annexes:
Annex A: Guidelines on enhance survey program of inspection during survey of bulk carrier.
Annex B: Guidelines on enhance survey program of inspection during survey of oil tankers.

21. **What are the corrosion types found in cargo holds of a bulk carrier?**
Electro chemical corrosion, Chemical reaction (micro biological degradation), Pitting corrosion, oxidation, grooving, erosion....

22. **What is the allowance for pitting corrosion on such ships?**
****In general, allowable diminution of plate thickness up to 20% and for profiles up to 25% on original values will be accepted.*

23. **IBC, IGC and IMDG under what chapter?**
Under SOLAS chapter VII

24. **FSS code, LSA code under what chapters?**
FSS – Chapter II – 1, LSA – Chapter III

25. **Suppose you are removing a piston from ME, while the piston is hanging on the crane, a black out happened, what is your action?**
First thing, should not be panic, then to be situational aware, apply emergency procedures as discussed in tool box meeting and as per emergency contingency plan, and inform bridge about situation.
Emer. Gen should come in to operation within 45 sec.

Divide crew into two groups.
One for power sortation and the other for ensuring safe piston secure.
Once the situation get controlled then incident reporting and investigation.
Preventive action for future. (Safety & management meeting discussion, review of sms)

26. What checks on a crane prior to carry out any work?
Check brake for failsafe
Hook
Cable (SWL validity, Visual examination, Any abnormality of cable wrapping,....)
Limit switches, Full operation, Remote operation, load test (first check the maximum weight involving for lifting, assume maximum time for handling, then select some spare mass (Such as spare liner) for lifting fir small distance for specific time period)
Other difficulties may arise during operation.

27. What checks on hook?
SWL validity, Hammer test, Swivel arrangement, visual exam, visible color,.....

28. What checks on cable? Where SWL noted?
SWL validity, Visual examination, Any abnormality of cable wrapping,....
SWL noted on separate tag attached or punched on the ferrule at end.

29. Your crane cable was replaced at last port, but again there is a need of to change the same, what could be the reason?
External damage, in correct strands wrapping direction, Incorrect cable "broken in" (Allowing the e wire to settle with light load operation for sufficient time period)

30. What is the principle of overhead crane brake?
Solenoid activated (released) spring loaded friction pad assembly

31. What are the reasons for slipping a crane brake?
If electrical solenoid type – sticky solenoid operation, excess wear friction pad, incorrect spring tension, emergency brake release malfunction....

32. How you repair a faulty crane motor?
According to STCW code Part A/ III- 6, an electro tech officer should capable with such repair.
Then proper report for malfunctioning and repair possibilities will request from him.
Asses the effectiveness of his plan and handle accordingly.
If the case is without an electro tech officer/rating then, I and the second engineer should involve to solve the problem. (bcoz STCW Table A III / 2 – second key function)
This will involve with root cause analyzing, risk assessment, and safe and effective repair procedure.

33. How you prepare for a class annual survey?
As per HSSC and CSM, all machinery must be surveyed at least one time per every 5 year period.
Usually class will send an annual due list (20%),

Complete this due in quarterly periods.
Prepare survey report as per the format given by class with photo evidence,
Maintenance cleanliness, No any leaks, good housekeeping, Proper machinery functioning.

34. How you prepare for a safety equipment survey?

All the due safety equipments must be well maintained, All the relevant certificates and documents are kept ready, Prepare a proposal survey rout as it covers all the safety equipment, Equipment can be divided to FFA, LSA, Emergency equipments, Navigational equipments, Additional items for a tanker.....

35. How you ready, life boat for the survey?

Assign duties for responsible persons such as 2nd, 3rd and electro tech officer, Ensure engine is functioning properly, sufficient fuel, and Electrical installations in good condition, Emergency lighting and signal.....

36. What safety equipments will check on bridge?

Pyro techniques, Fire detection system, Life buoys, Life jackets, immersion suits,.....

37. What are the bridge equipments coming under your responsibility?

All electrical and machinery installations are coming under CE responsibility.

38. GMDSS coming under what chapter?

SOLAS Chapetr IV

39. What are radio equipments?

NAVTEX, GMDSS, VHF,.....

40. What is VDR and how you rectify any fault of VDR?

Voyage data recorder, It will log some important parameters and details which relates to ship navigation and operation such as, ME parameters (speed, direction, alarms), bridge microphone recording, GPD, Gyro, ...
If any fault, then proper investigation with root cause analyzing,
If repair is beyond ships staff capacity, consult manufacture, inform DPA/ tech super (depend on line of communication laid down in company SMS)
Company tech department will inform flag and class, then condition of class or temporary allowance will involve.

41. What is dispensation?

Temporary allowance granted from administration for any particular legislative requirement.

42. Tell me about automation survey?

During the machinery survey (CMS), the automation of each and every machinery will be tested. We should keep ready the automation file with updated alarm and monitoring system test records with evidence.

All the pressure and temperature gauges must test for error reading and property logged at frequent intervals as per SMS.
Surveyor will ask random test of few alarms and monitoring system.

43. ME LO pressure sensor how to check for survey?
With the help of calibrated valid pressure testing apparatus.
Simulation may not acceptable.

44. A pressure gauge or a thermometer error how to check? And what is your action if found any?
Using proper testing instruments with valid calibration certificate.
If any error found then log it.

45. How and where you log such error?
At local on the gauge and on automation file

46. From where you can find maximum value allowed for such error?
****In automation file.*

47. Who is engine AB and engine rating?
Engine AB has competency accordance with STCW table A III /5 and four key functions, while rating has table A III/ 4 and only one key function.

48. What are the STCW key functions of both?
Engine AB – Marine engineering
Electrical, Electronic and control engineering
Maintenance and repair
Control the operation of ship and care for personnel

Engine rating – Marine engineering

49. Captain ask the engine AB for mooring operations, will you send him?
If the company has trained them accordingly and company SMS responsibility included such operations, then I'll send.
Because, in STCW competencies under engine AB, there are not such competencies given.

50. How you update and upgrade you self for a new requirement? (Legislative requirement)
Update – by latest MSNs, circulars, and via IMO website and publications.....

Upgrade – By following a required training program

Note – The examiners were not happy with answers mentioned with " *** ".

GD Class J

I.K. wijewardana.

Orals examination conducted by

MR. Bandula Kariyawasam

1. What type of ships did you sail?
2. What is ur first vessel?
3. What is the type of ship, type of engine, which year is it build, any major problem over there are u faced?
4. He was asked me six seven ships And he interested that am I know ships keel laid date And engine type. What is mentioned letters of RND , MC , RTA ,L, S and because he interested keel laid date because it more important with regulations.
5. What were the major problems that u face in ur past sea time?
6. I mentioned one capsized and one piston crack, TC fire & crank pin damage deep to insitu grind run with one unit cut , piston , conrod outside cross head secured inside one TC cut off.
7. He asked me what the reason was. What were investigations carried out? What were company circulation come out due to this? Any safety precautions taken additionally after this?
8. What were the safeties followed during repair work?
9. When u starts prepare dry dock?
10. What are preparing one year before?
11. What are the document u uses?
12. From where u find this document?
13. What are the SMS manuals?
14. What is in safety management manual?
15. What are u look before three month?
16. What u check before enter to dry dock?
17. What type of things u check after water p/p out? Who go with u? What document carried with u?
18. How u mark any propeller blade damage? How u identify the blade number?
19. What u carried out initial meeting & daily meeting?
20. How u prepare additional job out of initial agreed?
21. What are the check carried in rudder & propeller?
22. What u looks in mid ship? He wants about bilge keel, why it in mid ship area,
23. Why are going to dock? Who is the interest to ship to be in dry dock?
24. What checks carried in anchor?
25. How u carried out plate renewal?
26. How u select the material?
27. What document do u check about plate renewal? Welding procedure, Welders qua lification, Shell expansion plan, testing procedure,..
28. What are the details u get from shell expansion plan?

29. How u know plate is suitable to use?
30. What is nesting plan?
31. Where u can get nesting plan?
32. What are the checks carried in mid ship?
33. How u knows plate need to be renew?
34. What did check just after dry dock?
35. What are the important are u check in dry dock?
36. What are the regulations for E' generator?
37. Where u can find out electrical regulations?
38. What are the responsibilities of chief engineer in switch board?
39. What u check in switch board?
40. Draw a main switch board diagram?
41. How checks safeties in switch board?
42. How over current trip, under voltage?
43. How u check voltage in high system?
44. What instruments do u used?
45. How u know ur EO qualified to work in high voltage systems? He is looking answer in STCW
46. Where is giving EO competence in stcw?
47. How u evaluate EO's competency?
48. What are the CE function?
49. How u evaluate present second engineers' competence for promote as CE?
50. What are the CEs' competence?
51. What are the electrical ratings competence?
52. How u renewed plate in bulk head?
53. How u know Ur welder qualified to do the job?
54. What document u used for before doing the job?
55. Where u find out this document? COSWP
56. How u know ur crew follow these procedures?
57. How u implement in safe work practices in ur ship? Tool box meeting
58. If CO request ur oiler for roping do u send him?
59. What are the competence of able seafarer in engine?
60. Where u can find coswp in ur ship?
61. What is the important of leader ship and priority management?
62. IF u sees smoke in Eng room what u do?
63. IF u sees somebody fall in smoke what u do?
64. Is u let him to die?
65. How many safety route do u have Eng. Room?
66. What is mean by team work?
67. Why is so important team work?
68. Why is so important communication?
69. How u become ready to safety management meeting?
70. What document u carry when u going to safety management meeting?

71. How u implement ISM system in ur ship?
72. Why u check SMS manual?
73. What are the manuals in this system?
74. What is in side safety management manual?
75. How u order bunker for next voyage?
76. Which document u use?
77. After the bunker u come to know 10 tons less? How u report to company?
78. What is in BDN?
79. Do u pay for water in bunker?
80. Can u remove ash?
81. How u carried out MARPOL ANNEX I ?
82. What are the document u have to ready?
83. How u carried out MARPOL ANNEX 4 ?
84. What are the document u have to ready?
85. How u carried out MARPOL ANNEX 5 ?
86. What are the document u have to ready?
87. How u transfer sewage?
88. How u carried out MARPOL ANNEX V I ?
89. What are the document u have to ready?
90. What are in tirr 3?
91. What are the present S content?
92. Where u write damage of OWS?
93. Where u write bunker?
94. Where u write bilge transfer?
95. In any pollution to whom u have to inform?
96. If gaily who will carry out the charge?
97. Which document u have to submit to coat?
98. How u verify ur subordinates write the log book correctly?
99. Which readings u consider in log book?
100. What are writing in log book first?
101. If JCW tem. 0.5 deg. Increase in one unit what u do?(Cylinder lubrication)
102. If piston cease in one unit what are u do?
103. 102 What are the safeties in Stat air line?
104. What condition in accommodation air?
105. How u carried out boiler survey?
106. What u looking in water drum?
107. What document u have to keep ready?
108. What are the safeties that u have to check?
109. How u check LL water level cut out?
110. How ready for annual survey?
111. How carried out safety equipment survey?
112. What is the items check in safety equipment survey?

113. Except LSA & FFA what check in safety equipment survey?
114. What are the bridge equipment under ur responsibility?
115. What do ready for survey?
116. What tells to EO to carry out for bridge equipment survey?
117. What are the record keep for bridge equipment tests?
118. What are the tests carried out in co 2 system?
119. How is auto pilot system work?
120. What is mean by follow up system work?
121. Draw how bridge signal transfer to steering room?
122. Draw block diagram for that?
123. How u carried out ME performance?
124. Draw Performance curves?
125. How u adjust ME peak pressure?

class

Chief Engineer Examination - Oral test

P.H.D.Ruwan Susantha

Examiner: Mr. Bandula Kariyawasam

01. What are the type of ships you have sailed?
02. What are the major incident/accident you have faced during your carrier? (Need complete description from start to end including investigation process.)
03. Under which regulation ship bottom inspection to be carried out
04. Dry docking preparation (from last DD, Content of DRL, DRS, Budgeting)
05. Before entering to DD inspections to be carried out
06. What instruction you would give to electrician
07. Hot work procedure during DD
08. Procedure for flooding at DD
09. A/ES fuel system was not properly flushed before DD, due to cold weather cannot start what is the recovery procedure?
10. Starting requirements?
11. Dead ship recovery procedure (How you ensure everybody familiar with the procedure)?
12. SOLAS chapters
13. List of certificates to carry on board, where can we find it?
14. What are the condition of assignments under which convention it required?
15. ISM manuals, each manual what those contains?
16. Which manuals includes job responsibilities?
17. How to carry out SMS review
18. PSC CODES?
19. Vetting inspections, how it carried out, why & who carry out vetting inspections?
20. What are certificates to carried on board gas tanker, under what is the code pertaining to gas tankers
21. Gas tanker safeties?
22. What types of electrical equipment on board
23. Inert gas plant how it works,
24. What are the maximum O2 % in IG outlet,
25. Purging & inerting process (what are the different methods)
26. How you ensure cargo operation is safety?
27. How many assignments for electrical rating, Under which convention it required?
28. What is the new requirement for able seaman training?
29. Cadet training book, how many assignment
30. How to train cadet
31. Who is designated person for cadet training evaluation
32. How you ensure his training is properly going on
33. Shipboard management meeting, participants, Procedure,
34. Before attend to management meeting how you prepare
35. What kind of preparation you expect from your 2nd engineer during management meeting
36. Bunkering procedure as chief engineer how you prepare?

