



**OCCUPATIONAL FRAMEWORK  
MSIC 2008 CODEH50WATER TRANSPORT**



**JABATAN PEMBANGUNAN KEMAHIRAN  
KEMENTERIAN SUMBER MANUSIA**

Department of Skills Development  
Ministry of Human Resources, Malaysia

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## ABSTRACT

An Occupational Framework (OF) is the outcome obtained from the process of identifying the work scope of the occupational areas in terms of competencies. Occupational Analysis (OA) is the process of identifying the work scope of the occupational sub-area in terms of competencies. It is used to analyse skilled human resource competency requirement for the industry. The development of the Occupation Structure (OS) is the preliminary process in developing relevant National Occupational Skills Standard (NOSS). The NOSS in turn will be developed to be used as the basis to conduct skills training and certification of competent personnel. This document is divided into several chapters, the first chapters include standard definitions of terminology used in *Jabatan Pembangunan Kemahiran* (Department of Skills Development) skills training system and documentation, followed by the objectives, scope and justification of the OF development for the Water Transport Industry. The second being an industrial overview highlighting the definition and scope of the industry, the current analysis of the local industry and its skilled worker requirements, government bodies and development plans supporting the growth of the industry. The following chapters explained the findings from an analysis which is the Occupational Structure (OS) with its associates Occupational Area Structure. Research initially consists of analysing available information on the Water Transport Industry, followed by the direct contact with those in the industry to obtain a general idea of the industry sub-sectors. A development workshop, site visit and interviews were conducted to get a better understanding of the organisational structure, job titles, hierarchy objectives and main activities of the specific positions. This industry represents one of the most potential sectors in the economy and a key player in the next industrial revolution – Industry 4.0. The total number of job area identified is 34 with 159 job titles. In order to develop the OF on the Water Transport Industry and Warehousing & Support Activities for Transportation Industry, all information related to the aforesaid group was gathered through literature review, survey and workshop sessions with industry experts.

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## GLOSSARY

<b>Component</b>	Part of system
<b>Framework</b>	An essential supporting structure of a building, vehicle, or object also known as a basic structure underlying a system, concept, or text.
<b>Scope of study</b>	Scope and delimitation of study are two elements of a research paper that inform the reader what information is included in the research and explain why the author chose that information. Although scope and delimitation explain the way a study is limited, this information adds credibility to research.
<b>Acts</b>	A formal decision, law, or the like, by a legislature, ruler, court, or other authority; decree or edict; statute; judgment, resolve, or award.
<b>Roadmap</b>	Any plan or guide to show how something is arranged or can be accomplished
<b>Remanufacturing</b>	Process to restore existing parts or components to 'as good as new' condition using a standardised industrial process in line with specific technical specifications.
<b>Repair</b>	Any operation to restore parts and components to a functional condition after worn out or damage for the purpose of utilisation.
<b>Reuse</b>	Any operation by which parts and components of vehicles are used for the same purpose for which they were conceived.
<b>Recycle</b>	Process to segregate non-usable parts or components for material recovery.
<b>Original Equipment Manufacturer (OEM)</b>	A company that makes a part or subsystem that is used in another company's end product.

## ABBREVIATION

<b>JPk</b>	<i>Jabatan Pembangunan Kemahiran</i>
<b>DSD</b>	Department of Skills Development
<b>OA</b>	Occupational Analysis
<b>CBT</b>	Competency Based Training
<b>DESCUM</b>	Development of Standard and Curriculum
<b>ETP</b>	Economic Transformation Programme
<b>EPP</b>	Entry Point Project
<b>OAA</b>	Occupational Area Analysis
<b>OS</b>	Occupational Structure
<b>OAS</b>	Occupational Area Structure
<b>MSIC</b>	Malaysian Standards of Industry Classification
<b>MOSQF</b>	Malaysian Occupational Skills Qualification Framework
<b>MQA</b>	Malaysia Qualification Agency
<b>MSC</b>	Malaysian Skills Certificate
<b>NOSS</b>	National Occupational Skills Standard
<b>NTP</b>	National Transport Policy

# CHAPTER 1: INTRODUCTION

## 1.1 Chapter Introduction

There have been various National Occupational Skills Standard (NOSS) documents developed for the Water Transport Industry. However, a complete analysis on the Occupational Structure (OS) of the Water Transport Industry has not been undertaken before this. Therefore, in order to identify the overall structure and available career paths in the industry, the Occupational Framework (OF) must be done for the Water Transport Industry. Given the nature of shipping under this Industry needing an efficient support system thus the Warehousing & Support Activities for Transportation Industry (Division 52 of Sector H, MSIC Code) is also considered in this report. However, the focus for the latter industry is on item code 5222 of the MSIC Code namely 'service activities incidental to water transportation'.

### 1.1.1 National Skills Development Act 2006 (Act 652)

The National Skills Development Act 2006 (Act 652) came into effect on 1<sup>st</sup> September 2006 after it was officially gazetted on 29<sup>th</sup> June 2006, with the mandate of promoting, through skills training, the development and improvement of a person's abilities, which are needed for vocation, and to provide for other matters connected therewith. The Act 652 is significant because for the first time in the history of skills training in Malaysia, a national legislation has been enacted solely and exclusively for skills training and development. In addition, the meaning and scope of skills training has been clarified and given a statutory interpretation that can be used to distinguish it from other components of the country's national education and training system. The Act 652 also provides for the implementation of a Malaysian Skills Certification System, leading to the award of five (5) levels of national skills qualification, namely Malaysian Skills Certificate Level 1, 2 and 3; Malaysian Skills Diploma; and Malaysian Skills Advanced Diploma.



### 1.1.2 Malaysia Qualification Framework (MQF)

The Malaysia Qualification Framework refers to the policy framework that satisfies both the national and international recognized qualifications. It comprises of titles and guidelines, together with principles and protocols covering articulation and issuance of qualifications and statements of attainment. Element of qualification framework indicate the achievement for each qualification title. It will also provide progression routes for all the graduates in the respective occupational fields.

The MQF has eight levels of qualification in three sectors and supported by lifelong education pathways as shown in the chart 1. JPK governs the skills sector, in which there are five (5) levels of skills qualification. The definition for each level of skills qualification is specified in Malaysian Occupational Skills Qualification Framework (MOSQF).

MQF Levels	Sectors			Lifelong Learning
	Skills	Vocational and Technical	Higher Education	
8			Doctoral Degree	Accreditation of Prior Experiential Learning (APEL)
7			Masters Degree	
6			Bachelors Degree	
5	Malaysian Advanced Skills Diploma	Advanced Diploma	Advanced Diploma	
4	Malaysian Skills Diploma	Diploma	Diploma	
3	Malaysian Skills Certificate 3	Vocational and Technical Certificate	Certificate	
2	Malaysian Skills Certificate 2			
1	Malaysian Skills Certificate 1			

Figure 1.1: Malaysian Occupational Skills Qualification Framework Chart



### **1.1.3 Occupational Framework**

Occupational Framework (OF) was previously known as Occupational Analysis (OA). OF is an outcome of an occupational analysis and research work carried on a particular industry sector. The contents of an OF shall include occupational structure, occupational definitions, job descriptions, manpower requirements and industry intelligence. The Occupational Structure (OS) is a matrix that will show relevant occupational areas and career paths for a particular occupation. The information on manpower skills requirements, occupational descriptions and industry intelligence will allow an overall understanding of the industry's occupational areas. Manpower skills requirements are to identify the skills gaps, and shortages in workforce. Industry Intelligence is based on an actual qualitative and quantitative data from the industry to further strengthen and prove the reliability of the data.

