Examiner's Report
April 2016
Ship Operations and Management

General comment

Most students made a reasonable attempt at the paper and demonstrated a fair knowledge of the subject though care should be taken to read all the questions carefully and plan time during the exam to answer all 5 questions in a sufficient level of detail. Those who came properly equipped with a ruler, pencils and eraser in order to produce clear, well presented drawings generally achieved well. The graph paper in the booklet is for use with a calculation, drawing or a graph.

Students were expected to demonstrate reasonable understanding of geography including the location of ports and be able to illustrate trade routes clearly.

Question 1

Answer ALL parts of the question.

a) Describe the characteristics (including dimensions, tonnages, cargo gear) of one of the following types of ship:

- **Capesize bulk carrier;**
- **MR product tanker;**
- **Ro-Ro.**

b) Draw a side profile and cross section of the ship.

c) Label the significant parts of the ship.

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.

This was the most popular question which may be explained by the sketches now included in the Ship Operations and Management course book.

Candidates should however familiarise themselves with proper ship plans and drawing to enable them to draw a reasonable representation of their chosen vessel and understand the General Arrangement of vessels.

They should also be familiar with the characteristics of the vessels as most of the standard size vessels Panamax, Handymax, Suezmax etc are deliberately built within a small range to match the cargoes on offer, the port draft restrictions and others such as beam and LOA.

Trade routes and cargoes for the vessel need to be logical and detailed with named ports and routes taken.

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Question 2

Answer ALL parts of the question.

a) Explain the role of a classification society in shipping. What services do they offer?

b) To maintain its class what generally is the requirement for inspection by class during the life of a ship and what are these surveys called? Under what circumstances might class be called to inspect the ship at some other time? Why might a potential purchaser of a vessel wish to inspect these survey records?

c) Give details of five certificates issued by class.

Another popular question and students who achieved high marks demonstrated knowledge of the role or position of Class as an independent check on the vessels condition and that Class are not directly employed by Flag or regulatory bodies but do work as agents for both to check that vessels are meeting their rules and regulations. Class also offer a host of other services such as metallurgists and structural analysis for shipbuilding and repair and type approval for new equipment and students should be aware of these.

The cycle of surveys was generally done well as were the other surveys that might be needed at times and students are expected to know the proper names for these and their duration which dictate inspection intervals. Most students were able to name five certificates but not all gave any details of these which lost them marks.

Question 3

Answer ALL parts of the question.

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

a) What cargo quantity can be loaded (show calculation);

b) Where you would organise bunkers, how much would you order and explain your reasons for your choice;

c) What is the daily net profit you anticipate earning for this voyage?

The vessel Antares Star, currently discharging at Kochi, West Coast India. Bunker ROB on completion will be 830 MT. IFO 380 at USD 245 pmt. Intention is to place vessel on spot market after completion next voyage at Busan port with 700 MT IFO380 on board. Vessel must have 5 days appropriate fuel safety margin on board at all times. At load or discharge ports bunkering is concurrent with cargo operations unless advised otherwise. Vessel is permitted by charterer to bunker on voyage. Assume that vessel is in summer zone throughout voyage.

SDWT 72,620 MT on 14.0 SW.

Grain Cubic 84,790 m3, 6 HO/HA

Constant including FW 850 MT

Loaded speed / cons 13 KTS on 36 MT IFO 380

Ballast speed / cons 14 KTS on 33 MT IFO 380

Port consumption 4 MT MT IFO 380

Daily running cost USD $ 10,600 / day

The Cargo

70,000 MT Alumina 10% MOLOO (SF 0.98) Bunbury, Western Australia-Busan, S Korea.

Max draft load and disport 14.2 M SW.

24,000 SSHEX load/ 16,000 SSHINC disch.

Freight US $16 PMT Commission 5%.

Distances

Kochi to Bunbury 3,453 nm

Bunbury to Busan 4,576 nm

Bunbury to Singapore 2,406 nm

Singapore to Busan 2,393 nm

Bunker Prices

Kochi - $295 PMT IFO 380 available after discharge but supply uncertain.

Freemantle, W Australia (close to Bunbury) - $315 PMT IFO 380. (6 hours bunkering delay)($5,000 barge cost) no deviation.

Singapore - $215 PMT IFO 380 (6 hours bunkering ($2,000 barge cost)).

Busan - $255 IFO 380 available after discharge.

Port Costs

Load port USD 67,000

Most students worked out that this was a cargo that would be restricted by the summer deadweight and that the bunkers on board would be a factor in this.

Most students also worked out that the small deviation to bunker at Singapore would be easily justified given the low price and that the vessel always had the safety margin on board.

Students were expected to determine that the price difference between Singapore and Busan was $40 well above the freight rate of $16 and so no benefit would accrue bunkering after completion of discharge.

Few students identified that the limiting factor for the cargo quantity would be the bunkers on board sailing from Singapore and that this was the quantity to load at Bunbury.

In general most who answered this question made a reasonable attempt and picked up marks by showing an

understanding of the procedure.

Students who clearly showed all their working so as to demonstrate knowledge of the method, even if making mistakes in calculation, gained marks.