37. When calculating bunkers who you liaise with, What are the sources you need to prefer,
38. Bunker quantity calculation, what information you need
39. Mixing of bunkers what is the safe mixing margin & how do you know it
40. What kind of regulations are there to concern
41. MLC 2006
42. On board complain procedure
43. Can somebody complain to a shore authority directly
44. Misbehaviour of seafarer how to handle the situation, until his repatriation if the behaviour is not improving?
45. Accommodation ventilation how you ensure it is proper,
46. As chief engineer who's responsibilities you should aware with?
47. How you coordinate with cook about cool room condition & with steward laundry equipment
48. What are deck machinery & equipment's maintenance (windlass, winch, cranes, hatch covers)
49. How gather information about deck machinery
50. Chief engineer taking over procedure
51. What are the checks to be done before take over, where it states?

EXAMINEER:MR.CHANDIMAL

OROLS EXAMINATION- CHIEF ENGINEER. ***Candidate-lakshan dissanayake***

Below answerers are correct and found from the books after orals test completed.

ISM

1) *Ships you sailed*
2) *What are the functional requirements*
3) *What do you understand by define levels and authorities (no #3 functional requirements)*
4) *Last company procedure of inform non conformities*
5) *Who is conducting internal audits*
6) *What qualification he has to meet to do the internal audits-**(this is because of my answer for earlier question was DPA, superintendent)***
7) *What is the meaning of review and overview-identify the deviations, continues improvement*
8) *Incase essential procedure not in smc,what procedure*
9) *How you have followed after you have implemented missing procedure in your ship-**observation , discussion and interviews (brief them),progression of drills.***

DRY DOCKING

10) *As chief engineer at dry dock during take over time what is your main focus*
Documents-job specification(done and to be done), tools, spares, cms items, pms items, addition 3 rd party involvement, survoire, provided tools by the ships like porker gauge and pin gauge for rudder carrier bearings. list of contact in dock personnel.
11) *How the voltage calculate accordance with low frequency (50hz)in dock supplied-*
V= IZ
Z=2ΦFL,ф=22/7
12) *What jobs you allocate for **2/E. E/O** entrée before docking birth(at lay up)and during drying at birth*
13) *How the jobs are allocated by superintend-(ships staff/shore staff)-**designated jobs to be authorised for dock –shaft survive. allocated budget***
14) *What are the requirements for stern tube out board seal to be changed-**no class or admin requirement, change due to damaged like water contamination, during shaft renewal it may be damage so complete new set at 5 year shaft surveyor - renewal, for shaft renewal during IN water survive can extend to 2.5 years with additional verification ,lub oil analyse , log book tem and press.***
15) ***Draw** the stern tube seal inboard and outboard*
16) *Spares to be arrange in dock -question repeated until correct answer.*
17) *As a chief engineer what checks before flooding the birth(before leaving the docking birth)*
-fwd to aft , anchor in place, paint completed and dry, anodes and transducers are uncovered,

Bilge grating fixed and in place check inside too for any obstacles, leaks through thrusters seals and stern tube seal ,rope guard , plugs, rudder inspection doors, check the full movement of the rudder. Rotate the propellers seals during oil leaks, rectified.

18) *How to Carrey out safety equipment surveyor-*

19) *How to Carrey out safety construction-*

20) *Emergency gene under what survive-* ***safcon***

21) *Co2 room inspection in dock-*

22) *Life boat engine requirements under solas*

23) *What difference between lifeboat and life crafts*

24) *Under safety equipment what is under bridge equipment,*

25) *How do you check operator confidence of GMDSS during operation-*

26) *Gmdss battery test- onload and offload test*

27) *What is api test in voice data recorded.(i don't know sir)*

28) *What are the class of fires,*

29) *How the portable extinguish categorise*

30) *MY LSA answers were not satisfied continue the LSA*

31) *Life boat tests carrying out (during dock)*

32) *What will be 1 st day meeting ,what need to be discussed?*

33) *What essential in daily meeting.*

34) *Surveyors in dry dock.*

35) *What is weight of the person according to new regulation - question related life boat*

36) *How do you deal with additional job*

Technical

37) *Turbo charger life time of centre mounted and end mounted-24000 hours centre brg 12000 –end mounted*

38) *Why owners still preferred to end mounted- easy maintains, self lubrication, longer shaft more resilient ,.....*

39) *Lub oil properties of end mounted-viscosity index, ...*

40) *Why thrust bearing located in blower side,...*

BUNKERING

36)*what checks before bunker order*

37) *what is the important of stability during bunkering-* ***GM to be keep positive acceptable limits according stability curves***

38) *how to record bunker in oil record book-*

Chief Engineer Officer Orals Examination July 2015

Candidate: **Chathura B.C.Wijekoon**

Examiner: **Mr.Bandula Kariyawasam**

Date: **09.07.2015; 1hr, 21.07.2015; 2hrs, 22.07.2015; 4hrs.**

Result: **Pass**

(I would like to mention that here I have written question with more details for reader's understanding how examiner actually asked his questions. And also brief answer is given in the brackets)

1. What the types of ships you have sailed & engine details, type, capacity?
2. What are the major incidents you have faced during your carrier, start from cadet ships? (Complete description from start to end including investigation & the knowledge you gain from that to utilize as C/E in future)
3. What are the C/E competencies & how many? What are the 3/E competencies?(examiner asked me to study C/E,3/E,ETO,ETO rating, Able seafarer engine & Master's competencies)
4. How to evaluate 3/E, E/Cdt, 2/E as C/E for their next immediate rank promotion?
5. How many assignments for E/cdt & what is first assignment in CTRB?(40& safety)
6. What are the types of purifiers & purification methods?
7. Why centrifuge on A/E & how you check it?
8. What is the reason for carbon accumulation & how to identify?
9. What are the types of piston rings & how many grooves on CPR ring?
10. How ensure your 3/E is giving reliable evidence regarding A/E & how you assess his knowledge of A/E?
11. What is your responsibility regarding fire drill? How you assess? (de-briefing)
12. Who will inspect drills? (PSC, flag, internal auditors)
13. What is your responsibility regarding drills to PSC? (I should ensure to PSCO our crew is ready for any emergency situation at any time)
14. What is fire construction onboard the ship? (SOLAS chap. ii-2 fire protection, detection & extinction....)
15. How you repair bulkhead insulation? (we should not any alteration as per SOLAS chap.i survey)
16. So don't you repair the damage insulation? (with the permission from flag administration only)How you are going to change the insulation? (refer FFA maintenance manual find material)
17. As C/E what is your responsibility of fire system?
18. How you ensure your E/O carrying out routine checks on FFA & FA?
19. If your emergency fire pump suction is fluctuating repeatedly, what is your action plan for trouble shooting? (ship draught is less)
20. What are the operational checks on emergency fire pump?
21. What are the maintenance checks after open up pump?
22. What are the checks on shaft & impeller?
23. How to check cracks on shaft, draw a shaft and explain?
24. Why you prepare maintenance report? (for CSM)

25. Draw a photo evidence, what do you want to mention on photo? (ship name, IMO no;, Identity of photo with date)
26. What are the crack testing methods? (NDT-DP test)
27. How you enter the cracks in the report?
28. After renewing the shaft what you have check?(order new shaft to maintain critical spares ROB)
29. Under what regulation you survey the emergency fire pump?
30. What are the fire protection in main engine? (relief valve, OMD...)
31. What is the fire construction regarding scavenge manifold? (fire extinguishing in scavenge space)
32. What are the methods?(steam & CO_2)
33. What are the fire protections in A/E? (leak off alarm)
34. What are the requirements of FFD & FA? (SOLAS & FSS)
35. How to check manual call point?
36. Where you get the indication of fire alarms?(Centralized control system located in ships office of my last ship but bridge indication also)
37. How does control system function on panel?(Give initial alarm of audible & visual, if not accepted within 2 minutes fire alarm will sound)
38. Tell me where you get the fire alarm exactly?(as per SOLAS audible & visual alarm must give in E/R too)
39. What are the fire detectors in E/R?
40. Where you can find heat detectors?(drying room)
41. What are the types of detectors on top of M/E your last ship?
42. Which type detectors are in accommodation?(smoke detectors)
43. Why smoke detector?
44. What are the fixed firefighting systems onboard ships?
45. What else?(as SOLAS chap.ii-2 under suppression of fire, ships more than 2000grt and more than 500m^3Volume of E/R must equipped with local firefighting system of hyper mist for IC engines, boiler, incinerator & purifiers)
46. How to do function test?
47. How you assess performance of your crew regarding fire drills?
48. What are the scenarios you created for E/R fires?
49. How to release CO_2 to E/R & what is the time to release it?
50. What are the checks on CO_2 system?
51. Smoke is emitting from A/E exhaust manifold, what is your action?What you have to report?
52. What is the reason for smoke emission from exhaust manifold?(manifold leak)
53. What are the other possibilities of fire on exhaust manifold?
54. Your 3rd engineer collapsed near generator, what is your action?(remove him from the risk)
55. What are the types of portable fire extinguishers?
56. There are two fires, one is oil and the other is gaseous fire, what is your action as C/E?(Direct crew to use class B & C firefighting mediums)
57. How to prepare for FFA survey?
58. What is the regulation regarding FFA survey?
59. What is E/O's responsibility of LSA? (survival craft limit switches & battery charger, emergency lighting)
60. Where is dry docking mentioned?(safety construction survey)

61. What is the maximum interval between the dry docking?(2 times for 5 year & 36 month max.interval)
62. Where you can find regulation regarding power generation?(SOLAS chap. Ii-1 part D Reg.40-44)
63. What is dead ship recovery time?(SOLAS chap.ii-1 reg.43:- 30 minute)
64. What are the high voltage safeties in power generation system?
65. How you ensure your E/O's ability to handle HV systems?(STCW competency)
66. What is the equipment used for HV testing?(HV tester with calibrator)
67. Draw & explain how sensor works?
68. How to adjust any deviation on gauge?
69. What are the materials of thermistor & thermocouple?(Constantine & iron)
70. What are the voltages they generated?
71. One light is dimming in control room, what is your action as C/E?
72. All lights are dimming in control room, Why? what is your action as C/E?(High current surging so voltage dip occur, V=E-IR)
73. What is E/O's responsibility regarding electrical system?(Trips & alarms, spares, instrumentation calibration)
74. What are the bridge equipment?
75. How you ensure your E/O is carrying out routine checks & tests of above?(As per STCW he must have competency)
76. How to test navigation lights?(By pulling out a fuse)
77. What are the feeds to VDR?(Navtec, AIS, GPS, RADAR, Microphones)
78. What is the survey for GMDSS?
79. What is the M/E governor control system? (NOR- P+I+D)
80. What is your action when M/E governor failure?
81. Are there any back-up system?
82. What are the control terms of JCW & LO systems?(P+I)
83. Explain P,I,D.
84. What are the bridge control requirements?
85. How you ensure all navigation officers following proper procedures regarding bridge equipment?
86. What are the M/E controls on bridge?(emergency shut down)
87. When they can operate it?(Anytime to prevent collision & grounding)
88. Do they need to get permission from C/E?
89. Can they change other parameters?(Get permission form C/E)
90. What are the types of steering gears?
91. What are the controls of S/G?(controlling methods:-Auto pilot, Hand, Non follow up)
92. What are the feeds to auto pilot?(Gyro heading,.....)
93. How many rudder angle indicators on bridge?
94. How it indicate angle?(selsyn)
95. How to ensure E/R is ready for UMS operation?(fire & water tight integrity)
96. What is the responsibility of E/O for UMS?
97. What are the responsibilities of duty oiler?(transfer, ensure no leaks)
98. To whom the oiler must report?(to duty engineer, D/E to 2/E....)
99. Who else to participate for UMS rounds?(3/E,4/E)

100. What is the responsibility of D/E?(writing log book,...)
101. What is the responsibility of 2/E?(overall report to C/E)
102. What are the C/E standing orders & night orders?
103. How you going to demonstrate boiler low low level shut down to surveyor?(actual blow down)
104. How you ensure trip activated at defined LLL?(levels stamped on gauge glasses)
105. How many gauge glasses you have boiler?(As per SOLAS chap.ii-1, reg. 32 minimum 2)
106. How to calibrate remote level gauge?(spam & zero adjustment)
107. Are two level gauges same and where are they located on boiler?
108. Are the readings of both gauge glasses same, what is the effect of trim & list conditions?
109. How you ensure your crew follow safe working practices?
110. Where you can find COSWP?
111. What are the sections?
112. Who supposed to carry out risk assessment?
113. How you ensure your crew read manuals?(everybody has to read & sign)
114. What is the allowed time period to sign manuals?(two weeks)
115. How you plan for dry docking before one year?
116. What are the items can be postpone?
117. What is the reference for dry docking?(SMS-Maintenance Manual)
118. What are the risks involved to E/R personnel during propeller shaft withdrawal by dock yard?
119. How you update with new regulations?(Masters regulation file)
120. What are the documents you have to maintain under Marpol Annex 1?(BDN file, ORB, SOPEP...)
121. What is the content of BDN?(temperature of fuel.....)
122. How you enter OWS maintenance in ORB?(under code I)
123. Where you enter PSCO inspection of OWS OCMD?(under code I)
124. What are the documents you have to maintain under Marpol Annex VI?
125. What are the parts(component) mentioned in NOx technical file?
126. What are the important parameters?(fuel timing, piston top clearance)
127. What is the document under SO_2?(Sulpher change over record book)
128. What are the content of section 1,2 & 3 of Sulpher record book)
129. What is the regulation regarding boiler emission?(Reg.14 Sox)
130. You notice black smoke is emitting from funnel while arriving port, what is your action as C/E?
131. What is the reason for uptake fire?
132. How you carry out root cause analysis for this incident?
133. What are the evidence you refer for trouble shooting?(log book, PMS...)
134. What is the most important area?(examiner expected answer D/E watch keeping effectiveness)
135. Where it is mentioned?(STCW chapter .Viii watch keeping)
136. How you evaluate M/E performances?
137. Where you can find L.O. testing procedure?(SMS:Management manual, LO management)
138. What are the areas your 2/E must consider while carrying out M/E LO filter cleaning?(magnet)
139. What are the other things can be found in side filter?(nonferrous particles: O-ring pieces)
140. What is the micron value of LO filter candles?