Therefore, a properly planned development and analysis will enable the OF to be precise and accurate thus ensuring that it will be a reliable source of information for further analysis of the industry and the development of NOSS and training requirements.

### **1.1.4 National Occupational Skills Standard (NOSS)**

National Occupational Skills Standard (NOSS) is defined as a specification of the competencies expected of a skilled worker who is gainfully employed in Malaysia for an occupational area, level and pathway to achieve the competencies and is gazetted in Part IV of National Skills Development Act 652. NOSS is developed by the industry experts based on the needs of the industry and is utilized as the main tool in the implementation of Malaysian Skills Certification System in which the performance of existing industry workers and trainees are assessed based on NOSS for awarding of Malaysian Skills Certificate.



### **1.1.5 Competency Based Training (CBT)**

Competency Based Training (CBT) is an approach to vocational training which emphasizes on what a person can do in a work place as a result of education and training obtained. CBT is based on performance standards which are set by the industry with main focus on measuring the performance while considering knowledge and attitude rather than the duration taken to complete the course. CBT is a learner-centric; outcome-based approach to training which allows each individual to develop skills at their own pace for a similar outcome, thus meaning training practices can be customized for each individual to achieve a similar outcome. CBT concept is the basis of Malaysian Skills Certification system which is coordinated by JPK.

### **1.1.6 Malaysian Standard Industrial Classification (MSIC)**

The MSIC is intended to be a standard classification of productive economic activities. Its main purpose is to provide a set of activity categories that can be utilised for the collection and presentation of statistics according to such activities. Therefore, MSIC aims to present these set of activity categories in such a way that entities can be classified according to the economic activity that they carry out. For purposes of international comparability, the MSIC 2008 Version 1.0 conforms closely to the International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4, published by the United Nations Statistics Division, with some modifications to suit national requirements. The objective of an industrial classification system is to classify data in respect of the economy according to categories of activities and the characteristics of which will be similar. The MSIC is a classification of all types of economic activities and is not a classification of goods & services nor is it a classification of occupations.<sup>1</sup>

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<sup>1</sup>Department of Statistics Malaysia. (2008). Malaysia Standard Industrial Classification (MSIC).





## **1.2 Objective of Study**

The objectives of the study are as below:

- a. To produce Occupational Structure (OS) from data analysis, interviews, site visits and focus group;
- b. To determine job descriptions of each job title from the OS;
- c. To investigate the skills in demand in the industry.

## **1.3 Scope of Study**

The scopes of work for the study to develop occupational framework are as listed below:

- a. To conduct literature review on the current industry;
- b. To consult with relevant industry representatives to obtain expert input from industry;
- c. To develop, disseminate and analyze survey and questionnaire's data from industries via industry representatives;
- d. To perform focus group discussion with the industry representatives, interviews, site visits and/or any other methods in order to achieve the study outcome.

## **1.4 Justification for MSIC Section Selection**

In order to make a clear justification for MSIC section selection, the purpose of this research needs to spell out clearly.

a. The purpose of this research other than to gain information on Occupational Structure (OS), Occupational Description (OD), Critical Jobs and also Skills in Demand, it is also focusing on knowing the growth and potential of Water Transport Industry in Malaysia.

b. This research also will includes group 522 namely Support Activities for Transportation with emphasize for Water Transport Industry consider it as a one of important part in Water Transport Industry

c. The current NOSS registry (May 2018) has stated that the NOSS relevant to the industry are under Section H, Division 50.



## 1.5 Chapter Summary

In light of recent economic development plans by Malaysia in this sector, the demand for sufficient skilled personnel has increased and the development of skilled manpower is crucial. With the Occupational Structure clearly defined, the sector stakeholders will be able to identify sub-areas that will require more intensive efforts in human capital development.

Although there have been past efforts in National Standards Development for the sector, the need for an Occupational Framework is required to determine the overall areas that may not yet have been focused on. The Occupational Structure that will be the outcome of this analysis shall be utilised as a blueprint of the manpower planning for this sector.



## CHAPTER 2: LITERATURE REVIEW

### 2.1 Chapter Introduction

This chapter will focus on the explanation of the Water Transport Industry and Warehousing & Support Activities for Transportation Industry, the current scenario in Malaysia, introduction to government policies, development plans, government bodies and industrial competitiveness at the international level pertaining to the Water Transport Industry.

Findings in this chapter were obtained via literature review, observation, interview with industry practitioners and discussion during workshops with development panel members. This literature review will be further discussed with panel members to obtain insight on the matters at hand from a practitioner's perspective.

### 2.2 Definition of Research Area

The research area is focusing on activities of Water Transport Industry and Warehousing & Support Activities for Transportation Industry. As stated earlier the definition of the research area is aligned with MSIC. Based on MSIC 2008, definition and scope of coverage for the Occupational Framework is as follows: -

Table 2.1: Summary of MSIC Section, Division and Group

MSIC Section	H	Transportation and Storage
<b>MSIC Division</b>	50	Water Transport
<b>MSIC Group</b>	501	Sea and Coastal Water Transport
	502	Inland Water Transport
	522	Support Activities for Transportation

### 2.3 Scope of Occupational Framework Based on MSIC 2008

To further understand the scope of this particular Occupational Framework based on MSIC 2008, Table 2.2 below can be referred.



Table 2.2: MSIC Section, Division and Group

Classification	Code	Description
Section	<b>H</b>	<b>Transportation and Storage</b>
Division	<b>50</b>	<b>Water Transport</b>
Group	<b>501</b>	<b>Sea and Coastal Water Transport</b> This group includes the transport of passengers or freight on vessels designed for operating on sea or coastal waters. Also included is the transport of passengers or freight on great lakes, etc. when similar types of vessels are used.
	<b>5011</b>	<b>Sea and coastal passenger water transport</b>  a) Operation of excursion, cruise or sightseeing boats b) Operation of ferries, water taxis c) Rental of pleasure boats with crew for sea and coastal water transport  <b>Excludes:</b> (a) restaurant and bar activities on board ships, when provided by separate units (b) operation of “floating casinos” <b>Includes:</b> rental of pleasure boats with crew or coastal water transport for fishing cruises
	<b>5012</b>	<b>Sea and coastal freight water transport</b>  a) Transport of freight overseas and coastal waters, whether scheduled or not b) Transport by towing or pushing of barges, oil rigs  <b>Excludes:</b> (a) storage of freight, (b) harbour operation and other auxiliary activities (e.g. docking, pilot age, lighter age, vessel salvage), (c) cargo handling
Group	<b>502</b>	<b>Inland Water Transport</b> This group includes the transport of passengers or freight on inland waters, involving vessels that are not suitable for sea transport.
	<b>5021</b>	<b>Inland passenger water transport</b>  a) Transport of passenger via rivers, canals, lakes and other inland waterways b) Rental of pleasure boats with crew for inland water transport  <b>Includes:</b> transport of passenger inside harbours and ports



