



# EXAMINER'S REPORT

## NOVEMBER 2020

### SHIP OPERATIONS & MANAGEMENT

#### General comments.

As in July given the prevailing restrictions for the COVID 19 pandemic it is still good 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 in some centres. Reading the past reports of the examiners means that a candidate will come prepared to take the exam.

There were some very good individual results and some exam centres have improved their performance. Some centres were unable to take the exam but we look forward to their return. Candidates should be aware of new regulations that have come into force in the last few years. Those affecting emissions affect all vessels but so also do those regarding ballast and hazardous materials on the vessel. 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. A map should always show relevant ports, routes and geographical features on that route such as canals, capes, seas, oceans, and special areas affected by weather, currents or hazards. Do not waste times naming irrelevant details such as distant seas, and countries as these get no extra marks.

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

a) Describe the characteristics including dimensions, tonnages, cargo gear of ONE of the following types of vessels;

i. Capesize bulk carrier

ii. VLCC tanker

iii. Panamax container vessel

b) Draw a profile and cross section of the vessel.

c) Label the significant parts of the vessel.

d) Give details of ONE trade the vessel operates in, where it will load, carry and discharge its cargo.

Use the world map provided to support your answer.

The ability to draw an accurate representation of a vessel is fundamental and required in several exams.

The majority of candidates chose the Capesize bulker or the VLCC and some of the drawings were very good with large drawings showing a lot of detail and well labelled parts of the vessel. One candidate in fact did such a good answer that they scored full marks.

Where the question asks for the characteristics of the vessel, it is not sufficient to give the basic details LOA, Beam, Draught, SDWT, written on the drawing. You should be able to show the examiner the depth of your knowledge and show a degree of precision. A VLCC has a max draft of about 22M not 12-25M. Its tonnage is today normally 300-320 KMT not 180-400 KMT. This applies to all types of vessels; the majority are built to quite specific parameters.

The standard of drawing was better but often too small which then lacked detail. Most of the transverse or cross-sectional drawings were limited and some were forgotten or instead showed a plan view. The naming of parts has improved but drawings still lack important details such as anchors. Many candidates saved their best efforts for the description of the trade, while some went into very detailed writing about these trades which caused them to lose some marks, as this was a four parts question and all parts carry equal marks. When using a map for this part, mark the load and discharge port on the map to show some knowledge of the route.

## **2. Answer BOTH parts of the question.**

**You have been asked by a potential investor about the costs of shipowning.**

**a) Clearly explain the difference between fixed costs, operating or daily running costs and voyage costs. Why would you expect costs to be divided in this way?**

**b) What different cost items would you expect to see in each of these three categories?**

A very popular question with most candidates attempting this with generally a good result and generous marks. Most were able to identify the three main categories of cost and give a good explanation of which parties they were allocated to, but some had a little difficulty explaining the reason why it was done this way.

There were some good answers with clear reasons, which showed understanding.

All three will ultimately be paid for by the commercial operation of the vessel. It is down to the commercial operator to ensure that, as far as possible, the vessel is fixed to earn money at a daily rate that will pay, not only for the fixed owners cost and the semi variable managers costs, but also for the costs of the actual voyage of the vessel (fuel and port costs) and, if possible, make a profit to be set aside for leaner times.

Part b asked for the different cost items you would expect to see in each of these three categories. Writing a few lines with a) loan repayment, b) crew costs, stores, insurance, admin, maintenance and drydock, and c) Port costs, bunkers, is not enough. Each should be expanded to gain the marks. Never use the word etc. Port costs tugs etc does not show knowledge except you know that tugs are a port cost. You need to earn your marks

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

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

Calculate:

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

The ability to work out a simple voyage calculation and to show this in a simple format should always be practised.

Candidates attempting the calculation must have a calculator with and should practice laying out their calculation logically. A calculation should only show your working, not an essay describing the whole process.

Candidates should also strive for accuracy in an examination. Avoid excessive rounding up; it is OK in real life when it is better to overestimate time and consumption 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 (in reality this might be 800 MT). 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.

Now to this exam. Candidates answering this question must be clear in their minds about SDWT the Summer Deadweight. It is the figure most ships load to because most of the world is mainly in this zone. And in this exam, it will always be the SDWT which in this case is **53,626 MT**. This is the maximum weight that can be put into the vessel and will include cargo, bunkers and the constant which in this exam will always be stated to be part of the constant.

What is DWCC? It is the maximum deadweight of the cargo capacity. In this instance it is found by dividing the Grain cubic 68,392 M3 by the Stowage factor SF 1.41 which is **48,505 MT**. This is the physically the max cargo that the vessel can take. All holds are full. You cannot load more.

So, you have  $53,626 - 48,505 = 5,121$  MT of available dwt for bunkers and constant.

Read the question carefully. It was a relatively simple calculation, the vessel would cube out at 48,505 MT leaving some 5,121MT of spare dwt for the constant and a bunker so that is the cargo and it meets the CP terms. Several candidates having done this correctly then deducted the constant and bunkers and threw the marks away. Most showed a good understanding of the calculation for freight and deductions and were marked accordingly.

It was the bunkers that gave the most problem. A safety margin of 150 MT of LS Bunkers is just that, a safety margin. But it can include the LS Gasoil 0.1%S ROB of 90 MT. The vessel therefore easily had enough (198MT) to reach Singapore without using this and complete discharge before bunkering. The fuel used on the voyage was 532 MT and only that. The bunkers taken at Singapore should be 492MT reducing the ROB to 600 MT LSFO 0.5%S. The cost of this and the barge cost are not a cost of this voyage. They will apply when used to the next ones.

