INTRODUCTION TO SHIPPING

Lead Examiner Report

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General comments:

The June 2025 examination paper offered a comprehensive selection of questions that effectively covered the principal components of the shipping syllabus. Many candidates demonstrated a solid grasp of the core topics, with a majority presenting well-developed answers that incorporated relevant examples from the maritime industry. However, a recurring issue among some canidates was inadequate time management; as seen in the previous sitting, this resulted in incomplete responses or rushed conclusions, especially in the latter parts of the exam.

In particular, the responses to the definition sections showed a noticeable divide. While some canidates provided clear and concise definitions, others tended to offer vague or overly broad explanations, which did not fully address the specific requirements of the question. The use of real-world scenarios and references to current maritime practices were commendable in several scripts, adding depth and context to the theoretical aspects. These canidates scored very high.

One key area that requires improvement is the overall structure of answers. A number of candidates struggled to organize their responses in a logical and coherent manner. Effective exam technique necessitates a clear introduction to set the context, a well-developed discussion that explores the topic in detail, and a succinct conclusion that ties together the key points. In some cases, answers lacked this structure, making it difficult for the examiner to follow the candidate's line of reasoning.

Despite these challenges, the cohort's overall performance was positive with marks over 80% achieved by some canidates. Canidates who excelled did so by not only demonstrating a very sound knowledge of shipping conventions and regulations but also by clearly articulating their answers in a structured way, using industry examples to support their points. Future candidates are encouraged to focus on time management, answer structure, and precise definitions to further improve performance in subsequent sessions.

Question 1:

Answer all parts of the question.

Define and briefly discuss these maritime conventions.

a) Define what stowage factor is and its formula

b) Discuss the importance of stowage factor in loading bulk cargo with regard to:

i. Efficient use of space

ii. Cargo planning

iii. Ballast and stability management

iv. Cost estimations

v. Cargo handling and safety

What was being looked for by the examiner:

This question was not a popular question, but some candidates make a good attempt. Candidates were expected to provide a clear definition:

Stowage Factor (SF) is a fundamental concept in maritime shipping that describes the relationship between the volume and weight of cargo. Specifically, it is defined as the amount of space, expressed in cubic meters per metric ton (m^3/ton) or cubic feet per long ton (ft^3/ton), that a given weight of cargo occupies when stowed onboard a vessel. The formula for calculating stowage factor is:

Stowage Factor = Volume of Cargo (m^3) / Weight of Cargo (tons)

The stowage factor is especially important when dealing with bulk cargoes such as grains, coal, ores, or fertilizers. Each type of cargo has a characteristic stowage factor, which can vary depending on particle size, moisture content, and packing method. For example, a low stowage factor indicates that the cargo is dense and will occupy less space per ton (e.g., iron ore), whereas a high stowage factor means the cargo is less dense and requires more space per ton (e.g., wood chips).

The significance of stowage factor in loading bulk cargo encompasses several key operational and commercial aspects:

i. Efficient Use of Space: Understanding the stowage factor allows ship planners to maximize the utilization of cargo holds by determining how much cargo can physically fit in each compartment. This helps prevent wasted space and ensures the vessel carries as much cargo as possible within its volume and weight limits.

ii. Cargo Planning: Accurate knowledge of the stowage factor is essential for creating efficient loading plans. It guides decisions on the distribution of different cargo types to maintain even weight distribution, which is crucial to the vessel's trim and stability.

iii. Ballast and Stability Management: Since the stowage factor affects how full or empty the holds appear when loaded with a given weight, it directly impacts the ship's stability. Dense cargoes may lead to the ship being "down by the head or stern" if not properly balanced, while light cargoes might require additional ballast to maintain safe draft and stability.

iv. Cost Estimations: Freight rates for bulk cargoes are often negotiated on a per-ton or per-cubic-meter basis. The stowage factor enables both shipowners and charterers to estimate the total cargo quantity, voyage revenue, and associated expenses (such as port fees or canal dues, which can be affected by draft or tonnage).

v. Cargo Handling and Safety: Knowledge of stowage factor informs the stowage method and helps ensure cargo is safely and securely loaded. It also helps to prevent problems such as shifting cargo,

which can occur if holds are not properly filled or if cargo is not adequately secured, posing risks to the vessel and crew.