	<b>5022</b>	<b>Inland freight water transport</b>  a) Transport of freight via rivers, canals, lakes and other inland waterways  <b>Includes:</b> transport of freight inside harbours and ports
Group	<b>522</b>	<b>Support activities for transportation</b> This group includes activities supporting the transport of passengers or freight, such as operation of parts of the transport infrastructure or activities related to handling freight immediately before or after transport or between transport segments. The operation and maintenance of all transport facilities is included.
	<b>5222</b>	<b>Service activities incidental to water transportation</b>  a) Port, harbours and piers operation services b) Vessel salvage and refloating services c) Other service activities incidental to water transportation n.e.c.  <b>Excludes:</b> (a) cargo handling (b) operation of marinas <b>Includes:</b> (a) navigation, pilotage and berthing activities (b) lighterage and lighthouse activities



## 2.4 Key National Maritime Stakeholders

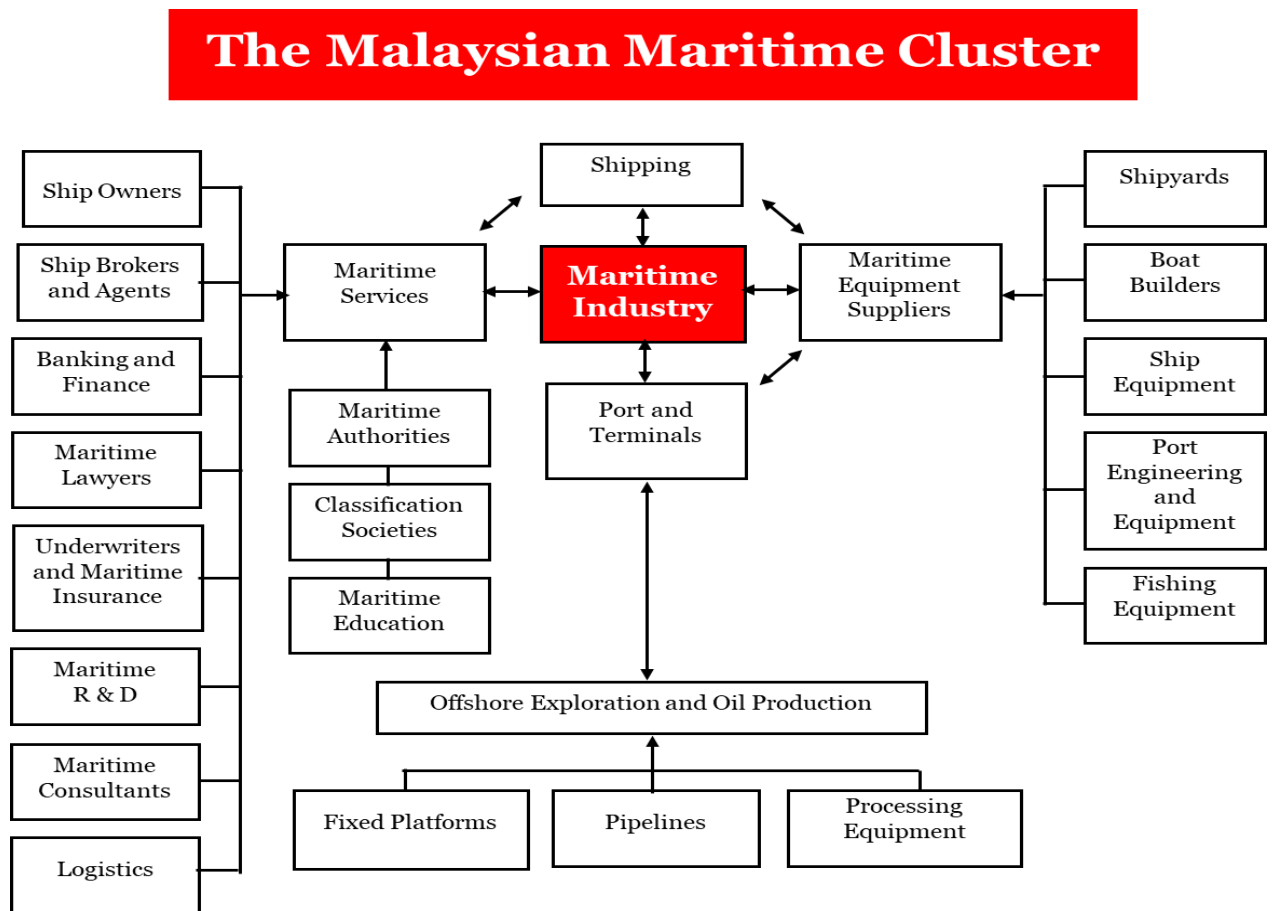


Figure 2.1: The Malaysian Maritime Cluster

(Source: Marine Department Malaysia)

Exploring the development within Water Transport Industry and Warehousing & Support Activities for Transportation Industry requires an understanding of the key National Maritime Stakeholders. Each category listed in Table 2.3 shown below plays a role in shaping the Water Transport Industry and Warehousing & Support Activities for Transportation Industry



### 2.4.1 Government Agencies and Regulatory Bodies

Table 2.3: Government Agencies and Regulatory Bodies

No	Agency/Organization	Roles and Responsibility
1.	Ministry of Transport	- Draft Policies in relation to Water Transport Industry
2.	Marine Department Malaysia	- Administer National Legislations and International Conventions ratified by Malaysia - Exercise Merchant Shipping Ordinance 1952, Merchant Shipping Ordinance 1960 (Sabah) and Merchant Shipping Ordinance 1960 (Sarawak)
3.	Federal Port Authorities <ul style="list-style-type: none"> <li>- Penang Port Commission</li> <li>- Port Klang Authority</li> <li>- Johor Port Authority</li> <li>- Kuantan Port Authority</li> <li>- Kemaman Port Authority</li> <li>- Bintulu Port Authority</li> </ul>	- Exercise within their port limits Penang Port Commission Act 1955, Port Authorities Act 1963 and Bintulu Port authority Act 1981
4.	State Port Authorities <ul style="list-style-type: none"> <li>- Sabah Port Authority</li> <li>- Sarawak River Board</li> <li>- Kuching Port Authority</li> <li>- Senari Port Authority</li> <li>- Miri Port Authority</li> </ul>	- Operates terminal activities within port limits
5.	Sarawak River Board	- Administer regulations as per Sarawak Rivers Ordinance, 1993 and Sarawak Rivers (Amendment) Ordinance, 1997
6.	Sabah Ports and Harbour Department	- Administer regulations as per Merchant Shipping Ordinance 1960 (Sabah)



## 2.4.2 Operations

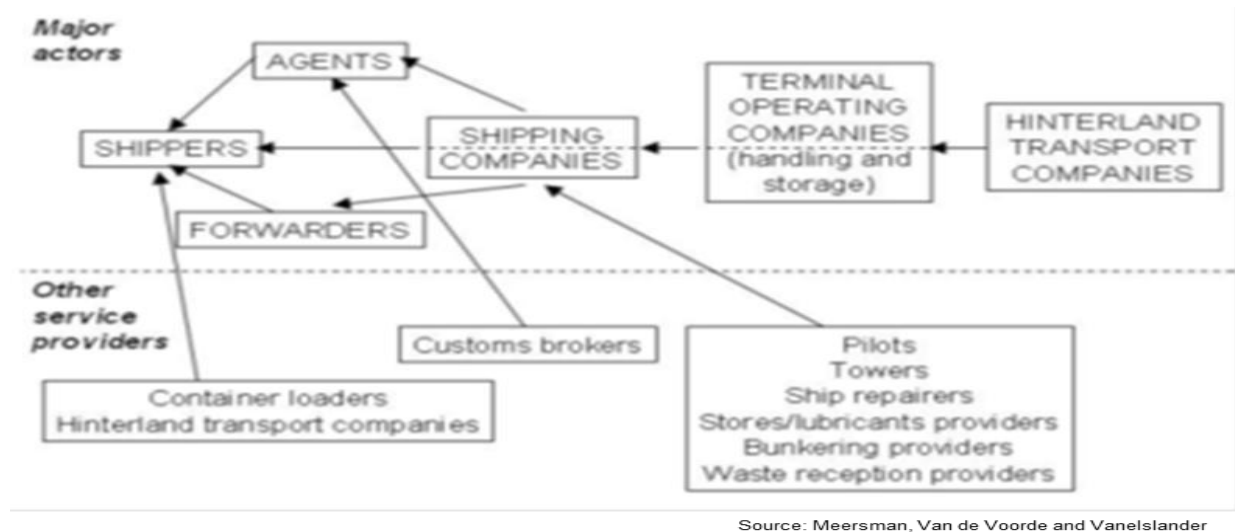


Figure 2.2: Maritime Shipping Operations

(Source: Marine Department Malaysia)

Figure 2.2 above show about the structure in maritime shipping operations where its going to 4 process starting from Hinterland Transport Companies and ended to shippers.