141. What are the bearing clearances of crosshead ,big-end & main bearing of your last ship?(0.20-0.32/ 0.40-0.64/0.52-0.73)
142. What you check in modern engine cylinder lubrication system during your rounds?
143. What is the flickering frequency of lubricator lights?
144. Why communication is very important?
145. How you evaluate 3/E's competency of using English language?(by giving phrase to interpret)
146. What is the important of priority management?
147. What is the important of team work?
148. What are the leadership qualities?
149. How you evaluate E/Cadet's electrical knowledge?
150. How often you carry out cadet evaluation?(weekly)
151. What is your action as C/E if cadet not following training program properly?(disciplinary action against misconduct)
152. For example cadet is overhauling fuel injector of A/E, how to evaluate him?
153. How often C/E & 2/E meet and discuss issues?(weekly)
154. What are the SMS manuals & explain the content?
155. How you guide 2/E regarding repairs in paint store?(management meeting, flammable gases)
156. What is your instructions to E/O repair lamp?(Intrinsically safe, seal ring)
157. Are going to take over the ship or take over the system?
158. What part of system you are going to take over?(responsibilities of C/E)

Orals completed.

Thank you.

CLASS -(I)

ORALS Examination

Candidate :- B. Weerasinghe.

Examiner :- Mr. Chandimal Jayathilaka.

Date :- 24/06/2015, 06/07/2015.

ISM

1. ISM functional requirements.
2. Explain master's over riding authority along with ISM code element No 05.
3. What is the difference between review & over view.
4. What is the master's review.
5. What is the content on master's review.
6. What is the cheif engineer's contribution towards the master's review.
7. How you prepare for an internal audit.
8. Who's conducting internal audits.
9. How the management companies make up the auditors for an effective auditing meathods.
10. As a cheif engineer what is your action plan during an audit.

E.K. M. – Turbo Charger.

11. Sketch & describe cross sectional view of a turb charger. (Axial flow end mounted T/C)

12. Sudden vibrations appear on the M/E T/C, what the possible causes.

13. As a cheif engineer what is your action plan duri a excessive vibration of T/C.

14. What are the methods in which the turbo char can cut off & M/E emergency operation conditions & what is the correct procedure for cutting of the turbo charger. (Explain the procedure in detail.)

15. What will happen when T/C nozzle ring part chocked.

16. How to determine the M/E safe operational rpm during such emergency condition.

17. What are the clearances obtain during a turbo ch & how to obtain them. (K- clearance)

E.K.G. - Refrigeration.

18. Why subcooling is effective.

19. How many degrees can go subcooling.

20. What are the reasons for compressor suction side freezing.

21. How to maintain compressor inlet in super heated reigon.

22. Why the compressor suction is taken from the crankcase.

Dry Docking.

23. What are the ship's drawings & plans send to dock prior to docking.

24. What are the details & in formation obtain from the following drawings.

→ General arrangement plan.
→ Mid ship sectional plan.
→ Shell expansion plan.

25. What is the importance of the docking plan.

26. Whatis the nesting plan.

27. What are the inspections you carry out on the rudder.

28. What is the criteria to check / inspection that when a plate section of the rudder has been removed.

29. How you pressure test the rudder.

30. During In water Survey what are the arrangem to obtain the rudder pintle clearance.

31. What are the I.W. Survey requirements.

Main Engine Power Calculation.

32. How you calculate ship's specific fuel oil consump

33. Reasons for increase in S.F.O.C.

Electrical & High Voltage.

34. Explain operation of the Current Transformer (CT

35. What components are employed with CT.

36. What is the reason that ammeter can not be directly measure bus bar currents.

37. Draw & explain the single phasing sensing & tripping arrangements.

38. Draw & explain HRC fuses, operation., And also materials of it's components.

39. What are the current limiting factor of HR fuses.

40. What are high voltage safety.

41. Why "NER" is employed.

42. Determine the "NER" value resistance @ voltage 1.1kv.

Misc. & I.G.

43. What are the PSC codes. (From 10 to 99)

44. What are the entries mentioned under the code -(I). in the O.R.B.

45. Explain operation of Inert Gas generator & system.

46. What safeties involves in the I.G. system.

47. What are the alarms & trips. in the system.

Project.

48. Explain the operation of "Hybrid Turbo charger".

Boiler.

49. How to carry out hydrostatic Pressure testing of a boiler.

50. What are the key points stress on during this test.

51. What are the survey intervals of the boiler.

52. What are the reasons for derated operation of boiler,

53. What could be the reasons for deterioration of the boiler furnace.

54. As a cheif engineer what are the precautions & actions when you found a buldging on the furnace wall.

55. How you going to continue operations of the steam plant, with your correct & effective actions. (Check with the template arrangement.)

Result ⇒ Pass.

Class 1

CHIEF ENGINEER- Examination - Oral test /// Date: 09th and 16th of April 2015 - ***PASS.***

Candidate: Manoj Elvitigala. (CINEC MARIIME CAMPUS –ENG batch- 11)

Examiner: Mr. Bandula Kariyawasam.

01. What are the types of ships you have sailed? There engine details ship details.
02. What are the major incident/accident you have faced during your carrier? (Need complete description from start to end including investigation process as per The SMS)
03. General questions from LSA /FSS code (type of life boys .life boat engine requirements,)
04. How to check performance of life boat engine cooling water pump,
05. Fire detectors, how to test, fire main inspections, and extinguishers fixed co2 system requirements.
06. Portable fire extinguishers type, weight, capacity.
07. How to release co2 in to engine room.
08. How to check cargo hold fire monitoring system
09. Casualty recovery procedure from machinery space
10. LSA/FFA Maintenance.
11. What instructions To EO,2/E,3/E,4/E
12. FFA survey
13. Fire pump damage what you do
14. Dry docking (planning ,during dock, before & during flooding, after leaving)
15. Before entering to DD inspections to be carried out
16. Dry dock specs how and what to prepare.
17. What instruction you would give to electrician
18. SOLAS chapters
19. General question from SOLAS chapter I, ii-1, ii-2, iii, IV and v.
20. Electrical and electronic navigation equipments on board and their maintenance(ask me to do a project on this topic and bring in next day ,i .e-RADAR AIS GYRO ECDIS GMDSS etc)
21. Radar how many what are the types how it work, GMDSS ,radio battery life
22. How to calibrate magnetic compass
23. Safety radio survey
24. What are the latest regulations under SOLAS-enclosed space entry
25. How you update with latest regulations published relevant to maritime field
26. What are the conventions checked by the PSC inspectors and explain what they check
27. ISM manuals, how many what is there content?
28. What are the meetings on board
29. C/E standing orders what are they, what crew should do
30. C/E night orders
31. What you expect from you 2/E,3E,4E
32. How to carry out SMS review
33. Marpol regulations
34. IOPP survey
35. Chief engineer documents on board
36. How to prepare for a PSC inspection
37. Boiler survey
38. Boiler tube leak what you do

39. Steering gear motor abnormal in rough weather what you do
40. OWS malfunction what you do
41. What is ME survey how to do
42. Engine room large fire one class A bulkhead insulation damage what you do
43. Fire control plan content
44. General arrangement plan content
45. Propeller inspections
46. Crane inspections
47. Emergency generator on load testing, staring requirements
48. Engine control room control system monitors fail what you do
49. How many assignments for electrical rating.
50. What is the new requirement for ETO
51. Engine Cadet training book, how many assignment
52. How to train a cadet
53. Who is designated person for cadet training evaluation
54. How you ensure his training is properly going on
55. Shipboard management meeting, participants, Procedure,
56. Before attend to management meeting how you prepare
57. What kind of preparation you expect from your 2nd engineer during management meeting
58. Bunkering procedure as chief engineer how you prepare?
59. Bunker plan.
60. Content on BDN
61. Information in F O analysis report what adjustment on engines purifiers etc
62. Draw and explain duel combustion cycle with parameters
63. Draw and explain boiler control system
64. When calculating bunkers. What are the sources you need to prefer,
65. Bunker quantity calculation, what information you need
66. Ordering bunker
67. What kind of regulations are there to concern
68. ORB entries
69. STCW functional requirements of Engineers and crew
70. High voltage safety
71. MSB safety
72. Safety drills, debriefings
73. Various operation conditions of ME
74. Misbehaviour of engine cadet how to handle the situation.
75. How you coordinate with cook & with steward
76. How gather information about deck machinery
77. Chief engineer taking over procedure
78. Are you taking over the ship or are you taking over the system
79. What are the checks to be done before take over,
80. Log bunker figures and actual figures not matching what you do will you take over, what is the procedure.

PASS

ORALS EXAMINATION QUESTIONS – CLASS1 ENGINEERING

EXAMINEE : W.K.C.KAMAL

EXAMINER : MR.CHANDIMAL JAYATHILAKE

DATE : 08.04.2015

GENERAL

01. BRIEFING ABOUT THE COMPANY
02. WHAT ARE THE TYPES OF CHARTERS?
03. WHICH TYPES OF SHIPS ARE USUALLY UNDER "TIME CHARTER"?
04. WHAT IS "BAREBOARD" CHARTER?
05. WHAT ARE THE OWNERS RESPONSIBILITIES UNDER BAREBORAD CHARTER?

SMS

06. YOU FOUND THAT IMPORTANT CHECK LIST IS NOT INCLUDED IN TO YOUR SMS ONBOARD. WHAT IS YOUR ACTION?
07. HOW DO YOU ORDER BUNKER?
08. WHAT ARE THE DETAILS YOU MENTIONED IN THE BUNKER REQUEST FORM?

SEA TRIALS

09. EXPLAIN SEA TRIALS?
10. WHAT IS THE PURPOSE OF "ENDURANCE TEST"

11. EXPLAIN DEAD SHIP RECOVERY PROCEDURE?
12. WHAT IS THE DEAD SHIP RECOVERY TIME?
13. EXPLAIN PREFERENTIAL TRIPPING?
14. DRAW PREFERENTIAL TRIPPING CIRCUIT DIAGRAM?

DRY DOCK

15. YOUR SHIP IS GOING TO DRYDOCK SOON. WHAT ARE THE INSTRUCTIONS YOU GIVE TO YOUR CREW?
16. THE SHIP IS AT THE GATE OF THE DOCK AND ABOUT TO ENTER IN TO THE DOCK? WHAT ARE THE DETAILS EXCHANGE WITH THE BRIDGE?
17. THERE WAS A REPAIR ON A FUEL TANK. HOW DO YOU ENSURE THE TANK IS FIT FOR THE NEXT BUNKERING?
18. HOW TO TEST A REPAIR?
19. EXPLAIN PROCEDURE FOR AIR PRESSURE TEST?
20. THE SHIP IS IN DOCK AND YOUR SUPERINTENDENT NOT AVAILABLE. HE CALLED UP AND ASKED TO INSPECT A DOUBLE BOTTOM FUEL TANK WHICH WAS NOT ON THE DRY DOCK REPAIR LIST. HOW YOU DEAL WITH?
21. HOW TO VENTILATE A FUEL TANK WHEN IT IS IN DRY DOCK?
22. WHAT ARE THE SPECIAL SAFETY PRECAUTIONS YOU TAKE BEFORE YOU ENTERING THE TANK?
23. WHAT ARE THE THINGS YOU CHECK IN THE TANK?
24. THE SHIP IS A BULK CARRIER, WHAT ADDITIONAL THINK YOU CHECK?
25. DRAW A DOUBLE BOTTOM TANK CONSTRUCTION
26. WHERE IS THE STEAM COIL LOCATION? WHY?
27. AS C/E WHAT ARE THE CHECKS YOU DO BEFORE FLOODING?