In conclusion, the stowage factor is a cornerstone of efficient and safe maritime cargo operations, affecting everything from how a ship is loaded to how costs are calculated and how the vessel is managed during its voyage.

Question 2:

Answer ALL parts of the question.

Describe ALL of the following charter party terms:

a) Laycan

b) Demurrage

c) Off-hire

d) Laytime

Candidates are expected to provide very clear and concise definitions:

Laycan

Laycan, short for "laydays cancelling," refers to the period agreed upon in a charter party contract during which the chartered vessel must arrive and be ready to load cargo. The laycan window establishes the earliest and latest dates for the vessel's readiness. If the vessel arrives before the laycan begins, it may not be accepted for loading; conversely, arrival after the laycan expiry gives the charterer the right to cancel the contract. Laycan is critical for operational planning and risk management, ensuring clarity and predictability for both shipowner and charterer.

Demurrage

Demurrage is a financial penalty or charge imposed when loading or discharging of cargo exceeds the period stipulated as "laytime" in the charter party. It compensates the shipowner for loss of time and potential disruption to subsequent voyages. Demurrage rates are pre-negotiated, and its application encourages charterers to load or discharge promptly. The concept thus incentivizes efficient cargo operations and protects shipowners against excessive delays.

Off-hire

Off-hire is a provision within time charter agreements specifying circumstances under which the charterer is not required to pay hire for the vessel. This typically applies when the vessel is unable to perform its agreed functions due to breakdowns, repairs, or other interruptions not caused by the charterer. During off-hire periods, the vessel's earnings are suspended, and responsibility for costs reverts to the owner. Off-hire clauses help balance risks between owner and charterer and ensure fair allocation of operational downtime.

Laytime

Laytime is the period contractually allowed for loading and discharging cargo, as defined in the charter party. It is the benchmark against which demurrage (excess time) and sometimes despatch (unused laytime) are calculated. Precise laytime definitions, including commencement, calculation, and exclusions, are essential to avoid disputes. Correct understanding and management of laytime enables both parties to plan cargo operations and to calculate costs associated with delays or efficiency.

• Laycan: Defines the window for vessel readiness and cargo operations.

• Demurrage: Compensates owners for cargo operation delays beyond laytime.

• Off-hire: Suspends charter hire for owner-responsible vessel downtime.

• Laytime: Specifies the allowed time for loading/discharging cargo.

Question 3:

Discuss the difference between a liner and a tramp service in shipping, giving examples of each, and discuss the type of cargoes that may be carried by the two services.

What was being looked for by the examiner:

Candidates are expected to provide a clear and comprehensive discussion on the difference between a liner and a tramp service.

Liner Services

Liner services refer to ships that operate on fixed routes, following published schedules with predetermined ports of call much like a bus or train service with regular stops and timetables. These services are typically provided by shipping lines that advertise their itineraries and adhere to them, regardless of whether their vessels are fully loaded.

Common examples include container lines such as Maersk, MSC, or CMA CGM, whose vessels call at major international ports on set dates. Liner services often focus on ports with high volumes of trade, facilitating predictable logistics for shippers and consignees.

• Types of cargo: Liner services primarily carry general cargo, containerised goods, vehicles (Ro-Ro), breakbulk cargo, and, in some cases, packaged bulk items. These can include consumer goods, electronics, machinery, manufactured products, and foodstuffs that benefit from scheduled, reliable delivery.

• Shippers: Liner services are favoured by businesses requiring regular shipments, such as retailers, manufacturers, and suppliers with ongoing supply chains.

Tramp Services

Tramp services, in contrast, operate much like taxis: they do not follow fixed routes or schedules but instead go wherever cargo is available, whenever required. Tramp ships are usually chartered for individual voyages or periods, and their timings and itineraries are dictated by the needs of the cargo owner or charterer.

