



Examiners Report

Ship Operations & Management

May 2019

General Comments:

With an overall improvement in the pass rate for this exam more students are taking a pen or ball point pen and a ruler, pencils and eraser into the exam and the result is a generally better standard of drawing. Where a question has a number of distinct parts a, b, & c, for example, the examiner is expecting the candidate to read each part of the question and answer each part in turn. Each part will always carry similar marks but first writing everything you know about the general subject and then trying to show this as a single answer for several parts is not likely to gain the maximum marks available. The examiner's reports are published on the web site, read them, and avoid repeating the common mistakes that occur again and again. It is very important to read the question. This exam and several others will always require a reasonable knowledge of geography and a significant number of marks are available for maps which can be the difference between success and failure.

Overall comments

This is a shipping operations exam; a reasonable knowledge of geography is needed for working in the shipping world and students need to have this for several exams and much of shipping life. They should be familiar with the main oceans and seas, the significant capes, canals, straits and choke points and be able to mark these correctly on a map together with a number of the main ports of the world.

Question 1.

Answer ALL parts of the question.

- a) Describe the characteristics for example (dimensions, tonnages, cargo gear, and equipment) of ONE of the following types of vessels;
 - i. A Handymax or Supramax bulk carrier.
 - ii. A VLCC tanker.
 - iii. An Ultralarge 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, and where and how it will load, carry and discharge its cargo. Use the world map provided to support your answer.

This was a very popular question and candidates should develop proficiency in answering it. They should also develop the ability to draw a vessel and understand why commercial craft are built this way and how the similarities between them are important. Candidates should try to look at actual ships general arrangement plans if possible. You were asked to show a side profile and cross section of the vessel which most candidates did well but several candidates also included a plan or birds eye view which was not asked for and wasted precious time.

You should also be familiar with the characteristics of the vessel and their dimensions which are often in quite a narrow range. Learn the typical SDWT, S Draught, Cubic Capacity, Beam, LOA, number of Holds/Tanks and Gear as practicable. Try to be reasonably precise with these particularly with the draught and deadweight so 185,000 MT SDWT on 17 M SW, not 120,000-400,000 MT on 12-20 M SW. If you learn a route for a cargo you must show named ports on the map and you must be very certain you know where these are. Clearly show the probable route or routes between them and name relevant features on that voyage.

Question 2.

Answer ALL parts of the question.

You have been asked by a potential owner to:

- a) Explain the difference between acquisition costs, voyage costs and daily operating costs.**
- b) Advise the costs associated with ship ownership.**
- c) Identify the main voyage and daily operating costs.**
- d) Allocate the following costs for a vessel under your management:**
 - i. Light dues.**
 - ii. Replacement of radar system.**
 - iii. Additional war risk insurance.**
 - iv. Garbage services in dry-dock.**
 - v. Mooring boat charges.**
 - vi. Tugs going into dry-dock.**
 - vii. Registration fees.**
 - viii. Supply of fresh water.**

A four-part question which was popular and generally answered well. The temptation to write everything together as a single answer rather than answering each part meant that some students failed to identify the difference between costs and instead gave a list of different ones without in some cases any explanation.

Most students showed a good knowledge of voyage and operating costs and most were able to give details. Some still persist in listing costs under different headings however which can be confusing.

Part d was quite well done but several placed the replacement of the radar as an operating cost when in fact it is improving the value of the asset and should really be a fixed cost for owners.

Repair of the Radar would be an operational cost. Where a cost might be under two headings such as supply of fresh water, both would be acceptable if an explanation was provided for example voyage cost where specialised cleaning might make this mandatory for that voyage.

Question 3.

Using the following information calculate:

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

Your vessel will complete discharge at Mundra, India and is fixed to load Richards Bay for discharge at Shanghai in China.

Bunker ROB on completion Mundra 1200 MT IFO at \$410 PMT and 160 MT LSGO Max 0.5% at \$620 PMT. Vessel must have a minimum of 250 MT FO and 100 MT LSGO on board at all times to cover safety margin. Intention is to place vessel on spot market at Shanghai after discharge with 1000 MT FO and with not less than 100 MT LSGO on board. Vessel must use LSFO at Shanghai as per regulations.

