



EXAMINER'S REPORT

NOVEMBER 2017

SHIP OPERATIONS AND MANAGEMENT

General Comments:

Answers should be in ink or ball point pen and drawings require a ruler, pencils and eraser for a well-presented paper. In addition, they should bring a **basic non-programmable calculator** as mobile phones are not allowed. Candidates should attempt FIVE questions and budget time for this, answering fewer will seriously reduce your chance of passing. While studying, ALL candidates should look at and attempt to answer questions from previous exam papers and read and study the previous examiners reports. A good knowledge of geography is important in half of all the Institute exams and especially in the Ship Operations and Management exam where a significant number of marks are available which can be the difference between success and failure.

Overall comments:

Most candidates made a reasonable attempt at the paper and demonstrated a fair knowledge of the subject but with some notable exceptions not many showed evidence of any effort to find out about the wider world of shipping. It is not sufficient to rely solely on study notes or indeed the course book which while valuable is only an aid to education. It is important to read the question carefully to determine what the examiner requires in an answer and to answer it as fully as possible. You need to demonstrate your familiarity with the subject. An answer of only a page or less is unlikely to be enough. The graph paper in the booklet is for use with a calculation, drawing or a graph; it should not be used for an essay. The examiners do not penalise students for lapses in grammar or spelling but they must be able to read your answer so clear and legible handwriting will help us give you marks.

Q1. Answer ALL parts of the question. a) Describe the characteristics for example (dimensions, tonnages, cargo gear) of ONE of the following types of vessels. i. A handymax bulk carrier. ii. An aframax tanker. iii. A panamax container vessel. b) Draw a side profile and cross section of the vessel. c) Clearly label the significant parts of the vessel. d) Give details of ONE trade the vessel operates in, where and how it will load and discharge its cargo. Use the world map provided to support your answer.

Candidates should familiarise themselves with proper ship plans and drawings to enable them to draw a reasonable representation of their chosen vessel and understand the General Arrangement of vessels. Drawings are often too small, use the full area of the A4 page and clearly show the different parts of the vessel and identify what they are.

Candidates should know the technical description and characteristic dimensions, deadweight and cubic capacity of the standard size vessels Aframax, Handymax, Panamax etc as they are deliberately built within a small range to match the cargoes on offer and the port or canal restrictions. Trade

routes and cargoes for the vessel need to be logical, and realistic. Maps should show the routes taken. If asked for one trade route do one but do it properly. This means show a single trade with a **named load and discharge port**, and these should be ports that load and discharge this cargo as examiners check the validity of these.

Q2. Answer ALL parts of the question. a) What information is needed about a vessel to prepare an operating budget? Explain in detail why each part of this information is important and how this may affect the budget. b) Provide full details of the main cost items that will appear in a typical budget estimate for the daily operating cost.

This was a very popular question attempted by most student with some success, but it is important to read the question to ensure you answer it. To prepare a budget for a vessel you need to know something about the vessel otherwise you cannot even begin to do this. Type size and age are all important as all will affect a budget profoundly but so will other factors like the registry, trade pattern, equipment on board and other variables. Papers that addressed this and briefly explained why these points were important got good marks. Budgeting for the daily operating costs for the vessel was also done quite well showing some knowledge of the major cost items that arise just keeping the vessel in service, but it should be remembered that vessels are at times out of service and this should be mentioned. Remember apart from some small fuel usage while idle, bunkers are not an operating cost item, they are a voyage cost, as are most port costs.

Q3. Answer ALL parts of the question and show your working for each. Using the data provided below, calculate a) What quantity of cargo can be loaded? b) Where would you take bunkers and what quantity would you stem. Give your reason for this. c) Calculate the daily net profit for the voyage.

Your vessel will complete discharge at Amsterdam in The Netherlands and is fixed to load Sfax in Tunisia for discharge at Santos in Brazil.
Bunker ROB on completion of discharge at Amsterdam is expected to be 350MT IFO @ \$320pMT & 150MT LSGO @ \$460pMT

Vessel must have a total (FO + LSGO) of 150 MT Fuel on board at all times to cover safety margin. Intention is to place vessel on spot market at Santos after discharge with at least 400 MT FO on board and at least 100 MT LSGO.
All fuel used in SECA is LSGO

Vessel SDWT 36,593 MT on 10.7 M
Cubic Grain 46120 M3
Constant including FW 475 MT
Loaded speed 13 KTS on 23 MT FO or LSGO per day as appropriate
Ballast speed 14 KTS on 21 MT FO or LSGO per day as appropriate
Port consumption 4 MT FO or 4 MT LSGO per day as appropriate all purposes
Vessel Daily Running Cost \$8,400 per day

Cargo 35,000 MT Fertiliser 10% MOLOO (SF 1.15) Sfax-Santos
Max Draft at load port 10.7 M SW no draft restrictions at other ports.
12,000 MT SSHEX at Load / 9,500 MT SSHINC at Discharge.
Freight \$23 FIOST per Metric Tonne
Commission 5%.