Examples of tramp services include bulk carriers transporting iron ore from Brazil to China or tankers moving crude oil from the Middle East to Europe by companies such as Vale and Stena Bulk. These vessels often carry full shiploads for a single customer or cargo owner, following routes that may change with each voyage.

• Types of cargo: Tramp services typically carry bulk commodities such as coal, grain, iron ore, crude oil, fertilisers, or timber that are loaded and discharged in large quantities, usually at specialised terminals. These cargoes are suited for flexible, as-needed shipping rather than scheduled services.

• Shippers: Tramp shipping is commonly used by commodity traders, mining companies, energy firms, and agricultural producers who require vessels on-demand to move large parcels of cargo between variable ports.

Summary of the key differences is excellent for a conclusion:

• Schedule: Liner services run on fixed schedules; tramp services are unscheduled and flexible.

• Route: Liner services follow published, regular routes; tramp vessels operate wherever cargo is available.

• Cargo types: Liners generally carry containerised or general cargo; tramps move bulk or large-volume cargoes.

• Users: Liners serve regular shippers; tramps serve clients with irregular or bulk shipping needs.

Question 4:

Answer BOTH parts of the question.

a) Identify and discuss the role and responsibilities of a dry cargo chartering broker

b) Discuss two main features of a time charter party

What was being looked for by the examiner:

This question provided candidates with the opportunity to provide a deep and insightful response to such as:

a) Role and Responsibilities of a Dry Cargo Chartering Broker

A dry cargo chartering broker plays a crucial role in the maritime industry, acting as an intermediary between shipowners and charterers. Their primary responsibilities include:

Market Analysis and Intelligence: Brokers continuously monitor the shipping market to provide clients with up-to-date information on freight rates, market trends, and available vessels. This helps clients make informed decisions about chartering opportunities.

Negotiation and Contracting: They negotiate the terms of the charter party agreements, ensuring that both parties' interests are represented. This includes discussing freight rates, laytime, demurrage, and other contractual terms.

Documentation and Compliance: Brokers ensure that all necessary documentation is prepared and complies with international shipping regulations. This includes charter party contracts, bills of lading, and other relevant documents.

Relationship Management: Maintaining strong relationships with shipowners, charterers, and other stakeholders is essential. Brokers facilitate communication and resolve any disputes that may arise during the charter period.

Post-Fixture Services: After the charter party is signed, brokers continue to provide support by monitoring the voyage, ensuring that the terms of the contract are adhered to, and assisting with any operational issues that may arise.

b) Two Main Features of a Time Charter Party

Candidates are expected to cover any two of the following key features of a Time Charterparties:

Fixed Period of Hire

The vessel is chartered for a set period (e.g., months or years).

The duration can be flexible, often with extension options.

Freight Payment Structure

The charterer pays hire rates (usually per day or per ton of cargo capacity).

Payment is made in regular instalments, often in advance.

Operational Control

The charterer decides on routes, cargo, and trade within agreed limits.

The shipowner manages crew, maintenance, and technical aspects.

Fuel & Port Costs

The charterer pays for fuel (bunkers) and port expenses.

The owner covers ship maintenance and crew wages.

Question 5:

Explain how the rise and fall of tides are caused and why they vary and discuss their effect

on shipping.

What was being looked for by the examiner:

This was one of the least popular questions and many candidates struggled with a correct answer. Many state that tidal movement is a phenomenon, which it is not. Tidal changes are highly predictable.

The rise and fall of tides are primarily caused by the gravitational forces exerted by the moon and the sun on the Earth's oceans. The moon, being closer to the Earth, has a stronger gravitational pull compared to the sun. As the moon orbits the Earth, its gravitational force pulls the water in the oceans towards it, creating a bulge or high tide on the side of the Earth facing the moon. Simultaneously, on the opposite side of the Earth, another high tide occurs due to the inertia of the water. The areas between these bulges experience low tides.