Table 2.4: Operation

No	Agency/Organization	Roles and Responsibility
1.	Federal Port Operators and State Port Operators	- Delivers port services to ships calling to port
2.	P&I Malaysia	- Issues insurance to ships
3.	Ship Brokers & Agents	- the designated person or agency held responsible for handling shipments and cargo, and the general interests of its customers, at ports and harbors worldwide, on behalf of ship owners, managers, and charterers.
4.	Logistics – Forwarding Agents	- Responsible for tracking inland transportation, preparation of shipping and export documents, warehousing, booking cargo space, negotiating freight charges, freight consolidation, cargo insurance, and filing of insurance claims.
5.	Classification Societies	- A non-governmental organization that establishes and maintains technical standards for the construction and operation of ships and offshore structures.

## 2.4.3 Industry Associations and Professional Bodies





Table 2.5: Industry Associations and Professional Bodies

No	Agency/Organization	Roles and Responsibility
1.	Malaysia Shipowners Association (MASA)	- The National industry organisation representing ship owners in Malaysia. Ordinary membership is open to a Malaysian resident company which owns at least one vessel registered in Malaysia. Associate membership is open to any Malaysian resident company involved directly or indirectly with the shipping industry. MASA's directory of ordinary members represents 80% of Malaysian tonnage. MASA's directory of associate members comprises charterers, ship management companies, chartering brokers and bunker suppliers
2.	International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)	- IALA is a non-profit, international technical association. Established in 1957, it gathers together marine aids to navigation authorities, manufacturers, consultants, and, scientific and training institutes from all parts of the world and offers them the opportunity to exchange and compare their experiences and achievements.
3.	International Maritime Organization (IMO)	- The United Nations specialized agency responsible for safe, secure, and efficient shipping and the prevention of pollution from ships
4.	The International Association of Ports and Harbours (IAPH)	- IAPH is a global alliance of ports, representing 180 ports and 140 port-related businesses in 90 countries
5.	International Labour Organization (ILO)	- The only tripartite U.N. agency, since 1919 the ILO brings together governments, employers and workers of 187-member States, to set labour standards, develop policies and devise programmes promoting decent work for all women and men.

#### 2.4.4 Maritime Education

Table 2.6: Maritime Education

No	Agency/Organization	Roles and Responsibility
1.	- Maritime Institute of Malaysia	- Involves in training, research support, collaboration work with maritime administration, policy advisory and recommendations on maritime matters to the government.
2.	- 35 Accredited Training Institutions	- Provides training following STCW Manila Amendment 2010 requirement
3.	- Public/Private Universities	- Research support, collaboration work with maritime administration



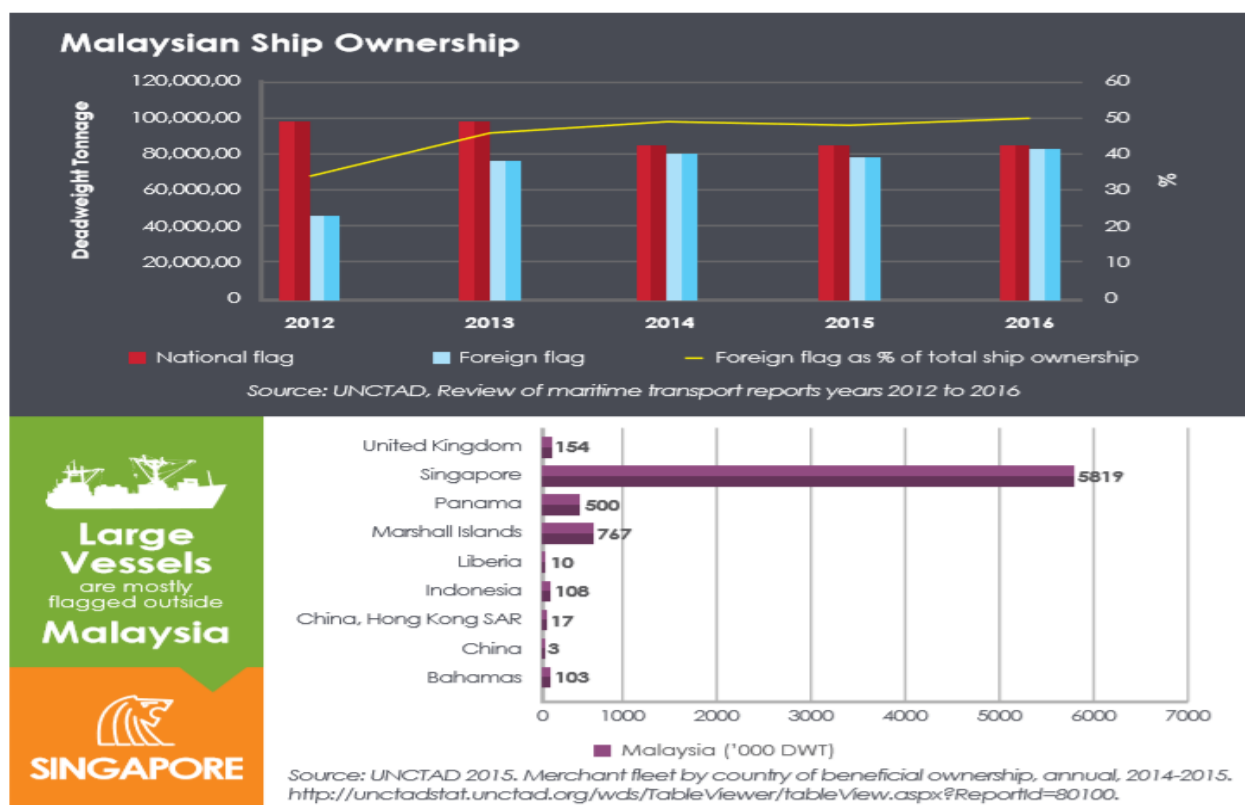


Figure 2.3: Malaysian Ship Ownership 2012-2014

(Source: UNCTAD 2015)



## 2.5 Government Policies, Acts, Regulations and Standards

Below are the policies, acts, regulations and standard that are relevant to Water Transport Industry in Malaysia.

