

SJ

Class IV exam

Examiner- A W Holmes

Liverpool

Duration- 80 mins

Passport/Discharge book

Looked through my TRB, was familiar with my vessels so chatted about engines whilst he checked my documents.

- 1- Take me through the procedure for taking over a watch
- 2- What do the various smoke colours mean?
- 3- JCFW header tk bubbling, why?
- 4- Main engine JCFW temp on one unit is high, why? (he was looking for incorrect fuel timing)
- 5- Start ME from cold
- 6- Take ER control of engines from bridge (align telegraphs)
- 7- OMD, what is it, why fitted?
- 8- Enclosed space entry procedure for crankcase, black particles at bottom, why? (carbon from seized piston ring and damaged stuffing box/diaphragm)
- 9- White particles, from where? (main bearing)
- 10- Scavenge fire procedure
- 11- What type of scavenge (loop, uniflow, cross)
- 12- What type of exhaust (constant pressure, pulse)
- 13- CPP, how it works
- 14- if CPP damaged, how will you move forward? (fails in forward drive position)
- 15- If fails at 0° how will the ship move? (manual control)
- 16- Safety devices on crankcase (safety relief doors)
- 17- Safety devices on compressor
- 18- What is a bursting disk
- 19- Safety devices on air receiver?
- 20- Why drain?
- 21- Safety devices on boiler?
- 22- Blow down gauge glass
- 23- Oil in observation tank, where from?
- 24- How do you find specifically where from? (condensate drains)
- 25- How do you operate RO plant
- 26- How do you operate evap?
- 27- What needs doing to the water before it can be used? (chlorine and he said lime to soften it apparently)
- 28- What do you do on a set of rounds?
- 29- Take me through bunkering procedure
- 30- How to pump bilges
- 31- What sort of bilge pump did you have?

- 32- What should you never do with that type of pump?
- 33- OWS construction including 15ppm and ORB
- 34- What would you put in ORB?
- 35- Water level in bilge rising, what action do you take?
- 36- What pump would you use with Bilge injection valve?
- 37- Parallel a generator
- 38- Motor construction
- 39- Generator trips
- 40- What is reverse power protection?
- 41- Starting methods for motors (star delta DOL)
- 42- What fixed systems did you have?
- 43- CO2 operating procedure
- 44- How would you detect a leak in CO2 bottle room?
- 45- Water mist, how do you operate it?
- 46- What is a permit to work?
- 47- How long does it last?
- 48- What is a SECA?
- 49- What is an IAPP certificate? (something like that anyway, emission certificate provided with engine)
- 50- What other certificates does your ship have?
- 51- How would you find an earth fault on the 220v system?
- 52- Minimum reading from a mega test
- 53- Economiser fire, what is the danger (iron fire caused by hydrogen fire)
- 54- Minimum time for economiser water pump to be run after shutting down of engine? (I said 24 hrs but just emphasised that you don't want stationary water being heated up)
- 55- What is ISM?
- 56- Explain your refrigeration system
- 57- Fridge pump running longer than normal, why? (took me a long time to get to this but just check the door is closed)
- 58- What are the dangers of A/C over fridges? (Legionella)
- 59- How would you remove this threat?
- 60- What was your crankcase made from? (Cast iron)
- 61- Why are some smaller engines cast from one piece? (something to do with the way the grain goes but he didn't seem to mind that I wasn't sure)
- 62- What metals make up brass (copper and zinc)
- 63- How does a PID controller work?
- 64- What is GM?
- 65- What is free surface effect
- 66- How do you lubricate a crosshead
- 67- What wear would you expect to find on a crosshead?
- 68- How is it held in place?
- 69- How could you see if you had a cracked jacket? (something to do with looking in the scavenge space or removing the start air valve but I wasn't 100%)
- 70- How many starts do you get from an air receiver?

These are all I can remember so far, he knew what engine I had so he was keen on finding out how much I knew about it but I don't think I would've failed if I didn't know, as long as the safety side was covered.

He had to shepherd me towards some answers but once you get it he moved straight on, didn't linger on any areas that I was weak. It's a lot of questions I know but he didn't have any questions in front of him, just MGN 69 which gave him the focus for his questions.