Open Awards Qualification Unit

This unit forms part of a regulated qualification.

1 Unit Details

Unit Title:	Port Services and Operation
Unit Reference Number:	J/618/7075
Level:	3
Credit Value:	6
Minimum GLH:	45

2 Learning Outcomes and Criteria

Learning Outcome (The Learner will):	Assessment Criterion (The Learner can):
1. Understand the development and role of ports	1.1 Identify the world's largest and busiest ports
	1.2 Describe different models of port ownership
	1.3 Explain the differences between natural and purpose-built ports and the evolution of port cities
	1.4 Evaluate trends in port development including free ports, hub ports and gateway ports
2. Understand port services and operation	2.1 Identify the key operations of a safe and efficient port
	2.2 Outline the regulatory authorities that operate in a port
	2.3 Summarise **two** types of cargo terminal and describe the equipment used to load and discharge vessels
	2.4 Explain the stages in the movement of goods or passengers through a port
	2.5 Give **one** example of automation that is transforming port operations

3.	Understand the role and duties of port agents	3.1	Explain the roles and responsibilities of port agents
		3.2	Summarise the following vessel services that agents provide; a) Chandlery b) Crewing c) Bunkering d) Husbandry
		3.3	Summarise the clearances and dues required for a vessel to enter and leave port
		3.4	Explain the conflicts of interest that may arise between cargo owner, ship owner/operator and broker and their agents
4.	Understand safe and professional working practice in the port environment	4.1	Identify the types of hazards encountered in a port
		4.2	Explain the purpose of port state control inspections of vessels in port
		4.3	Describe what practices are followed to ensure the safe arrival and berthing of a ship
		4.4	Justify the recommendation from an accident report from **one** recorded port incident that involved loss of life
5.	Understand port communications and vessel planning	5.1	Identify the main stakeholders in port operations and logistics
		5.2	Explain the process for planning a vessel's arrival and departure
		5.3	Explain how delays and congestion in ports can be resolved
		5.4	Evaluate how technology could impact on communications and vessel planning

Learning Outcome 1- Indicative Content	
AC 1.1	Learners should know the top ten busiest ports in the world and the 5 busiest ports in Europe.
AC 1.2	Learners should know about state owned ports, public sector body owned, port authority owned, trust ports, private sector owned ports and the landlord model of port ownership.
Learning Outcome 2 - Indicative Content	
AC 2.1	Learners should outline the key features of a successful port in terms of: safe approach, dredged channel, port entry control, pilots, VTS, Harbour Masters, tugs, berthing arrangements, cargo handling space and equipment, locked basins, storage areas, and skilled or trained labour.
AC 2.2	Learners should outline other port office roles, including: port management, customs, health, surveyors, local/national authorities and ship's agent.
AC 2.3	Learners should be introduced to the following:

