



# EXAMINER'S REPORT JULY 2020

## SHIP OPERATIONS AND MANAGEMENT

### General comments.

Given the prevailing restrictions for the COVID 19 pandemic it is heartening to see that despite these candidates are carrying on studying and have made the effort to take these exams and from the results it would seem that this effort has been rewarded. Most seem to have taken the time to read the previous examiners reports and come prepared to take the exam. There were some very good individual results and some exam centres have improved their performance. It should have been anticipated that with the new worldwide bunker changes a question on this would be likely and the subject is still in flux. New or updated legislation on Bulk cargoes and hazardous materials are also in the news while the requirement to be able to draw an accurate representation of a vessel will not be going away at any time. The ability to work out a simple voyage calculation and show this in a simple format should always be practised and candidates will also have to demonstrate a reasonable understanding of maritime geography. Shipping is the truly worldwide business and a good knowledge of that world is essential.

### 1. Answer ALL parts of the question.

**a) Describe the of one of the following types of vessels including dimensions, tonnages, cargo gear and equipment.**

- i. A Handymax Bulk Carrier
- ii. An Aframax tanker.
- iii. A Feeder container vessel.

**b) Draw a side profile and cross sectional of your chosen vessel**

**c) Label the significant parts of your chosen vessel.**

**d) Give details of ONE trade this vessel operates in, where and how it will load carry and discharge its cargo. Use the world map provided to support your answer.**

Several candidates seized on the Handymax vessel as their choice to show they were fully familiar with the Handy size vessel while ignoring the fact that the question asked for Handymax. Also called Supramax, these are the very largest vessels that will meet some of restrictions that still apply in this class. Where the question asks for the characteristics of the vessel it is not sufficient just to give the basic details LOA, Beam, Draught, SDWT, written on the drawing and expect that this is enough. It is not. You should be able to show the examiner the depth of your knowledge. The standard of drawing, with some notable exceptions was rather poor. Many were too small so lacked detail. A few drew a reasonable layout of the bow area but other seem to almost ignore it and missed marks. Many were just a poor effort to reproduce some sketches from the manuals and lacked any evidence of actual study of a ship's General Arrangement plan. Most of the transverse or cross-sectional

drawings were inadequate and some were forgotten or instead showed a plan view. The naming of parts has improved. Many candidates saved their best efforts for the description of the trade and some went into very detailed writing about the grain trade which while interesting wasted their time as there are four parts to this question and in principle all parts carry equal marks. When using a map for this part, mark the load and discharge port on the map and show some limited knowledge of the route.

2. Answer **ALL** parts of the question.

Commercial vessels that are trading on international voyages and are not equipped with scrubber systems must now carry two types of Low Sulphur conventional fuels unless they use LPG or similar systems.

- a) Give full details of these fuels and where each fuel will need to be used. Using the world map provided show the different ECA, SECA and other restricted areas and the limits of these.

How can a vessel ensure that it gets the correct fuel at a reasonable price and what precautions should they take to check this?

Given that the Marpol International regulations for Sulphur in fuels changed to cover the whole world on the 1<sup>st</sup> January 2020 candidates should have been expecting a question about where and when they applied and they were not disappointed. Some even remembered that there were other areas where limits already applied that were stricter. What was disappointing was that many could not show where these ECAs and SECAs applied in their written answer or on the map with any accuracy. Despite some of these for example the EU Directive, being in force and applied since 1<sup>st</sup> January 2010 several candidates from an EU member state still showed complete ignorance of its existence.

The North American ECA applies to the whole continent from the Mexican border to Alaska and into the Labrador Sea region, including all Canadian ports. It also includes the Hawaiian Islands, Puerto Rico and US territorial Islands in the Caribbean.

Only two fuels are permitted on ships, one with a Max 0.5%S content, the other with a Max 0.1%S content. These may be Gasoil, Diesel, or Fuel Oil but whatever they are they must meet the limits for Sulphur.

The China regulations were absorbed into the Worldwide limit so did not warrant any special mention but some students noted that more stringent rules apply to vessels operating in the Yangtze and Xi Jiang rivers where from Jan 2020 vessels must use Max 0.1%S at all times. These students got an extra mark.