28. WHAT RE THE CHECK YOU DO DURING THE FLOODING?

29. HOW YOU PREPARE M/E FOR STARTING FOR THE FIRST TIME AFTER DRYDOCK?

POWER BALANCE

30. HOW DO YOU CARRY OUT POWER BALANCING OF YOUR MAIN ENGINE?

31. WHAT ARE THE CONCERNS DURING POWER BALANCING?

32. WHAT ARE THE NOx TIER III STANDARDS?

FROM THE PROJECT (GAS TURBINE)

33. WHY IT'S CALLED GAS TURBINE?

34. WHAT ARE THE THINGS MAY INSTALLED BETWEEN GAS TURBINE AND THE PROPELLER?

35. WHAT IS THE PURPOSE OF THE GEARS?

36. DRAW A SUITABLE COUPLING FOR THIS TYPE OF ARRANGEMENT?

37. EXPLAIN EMERGENCY RUNNING PROCEDURE FOR ABOVE TYPE OF COUPLING?

Chief Engineer officer Orals examination April 2015

Candidate : JDBP Jayaweera
Examiner : Mr Bandula Kariyawasam
Date : 21.04.2015 5hrs & 23.04.2015 3.5hrs approximately
Result : Pass

1. What type of ships you have sailed?
2. Give me a list of details including, engine make, type & capacities?
3. Tell me major incidents you had come across in your carrier with details, action of the c/E, company respond?
4. Tell me how you prepare for survey on fire safety?
5. What kind of protection you have against fire? Where it was mentioned?
6. Where it was mentioned?
7. What kind of fire protection had on engine room?
8. What are fire protection boundary types?
9. What kind of class fire door had on ECR?
10. Where you find these details?
11. What you find on fire plan?
12. Where you find fire plan?
13. What kind of fire detection safety you find on E/R?
14. What is your order regarding the functionality of above?
15. How you ensure E/O maintain the requirement?
16. How you make sure E/O fallowing your instructions?
17. What if he is deviate from your instructions?
18. From where it is mentioned to requirement of Crank case door on Diesel Engine?
19. What you check on M/E control systems?
20. What you expect from E/O to forward to you regarding instrumentation on M/E?
21. Show a report of a Instrument calibration report sample?
22. Where it was mentioned the requirement?
23. How you maintain cleanliness of Control system on ME engines?
24. What instructions you give to 2/E regarding this?
25. What control systems had on E/R?
26. What control system had on M/E?
27. How you ensure timing on ME?
28. What kind of governor had on ME engine?
29. What happen if FIVA valve signal not coming to a certain unit?
30. What are control terms?
31. Why not law pressure boiler 2 term controller?
32. Why not L.P boilers does not have sudden steam consumptions?
33. What kind of boiler water level controls had on crude oil carriers?
34. Why it is multi element control?
35. What is sea trial reports?
36. Draw main engine load diagrams?

37. How you ensure your main engine performance?
38. How the performance accessed?
39. Draw a Main engine load diagrams given in sea trials?
40. How do you maintain Air condition in the accommodation?
41. What you expect from Steward?
42. How maintain Domestic refrigeration system?
43. Where you would get required temperatures that should be kept on them?
44. What is Shop trial reports?
45. What rules governed shop trial condition engine?
46. What you expect from 2nd engineer regarding M/E Lub filter cleaning?
47. What he should report to C/E?
48. What is to be expect inside a lub oil filter?
49. What is he report about Metal debrills found on filter?
50. What duties have you as C/E from 3rd engineer towards System lub oil filter maintenance?
51. What function should E/O should have to maintain according to STCW 2010?
52. What Function should have to perform as C/E ?
53. What regulation regarding Emergency Diesel Generator?
54. What you expect from E/O regarding Emergency Generator and switchboard
55. What report do you expect from E/O?
56. What duties from 2/E,3/E regarding EDG you expect to report?
57. Draw a Auto Pilot control system on Steering gear on bridge?
58. What functionality you expect from a Electro technical Rating onboard?
59. What you expect from Engine rating?
60. How you manage L.O?
61. How manage F.O?
62. Draw Complete Electrical distribution system?
63. Draw a Complete AVR diagram?
64. Draw P-V diagram for Tow stage Air compressor with approximate values of temperatures and pressures, Show suction/Discharge valve opening and closing.
65. What regulations governs bunkering?
66. What is SOPEP?
67. What you as chief engineer carry to ensure annex iv requirements?
68. What you maintain on Sewage plant?
69. What test you would carry on it?
70. What PPM of chlorine, BOD you maintain?
71. What as C/E your reaction if found Sewage plant defective?
72. Other than reporting what you carry to ensure compliance?
73. What conventions to be comply for a ship?
74. Where is Ships security mentioned?
75. How you calibrate OMD?
76. How you test OMD?
77. Regarding annex vi what is your duty?
78. What your engine room department have to maintain towards its compliance?
79. What you look to ensure compliance on OWS?

80. How as C/E when your assign for a ship till take over you handle the situation?
81. What areas you check during taking over?
82. What if you find any deficiency?
83. How you as C/E prepare for management meeting?
84. What as newly joined C/E you would point out on Management meeting?
85. How you evaluate E/C?
86. How many assignments on a cadets record book?
87. What if your not assessed Trainees properly?
88. What is 2/E assessment of E/C found wrong and if E/C knowledge not up to the limit?
89. What protection had on H.V systems?
90. How you prepare for dry docking? What documents to prepare?

ORALS EXAMINATION QUESTIONS – CLASS1 ENGINEERING

EXAMINEE : W.K.C.KAMAL

EXAMINER : MR.CHANDIMAL JAYATHILAKE

DATE : 08.04.2015

(Guys, these are the exact answers I have given to the examiner, I can't guaranty the validity of the answers. Refer books for justify my answers. Tnx)

GENERAL

01. BRIEFING ABOUT THE COMPANY

02. WHAT ARE THE TYPES OF CHARTERS?

Time charter, voyage charter, bareboat charter

(Examiner was expecting more, but I knew only these three)

03. WHICH TYPES OF SHIPS ARE USUALLY UNDER "TIME CHARTER"?

Container ships

04. WHAT IS "BAREBOAT" CHARTER?

Where the charter party is responsible for almost everything such as fuel, lub oil, crew management, technical management, provision, spare parts, etc.

05. WHAT ARE THE OWNERS RESPONSIBILITIES UNDER BAREBOAT CHARTER?

It's as per the agreement.

ISM

06. HOW DO YOU REVIEW YOUR SMS SYSTEM ONBOARD?

To review the SMS onboard I should have to have proper knowledge about company SMS and the ISM code and other relevant local and international regulations. This knowledge I may get from company familiarization programs and be in touch with new regulations.

I have to evaluate the commitment of the crew regarding the SMS onboard. I do this through interviews, discussion and observations. Through this, I can identify whether any further training, awareness is required.

Then I have to compare the onboard procedure together with the written procedure. I have to identify any short comings, deficiencies. As an example regarding the bunkering, I would check whether proper bunker meetings has taken place, all check list has been followed and filed, BDNs are available for last 3 years, bunker samples are stored properly. Likewise I would check each and every onboard process. (The examiner moved to the next quiz)

07. YOU FOUND THAT IMPORTANT CHECK LIST IS NOT INCLUDED IN TO YOUR SMS ONBOARD. WHAT IS YOUR ACTION?

An important check list is missing means there is a serious fault on company and ship's SMS. Because until now it was not discovered about this deficiency. It was unnoticed by the master, crew and during internal audits. Therefore while introducing new check list we have to eliminate our system fault also.

We have to discuss this matter in the ship's "Management meeting".

The system errors can be resolved by

- Amendment to the system

- Increase supervision
- Improve training and awareness
- By providing necessary resources

So we have to identify which method(s) is suitable.

Regarding the checklist we may have to prepare a draft checklist to comply with regulations and requirements. Above all suggestion are included to a "SMS review form" and should send to the company.

The company will discuss this matter thoroughly and the system will be amended as necessary.

Any changes to the system has to logged in "Incoming document ledger", and necessary "revision page of the relevant SMS manual". If necessary, existing documents should be discarded.

Once the system is amended, the implementation process should discuss in the "Management meeting" and then has to bring to the "Safety committee meeting", and aware the crew and get feedback if any. The process should be carefully monitored by seniors and after about three month the process should be evaluated and should send a report to the company.

BUNKERING

08. HOW DO YOU ORDER BUNKER?

Usually the charterer notifies us to send them the bunker request. Once I received the request, I will discuss with the master regarding the voyage plan. My main concerns are;

- Distance from this bunker port to next bunker port
- Speed which is going to maintain
- Any expecting anchorages
- Any expecting bad weathers

- Area of trade, whether the ECA areas are included
- Amount of reefer containers, refrigerated cargo, etc. are going to carry

The company SMS state how much fuel should be ordered as the reserve. In my company SMS states that it should be order bunker for 3 days reserve for M/E NCR consumption. (What is NCR? The RPM that engine normally running)

Now I have to check ROB onboard tank wise. Then I can calculate;

- Minimum amount of fuel required
- Maximum amount of fuel can take onboard without mixing
- Maximum amount of fuel can take onboard with mixing

If the ship is calling ECA ports then the DO request has to be made accordingly.

Regarding the fuel oil quality, company's and engine makers' instructions to be followed.

These details are entered in the "bunker request form" and send to the charterer via master.

09. WHAT ARE THE DETAILS YOU MENTIONED IN THE BUNKER REQUEST FORM?

- Grade of fuel
- Minimum amount of fuel required
- Maximum amount of fuel can take onboard without mixing
- Maximum amount of fuel can take onboard with mixing
- Maximum sulphur content
- Maximum density
- Viscosity

SEA TRIALS

10. EXPLAIN SEA TRIALS?

Once a new ship is built, it should be demonstrated that the ship and its machinery are complying with the statutory and class requirements. During sea trials several tests are done to demonstrate this.

Hull test: during hull test performance of anchor equipment, the steering gear local and remote control are tested. Also the effective ship speed for bow thruster is established.

Navigation equipment and radio communication equipment: checked according to the SOLAS

Nautical trials: speed trials, various manoeuvres including stopping and reverse manoeuvring are tested. (What is stopping manoeuvre? The ship should be able to stop within 15 ship length when the ship is running at full speed, in special cases 20 ships length for some types of ships)

Machinery and electrical installation: as engineers this is the important test for us. During this test
Starting air capacity is tested (what is starting air capacity? For reversible engine there should be sufficient air for twelve consecutive starts without being filling air bottles, for non-reversible engines it's for 6 starts).
Slowdowns shut downs are tested
Blackout test and dead ship recovery test are carried out. (What is the dead ship recovery procedure, and time? See quiz 12,13)
Under the endurance test the main engine fuel consumption and operational parameters are tested. (What is the purpose of endurance test? See quiz 11)
Vibration and noise level is measured.

Steering gear performance is tested. The main steering gear should be able to operate 35^0 of one side to 35^0 of other side at deepest seagoing draft and at full speed, and under same condition it should be able to operate operate 35^0 of one side to 30^0 of other side within 28s.

Fire pump function test also should be done. (What is fire pump function test? Check whether fire pump can give two 12mm diameter 12meter long water jet when the ship is at full speed)

11. WHAT IS THE PURPOSE OF "ENDURANCE TEST"

To obtain operational parameters and fuel consumption at various engine speed. Then the economical rpm can be obtained. Also these details are used as future references to evaluate the condition of the M/E from its original status.

Also the parameters are noted by running engine at MCR speed for 4 hours, NCR speed for 2 hours and 103% speed for ½ hour

12. EXPLAIN DEAD SHIP RECOVERY PROCEDURE?

- Check the diesel level of the emergency generator fuel oil tank and ensure all valves are opened. Check oil, cooling water,etc levels. Start the emergency generator.
- Close the circuit breaker of emergency generator and power the ESB.
- Start an E/R fan which powered by ESB.
- Start the emergency air compressor and fill the emergency air bottle.
- Start DO pump for A/Es
- Start auxiliary cooling water pump if available.
- Prepare SW pump, an A/E for starting.
- Open all CBs from MSB
- Start an A/E and connect it to the MSB by closing the main circuit breaker.

- Start SW pumps, cooling water pumps and other essentials according to the priority.
- Stop emergency generator manually if it's not stop automatically.