### 2.5.1 Acts for The Water Transport Industry and Warehousing & Support Activities for Transportation Industry

Merchant Shipping Ordinance 1952

Merchant Shipping Ordinance 1960 (Sabah)

Merchant Shipping Ordinance 1960 (Sarawak)

Federation Light Dues Act 1953 (Act 250)

*Akta Pendaftaran Kapal Layar Antarabangsa Langkawi* 2003 (Malay Version Only)

Act 302 - Petroleum (Safety Measures)

Act 1984 - Petroleum (Safety Measures) (Amendment) Act 1991

#### **Subsidiary Laws**

Act 1393 - Merchant Shipping (Amendment and Extension) Act 2011

Act 1394 - Merchant Shipping (Oil Pollution) (Amendment) Act 2011

Federal Territory of Labuan (Extension and Modification of The Federation Light Dues Act 1953)

Order 2014 Merchant Shipping Order (Collision Regulations), 1984

Merchant Shipping (Collision Regulations) (Rules Vessels Navigating Through the Straits of Malacca and Singapore)

Order 1984 Merchant Shipping (Collision Regulations) (Amendment)

Order 2000 Port (Safety of Workers) Rules, 1985

Federation Ports Rules 1953

Boat Rules 1953

State Ports Rules

Merchant Shipping (Amendment) Act 1998 (Malay Version Only)

Merchant Shipping Ordinance 1952 - Merchant Shipping (Central Mercantile Marine Fund) Rules 1984

Merchant Shipping Ordinance 1952 - Merchant Shipping (Near Coastal Trade)

Voyage Limit Rules 1994 (Malay Version Only)

Act 515 - Merchant Shipping (Oil Pollution) Act 1994



P.U (A) Petroleum (Safety Measures) (Transportation of Petroleum by Water) Regulation 1985

Act 1316 - Merchant Shipping (Amendment & Extension) Act 2007

Ports (Privatization)- Act 1990

Domestic Shipping Licensing Board Penang Port (Navigation Within the Area of The Brigde) Rules 1986

P.U (A) Medical Examination Rules 1999 (Kaedah-KaedahPerkapalanSaudagar (PemeriksaanPerubatan) 1991)

### **Acts Related**

Akta 750 - AktaLaut Wilayah 2012 (Malay Version Only)

## **2.5.2 National Transport Policy (NTP)**

**The NTP 2018-2030 will provide the strategic direction for a sustainable transport sector**

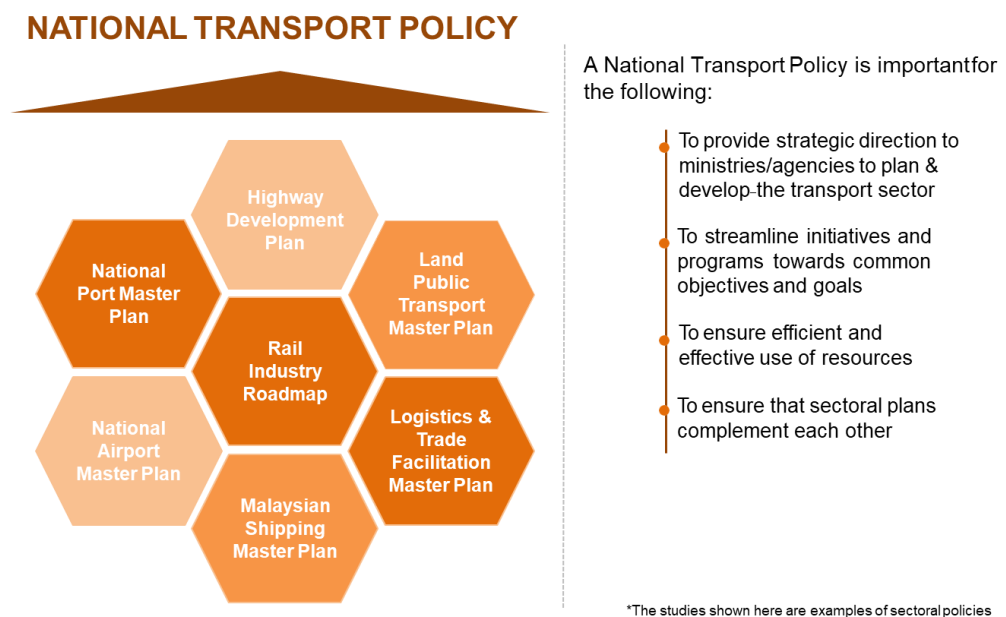


Figure 2.4: National Transport Policy

(Source: Ministry of Transport Malaysia)



### 2.5.3 Cabotage Policy

Malaysian Government implemented a policy which reserves the transportation of goods in the domestic trades to ship flying the Malaysian flag. This policy implemented on 1st January 1980 which is reflected in Part IIB of Merchant Shipping Ordinance (MSO) 1952 Domestic Shipping Licensing Board (DSLBS) to regulate & control domestic shipping between port in Malaysia.

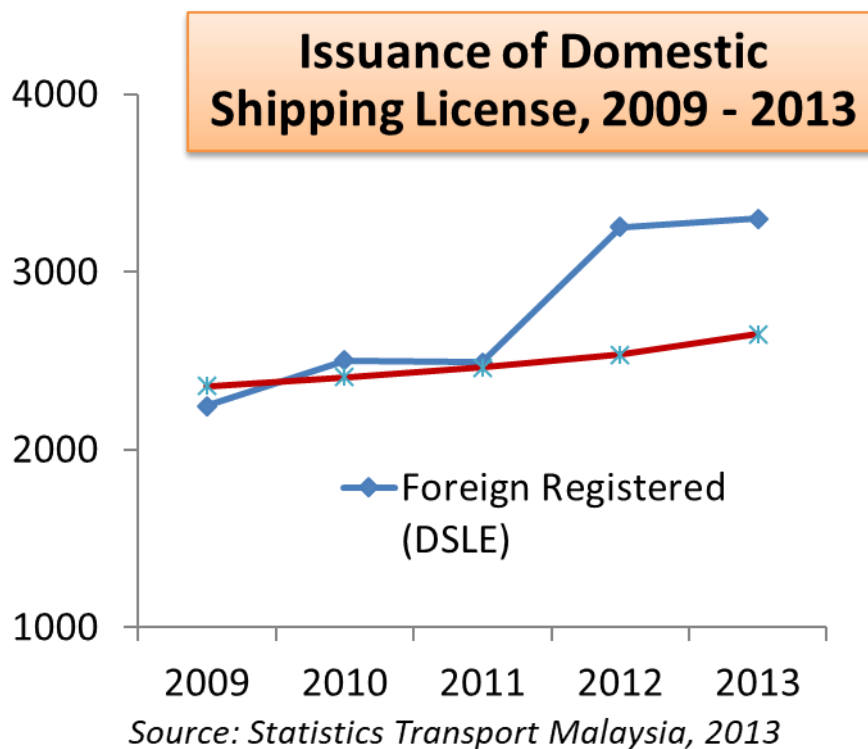


Figure 2.5: Issuance of Domestic Shipping License, 2009-2013  
(Source: Statistic Transport Malaysia, 2013)

### 2.5.4 Water Transport Event

#### i. World Maritime Day

The United Nations (UN), via the International Maritime Organization (IMO), created World Maritime Day to celebrate the international maritime industry's contribution towards the world's economy, especially in shipping.



The event's date varies by year and country but it is always on the last week of September



Figure 2.6: World of Maritime Day

(Source: Marine Department Malaysia)

## ii. Seafarers' Day

Day of the seafarer is an official United Nations international observance day which takes place every year on 25 June. It is organized by the International Maritime Organization and aims to increase awareness among the general public of the world's 1.5 million seafarers for their unique, and all-too-often overlooked, contribution they make to the well-being of all of us.