Distances
Amsterdam-SECA Limit 420 NM
Amsterdam to Sfax 2395 NM
Sfax to Santos 5395 NM
Sfax-Gibraltar 1005 NM

All fuel used in SECA to be LSGO.
Bunker Prices
Amsterdam available during discharge current cargo
IFO @\$275pMT LSGO \$450pMT

Gibraltar on loaded passage no deviation. Delay 6 hours Barge cost \$2500
IFO @\$275pMT LSGO @\$450pMT

Santos available during discharge
IFO 380@\$315pMT LSGO @\$500pMT

Port charges
Sfax \$46,000
Santos \$53,000

The cargo was obviously limited by the deadweight and therefore the maximum deadweight on board would always be on departure from the load port which could be calculated. Bunkering should not have been a difficult choice, Amsterdam and Gibraltar were the same price, but Gibraltar had extra costs and a time delay. The ability to load more cargo at Sfax was limited to the amount of fuel used for the short journey to Gibraltar to bunker as taking any more cargo than this at Sfax would have overloaded the vessel when it later bunkered. Part bunkering at Santos after discharge was never an option. The safety margin of fuel was always on board the vessel so does not need to be

added to the fuel used nor does it need to be taken during bunkering. Candidates should practice doing calculations to be able to layout this out clearly and concisely.

Q4. Answer BOTH parts of the question You are the operator for a container shipping company charged with buying bunkers for a small fleet of vessels on a round the world service from Japan, Korea and China via the Middle East, Mediterranean, and Northern Europe to the USA. To meet all the sulphur emission requirements; a) Show the specific fuels that will be needed for the above areas, the emission requirements for each and what regulations are in place to enforce these. Use the world map provided to support your answer b) How will you ensure that your vessels will be supplied with good quality fuels at a competitive price and what measures would you expect to be in place in your company to do this?

Students seem to know that bunkers are a major cost item in any voyage but many still seem unaware of the different regions where specific rules on low sulphur emissions **mandate** low sulphur fuels unless alternative technologies or fuels are available. EU regulations that apply to ALL EU member ports which for the last SEVEN years have limited the sulphur content of fuel used **on vessels in port to a maximum of 0.1%S**. There are no exemptions from this ruling. Most students were aware of the European SECA and the US ECA but should also be aware of their geographic limitations which do not include the Mediterranean or most of South and Central America. The use of the map was fair. Candidates who mentioned the recent implementation of 0.5%S ECAs around some ports in China gained extra marks, but these, as yet, have not been extended to Japan, Korea or Singapore. The second part of the question asked for measures you would take to ensure you got good bunker at a competitive price. Many candidates identified these with varying degrees of success. It is important to read the question, you were not asked to list bunker ports, why they were successful, or how fuels were produced.

Q5. Your vessel has suffered an explosion and serious fire in a cargo of fertiliser in No 3 Hold while in port discharging. There has been major damage to the hold and associated hatch cover and ballast tanks. Following an unsuccessful attempt to fight the fire with hoses and CO2, shore firefighters have put large amounts of water into the cargo hold and this has been successful. Some further damage has been caused to heat sensitive cargo in adjacent holds by the heat and boundary water cooling. There has also been some damage to the berth and several crewmen and shore personnel have suffered minor burns and smoke inhalation. Discuss in detail the different insurances the vessel will have in place to cover this event.

While this question involved an incident to the vessel it was not necessary for the candidate to state what action should be taken or what resources were available to deal with the incident, only to answer the question and discuss in detail the different insurances the vessel will have to cover the event. Most of this will be covered by the Hull & Machinery (H&M) insurers or the Protection & Indemnity (P&I) club and which insurer covers which damage would be a role for an average adjuster as General Average would likely be an important factor. Candidates who went through the damage done identifying the probable cover scored better marks and mention of FFO and FDD was an advantage. Cargo insurance is normally arranged by the buyer or seller but damage will be under the P&I and in any General Average claim. Many papers showed a lack of knowledge of insurance.

Q6. A ship management company has commercial, technical and operational management of a fleet of bulk carriers. Draw an organisational chart for the company showing the various departments that you would expect to find in the company. Fully explain their roles, responsibilities and key functions.

Another popular question which was done well by most who attempted it. Most candidates had a fair idea of the various departments that would be found in a management company and several took trouble to explain the roles and responsibilities. If asked to draw an organisational chart it is important to give some time to this as by laying out the different roles it makes it easier to fully identify all the different tasks that they cover leading to more marks.

Q7. Answer ALL parts of the question. a) Explain the role and the services offered by a classification society. b) To maintain its Class what generally is the requirement for Inspection by Class during the life of a vessel and what are these surveys called. Under what circumstances might Class be called to inspect the vessel at some other time? Why might a potential purchaser of a vessel wish to inspect the vessel's survey records? c) Give details of least SIX certificates issued by Class.

Many students seemed a little unsure of the role of Class as an independent check on the condition of the vessel. The services offered are to provide a resource of naval architects, surveyors, engineers and IT specialists to shipowners and this part was done with varying degrees of success. Acting as an agent on behalf of flag was better understood. The programme of surveys was quite well done as was the inspection of records. Most answers addressed the Certificates well, but what they indicated and their validity and verification intervals was sketchy and should be fully understood. A brief examination of such certificates on the Internet would make these clear.

Q8. Answer BOTH parts of the question. a) Explain what certificates 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.

This question was very specific to the ISM code and the certificates and documentation needed to be in compliance with it and support it. Virtually all certificates carried on board are necessary for the ship to operate but most of these were there before the ISM code came in force so could be mentioned but are not specific to the code but rather to SOLAS, MARPOL, FLAG or CLASS requirements. Specific documents are a SMC Safety Management Certificate and copy of the companies DOC Document of Compliance and the issuance, verification and validity of these should be known. Other documents that must be available are Record of Audits and non-conformities, details of training and the Continuous Synoptic Records. There were some good answers on the role and responsibilities of the DPA although those specifically relating to the implementation of the ISM got better marks.