13. WHAT IS THE DEAD SHIP RECOVERY TIME, AS PER REGULATIONS?

30 minutes

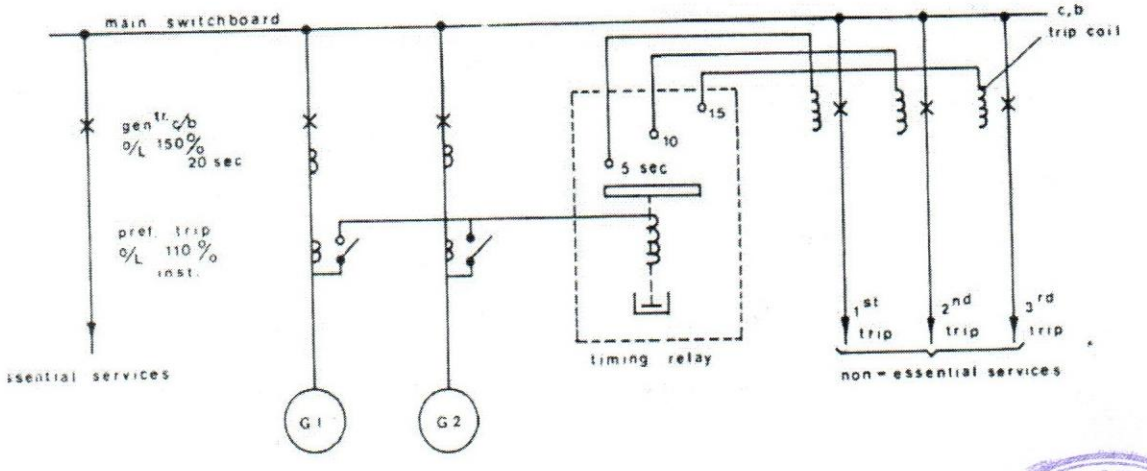
14. EXPLAIN PREFERENTIAL TRIPPING?

Once a generator is over loaded to 110% of its MCR load, to reduce the load thus prevent damage to the generator and prevent tripping due to overload the non-essential supplies are tripped sequentially.

15. HOW TO DEMONSTRATE PREFERENTIAL TRIP?

Adding more loads to the switch board by starting large consumers such as fans, cranes ,etc. If two generators are running in parallel this may be achieved by shifting load to one generator.

16. DRAW PREFERENTIAL TRIPPING CIRCUIT DIAGRAM?



DRY DOCK

17. YOUR SHIP IS GOING TO DRYDOCK SOON. WHAT ARE THE INSTRUCTIONS YOU GIVE TO YOUR CREW?

- Always ware PPE and strictly follow PTW sytem
- Keep firefighting appliances handy all the time
- Mark scape root clearly
- Clean bilges before arrival
- Clean spills immediately and put rubbish always in to closed containers
- Know emergency contact detail and reporting procedure
- Don't enter to any enclose space without permission
- Don't do any hot work outside the workshop
- Immorbalize the fixed CO_2 system and lock the room
- Immorbalize the fixed Oxygen-Acytelin system and lock the room
- Note down any isolations
- Mark all valves,pipes,etc to be dismantled
- Don't add additional job to the job list.
- Keep manual,drawings, instrument ready
- Anything give to the yard personnel should be logged and the signature has to be taken
- Don't do any transferring during at the dock.
- Don't pumpout any bilges. Bilges should transfer to reception facility as agreed.
- Sewage should transfer to a reception facility via STP as agreed.
- 2^{nd} engineer should brief the crew regarding the daily meeting, so the crew is aware about the jobs carried out onboard

- E/R should be manned all the time and 2nd engineer should give careful attention to crew rest hours.
- Engineers should familiar with the HFO/DO changeover procedure of M/E, A/Es and boiler, also the draining and filling procedure of stern tube bearing lub oil. Electrician should familiar with the shore connection
- Prepare connection for cooling water for A/C and ref
- Monitor all dry dock personnel jobs and activities
- Don't turn propeller without permission
- Don't start any heavy machinery
- **Take M/E crankshaft deflection before enter in to the dock** (it's very important to state this)
- Don't open up any think without permission of C/E
- If any doubt, contact C/E

18. THE SHIP IS AT THE GATE OF THE DOCK AND ABOUT TO ENTER IN TO THE DOCK? WHAT ARE THE DETAILS EXCHANGE WITH THE BRIDGE?

    The M/E is standby

    Winch power is available

    There will be a blackout soon during power changeover

    (The examiner was not satisfied with my answer, he has something else in his mind)

19. THERE WAS A REPAIR ON A FUEL TANK. HOW DO YOU ENSURE THE TANK IS FIT FOR THE NEXT BUNKERING?

Since this is a critical repair, I have to ensure a correct repair procedure is following. For this I will check their proposed repair plan to ensure correct material is selected, proper welding procedure is following and the qualified welder is chosen, etc.. And then I will monitor each step of the repair by myself, especially the testing process after the repair.

20. HOW TO TEST A REPAIR?

First the repair is tested locally by a suitable method such as vacuum test, ultrasound test, magnetic particle test, etc.

Then the air pressure test should be carried out for the tank.

21. EXPLAIN PROCEDURE FOR AIR PRESSURE TEST?

All pipe lines are blanked. Ensure everything is removed from the tank and manhole covers are fitted with new gaskets. Mount the connection for air hose and the pressure gauge to the sounding pipe.

Then the tank is pressurize to 0.20 bar and then lower to 0.14 bar and kept this for 10-15 and ensure the pressure is not dropping.

22. THE SHIP IS IN DOCK AND YOUR SUPERINTENDENT NOT AVAILABLE. HE CALLED YOU AND ASKED TO INSPECT A DOUBLE BOTTOM FUEL TANK WHICH WAS NOT IN THE DRY DOCK REPAIR LIST. HOW DO YOU DEAL WITH?

I will make a "drydock specification" for the job and bring it to the daily meeting and request for quotation. Once I got the quotation I will forward it to the superintendent/ owner. Once they approve it, I will give go ahead for the job by signing "drydock specification on behalf of the owner,

The job is discussed during the daily meeting and provides necessary support to the dock personnel if required, eg: transfer fuel oil to another tank.

23. HOW TO VENTILATE A FUEL TANK WHEN IT IS IN DRY DOCK?

Open both manhole covers. Supply air from bottom man hole and direct vapour away from the working aria through top man hole with the aid of flexible portable ducts.

(The examiner was not satisfied with my answer)

24. WHAT ARE THE SPECIAL SAFETY PRECAUTIONS YOU TAKE BEFORE YOU ENTERING THE TANK?

- The "Entry in to enclosed space permit" is issued by dockyard. **But still I will carry out my own risk assessment and entry into enclose space procedure as per company SMS.**
- The exact time I'm planning to enter in to the tank will be discussed in daily meeting and ensure no hot work or other critical works carried out adjacent to the tank and a drydock safety officer may present at the work site if possible.
- The openings should be guarded and "MEN WORK INSIDE" notices should be posted.
- Fuel lines and steam coils may blank as an additional precaution
- Once I satisfy I will follow the company stated procedure for entry into enclose space.
    - Backup party should available with SCBA at the entrance.
    - All necessary PPE should be worn
    - Communication should establish via intrinsically safe VHFs (If your ship is not a tanker do you have intrinsically safe VHF on board? No. I have to get these from drydock authorities)
    - Life line should be used

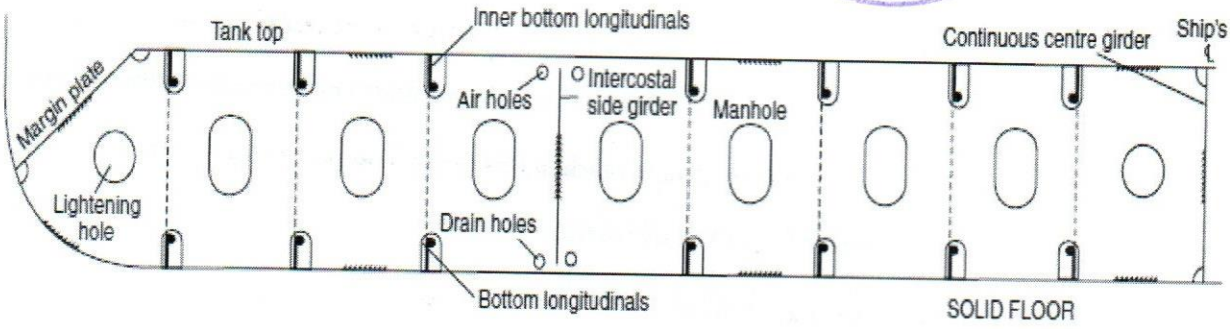
25. WHAT ARE THE THINGS YOU CHECK IN THE TANK?

- While entering the tank I will check the condition of the manhole covers, studs, seats and the ladder.
- Then I will check for signs of corrosion and cracks on shell platings, floors, longitudinals, frames, etc.
- Check condition of welding seems as much as possible.
- Check the condition of the steam coil. The coil should be pressure tested by drydock personnel.
- Condition of the sounding pipe and the striker plate should be checked. (What is the purpose of striker plate? During manual sounding the weight piece of the sounding tape always hits on the floor below the sounding pipe and the plate may gradually wear. To compensate this, an additional plate is welded below the sounding pipe.)
- Check the suction pipe, bell mouth and any u brackets supporting the pipe.
- The vent is also a part of the tank and therefore should be inspected.
- Any pipelines passing through the tank should inspect
- **Any remote sounding arrangement should be checked and calibrated if necessary.**

26. THE SHIP IS A BULK CARRIER, WHAT ADDITIONAL THINGS WILL YOU CHECK?

Signs of buckling and cracks on tank top

27. DRAW A DOUBLE BOTTOM TANK CONSTRUCTION



28. WHERE IS THE STEAM COIL LOCATION? WHY?

Near to the suction. To prevent losing suction due to clogging fuel at suction during subzero temperatures.

29. AS C/E WHAT ARE THE CHECKS YOU DO BEFORE FLOODING?

As C/E I should ensure any jobs related to the water tight integrity, and any jobs which can do only when the ship is on dock, has been completed, surveyed and documented.

- Hull painting should be completed and dried
- Draft and load line marks should be marked.
- All zinc anodes should be fitted and any protective covers should be removed.
- ICCP system anodes should be fitted and connected
- Grease of transducers should be removed
- All tank plugs are fitted and sealed
- Anchors are fixed and heaved up
- All sea gratings are hinged

- Rudder is fitted, inspection covers are welded back, plug is fitted and pressure tested
- Shaft alignment completed, shaft is mounted. The propeller is fitted, rope guard is welded, pocker gauge reading has taken. Aft seal is filled with oil and plugged, protective cap is fitted and nuts are cemented.
- Bow thruster is filled with oil and checked for leakages
- Stern tube is filled with oil
- All sea side valves are fitted and keep in closed position
- Try out steering gear and ensure proper operation of the rudder
- Secure any moving items

Then I have to ensure the ship is in same stability condition as before docking. Any thing transferred to the outside should be taken back eg: Fuel oil. Sound all tanks and ensure same as prior to dock.

Next I have to ensure that there is enough man power available onboard for the actions to be taken during flooding, eg: check for leakages, venting the sea water system, etc

Once I ensure that all above requirements are fulfilled, then the master is informed and he may sign the "Authorization to flooding" certificate. I will enter this date and time in log book.

30. WHAT RE THE CHECKS YOU DO DURING THE FLOODING?

Before the ship clears blocks, I have to ensure all jobs are satisfactorily done and there are no leakages and if there is any leakage observed master should be informed immediately to terminate the flooding.

The crew should be instructed regarding things to check;

- When the ship is flooded up to the overboard valve level, water tightness should be checked by feeling over pipes or through vents.
- Once it's ensured no leakages valves should be slowly opened and sea water system should be vented
- All tanks and cofferdams should be sounded and ensure no leakages.
- Any hull repairs should be checked for water tightness

31. HOW YOU PREPARE M/E FOR STARTING FOR THE FIRST TIME AFTER DRYDOCK?

- Ensure all jobs has been completed on M/E
- Take crankshaft deflection and compare with pre dock readings
- Ensure shaft bearings and stern tube filled with oil.
- **Ensure the propeller is immersed** (how you ensure the propeller is immersed? I said visually, but examiner was not satisfied)
- Turn with the turning gear and ensure there is no abnormality
- Fill up both air bottles

POWER BALANCE

32. HOW DO YOU CARRY OUT POWER BALANCING OF YOUR MAIN ENGINE?

Referring to MAN B&W MC-C engines

This is a very critical job. Any maladjustment may jeopardize the engine performance. Therefore as a C/E I have to ensure all necessary precautions should take to ensure validity of my actions.

First I have to take the power card to ascertain the power distribution among each unit. For this I will chose a calm day and informed bridge to not to take any sharp course alteration during this

period. As the engine RPM I will chose the normal RPM which we use to take engine performance. The indicator mechanism should be well lubricated before use and should maintain enough time duration between two readings to let the mechanism to cool down. The indicator cocks should be properly blown before each reading and the valve should be fully opened. To ensure correctness of the reading I will take two sets of reading to ensure the correct reading has been achieved. If any power imbalance has noticed then I have to find the reason behind it. A set of draw cards will be taken and should check for any problem on compression pressure. If there is a problem on compression pressure the fault should be found and rectified. Any problem on injection equipment also can be discovered from draw card and power card. Mean indicated pressure should be kept within +-0.5 bar within all units. Any slight deviation may recover by adjusting VIT rack, up to 3 indexes. During any adjustment, other parameters should be monitored such as exhaust gas temperature, any vibration, knocking sound to ensure that the other units are not overloaded. Adjustments should be done in small quantities and after each adjustment a sufficient time should be given to stabilize the engine before any reading is taken.

After the final adjustment calculate the SFOC and ensure it's not deviate much. Also ensure parameters are not deviate much from sea trial readings, this ensure the NOx emission is not affected. Log the adjustment on NOx technical file together with the performance report before and after adjustments. Also log the adjustments in the log book.