Tides vary due to several factors:

Lunar Cycle: The position of the moon changes as it orbits the Earth, leading to variations in the gravitational pull. This results in different tidal patterns, such as spring tides (higher high tides and lower low tides) during full and new moons, and neap tides (lower high tides and higher low tides) during the first and third quarters of the moon.

Solar Influence: The sun also affects tides, although to a lesser extent than the moon. When the sun, moon, and Earth are aligned (during full and new moons), their combined gravitational forces result in higher tides (spring tides). When the sun and moon are at right angles to each other (during the first and third quarters of the moon), their gravitational forces partially cancel out, leading to lower tides (neap tides).

Geographical Features: The shape of the coastline, the depth of the ocean, and the presence of bays and estuaries can influence the height and timing of tides. Narrow bays and estuaries can amplify tidal ranges, while wide, open coastlines may experience smaller tidal variations.

Earth's Rotation: The rotation of the Earth also affects tides. As the Earth rotates, different areas of the planet move in and out of the tidal bulges, leading to the regular rise and fall of sea levels.

Effect of Tides on Shipping

Tides have a significant impact on shipping and maritime activities:

Navigational Safety: Tides affect the depth of water in ports, harbors, and shipping channels. Knowledge of tidal patterns is crucial for safe navigation, especially for large vessels that require sufficient water depth to avoid grounding.

Port Operations: Tidal variations influence the scheduling of loading and unloading operations in ports. High tides provide deeper water, allowing larger ships to enter and leave ports safely. Conversely, low tides may restrict the movement of vessels, leading to delays.

Fuel Efficiency: Ships can take advantage of tidal currents to improve fuel efficiency. By timing their voyages to coincide with favorable tidal currents, vessels can reduce fuel consumption and travel time.

Mooring and Berthing: Tidal changes affect the tension on mooring lines and the stability of berthed vessels. Proper management of mooring lines is essential to accommodate tidal variations and prevent damage to ships and port infrastructure.

Understanding and predicting tidal patterns are essential for the efficient and safe operation of shipping activities. Mariners rely on tide tables and real-time tidal data to make informed decisions and ensure smooth maritime operations.

Question 6:

Describe the role of Port State Control (PSC) in ensuring the safety, security and

environmental compliance of ships visiting a country's ports.

This was one of the weaker questions attempted by many candidates:

Port State Control (PSC) – Safeguarding Maritime Safety, Security, and the Environment

Port State Control (PSC) is a critical tool used by maritime authorities to uphold international standards when foreign-flagged vessels call at their ports. Through targeted inspections, PSC ensures ships comply with global conventions on safety, security, labour, and environmental protection. By doing so, it helps safeguard national waters, port infrastructure, and seafarer welfare.

1. Ensuring Ship Safety

PSC inspections verify that vessels meet safety requirements established by the International Maritime Organization (IMO). Authorities check structural integrity, life-saving appliances, fire safety systems, and navigational equipment. If a ship is found unsafe or unseaworthy, it may be detained until deficiencies are rectified—reducing the risk of accidents in busy port areas.

2. Preventing Marine Pollution

Compliance with the MARPOL Convention is a core focus of PSC. Inspections cover ballast water management, waste treatment, and pollution-control systems to prevent oil spills, illegal discharges, or harmful emissions. Enforcing these standards protects marine ecosystems and preserves water quality around ports.

3. Enhancing Security & Combating Illegal Activity

PSC helps implement the International Ship and Port Facility Security (ISPS) Code, strengthening defences against terrorism, piracy, smuggling, and other unlawful activities. Inspectors review crew documentation, cargo authenticity, and anti-tampering procedures to ensure ships do not pose security threats to ports or national borders.

4. Protecting Port Workers & Infrastructure

By enforcing the Maritime Labour Convention (MLC) of the International Labour Organization (ILO), PSC safeguards seafarers' rights and welfare. It also checks compliance with rules on handling hazardous cargo, reducing risks of fires, explosions, or chemical leaks. These measures help prevent workplace accidents and protect valuable port facilities.

