EXAMINER'S REPORT

NOVEMBER 2021

SHIP OPERATIONS AND MANAGEMENT

General Comments

Reading past reports of examiners in SOM and other subjects means that a candidate can have some familiarity with the exam and what is required to pass it. It seems that some candidates are still failing to do this. Others have, and with some good results. While marking papers one annotation "read the question" is still often used by examiners to explain poor marks. Candidates who don't read the question lose time writing about irrelevant material. They don't lose marks; they just don't get them.

Candidates also need to demonstrate a reasonable understanding of maritime geography. Shipping is truly a 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 time naming irrelevant details such as distant seas, and countries as these get no extra marks.

Candidates should be aware of new regulations that have come into force in the last few years. Those affecting emissions affect all vessels as do those regarding ballast and hazardous materials on the vessel. There are more coming to try to combat climate change.

Question 1

a) Describe the characteristics (for example dimensions, tonnages, cargo gear and equipment) of ONE of the following types of vessels:

i. Capesize bulk carrier

ii. MR (Medium Range) tanker.

iii. New Panamax container vessel

b) Draw a side profile and cross sectional of the vessel.

c) Label the significant parts of the vessel.

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

Use the world map provided to support your answer

The requirement to be able to draw an accurate representation of a vessel is still required for several exams. The majority of candidates chose the Capesize bulker and some of the drawings were large showing a lot of detail and well labelled parts of the vessel. But often these were too small which then lacked both of these. Some were just a poor effort to reproduce sketches from the course books and lacked any evidence of actual study of a ship's General Arrangement plan. 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 a little where this is done but drawings still lack important details such as anchors, the fo'castle, and lifeboats. Those choosing the tanker generally did better. Pump rooms, on tankers with these, are always at the bottom of the ship. A good drawing with good naming of parts is vital, but so are the characteristics of the vessel. It is not sufficient merely just to give the dwt, draught, loa, beam, gear and engine power. These should be accurate and backed up with some description of the type of vessel that shows the examiner you are familiar with this type of vessel.

Many candidates saved their best efforts for the description of the trade. Remember 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.

Question 2

a) Explain the role and responsibilities of the DPA regarding the safe operation of each vessel and the proper implementation of the International Safety Management (ISM) system.

b) Explain what specific certificates and other documents a vessel carries to show compliance with the ISM code; what is their validity, which bodies issue these certificates and what do these certificates signify? What other documentation should the vessel have to support these certificates?

This was quite a popular choice and the first part of this question on the Role of the DPA was generally done quite well. Most showed they knew that the role was at a high level and was concerned with the safety management system of the company both ashore and afloat. While the DPA is often a senior superintendent and will often be involved in incident management this is not his primary role which is to try to ensure that the incidents don't happen, prevention rather than cure.
The second part was not so well done because many candidates did not read the question which asked what SPECIFIC certificates and other documents a vessel carries to show compliance with the ISM code and their validity etc.
Ships have to carry a lot of documents but the ones that show compliance with the ISM code are quite specific starting with the SMC and the DOC and accompanied by the CSR, the Record of Audits, the Record of non-conformities and the details of the Officers training. Those who wrote about these with good details of each got good marks.

Question 3

Answer ALL parts of the question

You have been asked by a potential investor about the costs of ship owning.

a) Clearly explain the difference between acquisition/fixed costs, daily running/ operating costs and voyage costs

b) Describe as fully as possible the different cost items you would expect to see in each of these categories.

c) You have received the following list of costs for a vessel under your management. How would you allocate these costs to the categories in Part (a) of the question

Light dues
P&I call
War risk insurance premium
Tug costs at load port
Supply of main engine lubricants Draft survey
Registration costs
Agency fees
On hire survey for spot charter. New Gyro system for the vessel.

Unsurprisingly this was the most popular question as most candidates feel they know all about costs and the marks reflect this. Many failed to note that they were asked in part (a) to explain the DIFFERENCE between the various costs and instead merged their answer in part (b) describing the different cost items which while it gave them marks for part (b) did not answer the question about the difference. If as in part (b) you are asked to describe as fully as possible the different cost items it is not enough to merely list for example Crew, Maintenance, Admin, Insurance, and Stores without going into more detail about these. The cost question is an important source of marks and relatively easy so you have to work and study for these. Those who did were rewarded with better marks. The list of costs in part(c) generally is answered well but with some common errors
War Risk is an OP cost, AWRP is a Voyage cost. All ships have War Risk cover when trading.
A new Gyro System increases the value of the asset and is a Fixed Cost.
Light dues are a Voyage Cost but if you always trade in an area with this it can be an Op Cost.
There were some very good answers and overall, this was well done.