33. WHAT ARE THE CONCERNS DURING POWER BALANCING?

Exhaust temperature is not exceeding limits

No any abnormal vibrations

Pmax-Pcomp not exceed 35 bar

SFOC not affected

NOx emission not affected

Engine is operating at a VIT active region

34. WHAT ARE THE NOx TIER III STANDARDS?

From 1-1-2016

For engines below 130rpm NOx emission limit is 3.4g/kWh

FROM THE PROJECT (GAS TURBINE)

35. WHY IT'S CALLED GAS TURBINE?

Because exhaust gas is used to drive the power turbine

36. WHAT ARE THE THINGS MAY INSTALLED BETWEEN GAS TURBINE AND THE PROPELLER?

Gears and couplings

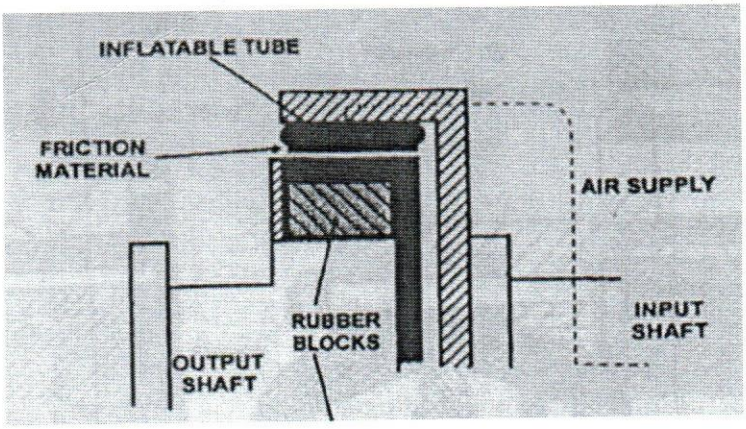
37. WHAT IS THE PURPOSE OF THE GEARS?

Propeller is designed to give enough power to drive the ship and the propeller has its effective RPM which is usually a low RPM.

Engine has its own design RPM which is giving its optimum performance.

To match the engine RPM to the propeller, the reduction gears are fitted.

38. DRAW A SUITABLE COUPLING FOR THIS TYPE OF ARRANGEMENT?



39. EXPLAIN EMERGENCY RUNNING PROCEDURE FOR ABOVE TYPE OF COUPLING?

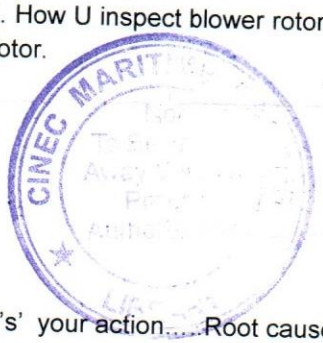
There are sets of emergency coupling bolts are provided. The coupling can be engaged with aid of these coupling bolts while the engine is stopped. This procedure is only suitable for limited period of time.

ED class I orals

Examiners :- Mr. Pujitha Herath and Chandimal Jayathilake Date:- 18-02-2014

K.H.B.Kumarasinghe.

1. New ISM circular came onboard. How you implement?
2. ISM C/Eng. Responsibilities.
3. Previous ship details..
4. How is your company ISM procedure familiarization ?
5. How your suggestion of ISM implementing onboard procedure ?
6. ISM elements and Functional requirements?
7. MLC-2006, What is? Why MLC came?
8. MLC Titles ? Who implement MLC?
9. MLC implementing on board as C/Eng..
10. Age 16 to 18 seafarer regulations?
11. Abnormal behavior of seafarer... What to do? How to warning him? If can't control how you send home?
12. If engine room person not up to the standards... What to do ?
13. Ship prepare for dry docking..What documents need to send , dry dock?
14. One day before dry docking.... Instruction for ship stuff. ?
15. IOPP survey in dry dock?
16. SOPEP items and what SOPEP manual included ?
17. Complete survey of CO_2 system at dry dock? How pressure test CO_2 bottles? Who is doing? How many? Where U get information?
18. How to isolate CO_2 system at dry dock ?
19. If Superintendent ask more work at dry dock, What U do as C/Eng?
20. How U check progress on dry dock jobs?
21. At D/D , your both auxiliary blowers out of order. Send repair to yard. How U inspect blower rotors for balancing? Method of checking balancing? And other inspection carried-out on rotor.
22. What may be the possible causes for blower break downs?
23. Root cause analyze methods?
24. Exi..? Safe voltage and current..
25. Tanker safety? Safe areas ? Zener barrier ?
26. Tanker ship lightings...? And Zones..?
27. Motor protections ?
28. Static exciter, explain..
29. At sea your duty engineer call, Bilge holding tank level is high. . What's' your action.....Root causes find. Then how to repair?
30. ORB filling ... sections..
31. You're A/C plant needs repairs... Instructions to crew..
32. How ODS recovery? What documents maintains ?
33. VOC regulations for tankers ?
34. Does Sri Lanka port having vapor return line? So how to apply VOC regulations on Sri Lanka?
35. Specific fuel oil consumption calculation ...
36. Fuel oil system for M/E and where flow meter fixed.?
37. Power calculation and methods..
38. How volumetric fuel control of electronic engines..
39. RT Flex and ME engines where control auxiliary blowers ?
40. If volumetric fuel control feed back failure .. What happen to the engine..
41. New ship delivery...
42. Sea Trails...



..... **PASS** .....

Mass I

Candidate- S.K Wijenayake

Examiners- Mr.Poojitha Herath

Mr. Chandimal Jayathilake

Date- 19/02/2014

Duration- from 1015hrs to 1145hrs

1) IMO
    a) How many committees?
    b) How to make a low?

2) SEEMP

    a) What is SEEMP?
    b) How are you going to implement it on your vessel and your advice to your crew.
    c) If circular came to regard SEEMP, How do you implement it?
    d) How do you know above circular (regarding SEEMP) is implemented on board your vessel? (What kind of benefits you gain and how do you assess it?)

3) Enhance survey

    a) What is IBC code?
    b) Enhance survey procedure

4) Dry Dock

    a) Plate renewed procedure. (Shell)
    b) Welding techniques
    c) Edge preparation methods
    d) Surface preparation standard
    e) Coating procedure and thickness
    f) Before flooding inspection

5) Boiler

a) Starting procedure after cold lay-up.
b) Special checks.
c) Super heated steam carry over, consequences.
d) Design methods to eliminate steam carry over on super heaters.

6) ISM

a) Difference between deficiency and non-conformities.
b) NC raises procedure.

7) MLC

a) The day before MLC audit found greaser rest hours are less for the last 03 months what is your action as a chief engineer?
b) E/R preparation for MLC audit.
c) MLC titles.

8) M/E

a) Draw a starting airline diagram.
b) What are the different between blocking devices and interlocks?

9) Electrical

a) E/F testing methods.
b) HV precaution.
c) How you know E/E is confident about the job?
d) If E/E not available, How do you face with a HV system?

Miscellaneous

a) ORB fills
b) Why bilge tank under section I?

C [555]

18th Feb 2014

Chief Engineer Oral Exam

Candidate : K.A.A.D. Supun Uthpala

Examiners : Mr. Poojitha Herath

Mr. Chandimal Jayathilake

Maritime Law

1. What is the different between non conformity and deficiency.
2. Who will issues n-c and deficiency.
3. Who will clear the PSC deficiency.
4. How you implement SMS system on-board.
5. SMS reviewing method and how often carry out a review.
6. PSC codes- what is code 17, 19 & 30.
7. Explain Manila amendments.

Ship construction

1. What are the items that include in shell expansion drawing.
2. What is mill scale.
3. What are the methods for preparing hull plating before apply coatings.
4. What are the 'SA' standards.
5. Explain a Load Line survey.
6. Types of water tight doors and explain.
7. From where the regulations coming to the water tight doors and water tight door regulations.
8. Draw container ship hatch cover and sealing arrangements.
9. Lets assume you are in dry dock and tomorrow the dock going to be flooded. As a C/Eng what kind of instructions you give to 2/Eng & E/Eng.

EK's

1. Why some ships fitted with reduction gear box and clutches.
2. Why it is necessary to step down the RPM.
3. Draw air operated clutch.
4. Carry out reduction gear box and clutch complete inspection.

5. What type of bearings used in gear box and what is the reason for it.
6. What type of safety devices fitted in gear boxes.

Boilers

1. Carry out a boiler intermediate survey.
2. Now you are almost finished the boiler survey, ship is necessary to leave the port as soon as possible, surveyor already left the vessel, cannot stay in the anchorage due to piracy area, next port survey arrange and confirm, have enough diesel oil. As a C/Eng how you are going to handle the situation.

Electrical

1. What are the advantages of D.C motors.
2. How speed changing achieve in winches.
3. How to test the under voltage relay.

Miscellaneous

1. Taking of L/O bunkers, under which code recorded in the oil record book.

17th March 2014

Chief Engineer Oral Exam

Candidate : K.A.A.D. Supun Uthpala

Examiners : Mr. Chandimal Jayathilake

Maritime Law

1. What is non conformity and deficiency.
2. How to report a deficiency to company.
3. What is the procedure to clear (close) a deficiency.
4. What is master's review and explain.
5. As a C/Eng how you review a SMS on-board.
6. What are the PSC codes and explain it.
7. By taking an example for detainable deficiency and explain how you handle the situation.
8. What is ISPS code.
9. What are the security levels and explain them.
10. Explain ISPS audit.

Ship constructions

1. What are the surface preparation standards and explain them.
2. Coating procedure for hull after completion of hull preparation. How to check the wet film thickness.
3. What is the value of coating thickness for withstand for five years.

EK's

1. Boiler survey preparing procedure.
2. How you run the economizer in dry condition for a short period of time. What are the actions.

Electrical & H.V. systems

1. Difference between A.C and D.C motor.
2. Under voltage trip draw and explain, how to test it.
3. What are the methods of controlling the speed and direction of rotation in mooring winches.
4. Draw and explain the Ward Leonard system.
5. High voltage systems, explain the 'Electrical Permit To Work' (EPTW) system.

class I

K.S.T.S. NIROSHAN 17.02.14 2½ hrs.

1st day .. By Mr. Chandimal.

1. You have sailed on different ships in different companies what are the difference in ISM systems ?
2. C/E responsibilities .
3. How you implement safety circular ?
4. How you order fuel oil ? [Executive Summary,] ESP
5. How extend dry docking interval ?
6. How do you do Rudder survey ?
7. Sketch Rudder & Rudder carrier bearing.
8. in carrier bearing which area need attention. ?
9. Why rudder movement limited by a jumper bar ?
10. As a CIE what do you check before flooding in a dry dock ?
11. As a CIE what instructions you give to subordinates ?
12. in dry dock how you obtained the enclosed space entry permit ? ship yard .
13. in tanker what are the intrinsically safe equipments. ?
14. in ME engine . what is ccu & functions ?
15. in large ME engines why redundancy is no longer valid.
16. RT flex engine how low load operation permits ?
17. What is overlap period in injectors & injector sequentially changing time. 10 s / 20 min.
18. Why injectors one sequentially change ?
19. How combustion chamber designed to withstand thermal stresses.
20. ME engine, COCOS - EDS, systems shows, one unit power loss, How do you ~~drag~~ rectify this ?
21. in large 2 stroke TIC how you assess the performance ?
22. How do you prepare hull for SA 2.5 standard ?
23. How to earth a transformer .
24. Arrangement of power supply to the steering gear motor ?

25. What are the safeties in HV transformer area?

26. What is main boiler & Auxiliary boiler.?

27. How to set economizer safety valve?

28. How to isolate the Aux boiler safety V/V's during economizer safety V/V float?

29. According to MLC 2006, what checks carry out on FW G plant & FW system.?

30. What is Cl^- ppm in FW - 0.2 ppm at the top [illegible] 0.08

31. How often you change UV light in sterilizer? 6 months.

32. What is critical & minimum spares?

33. How you prepare for AMSA PSC inspection?

34. What is the ISO classification of IFO-380

35. As a CE RNG-35 / RNG 360 what do you check in ORB?

36. What [illegible] details you enter in NOON report

37. What will happen when water carry over with steam?

Second day - 26.03.14 - K.S.T.S. NIROSHAN

By Mr. Chandimal - 2½ hrs

1. What are the ISM elements.?
2. How to reviews ISM?
3. How do u implement ISM circular?
4. What is Non-conformity & Who will issue Non-conformity?
5. What are the differences bet^n NC & Defficiency?
6. Who will issue deficiency?
7. What is the difference bet^n management meeting & safety meeting?
8. Who are the safety Committe members?
9. How you implement your suggesion regarding safety?
10. What is Exi & what are the intrinsically safe areas in a tanker?
11. What are the intrinsically safe equipment in a tanker?
12. What is Zenner barrier & draw & explain?
13. What factors you consider when ordering bunkers?
14. What is incompatibility & How it happens?
15. As a CIE what do you check before flooding in a dry dock?
16. What are the instructions you are giving to your 2nd engineer befor flooding?
16. your 3rd eng. said F.O. Service tk level low in dry dock, what instructions are you giving to 3rd Eng?
17. Why you dont allow to fill up Service tk?
18. Sketch a double bottom fuel tk?
19. What are the preparation to inspect double bottom F.O. tk on dry dock?
20. Who will issue the enclosed space certificate?
21. As a CIE explain how you inspect the d.b F.O (above) tank.
22. In electronically controlled ME engine, one unit power is less & how you trace the problem.?
23. What is CCU?
24. In large ME engine why redundancy no longer valid?
25. How does Hydraulic pressure control in ME engine?