3. Answer **ALL** parts of the question.

One of your vessels has been fixed to carry out the following voyage. Using the factors below calculate;

- a) What quantity of cargo can be loaded? (Show your working)
- b) Where you would organise bunkers and what quantity would you stem giving your reason for this.
- c) Calculate the daily net profit for the voyage. (Show your workings)

Candidates who attempt the calculation should have a calculator with them and should practice laying out their calculation logically. They should also strive for accuracy in an examination. Avoid excessive rounding up, it is OK in real life but not in an exam. Do not round up days.

If the voyage leg takes 8.34 days with fuel consumption of 28 MT per day then this is 233.52 MT. fuel. If you round it up to 8.4 days it will be 235.2 MT. If you round up to 9 days it is 252MT. This is a lot of money at \$400 per tonne

When you add up the days and the fuel usage for the whole voyage (don't forget the port usage) and you get 35.56 days and 791.78 MT fuel then the voyage length is 35.56 days.

You can round up the bunker total to 792 MT because then you will be able to order a round number quantity to replace it with. KEEP IT SIMPLE.

Only the fuel used on the voyage should be in the expenses of the voyage.

Do not waste time calculating **the cost** of the fuel used for each leg of the voyage, only the fuel used. Example:

ROB 400 MT@ \$350 at start. Must have 500 MT at end. Bunker price during voyage \$375pmt.

If your total fuel usage for the voyage is, for example, 567 MT there is no benefit working out the cost of the fuel used for each voyage leg and the port calls only the fuel usage which = **567MT**

Using FIFO you will use the ROB of 400 MT@ \$350 first at total cost \$140,000.

You will have to take at least 167MT for this voyage at a cost of  $(167 \times \$375) = \$62,675$

So, the cost for the fuel on the voyage is \$202,675

The bunkers you have to take will be 167MT (for this voyage) +500 MT (for increased ROB = 667MT. KEEP IT SIMPLE

Several candidates worked out that with a Stowage Factor of 1.35 the vessel with a cubic grain capacity of 87,849 M3 would be physically full well before reaching the DWAT limit of 70,000 MT.

Max cc  $87,849/1.35 = 65,073\text{MT}$ . The spare dwt capacity is 4,927 MT and this will easily accommodate the constant, and all the bunkers needed at every stage of the voyage with about 2,000MT of spare dwt available. So the cargo to load is 65,073MT. KEEP IT SIMPLE

4. Answer **BOTH** parts of the question.

- a) Explain what specific certificates and other documents a vessel carries to show compliance with the International Safety Management (ISM) code; what are their validity, which bodies issue these certificates and what do these certificates signify? What other documentation should the vessel have to support these certificates?
- b) Explain the role and responsibilities of the DPA regarding the safe operation of each vessel and the proper implementation of the Safety Management System.

There were some good answers to this question which showed familiarity with the ISM system and

its certificates and documents and how these are maintained. Many were familiar the DOC and the SMC but less sure of which was issued to the ship (the SMC) and the shore (the DOC). Many were aware of the validity and the verification (SMC, 5 years + intermediate at 2.5 years) (DOC, 5 years + annual) and that the DOC was required for each type of vessel operated by the company.

But the whole system also relies on other documentation such as the Record of Audits, Records of non-conformities, details of training and the CSR (Continuous Synopsis Record). Without these the system is invalid as ISM should be a living documentary record.

There was also an understanding of the role and the responsibilities of the DPA the Designated Person Ashore in the implementation, development, monitoring and auditing of the SMS which is key to ensure safety at sea, the prevention of injury and death and avoiding environmental damage, in particular the marine one.

However, many candidates seem to dwell rather more on the additional duties of the DPA that in truth are more the role of a senior Deck or Engine Marine Superintendent. Obviously, such a person in the organisation may be well qualified for the DPA role but senior superintendents are available to deal with crises whenever they arise, the main role of the DPA is to try, through the ISM system, to avoid these happening

5. Answer **ALL** parts of the question.

Your company is due to accept delivery of a new build vessel and this will be registered with an open registry.

- a) What are the advantages and disadvantages of doing this?
- b) What specific certificates for the vessel will be issued by this flag and what do they signify?
- c) Give details of five other Certificates which will be issued under the authority of this Flag together with their validity and what they certify. Which organisations will likely issue these?