Question 4

Define and explain FIVE of the following abbreviations.

i. **IEEC**
ii. **IOPP Certificate**
iii. **SOLAS Convention**
iv. **IACS**
v. **CTL**
vi. **NDFFCA PMQS**
vii. **SEEMP**
viii. **ECDIS**

This question was quite popular and those candidates who chose it were generally awarded high marks. They got these by reading the question and answering it. You were asked to define and explain five abbreviations from a list of eight and that meant identifying exactly what it stood for, what it signified and why it was important and there were some very good answers. Most attempted the IEEC, IOPP, SOLAS, IACS, ECDIS and SEEMP which was a welcome sign of some effort at studying these. CTL and NDFFCAPMQS were less popular as they are perhaps more operational terms used in the industry. Well done.

Question 5

Your five-year-old vessel has reported a fire in No 3 cargo hold with a full cargo of grain while on route to the discharge port. Despite CO2 being released into the hold this has not been successful and the Master has requested to divert to a nearby port where more sophisticated equipment and trained fire fighters are available.

Following berthing at a layby berth the fire has been extinguished with the aid of the shore fire fighters and the ship's crew but water and fire damage has been caused to the cargo in No 3 hold and adjacent holds by the heat and water. There has been major damage to the hold and associated hatch cover and ballast tanks. In addition, some of the crew and shore personnel have minor injuries and smoke inhalation problems. The Master has declared General Average

Discuss in detail the different insurances the vessel will have in place to cover this event.

This question was a variation on a popular incident question but focussing only on the insurance and General Average issues.

A ship has a fire in the cargo, CO2 has been used to no avail, the ship diverts to a port to deal with it, the firefighting assistance is successful, General Average has been declared. What different insurances will the vessel have to cover the event?

The question was clear, and making a plan like the following would help to address this.
The fire has damaged the ship and some of the cargo. Fighting the fire with CO2 has not been successful. The ship has to deviate to a port for assistance. Once there, shore assistance has been given and the fire has been put out but with some further damage to the cargo from fire and direct water damage and boundary cooling. There have been some minor injuries to crew and shore personnel. General Average has been declared.

Deal with each point in turn. You will need the involvement of the P&I Club, the H&M Insurers and an Average Adjuster. Cargo insurers are also likely to be involved
This is not a Total or Constructive Total Loss situation.
The H&M insurers are likely to be responsible for the repairs of damage to the ship and losses such as the CO2 and any further deviation to a repair yard if needed and surveyors' fees as well as a GA contribution.

The P&I are likely to be responsible for the Hospitalisation and medical cover for the crew and shore personnel together with any repatriation costs. They may also have liability for the Cargo damage and for any unrecovered GA contributions. Any damage to the berth may also be a liability, as will legal costs, loss of earnings and loss of hire.
Cargo insurers are likely to be responsible for the cargo and a contribution to GA

General average will likely to be responsible be for the cost of deviation to the port for assistance, damage to the cargo by water used to flood holds and boundary cooling, and any cargo removal and re-stowage, the costs of the shore firefighters and the port layby berth

and the time lost in this.
There will be areas of overlap but that is why an average adjuster is appointed.

Question 6

Answer ALL parts of the question and show your workings for each. Using only the data below and avoiding excessive rounding up, calculate:

a) What quantity of cargo can be loaded? (Show your workings)

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)

Your vessel will complete discharge at Portland, Oregon, USA and is fixed to load at Seattle, USA for discharge at Yokohama, Japan.
Bunker ROB on completion Portland
300MT VLSFO 0.5%S 380@$510 pMT
190MT LSGasoil 0.1%S @ $600 pMT

Vessel must have a minimum of 5 days fuel on board at all times to cover safety margin. Intention is to place vessel on spot market at Yokohama after discharge with minimum 600 MT LSFO 0.5%S on board and 200 MT LSGasoil 0.1%S. All fuel used in ECA is LSGasoil 0.1%S

SDWT 51,347 MT on 12.3 M
Cubic Grain 66,392 M3
Constant including FW 550 MT
Loaded speed 13 KTS on 24 MT VLSFO 0.5%S or LSGasoil 0.1%S per day as appropriate
Ballast speed 14 KTS on 24 MT VLSFO 0.5%S or LSGasoil 0.1%S per day as appropriate
Port consumption 4 MT VLSFO 0.5%S or 4 MT LSGasoil 0.1%S per day as appropriate all purposes
Vessel Daily Running Cost $10,000 per day

Cargo 50,000 MT Grain 10% MOLOO (SF 1.40) Seattle-Yokohama
No draft restrictions on voyage.
14,000 MT SSHEX at Load/11,000 MT SSHINC at Discharge.
Freight $37 FIOST per Metric Tonne
Commission 5%.

Distances

Portland-Seattle	392 NM All steaming in US ECA
Seattle to limit of US SECA Zone	275 NM
US ECA Zone--Yokohama	4242 NM

Bunker Prices
Portland: VLSFO 0.5%S $525 pMT, LSGasoil 0.1%S $585 pMT (6hr delay and fuel, $2000 barge cost)
Seattle: VLSFO 0.5%S $540 pMT, LSGasoil 0.1%S $600pMT (concurrent with loading)

Port charges

Portland	$86,000
Yokohama	$77,000

It has been said many times the need for laying out work clearly, keeping it simple, showing your working and clearly showing your answer. A calculation should be just that: a calculation not an essay describing the whole process. Use a double page spread, lay out a simple format for finding the answers on one page and fill this in with some of the calculation on the other page. Show your answer to the questions clearly. You should also strive for accuracy in an examination.