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

**Commercial vessels that are not equipped with scrubber systems and are trading on International voyages and 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.**
- b) Using the world map provided show the different ECA, SECA and other restricted areas and the limits of these.**
- c) Vessels that cannot use LPG or alternative fuels are now being fitted with Scrubber systems. Give details of the main types of these and how they operate. What are the possible disadvantages of having an open loop scrubber system when entering certain ports?**
- d) Briefly describe why certain ports such as Singapore, Gibraltar and Fujairah have become successful bunkering locations.**

The change in the whole landscape of ships bunkers with the adoption in Jan 2020 of the Worldwide maximum of Max 0.5%S emissions was noted by most candidates. Most also know that in certain areas the more severe max 0.1%S on emissions still applied. To be clear, only two fuels are permitted on conventional ships without scrubbers, 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 emissions.

Generally, most had heard of the ECAs and SECAs but several could not show where these applied in their written answer or on the map with accuracy.

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. Candidates should also be familiar with the SECAs in the Baltic, North Sea and the Channel.

The China regulations were absorbed into the Worldwide limit so did not warrant any special mention but some students noted that more strict rules apply to vessels operating in the Yangtse and Xi Jiang rivers where from Jan 2020 vessels must use Max 0.1%S at all times and in main ports in S Korea since 1st September 2020.

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

**Your Panamax bulk carrier is fixed on charter to load a full cargo of sugar at Belem, on the North Coast of Brazil in early February for discharge at Hong Kong. The vessel could be routed via Cape of Good Hope, the Panama Canal, or the Suez Canal which are similar in distance. What factors would you take into account when deciding which route to take and what resources are available to help you in decision making?**

**Using the world map provided show the relevant routes, ports and bunkering locations.**

While most candidates were aware of the options available for a vessel loading at Belem for Hong Kong, some decided on which one to use and then merely looked at the benefits of using this one without any consideration of the others. Having done this, they then often ignored the resources available to help in decision making as they had already made it.

The question asked what factors you would take into account when deciding which route to take Panama, Suez or the Cape of Good Hope, and all of these had to be looked at and there are resources available to help where these are uncertain. Canals have costs and delays, who pays for these, what is in the charter party terms. Are there draft restrictions, what is the cargo, will it be affected by load lines, will weather be a problem, what about bunkering, what about piracy, there are a lot of matters to consider and a lot of experts able to help you make informed choices.

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

**a) The ISPS code was not designed to protect ships from threats in ports; it was designed to protect ports from threats posed by ships. Discuss the validity of this statement.**

**b) What benefit has the ISPS code been to shipping and what manpower requirements and documentation must be shown by a vessel and its management to show compliance with the code.**

Not a very popular question but those that chose it showed good knowledge of the subject and were able to argue that the statement in the question did or did not have validity. There are after all always at least two sides. Most were able to discuss the benefits of the code and the increased levels of security in ports was generally welcomed but piracy is still a consideration that it seems is not sufficiently covered under ISPS. The manpower requirements and documentation needed was generally well done.

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

- a) Explain the role of a classification society in shipping. What services do they offer?**
- b) Explain the cycle of surveys required by the Classification Society during the life of a vessel to ensure that a vessel remains in Class.**
- c) Under what circumstances might Class be called to inspect the vessel at some other time?**
- d) Give details of FIVE certificates issued by Class including their validity, verification requirements and what they certify.**

It would seem that while most candidates are fully familiar with some aspects of Class there is still uncertainty of their exact role which is as an independent check upon the condition of the vessel. Class sets its rules and standards based on the legislation regarding construction and maintenance of vessels enshrined in landmark conventions such as SOLAS and MARPOL. That Class were involved in the formulation of these is also understood. By setting common standards for construction and operation they ensure that ships meet these in order to be Classed. The services they provide such as type testing and certification, fuel analysis, metallurgy, naval architectures, surveyors, engineers and IT specialists mean that many Class societies are also delegated with the task of issuing Flag country certificates acting as an agent in this case. The survey cycle was generally understood as was the other surveys for damage and sale and purchase. When answering a question about certificates Class issues are fully familiar with the Certificate, its validity, survey frequency and what it signifies as well as on whose behalf it is done if relevant.

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

**You have received a call from your managed vessel reporting that while alongside discharging grain, one of the ship's crane booms No 3 has collapsed into the cargo hold causing some structural damage to a hatch, the boom and some cargo and injured one of your crew and one of the stevedores.**

- a) What immediate action would you expect to be taken on board the vessel to manage this situation?**
- b) What immediate action needs to be taken by the Managers to ensure all necessary parties are made aware of this incident and to assist the vessel and its crew with this problem?**
- c) What insurances will the vessel have in place to cover the damage and injuries and how would you expect these to be apportioned to the insurers.**
- d) Under what circumstances might you consider declaring General Average in an incident?**

A popular question which for the most part is fairly standard and predictable which explains some better answers. Many candidates identified the first priority in any incident which is to ensure the safety of the ship first while at the same time checking on any injured parties. Some however dealt first with the injured and then called their owners or managers which would seem somewhat poor judgement if you have nothing to tell them about the condition of the vessel.

The resources available in the management office to assist the vessel was better done but still some seem to think it is the Master role to tell everyone and deal with everything. It is not, keep control, delegate, document and seek assistance. Most candidates were aware of the insurance available and specific parts of the P&I cover were cited and got marks.