5. Promoting Global Compliance

PSC regimes operate under regional agreements such as the Paris MoU (Europe and North Atlantic), Tokyo MoU (Asia-Pacific), and US Coast Guard inspection system. Vessels repeatedly failing inspections may be blacklisted, restricting their access to ports worldwide. This international cooperation encourages shipowners to maintain high operational and safety standards across the global fleet.

Question 7:

Answer ALL parts of the question:

a) Using the world map provided, identify two load and two discharge grain ports.

b) Using the world map provided draw the supporting general trade routes used for

the carriage of grain to include the oceans, seas and waterways.

c) Identify and discuss two factors which may affect the demand and supply of grain.

This was one of the most popular questions and was done very well by some candidates.

Part a and b was well done except that some candidates has inaccurate load and discharge ports in on the maps, some had Rio de Janeiro to far south in Brazil. Some trade routes were excellent while others could have had a bit better labelling.

Part c, was covered with exceptionally good responses. Candidates should were able to provide a comprehensive discussion covering,

The international grain market is shaped by a complex mix of economic, environmental, and geopolitical factors. These forces influence both supply and demand, ultimately determining grain prices, trade flows, and availability worldwide.

Candidates were supposed to cover **TWO Factors Affecting Grain Supply**

1. Weather and Climate Conditions

Extreme events such as droughts, floods, hurricanes, and heatwaves can drastically reduce crop yields.

Climate change is driving increasingly unpredictable weather patterns in major exporting regions such as the U.S., Brazil, Ukraine, and Australia.

Adverse conditions often trigger supply shortages, pushing global prices upward.

2. Agricultural Technology and Productivity

Modern techniques—high-yield seed varieties, precision irrigation, fertilizers, and mechanisation—boost efficiency and output.

However, many developing nations face technological gaps, limiting their ability to expand production.

3. Geopolitical Events and Trade Policies

Conflicts, sanctions, and export restrictions disrupt supply chains and global grain availability.

Example: The Russia–Ukraine war curtailed wheat exports, driving shortages and price spikes.

Domestic policies such as subsidies and tariffs also influence production by shaping farmer incentives.

4. Pests and Crop Diseases

Threats such as locust swarms, fungal outbreaks, and viral plant diseases can devastate harvests, creating unexpected supply shocks.

Candidates were supposed to cover **TWO Factors Affecting Grain Demand**

1. Population Growth and Urbanisation

Expanding populations increase the need for staple grains like wheat, rice, and corn.

Urbanisation fuels demand for processed and convenience foods, many of which rely on grain inputs.

2. Changing Dietary Preferences

Rising incomes in emerging economies (China, India, and across Africa) drive demand for wheat-based products, animal feed, and biofuels.

In contrast, shifting consumer trends in some Western nations—such as the growth of plant-based diets—may alter traditional demand patterns.

3. Trade Policies and Import Regulations

Tariffs, quotas, and bilateral agreements shape the cost and volume of imports.

In some cases with the weaker candidates they only covered the demand factors or the supply factors and in some minor cases they mixed the supply and demand factors. It is critical is read the question before starting to prevent such confusion.

Question 8:

Identify the following on the world map provided.

Continents:

i. Asia

ii. Africa

iii. Europe

iv. South America

v. Australia

Water ways:

vi. Straits of Hormuz

vii. Torres Strait

viii. Panama Canal

ix. Malacca Strait

x. Suez Canal

Seas:

xi. Caspian Sea

xii. Mediterranean Sea

xiii. South China Sea

xiv. Baltic Sea

xv. Black Sea

Major ports:

xvi. Yokohama

xvii. Rotterdam

xviii. Busan

xix. Richards Bay

xx. New York

What was being looked for by the examiner:

This was a very popular question for this session. Once again some were unable to correctly position ports in the correct countries or correct location in that country, for example Yokohama was position too far north in some instances. This is a question which candidates can score top marks, much better preparation would go a long way in achieving higher marks on the maritime geography question. Some were able to score over 18 marks on this questions, keep up the good work.