Figure 2.7: Day of the Seafarer

(Source: Marine Department Malaysia)



### **iii. Langkawi International Maritime and Aerospace Exhibition (LIMA)**

Langkawi International Maritime and Aerospace Exhibition (LIMA) is a maritime and aerospace exhibition that takes place once every two years in Langkawi, Malaysia. The event is one of the largest maritime and aerospace exhibitions in the Asia-Pacific, and is focused mainly on the defence industry, but also supports civilian industries. In 2013, LIMA recorded an overall growth of 10%, with 433 exhibitors from 31 countries, 333 defence delegations from 38 countries, 632 media personnel from 127 agencies, 68 ships and 78 aircraft attending the show. The 5-day event also saw 38,421 trade visitors from both defense and commercial sectors from all around the world, as well as 135,691 public visitors.

The exhibitors involved in the event exhibit their products inside the purpose built Mahsuri International Exhibition Centre (MIEC), adjacent to the terminal at Langkawi International Airport. The maritime exhibitions take place at Resort World Langkawi while the aerospace exhibitions take place at the Langkawi International Airport. The venues are all in close proximity to each other. The event is supported by the Malaysian government and industry associations.



## 2.6 Industry & Market Intelligence

### 2.6.1 Background of The Water Transport Industry in Malaysia

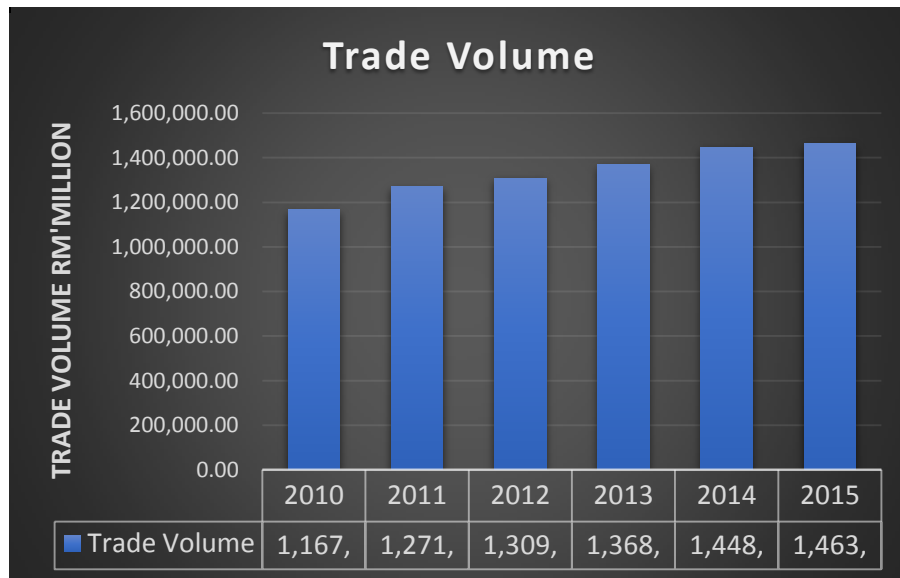


Figure 2.8: Malaysia Trade Volume 2010 - 2015 (RM' Million)

(Source: Department of Statistics Malaysia)

Figure 2.8 shows Malaysia Trade Volume from 2010-2015, where it shows an increment by year for trade volume in Malaysia, that shows how the water transport industry in Malaysia and how it develops toward incoming years.

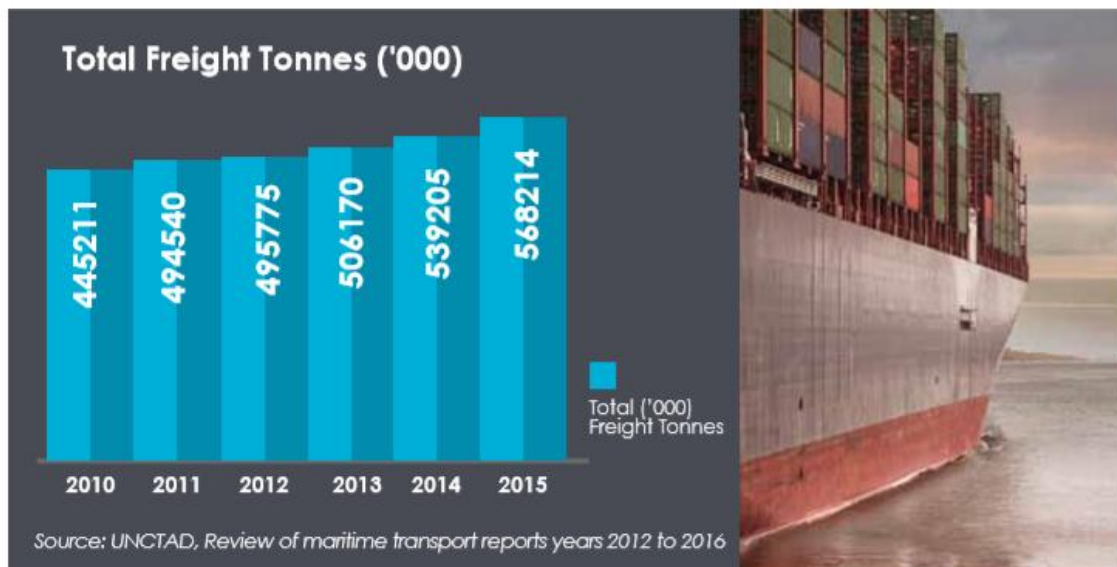


Figure 2.9: Total Freight Tonnes ('000)

(Source: UNCTAD, Review of maritime transport reports years 2012-2016)





An average of RM1,338,105 million a year Value of National cargo recorded between 2010 and 2015 (Department of Statistics Malaysia) and of this 98.5% of cargo volume was handled by the Water Transport Industry (Ministry of Transport Malaysia). This industry focuses on transport of freight and passengers divided further by sub-sectors of sea area such as sea and coastal waters; and inland waters. The water transport industry includes the transport of passengers or freight over water, whether scheduled or not. Also included is the operation of towing or pushing boats, excursion, cruise or sightseeing boats, ferries, and water taxis. Although location is an indicator for the separation between sea and inland water transport, the deciding factor is the type of vessel used.

Nonetheless, Water Transport Industry and Warehousing & Support Activities for Transportation Industry in Malaysia may generally be regarded by the stakeholders and public as Maritime Transport which is more than just ships and the provision of shipping services. The Malaysian shipping industry is supported by and in turn supports other components of the maritime transport chain. Each component plays a definitive role in determining the efficiency and competitiveness of the Water Transport Industry in Malaysia.





Figure 2.10: Maritime Transport Supply Chain

(Source: Modified from Hoffman, UNCTAD)

Figure 2.10 above explain the process or maritime transport supply chain starting from building and ended with Port/Terminal operations. This process flow is important supply chain to water transport industry.