This was a three-part question and part a) asked for the advantages and disadvantages of registering with an open registry which was generally answered better than in the past. The real benefit is flexibility, and the choice that it offers. There was also some thought to the disadvantages and mention made of increased Port Control inspections, possible action by the ITF and some other restrictions on the coast of Australia.

Open registries differ but most of them issue at least four certificates, The Certificate of Registry, the International Tonnage Certificate, the Radio Licence, and the Minimum Safe manning Certificate. Other certificates that they may issue and which more often are issued by Class under the authority of the Flag are the three standard Safety Certificates, IOPP, IAPP, SMC, DOC, ISSC etc. If you chose these you should know the validity and survey frequency, as well as some limited detail of what they certify.

6. The company you work for currently manages a fleet of 30 vessels, a mixture of tankers and bulk carriers for which you have commercial, technical and operational management.

Describe the various departments that would be in the company and explain the key functions and responsibilities of each department.

Draw an organisational chart for the company and identify the key roles within it.

This question asked the candidate to show some knowledge of the typical set up in a management office which provided commercial, technical and operational management. It was therefore relatively easy for those who work in this field, or for those in brokers who deal with them and there were some good answers which made this the question the one with the highest average marks. Those who do not can find information on what roles and functions would be expected by looking in the Manual or reading through the BIMCO SHIPMAN contract which clearly show all of the main functions. In general, those who attempted this did well, but others made the mistake of merely writing that there would be an operations department, a chartering department, a stores department etc without indicating the key functions or responsibilities of these or the different roles within each. Some of the organisation charts were good but too many were rather basic. A simple plan should have been made first with all the different roles for each heading so Chartering for example should bring to mind, Time Charter, Spot Charter, Bareboat, S&P Research etc instead of just Chartering.

7. Answer **BOTH** parts of the question.

a) You have been asked to prepare a budget for a recently acquired vessel by an owner with a mixed fleet of vessels under your company's management. Describe in detail the information you will need about the vessel and the significance of these in order to prepare the budget properly.

b) Briefly describe all the different costs associated with the ownership and operation of a vessel.

How would you allocate the following cost items and why would they fall into these categories.

Pilotage Invoice  
Crew Travel for joining vessel  
Port Dues  
Supply of Provisions  
Deductible on a cargo claim.  
Additional War Risk Premium  
Supply of Lubricants and Greases.  
Installation of a Scrubber unit.

As all a very popular question with 96% of candidates attempting this with generally a good result. Part a) about the budget was done quite well with most of the students reading the question rather than just creating a budget. It specifically asked for the information needed about a vessel that is needed to create a budget and the basics of Type, Size, Age, Engine and Auxiliaries, Flag and Crew,

Gear, and Trading Pattern were generally well done. Some added survey history and Class records which of course will be looked at as will be Port Control inspections. The different costs associated with the ownership and operation were generally well done although with a few exceptions. Cost allocation was also a good for marks but a deductible on a Cargo Claim should really be a voyage cost.

8. Define and explain any **FIVE** of the following abbreviations:

- i. IMSBC Code
- ii. AWRP
- iii. SEEMP
- iv. IOPP
- v. PFSO
- vi. BWMP.
- vii. IEEC.
- viii. NAABSA
- ix. NDFFCAPMQS
- x. WIBON

8. The question asked the candidate to define and explain any five of the eight abbreviations listed. It should be obvious that this meant that the marks for each one was a maximum of four. This was a popular question and there were some good answers which showed real knowledge but some candidates seemed to feel that merely stating what the abbreviation stood for was enough. It was not. So BWMP stands for a Ballast Water Management Plan and this is a plan to manage the ballast water will not get more than a single mark. But BWMP stands for the Ballast Water Management Plan. This is a requirement of the IWSBC International Ballast Water Management Convention which came into force on 8<sup>th</sup> September 2017 The BWMP shall be approved by the Flag State or an approved recognised organisation. Officers and crew shall be familiar with the contents and implementation of the plan and with the equipment on board to filter/remove/kill microorganisms in the ballast and manage a ballast water exchange. Part of the plan will involve the keeping of a BWRB a Ballast Water Record Book giving relevant information about the ballast/deballast/exchange process, would get full marks. The same applies to all the abbreviations.