SDWT 201,505 MT on 18.5 M No Draft restriction on voyage

Cubic Grain 222,786 M³

Constant incl FW 1100 MT

Loaded speed 12 KTS on 47 MT FO/LSGO per day

Ballast speed 13 KTS on 47 MT FO/LSGO per day

Port consumption 4 MT FO/LSGO per day all purposes

Vessel Daily Running Cost \$16,200 per day

Cargo 160,000 MT Coal 10% MOLOO (SF 1.40) Richards Bay - Shanghai

125,000 MT per day SSHINC at Load/45,000 MT SSHEX at Discharge.

Freight \$14 FIOST per Metric Tonne

Commission 5%.

Distances

Mundra to Richards Bay	3850 NM
Richards Bay to Shanghai	7105 NM
Richards Bay to Singapore	4867 NM
Singapore to Shanghai	2238 NM

Bunker Prices

Mundra HSFO \$440 PMT. No LSGO Available

Richards Bay HSFO \$390 PMT, LSGO \$600 PMT, concurrent with loading

Singapore HSFO \$363 PMT LSGO \$510 PMT Barge cost \$2500. Delay 6 hrs. No deviation.

Shanghai HSFO \$378 PMT

Port charges

Richards Bay \$125,000

Shanghai \$137,000

Another rise in the numbers attempting this question and some improvement in the quality of the answers to what could have been simple if students had followed a logical process. Several students who did this obtained good marks and those who made a mistake in the different parts of the question (a, b & c) but showed their knowledge of the correct method were still able to get a pass. You must show your working as otherwise an examiner may find it difficult to award marks. The cargo was limited by the cubic capacity so the max cargo was 159,133 MT leaving at least 40,000 MT of spare dwt for the constant and bunkers.

Unfortunately, some students still reduced the cargo by these figures which was a fundamental mistake. While the cheapest bunkers were at Singapore the vessel would need to bunker to get there and by limiting the amount taken at Richards Bay to the minimum to get to Singapore with the safety margin bunkering at the two ports was a lot cheaper. Only the fuel actually used for the voyage should be part of the voyage expenses which should be on a FIFO (First in First out) basis which meant that the ship would first use up all the ROB of 1200 MT FO before starting to use **some** of the new fuel. In real life an operator would add on margins for bad weather, port delays etc but in an exam you should **ONLY** use the figures given to you. If there is a delay, we will tell you. You should be familiar with SHEX and SSHEX and what multiplier to use in each case. Students should practice doing calculations to be able to layout this out clearly and concisely. This will also make calculating the fuel used easier. For the exam it is simpler to calculate the total fuel usage correctly and then calculate the cost. In this question it will be the ROB Fuel used first at its price, followed by the amount of new fuel bunkered at Richards Bay used at its price and then the amount of Fuel bunkered at Singapore which was used on the voyage at its price. Keep it simple and don't forget port fuel usage.

Question 4.

Answer ALL parts of the question

Your vessels are engaged on world-wide trading calling at ports in China, Japan, South Korea, the Mediterranean, Northern Europe and North America. They are not fitted with scrubber systems and burn conventional oil fuels.

In order to meet all current sulphur emission requirements what specific fuels will need to be used on board the vessels when operating in the ECAs, SECAs, and other restricted emission areas?

Give details of all these areas and where they apply. What fuels will vessels need to use in January 2020 when changes to the sulphur emission regulations are expected to come into force and why are these changes considered necessary?

Use the world map provided to show the various ECAs, SECAs, and restricted emission areas to fully support your answer.

The question asked what specific fuels were required on board to meet all current sulphur restrictions for a vessel trading between North American, European and Chinese ports. Students should by now be **fully** familiar with the SECAs in Northern European waters that have been in place since 2007 and with the North American ECA which came into force in 2015, together with their geographical limits and the strict Sulphur emission requirements. They should also know about the EU directive which covers all EU ports and has the same requirements and has been in force since 2010. The recent Chinese ports low sulphur requirements should also be known and several students noted the implementation of this from 1st January 2019 covering the whole Chinese coastal waters. Several students attempted the question without, it appears, having almost any knowledge of these areas or the fuels needed. Given that further restrictions are planned it is essential that everyone working in shipping knows about these and be able to show these limits on a map of the world. Future exams are likely to reflect this. Some students appear to have learned this lesson and got good marks, others have not and did not. The fuels needed for use in 2020 might of course include higher sulphur fuels but you were specifically told that the vessel was not fitted with scrubbers.