26. When swash plate P/P control failure, what will be the failsafe position. ?

27. What are the advantages & disadvantages of ~~swash~~ hydraulic P/P keeping fail safe pos^{n} at full ahead position. ?

28. What are the indications when TIC nozzle ring 50% failed ?

29. Draw a centre mounted TIC

30. Where thrust bearing location & what is the reason for this location. ?

31. What are the hull preparation standards ?

32. What are the factors consider when select hull preparation standard ?

33. What is MSPC standard ? Explain.

34. How to earth a TIF ?

35. What are the applications of above arrangement ?

36. What are the steering gear motor protections ?

37. What are the HV safeties & How you going to do HV maintenance ?

38. What is main boiler & Auxiliary boiler ?

39. How you set economizer safety V/V ?

40. How you prepare for USCG inspection ?

41. What is VGP ?

42. What are the things CE should fill in VGP applicat

43. How you do audit in Deck department (ISM) ?

44. What are the pyrotechniques on bridge & how many are there ?

45. Wheres the other locations of pyrotechniques ?

46. What is priming & foaming ? How it happens ?

47. What are the consequences when cong over ?

48. How do you prevent priming & foaming ?

49. What is copper pick up & how it happen ?

50. What is the boiler tube material & What are the compositions ?

ON OBJ" APRIL 2014 - 3rd day. 3 Hrs

K.S.T.S. NIROSHAN By Mr. Pujith Herath.

1. What are the faults in Boiler safety V/V ?
2. What is simering ?
3. What are the Boiler water chemical levels ?
4. What is Hydrasin & Why use Hydrasyn ?
5. How you advice your 2nd Engineer to check automatic functioning of boiler ?
6. How do you check function of a PID controller ?
7. How you carry out Zero check in a PID controller ?
8. Why you use 4-20 mA in a control systems ?
9. Why you select minimum value as 4 mA ?
10. What is the air pressure range in a pneumatic controller ?
11. What is ACU & function of ACU ?
12. In Electronic engine How do you change electronic card ?
13. What are the UMS requirements ?
14. What are emergency steering regulations ?
15. What is the role of owners representative ?
16. What is Collective Bargain Agrement ?
17. What is dispensation & How you apply for dispensation ?
18. How do you get dispensation for engine room machinery (eg- for OWS)
19. How do you carry out complete service of a OWS ?
20. What is MARPOL Annex IV & Regulations ?
21. How you implement your suggetion regarding safety ?
22. Abnarmal behaviour of a seafarer in E/R, As a CE What is your action ?
23. How you evaluate ME performance ?
24. In a CPP How you assess performance ?
25. How you ascertain CPP system is properly functioning ?
26. How you check Performance of a bow thruster ?

27. How you ascertain Hydraulic system properly functioning?

28. What is Parking test?

29. How do you carry out inter-departmental Audit?

30. How you advice your 3rd Engineer for maintenance of E/R fire hoses & hydrants?

31. If you dont have compressor oil, what is your action?

Result- Pass.

2013

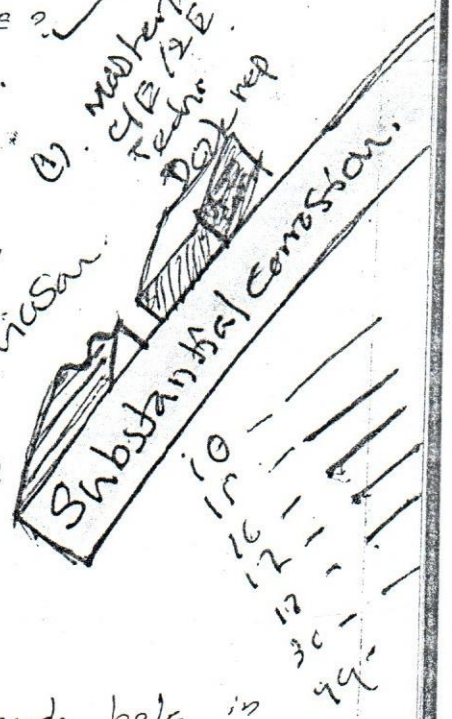
ED Class I orals

MR. WEERATHERA

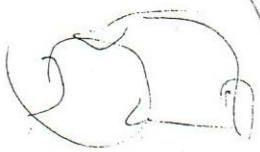
20/03/2013 Morning

Examiners:- Mr. Bandula Karunanayake
mr. Pujitha Herath
mr. Chandimal Dassanayake.

ISM functional requirement? ✓
D.P. roll ?
How to improve ism on board ?
DRY DOCKING ?
How to prepair for dry docking ? ✓
what are the deaument to send dry dock?
Tank r/v is leaking how you order?
Dry dock services ? ✓
The is dents in hull what is action of CIE ? ✓
why rudder having two plug ? ✓
what is the purpose of rope gard ?
How you check the intergrity of plug ? ✓
who will attend for dock bottom inspection ?
How to renew fuel oil tank plate?
Supper says it can not change what I CIE do ?
1.5 m x 1.0m How to change ship side plate?
why make rounded plate corners?
Do you follow ism when at dry dock?
"Nest" plan? (For plate preparations).
When you are joining vessel the out going CIE made hole in the BHD of control room and put blower what do you do?
How you make repair it ?
How you make it insulation ? (How to find class of insulation?).
By declaration of conformity asbestos free can use of insulation).
Is your old ship how do you carry out thickness gauging?
How to prepair ship for psc?
PSC codes ?
what are the items that psc check?
ME engine PMI ?
CODES EDS ? what is in Flex ? (PMI and EDS ?).
There is a problem in FIVA r/v what do you do ? (Auto cut out).
what is the Redundancy arrangement in ME ?
How to calculate cylinder oil consuption ?
How to order cylinder oil ?



33) - How to ensure that you are maintain optimum consump
34) How to increase cylinder ~~wait~~ oil consumption for one unit
35) How do you know that increase actually?
36) what do you check before flooding?
37) " " " " During flooding?
38) what is critical period?
9) why it is critical?
~~10~~ what do you check before starting M/E engine?



). what are the ISO compartment?
) How do discard fuel injector?
) what do you check in M/E control system before starting?
)
) what is interlock?
) what is blocking device?
) Draw OMD.?
) How to test OMD?
) OMD alarm rising what do you do?
) crank case explotion door?
) Secondry explotion!
) Found hotspot in main bearing how it happen?
) what do you check like oil analysis report?
) Accidently release of ref gas from containes what do you do?
) How to complain any problem of crew to Master or Capany (New DLC Regulations).
). what are the ocasions that crew member can complain his personal problems to PSC (Port state control).
) Fire pump regulations.
) Define 'A' class bulkhead.
) Steering gear rules & regulations.
). Electrical Requirements for steering gear.
). Ship earth fault finding systems? (Draw) DC injection
). steering gear protection, when it trips? explain Reason.
). ~~If M~~ How to locate a earth fault.
); M/E 40 Pump ~~for~~ Earth fault. what you do If VSI is steaming.
). How to megger Test above 40 motor.
. What are the M/E Slowdowns and Shut downs.
. Asked some Questions from the Project Report Submitted.

to PASS.

do you prepare for a routine dry dock.

What are the inspections for ~~re~~ standing time as
chief engineer? :

What are the instructions given to Elect engineer at
standing time?

What is the specific fuel oil consumption & How do you
calculate it?

How do you calculate power?

How do you explain to Ports control inspector your
sludge ~~re~~production amount is accurate with ROB.

How much sludge percentage included in fuel.

How do you enter oil discharge from your OWS
to Bilge sludge tank as entry in to ORB.

How do you calculate fuel oil consumption if the flow
meter is faulty?

What are the items send in Noon report?

How doy calculate prop. slip / pitch diameter measuring method draw & show.

Draw & explain viscosity control system?

One controller is not functioning what is your action as C/E?

How do you order fuel for next voyage?

What details you want to supply?

If charterer ask you to go extra 7 days
with present bunker what your answer.

What are the your sugetions for the situation

Black out is happen while bunkering you are
in ship office with captain / owner representative
etc. what is your action as C/E.?

What are the resons for black outs.

~~Draw~~ what are the cannel board protections.

Draw a electro magnetic OPR unit.

What are the standing orders you are giving

Chamind gunasekera Vs Mr Bandula kamyawasam + Mr [illegible]
Jayathilaka + Mr Pujitha Herath.

1. What is your company?
2. What type of ship is last?
3. what are the other types ships you sailed?
4. what are the ISM elements?
5. What ~~are~~ is the purpose of ISM Introduction.
6. what are the Tier I, Tier II, Tier III
   HOW MANY MANUALS HAVE YOUR SMS? WHAT ARE THEM / WHICH MANUAL INCLUDED JOB RESPONSIBILITY
7. What are the NOX Limits of ~~of~~ them.
8. What is the Nox Technical file.
9. What items do you record in Nox Tech file.
   ~~What~~ How IEAPP CERTIFICATE ISSUE?
3. What are the Marpol Annexes?
) what are the certificates under Marpol Annex I.
2) what is the difference between Flag state & port state?
3) How do you prepare the ship for a port state control inspection
) what are the documents prepared for that.
) How do ~~RT~~ flex work in low load.?
;) What are the Things control ~~control~~ by FCM 20 for cylinders & common.
) what happen if one FCM 20 is failed?
) what is your action for that.
1 How the fuel pressure controls in common rail?
How do you ~~pressure~~ leak test common rail after a maintenance
what are the main benifits from RT flex engines?
How do you prepare your vessel for load line survey & what are the items checks in that.
Draw the load line mark.
what are the inspections carried ~~out~~ out in bulk Carriers for LOAD LINE INSPECTION.
Draw a Hatch cover sealing arrangement / How do you test sealing of Hatch cover
what is the limit for dent on the hull.
What are the Precautions for emergency dry docking

are the standing orders are you giving
rew when bunkering.

what is the purpose of inert gas using for tankers.

(49) what are the safeties of inert gas system.

(50) what are the special safeties in gas tankers.

(51) Draw the benev safey barrier

(52) what type of pumps use for ^ cargo operation of. Gas tankers?

(53) How many sea water p/p do you survey.

(54) What are the limitations for CIO for CMS

(55) How to repair ruptured boiler tube.

~~Ballast~~

- What is your last vessel? What type it is?
- What is your ... how meny tect files have on board / What is includ
- NOx. how meny ... you Regarding NOx What are the NOx component
- What are the meathorod 1) Parameter check methood 2) Simplified check methood 3) Direct mea... methood.
- How you carry out maintenance of M/E related to NOx.
- What are the Certificates required to sail under Annex
- What are the Critical equipments onboard ship
- How meny paint coatings are appling on Hull / What is the thickness. 160 - 3 (Primer 1 2, Top cont 1 or 2, Antifouling.)
- As C/E How you plan D/D.
- What D/D Required by ship.
- What is include in DD (~~specks~~) specifications.
- One day before entering DD As a C/E what checks you carry out / What instruction you give to crew (later they will say you did not tell that) -?
- What you inform E/O before flooding
- What you inform you bridge one day before D/D.
- Draw and explain Muff coupplings. If Muff cuppo too tight how do you remove / Why it is too tight.
- What ~~you check~~ inspection & Repairs carry out in propelle
- How you repair to propeller crack. fix & CPP Propelers
- What is deferent between hull inspection soon as ship D/D (remove water)
- What checks you carry out on
- What service supply by DP / Why Air supply req
- Need to replace hull plate how? How you get the number (nest plan)
- Quetion related to brine system
- How the brine system use to cool the Ref. cargo.
- How maintain deferent temp of earch cargo Holds
- If Brine system is leaking how do you know ~~wheathear~~ ~~the~~ leakage.
- how you rectify the leakage
- how you brine system put back to operation.
- How you maintain brine density
- How you maintain ~~brine~~ ~~system~~ Cooling carol compartments.
- How you defrosting (thermal image)
- What ~~are~~ the High Voltage shipboard safeties.
- What is safe distance for handling HV system after disconnecting power.
- for conform to ~~safe~~
- Check by What instrument.
- How you carry out motor megger test
- What is the deferent between Voltage transform & Current transformer.
- Where you use thise things.
- Draw and explain static AVR.

(1) Do ... con... do ... is ... How ...

you know ISM fully impliment in your newly company.
How do you train a Cadet how newly join the vessel.
As C/E how do you evaluate his training.
How you carry out internal Audits of ISM

If Bridge control fail what is the action as C/E.
How do you carry out local control < BfW Sulzer.
with governor & without Governer.
What are the checks you carry out during local control.
Starting air system what are the interlocks &
what are the blocking devices.. (Unidirectional safeguard)
What is surging
What are the resions for surging
How you calculate M/E LO SFOC / what are the units.
How you avoid scavenge fire.