	Features of berth types including cargo handling and storage prior to or after loading or discharge for: a) General cargo, b) Container, c) Dry bulk, d) Ro-Ro, e) Passenger, and 4 main types of wet bulk terminal: a) Linear quay, b) Shore linked T Jetty berth, c) Water Linked Jetty Berth, d) Single point or single- buoy mooring. *For example, if the learner chooses to write about general cargo, then they should include consideration for timber, scrap metal, aggregates and reefer ships as a minimum. Similarly, for container ships they should include size of berths, container yard, gantry cranes straddle carriers, tractor units etc. For dry bulk this would include grabs, conveyors, and continuous loaders such as bucket wheel, screw and pneumatic loaders.*
AC 2.4	Learners should have an overview of the documentation needed without going into the fine detail, including inspections such as customs and security (especially passenger). Here, learners should be made aware of the MarSec security levels under the International Ship and Port Security Code. Goods subject to customs controls, and checks for pests and diseases. For inward cargo shipments this should include inspection of cargo on arrival and surrender of the bill of lading. For outward cargo learners should be aware of the need to prepare the ships hold to receive fresh cargo. (this may happen on passage to the port if she arrives with no cargo). The purpose of the statement of facts and notices of readiness.
AC 2.5	This is a good topic for a learner research task/project. We have not put specifics here because over the life of this qualification technology is constantly evolving. Learners should though be able to give examples of where processes or tasks can be fully autonomous and those that will still need human oversight.
Learning Outcome 3 - Indicative Content	
AC 3.3	Learners should include, port health, customs and immigration. A mention of the port state surveyor is permitted, however this is covered in more detail in LO 4. *Note also that the following is also in LO4: Port entry requirements such as: Port/Harbour master communication; the use of pilots, or pilot exemption certification; and port services.* Dues can be divided into: a) General tariffs such as port or conservancy dues and wharfage or cargo dues, b) Facilities tariffs such as berth hire and transit storage, c) Service tariffs for pilotage, towage, berthing, stevedoring, equipment hire, utilities and longer-term storage.
Learning Outcome 4 - Indicative Content	
AC 4.1	Learners should be referred back to the work on responses to emergencies in LO5 of Working in the Maritime Sector. The purpose of this assessment criteria is for learners to where different types of hazard may present in a port environment. The following HSE publication may be helpful: Quick Guide to Health and Safety in Ports
AC 4.3	Port entry requirements should include: • Port/Harbour master communication, • The use of pilots, or pilot exemption certification, • Port services such as tugs and mooring line crew. It should also be mentioned here the safe disposal of garbage and waste oil with associated record books, and any connections to shore side utilities if these are available.

	(power/water/sewage pump out).
AC 4.4	The MAIB website has a searchable section on marine accidents. Learners should be careful to ensure they are quoting from an accident that occurred in **port**.
Learning Outcome 5 - Indicative Content	
AC 5.1	Stakeholders can be broken down into wetside and dryside. For example, this could include (but is not limited to) Wetside: • Types of agent, • All of the operations to do with the vessel movement, including vessel owners, • Feeder barge and tug operators, • Port service providers such as bunkering and mooring. Dryside: • Lessees of terminals, • Logistics facilities, • Industrial sites, • Warehousing, • Logistics operators, • Road and rail operators, • Crewing and port operative employers, • Port authorities • Government or local authority bodies such as port health, customs, immigration and vessel inspection.
AC 5.2	Learners should see this from the ship agency and port readiness point of view. It is worth mentioning the ship board checks such as testing of mechanical hydraulic and ship board communication systems. preparing for mooring operations and pilot boarding. Other learning could include things such as: • The principle ensuring the agent is in funds before the ship arrives, • ETA, • Arranging for berth confirmation • Port services such as pilots tugs and mooring crew. • The port agent arranging for customs, immigration and port health, • Dealing with stow aways and free pratique or contraband issues, • ***Notice of readiness,*** • ***NoP Note of Protest*** *(or Noting Protest)* if damage to ship or cargo, • Use of Bill or lading, manifest and mates receipt, • Use of stevedores and tally clerks, • Preparing the ship for cargo, • ***Statements of fact, demurrage and despatch,*** • resupplying, refuelling, repairing and crewing the ship, • ***Departure report.***
AC 5.3	Learning should cover: • Losses to the ship owner in financing and operating the vessel, • Loss to the charterer, • Problems for “just in time” supply lines, • Loss of berth slots for the port authority. Things that will affect turnaround: • Berth availability of the right type, • Amount of cargo – more cargo more time especially for RoRo and RoPax, • Type of cargo and availability of equipment for loading unloading, can loading unloading be spread along length of ship? • Availability of labour, • Effects of weather (some cargos cannot be transferred when it is raining or high wind affecting cranes), • Labour disputes, • Delays in cargo arriving by other mode to the port, • Breakdown of equipment.

	Causes of port congestion may be due to: • Sudden peaks in cargo volumes at a time when port is already near capacity, • An unexpected event, • Extremes of seasonality. Responses could include: • Using alternative port plus land transport in short term, • Longer term abandoning a poorly performing port, • Better coordination of all parties.