Question 5.

Define and explain FIVE of the following terms or abbreviations.

- a) ISPS Code
- b) NDFCA PMQS
- c) BWM Convention
- d) Sue & Labour Clause
- e) CSR
- f) SEEMP
- g) IMSBC Code

This was not a popular question but those who did made a spirited attempt. It was necessary to define and explain five of the terms each carrying equal marks and therefore you must try to do five or you will lose the marks allocated to that term. Similarly, you should try to write about half a page on each one explaining the meaning of the term or abbreviation and explaining in a little detail to what it refers.

If it is some form of legislation who made the law and when, what does it signify, and who has to follow it. CSR can mean either Continuous Synopsis Record or Common Structural Rules and either would have been acceptable. Don't make the mistake of concentrating all your time and effort on any one term because you will not do justice to the others.

Question 6.

How can a company ensure that it employs and retains crews for its ships, and what are the possible consequences of failing to do this?

This is a broad question and is looking for an equally broad answer. It could be summarised as "be a good employer". Ships are complex, expensive pieces of equipment, carrying very valuable cargo in a hazardous environment where the consequence of a serious failure due to not having the right crew could be catastrophic to the owner's reputation and bank balance.

The way to recruit and retain staff are the same at sea as in any other type of employment. Your crew should be treated in the same way as your shore staff with fair salaries and working conditions, promotion on merit, good training etc. Some like paid leave, study time and good food are more specific to the marine world but still common sense.

The consequences of not employing and retaining good shore staff is unlikely to be catastrophic even if it is at the very highest level of management. The same is not true at sea. First and foremost, could be a fall in recruitment or retention of good staff which might necessitate employing substandard ones. This could have much more serious consequences but in any event could lead to poor morale, falling standards, problems with audits of the company, increased inspection by the authorities, possible union problems, detentions, fines and reputational damage that could have serious financial consequences.

Question 7.

Your Panamax bulker is fixed to load a max cargo soya beans at Philadelphia USA in September for discharge at Fremantle, Western Australia. The vessel can be routed via the Panama Canal, or the Suez Canal or the Cape of Good Hope, all of which are about the same distance.

What factors would you take into account when deciding which route the vessel should take? What resources are available to assist you in this decision?

Support your answer using the world map provided, showing the possible routes and key features of the voyage.

Shipping is a global business and operators should realise that a vessel can go from a start point on the East Coast of the USA to a destination in Western Australia by going either way, East or West around the world as was made clear in the question. Some students sent the vessel through Panama to the Pacific and then south to Cape Horn and Eastwards toward Australia. This question did not ask for the candidate to choose a route, only to look at the factors to take into consideration by doing this and choosing a route would not lose marks as it would answer the question.

There were good answers and they identified the main factors which were the charter party, draft issues, canal costs and delays, piracy, weather, hurricanes, cyclones, currents, bunkers, damage, ventilation etc.

While the weather off the Cape of Good Hope can be bad in winter this was spring in the southern hemisphere. Freak waves off the coast of South Africa tend to be a feature close to the coast and come from the SW while our vessel would be going the opposite direction if calling Durban for bunkers or not near the coast at all. Philadelphia is on the East Coast of the USA, and you were told that Fremantle was on the west coast of Australia but many ignored this. There were some sensible suggestions for bunker ports and this was considered but as the cargo was soya bean it is probable the vessel would have cubed out with spare deadweight so bunkering at Philadelphia could likely have been a good option. Whichever route the vessel might choose must be checked for the draught of the vessel.

Question 8.

What are the risks covered under the P&I Clubs' insurance? Give details of these and what is included in each category.

This was quite a popular question and some students who identified the risks that were covered by the P & I and explained these in a little detail were awarded good marks. Those who wrote about the history of P&I clubs wasted some time doing this but did pick up a mark for the one quarter Hull risk.

While some P&I clubs offer War Risk cover this is not universal as it is more the province of the Hull insurers. While most of the risks covered come under the terminology of third party it is not sufficient to just have that as your answer without being more specific.

Most students identified Pollution, Crew injury and Damage as major risks which was encouraging.