## The Malaysian Fleet

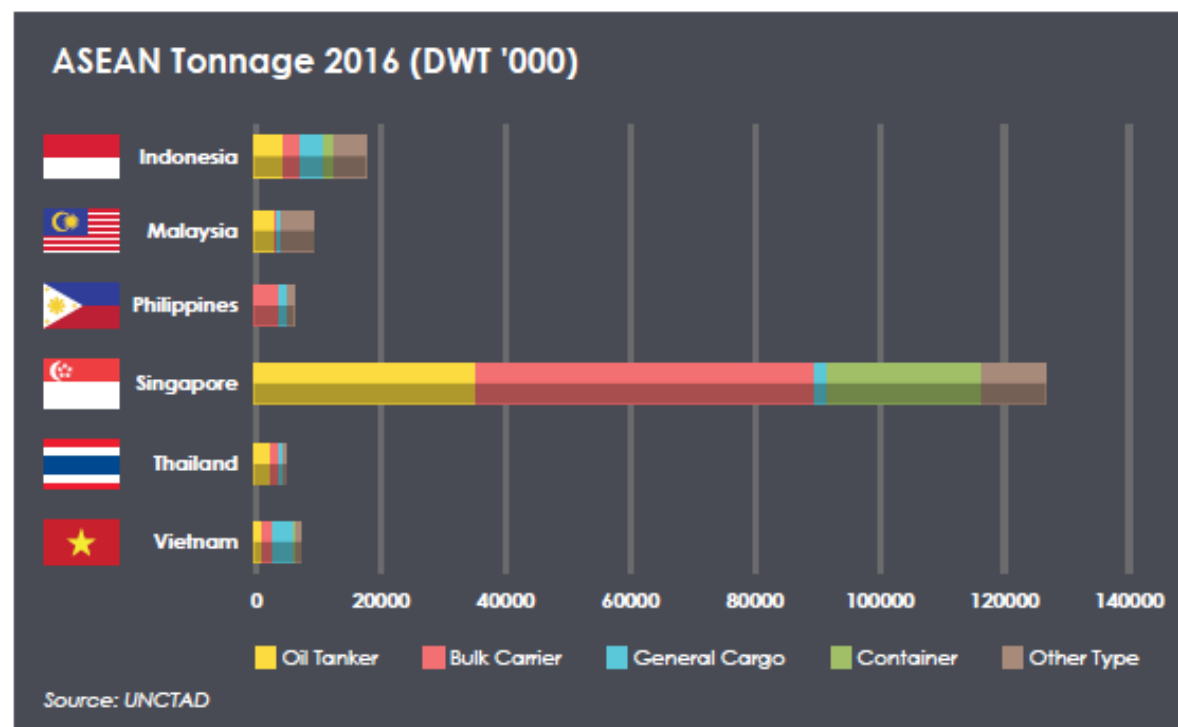
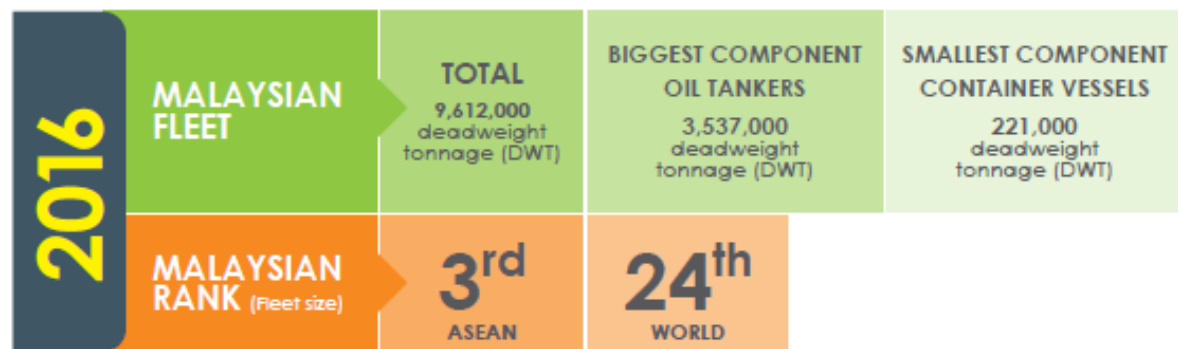


Figure 2.11: The Malaysian Fleet and ASEAN Tonnage 2016

(Source: UNCTAD)

Based on Figure 2.11, in 2016, Malaysia ranked 3<sup>rd</sup> in the ASEAN region and 24<sup>th</sup> in the world with total deadweight tonnage (DWT) of 9,612,000. Transport of goods via sea is by far the most economical when compared to air and land. Thus making water transport the most efficient transport regardless of the global economic state. Moreover, Malaysia is strategically located in the world map with the Malacca Straits receiving an average of 72,000 ships per annum transitting the straits transporting trades between Gulf and Far East.

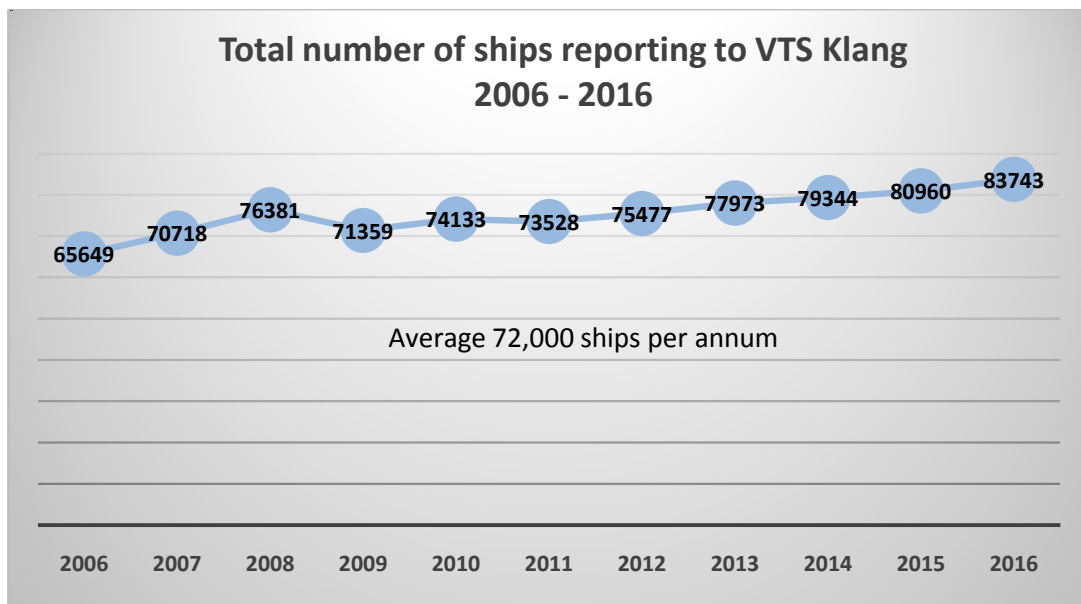


Figure 2.12: Total number of ships reporting to VTS Klang 2006 - 2016

(Source: Marine Department Malaysia)

The Figure 2.5 above, indicates the total number of ships reporting to VTS Klang from year 2006-2016. There is increasing number of ships reporting to VTS Klang from year 2006-2016 with average 72,000 ships per annum.



Malaysian shipping also supports a multitude of ancillary services and support industries. The ship building and ship repair industry, maritime legal services, and ports rely on the well-being of the shipping industry to flourish.