Question 4

Your vessel is moored alongside a berth close to completion of discharging a cargo of steel coils. A vessel approaching a berth to moor ahead of you with pilot on board and tugs in attendance loses control and makes heavy contact with your vessel, penetrating a side ballast tank and causing other structural damage in way of No.3 hold. A crewman and two stevedores suffer injuries falling off cargo while working in the hold.

a) What immediate action should you expect your crew to take on board your vessel?

b) What resources do you have available in your management office to assist the vessel and the crew?

c) What assistance is available at the port and in the area?

d) What insurances should the vessel have to cover this situation?

While this was a popular choice students should understand that examiners generally expect an essay answer rather than a list.

Students were expected to read the question carefully and demonstrate their understanding of what has happened by answering in a logical sequence. Your vessel was alongside completing discharge when you were hit by the other vessel causing some damage and some injuries. The immediate action should be to ensure the safety of your vessel while at the same time attending to the injured, and then telling people what has happened.

Your management office should have the resources to contact other interested parties and supply specialised help to the Master soon after the incident and students gain marks by showing knowledge of this.

Assistance is also available locally by the port authorities and local agent and students gained marks by showing what this may include. Insurance was generally well done although General Average was not appropriate to be explored in this question.

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Question 5

Your vessel has been fixed to load a solid bulk cargo under the International Maritime Solid Bulk Cargoes (IMSBC) code.

a) What information must be given to the vessel to enable the crew to prepare for this?

b) The cargo is a Group A cargo in the code. What specific documentary information must be given by the suppliers/shippers to the vessel prior to loading?

c) What must the vessel agree before loading with the terminal and what must be checked during the load to ensure that the requirements of the IMSBC code continue to be met.

d) If the cargo had been Group B in the code what would this mean and what precautions would have had to be taken on board the vessel prior to loading?

This question was specific to the IMSBC code and was the least popular question perhaps due to its recent introduction. Students were expected to demonstrate knowledge of the Code or the Groups of Cargoes in it, familiarity with TML (Transportable Moisture Limit) certificate and to cover the procedures for loading Cargo B and precautions taken.

Question 6

Answer BOTH parts of the question.

a) Explain what certificates and documentation a vessel carries to show compliance with the International Safety Management (ISM) code; which bodies issue these certificates and what do these certificates signify?

b) Explain the role and responsibilities of the DPA with regard to the safe operation of each vessel and the proper implementation of the Safety Management System.

This question specifically asked for the documents that would be on board the ship showing compliance with the ISM system. Several candidates gave some good answers, some produced outstanding ones though students were not expected to list all of the Certificates on Board, only those relevant to ISM compliance. The presence of statutory certificates does not signify that the vessel is compliant with ISM, even though their absence would likely be a serious non comformity.

The DOC and SMC are fundamental to ISM together with associated Audit reports, ISM Manual and other supporting documents and their validity, verification and purpose should be fully understood. Security is generally covered under ISPS. Candidates who showed real knowledge of the subject were rewarded.

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Question 7

Answer ALL parts of the question.

Your Panamax vessel will complete loading a full cargo in Gothenburg, Sweden in early January and is bound for New Orleans, USA.

a) What weather would you expect to encounter en route and what choices would you make regarding the route to take? Use the world map provided to support your answer.

b) Your company has decided to use a weather routeing service for this voyage. What benefits do you expect to gain by using a weather routeing service?

c) What specific bunker fuels would you have to have on board the vessel in order to meet the various requirements of this voyage and where would you use these.

This question which concerned a Panamax loading in January at Gothenberg, in Sweden, for Houston, in the USA was popular with candidates.

A good knowledge of Geography is **essential** in the shipping industry and students for the Institute exams are expected to demonstrate this together with some knowledge of the weather systems, load lines and the correct location of major ports, logical and acceptable routeing.

The options were really to go North or South of the UK but the threat going North is more from bad weather then from Icebergs which do not normally start coming down until about March- April and seldom reach the route which any ship would take to head for the tip of Florida.

A North based great circle route would take the ship against the Gulf Stream current and into the US ECA much earlier than a southerly one. This would have cost implications.

Most students made a fair attempt at the benefits of weather routeing.

Bunkers are a major cost item and students should demonstrate knowledge of the Fuels needed for the voyage and be specific about the sulphur limits which is the main regulating factor involved.

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Question 8

You work in the operations department of a ship management company which has operational control for a small fleet of vessels for an owner. The owner retains chartering of the vessels but all other functions are covered by your company. You have been advised that the owner has concluded a voyage charter fixture.

a) What information do you need about the fixture?

b) What information would you expect to find out from a port agent?

c) What are the main requirements of the vessel at the load and discharge ports?

d) What should you ensure that you find out from the agent when the vessel arrives at the load port?

This question was a good chance for students to show knowledge of operations and some did so well, benefiting from carefully planning their answers

Part A asked what information you need about the fixture and students gained marks by expanding their answers on cargo, quantity and the load port in a good level of detail.

Identifying the type of cargo, whether it is dangerous or hazardous, likely to liquefy, catch fire, can be carried, what its density is, whether it is a deadweight cargo or a cubic cargo, what cleaning is required, whether a hold or tank inspection is required and everything else you can think of shows genuine knowledge.

Students who interpreted what was required by the vessel, part (c), differently to the intention of the examiners when setting the question were not penalised.