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.

There were some very good answers but some made mistakes.

This was a cargo limited by the cubic capacity of the vessel. A simple calculation of the grain cubic/the S.F. would give the answer 47,423* MT. Most candidates got this. All should have compared this with the SDWT (51,347MT). There is 3,924 MT of spare dwt which less the constant 550MT means you have the capability to carry on board 3,374MT of bunkers. This is enough and you will be checking when the calculation of the voyage legs will show you that the length of the voyage and the bunkers required will be nowhere near this figure. But to get full marks for this you must show this and you must also show that this figure is within the tolerance of the c/p. It is, so show it and get full marks.

Do the voyage leg calculation as a table showing each section, ballast passage, load, loaded passage discharge, extras, and the relevant time and correct fuel used. Don't waste time with calculating the cost of the fuel each time, it merely makes room for error and is pointless.

You will have to bunker before the loaded voyage and you must always have the safety margin on board but as your ROB is large and is set to get larger for delivery at the disport it will not be an issue. It is always on board in the ROB so forget it. Where will you bunker? Bunkers at Seattle are $15 more expensive and you need to take a total of 723 MT (644 MT 0.5% + 79MT 0.1%) so extra cost is $10,843.
E
xtra charges at Portland are for 6 hours delay and a barge ($2500 DRC+ $600 Fuel+ $2000 Barge)
= $5,100. So bunker at Portland.

Finally, only the Fuel used on the voyage (remember FIFO) is an expense of the voyage. It should have been relatively simple to get the net profit per day of $41,484.

Question 7

Answer ALL parts of the question.

a) (i) Explain the role of a classification society in shipping and what services they offer?

(ii) Give details of the normal cycle of surveys that are required for a vessel to remain in Class.

b) All vessels carry three (safety) Certificates relating to Construction, Equipment and Radio. Give details of FIVE other certificates issued by Class on behalf of Flag, including their validity, verification requirements and what they certify.

Again, a popular question which asked in part (a)(i) for the role of Class in shipping and the services they offered. They provide an independent check on the condition of a vessel. If they find that the vessel is not in an acceptable condition, they take steps to make the vessel become so with the threat of loss of Class which would severely restrict the vessel commercially. The services they offer are wide ranging and largely technical involving naval architects, surveyors, engineers and metallurgists and a host of other specialists. Part (a) (ii) asked for the survey cycle required for a vessel to stay in Class and this was done quite well. Part (b) Despite the question stating that all vessels carry three named (safety) certificates and asking for FIVE other Certificates issued by Class on behalf of Flag several candidates decided to show they were aware of other certificates regardless of the question. For the record,

Class issues the Class Certificate on its own behalf.
The Certificate of Registry is issued by Flag.
The Tonnage Certificate is issued by Flag.
The Minimum Safe Manning Certificate is issued by Flag

So the correct answer would have been any of the others such as, the Load line, IOPP, IAPP, IBWMC, ISM SMC & DOC, ISSC, IMSBC, Grain Book, MLC, ISPPC. There are others related to the Energy Efficiency and Hazardous materials.

Question 8

Answer BOTH parts of the question, using the world map provided to support your answer.

a) Your vessel is due to load grains at Houston, USA for discharge at Ulsan, South Korea and at Hong Kong and is not equipped with a scrubber system. What specific fuels must the vessel have on board for the voyage to meet the various sulphur emission restricted areas that it will encounter on the voyage and at what points during the voyage should each fuel be used.

b) Your vessel will need to bunker during the voyage, identify a bunker port on the voyage and explain why you would choose this location. Discuss in detail what measures your company should have in place to ensure the vessel receives good quality bunkers at the right price.

This was a two-part question to allow a candidate to show familiarity with the current bunker requirements and some knowledge of maritime geography.
The first part was about bunkers. The adoption in January 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. 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 on the voyage in their written answer or on the map with any accuracy. Failure to know these missed marks. Vessels must use Max 0.1%S at all times in main ports in South Korea since 1st September 2020. Hong Kong however is the same as all China Ports, 0.5%S.

The second part of the question was about a voyage from Houston to Ulsan and Hong Kong. All three are major ports of the world and all candidates should know where they are on a map. Knowing this should show it was clear that the shortest route is via the Panama Canal at 9,640 NM and should have been chosen, so Singapore was not on the voyage. The route via Suez was 14,200 NM at best an extra 4,560 NM, 14 days and $180,000 for fuel, and via Cape of Good Hope or Cape Horn even further. You should know and show this on a map and know the bunker ports on the route which here were at Houston and at Cristobal and Balboa at the Panama Canal.
The reasons why a bunker port is successful should be well known, so should the methods to employ ensuring that the bunkers are of good quality at a competitive price which need to be more proactive than just appointing a broker to find them for you.