IOPP Servey - how you carry out.
What are the maintenance you carry out with fixed fire fighting system.
If master inform C/E to release total flooding system to machinery space, How you carry out.
Re entry procedure after flooding CO_2.
How you identify as electrical fire and how you make a report.
How you ascertain Economiser safety value is operating @ correct pressure.
How do you know boiler water treatments are correctly maintain after opening-up of boiler.
What type of corrosion occor in the boiler.
How galvanic corrosion happen in the boiler.
As a C/E what is your action after M/E electronic governor failure.
How you rectify the electronic Governor failure
~~What is M/E Interlock & Blocking device related to starting.~~

Date - - No

1. How do you instruct AE for O_2 scavenge?
2. Treatment for O_2 scav
3. Boiler corrosions, why corrosion high at wat level.
4. Explain galvanic action, caustic embrittlement.
5. Boiler furnace plate bulge how you handle
6. What are the checks to be carried out -
7. ISM certificate req, ISM manual & Internal Audit performed
8. Other certificates req for safety trading.
9. New regulation regarding complying procedure
10.

Date

1. What is dead fuel.
2. you are ~~joining~~ joining new delivery, How do you implement ISM.
3. What are your standing orders.
4. Internal audits, How often
5. How you arried out deck department, ISM internal audit.
6. How to get ISM certificate to a new vessel
7. Validity of intrim certificate ; ISM certi
8. What is ISPS
9. ~~How~~ implemantation of ISM, ISPS.
10. ISM manuals
11. How to order bunker fuel for new ship
12. How to calculate SFOC
13. Why Increase SFOC
14. How to take performance.
15. Calculate fuel oil consumption.
    - Indicated diagrems.
    - other methode.
16. Container carrier. cross section
17. preterantral tripping.
18. Switch bard protection
19. Dry docking
20. Docking / document. before dry docking.
21. Screw shaft monitoring system.
    - Temp., hub analiz, Lub/oil consumpt.
22. Checks before floating. (electrician)
23. Why Deflection is obtained after floating.
23. T/C → what, happen when T/C Nozzle ring partral fould
24. Indication of uptake fire / Reasons.
25. What are the document reday for bailer survey.
26. Anchor Survey, Position of spuding pipe.

27. Wha

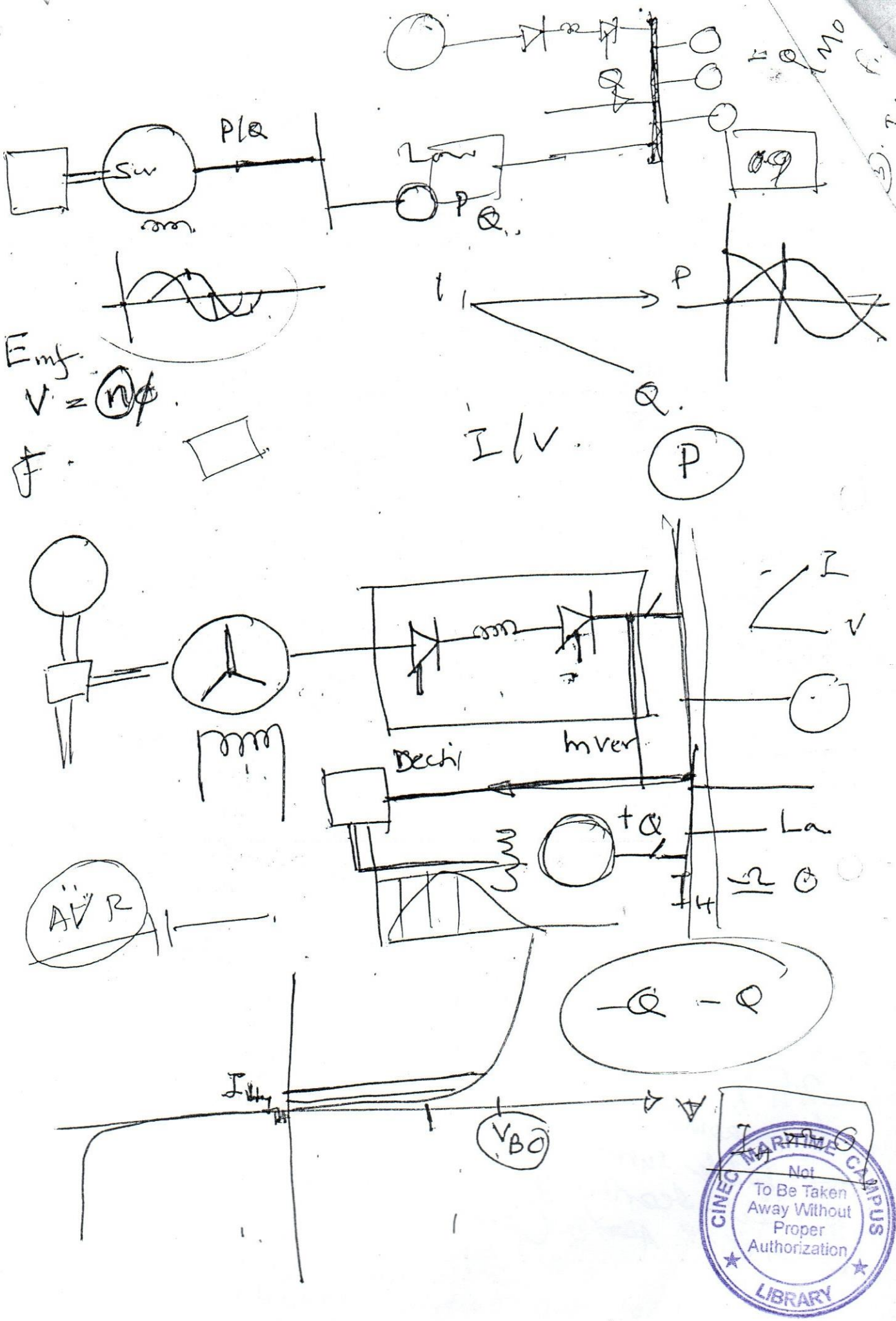
Date No

27. What is ballast water management.
What are the new requirment.
What are the regairment when transit Australia.

28. IAPP → Documents are checked during Survey
(Incinerator type approval certificate.
(Freon record if
(Bunker delivary Notes)
fuel change over procedure,

SF 504 – HSE inspection report
SF 505 – incident investigation report

OP-32 – chief eng hand over - Memerendum.
OP-024
OP-016 / 017



IMO structre what's the safety committees? GOOD
functions of it: Role of the IMO.
(3). If company [illegible] Ship, how u implement ISM? (it)
(4) DPA Role? & How it is join to ISM, [illegible] amendmen
(5). How you improve sms of your company.
(6). FIVA valve functra
(7). How you control injection with FIVA valve.
(8). Why electronic engines introduced.
(9). switchboard protection.
(10). what kind of distribution on board (insulated Earth).
(11). How to calculated NER Normal earth resistor).
(12). Ism functional Requirements, Interim Certificate, Elements
). How u know ISM is functioning on board.
). How Ism will combined with MLC
). MLC cabin size?
). What u do if ccu unit failure
). How you change ccu unit? Is it possible to change it when the engine is in operation.
Fire detector Types? & Installed places.
If ~~fire~~ false alarm comes in midnight in UMS condition in fire detector. what your actions.
DMLC 1 & DMLC 2 explain
Inwater survey requirements? How its ~~going~~ going to 7.5 years? what requirements
How ~~to~~ measure Rudder wear down
~~steering~~ Rudder survey
How to check steering gear. (Lo analysis, Filter clean etc).
Boiler Corrosion ~~A~~ Z (Galvanic, Caustic embrittlement)

how you implement ISM on newly delivered vessel as a chief Engineer.

Mahendra.
01/04/13

(2)

(3) Where is the most common area to cracks in ballast tank.

(4) what is MLC.

(5) what are the limitations that 16 years old Seafarer undergoes.

(6) What are the documents ready for ~~bunkering~~ Dry docking.

(7) How do you calculat Specific cylinder oil Consuption

8) How do you catculate power in Engine by using power card.

9) what is effective power, Indicated power, break power

10) what are the loses on main Engine. power

11) Which kind of vibration occurs on your Engine.

12) what is natural frequency.

13) How torsional, vibration is occured. and Damping

14) what is critical r.p.m.

If your Engine single unit cut off, how do you Calculate new critical speed.

what is enhance survey.

where it coming from (SOLAS chapter)

How do you carried out enhance survey in 15 years old ship.

what is girth belt.

what are the checks carried out in enhance survey in bulk carrier.

what are the checks carried out for ballast tank.

(24) What type of Propers you sailed; (Mitsubishi)
(25) ALCAP principle
(26) Why you adjust α Lubricator oil quantity.
→ (NOT How)
(27) Power calculation of M/E
(21) What is EEE ships!
(22) ~~ete~~ NOx Reduction Techniques.
(23) explain Miller cycle.
(24) What are the consequence of the miller cycle (Adverse effects).
(25) If your vessel dry dock tomorrow? standing orders to 2/E, E/E.
(26) What you check before connecting shore supply.
(27) What is the black out procedure.
(28) If you wish to join the vsl from dry dock!! Procedure?
(29) What's the critical period.
(30) \#Why Breaker load set to minimum before open connections.
(31) How you inspect the Tail shaft?
(32) *If stern tube leaking and water comes in at sea? What you do?
(33) *What is the special oil name and How you change for that oil. (Stern Tube)
(34) *Where you find a distance piece; purpose of it.
(35) *What's the engineering technique to manufacture chrome liner
(1) chrome line maximum weardown. } Typical values.
(2) stern tube & Bearing clearance. }
(3) How run RT flex engines in low load.
(4) How you drain fuel to change injector and put back operation.
(5) How does the ~~fuel~~ drain fuel goes (which Tank)
(6) *Where the distribution board safties (Protections)
(7) What are the undervoltage trip & explain ~~purpose of DC~~
(8) draw the shaft generator system & Job of the
(9) Draw and explain which part of the circuit is Unity P.F. Synchronous compensator

How
What

How the P.F. correction done by Synchron Capensator.

(41) What's the purpose of DC Link

(42) Where does the Unity P.F exists and which machineries effed from this.

(43) What is Exi.

(44) Draw & explain Zener barrier.

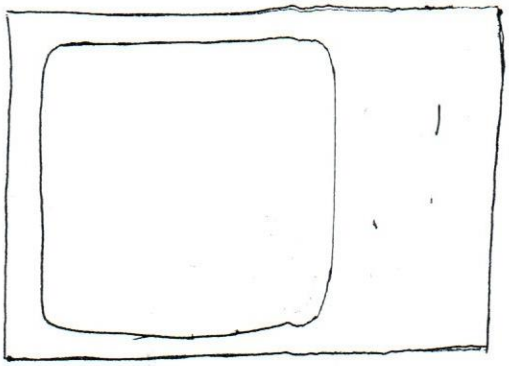
(47) Why two resistors placed on it, rather than one resistor.

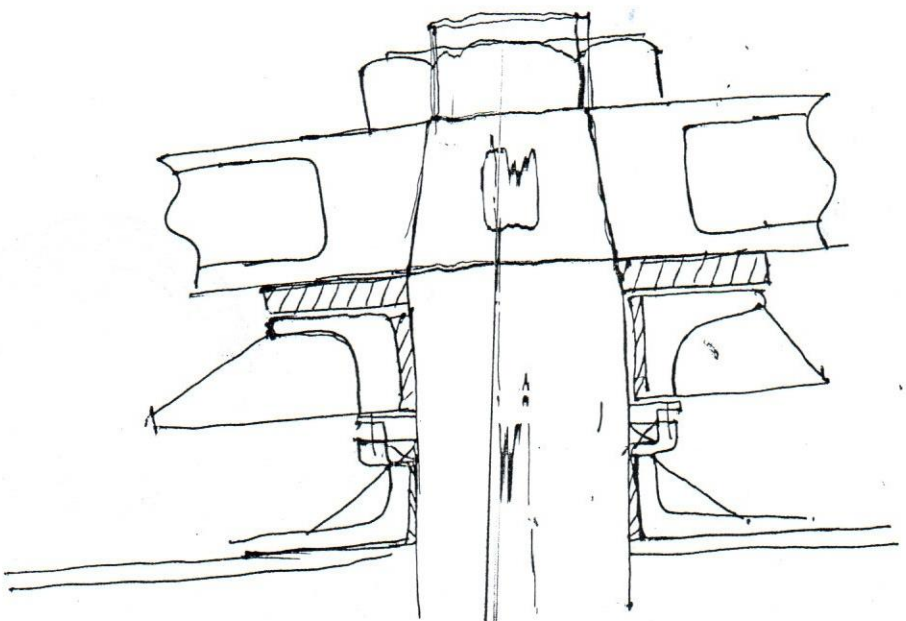
(46) Have you experienced boiler safety valve o/H.

(47) Boiler Accumilation of Pressure test.

~~Pg-08. Figure-2.~~

Pg-09-08





Turbo charger design developments and limitations.