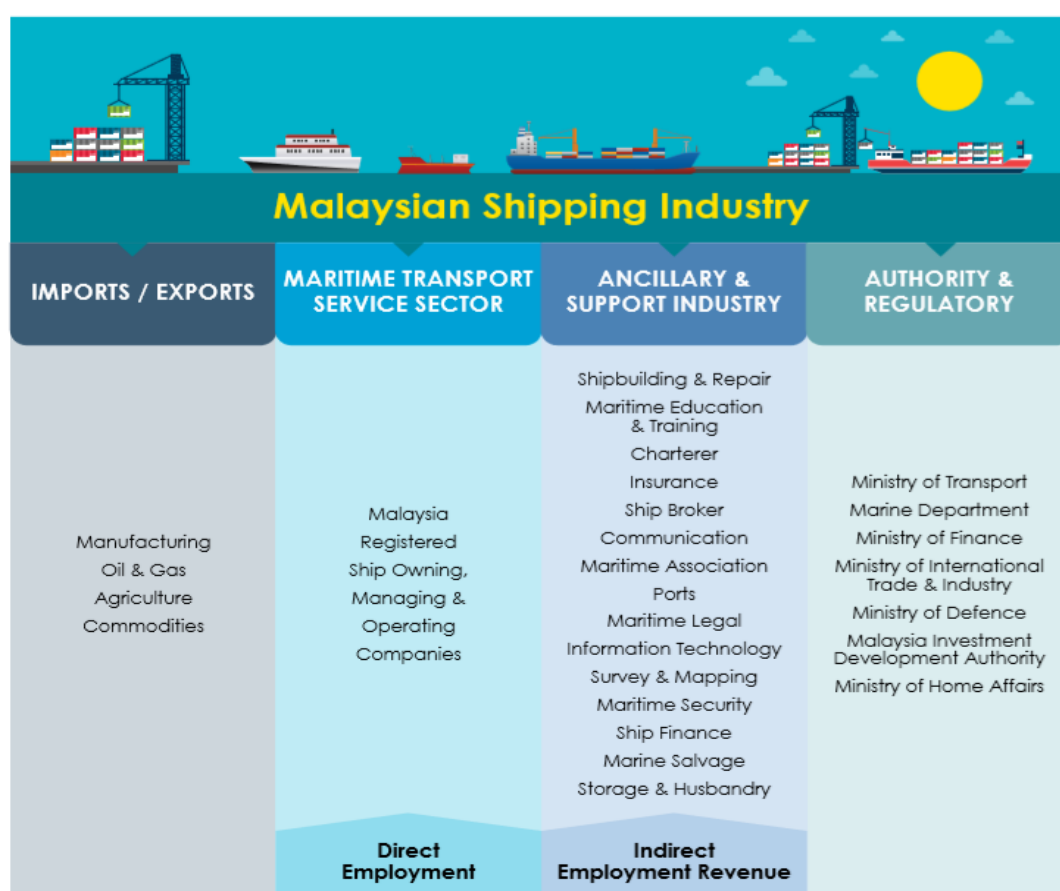


Figure 2.13: Malaysian Shipping Industry

(Source: Marine Department Malaysia)

Figure 2.13 and 2.14 explain about the Malaysian Water Transport Industry and Warehousing & Support Activities for Transportation Industry are an important and strategic parts of the Maritime Transport Supply Chain.



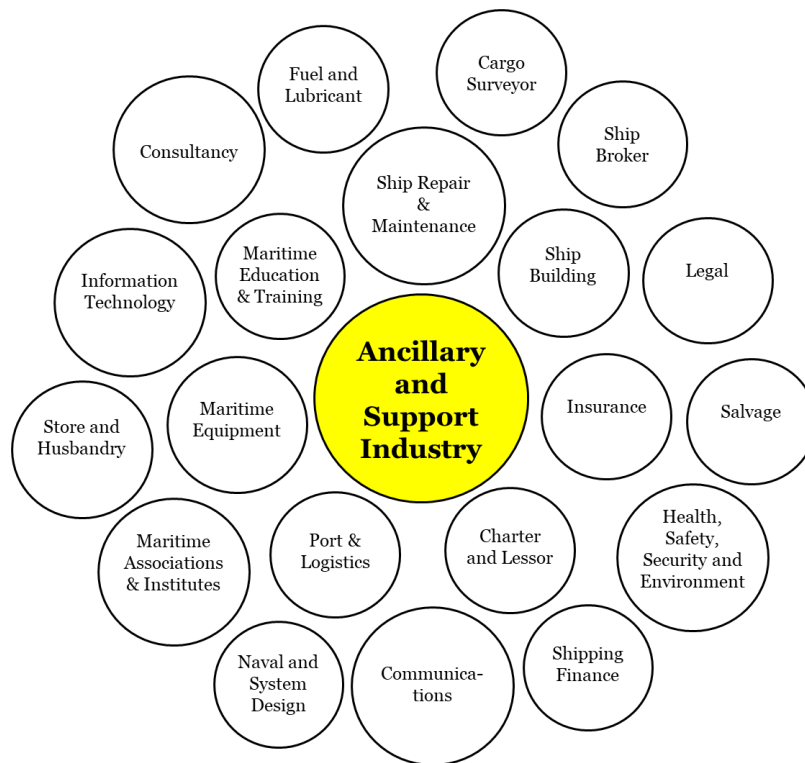


Figure 2.14: Ancillary and Support Industry

(Source: Marine Department Malaysia)

### Importance of shipping to Malaysia

Shipping is a significant contributor to the Malaysian economy. In 2016, total trade was RM1.48 trillion. 98.4% of Malaysian trade is carried by sea.



Figure 2.15: Importance of shipping to Malaysia 2016



(Source: Marine Department Malaysia)

## **2.7 Existing National Occupational Skills Standards (NOSS) Relevant to the Water Transport Industry and Warehousing & Support Activities for Transportation Industry**

The DSD has developed 37 NOSS related to Water Transport Industry and Warehousing & Support Activities for Transportation Industry as of May 2018. The summary of NOSS title is provided in the table below.



Table 2.7: Summary of NOSS developed under the Division 50 and Area 5222  
(Source: NOSS Registry May 2018)

LEVEL / SUB SECTOR	LEVEL 5	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
<b>Marine Services</b>	H501-001-5:2016 Ship Management (06-12-2016)	H501-001-4:2016 Ship Management (06- 12-2016)			
<b>Commercial Vessel Engine Maintenance</b>		TP-090-4 Watch Keeping Engineer of 750kw or More on Near Coastal Trade Voyage (25-10-10)	H501-002-3:2017 Marine Engine Maintenance Operation (25-10-10) (28-03-2017)	H501-002-2:2017 Marine Engine Room Watchkeeping (25-10-10) (28-03-2017)	
<b>Offshore Support Vessel (OSV) Engine Maintenance</b>	TP-090-5 Second Engineer Officer of 3000kw Or More on Near Coastal Trade Voyage (25-10-10)				
<b>Offshore Support Vessel (OSV) Engine</b>	H502-001-5:2016 Offshore Support Vessel (OSV) Engine Management (06-12-2016)	H502-001-4:2016 Offshore Support Vessel (OSV) Engine Maintenance (06-12-2016)			
<b>Port Operation</b>			H522-003-3:2017 Stevedore Operation Supervision (10-12-10) (28-03-2017)	H522-003-2:2017 Stevedore Operation (10-12-10) (28-03-2017)	
<b>Logistics</b>	IL-013-5:2014 Logistics Operation Management (25-06-2014)	IL-013-4:2014 Logistics Operation Administration (25-06-2014)	IL-013-3:2014 Logistics Operation Supervision (25-06-2014) L2	IL-013-2:2014 Logistics Operation (25-06-2014)	
<b>Logistic – Warehouse Fleet</b>	Not Available	Not Available	FB-013-3 Fleet Supervisor (01-10-09)	FB-013-2 Fleet Driver (01-10-09)	No Level
<b>Forwarding</b>	FB-011-5:2013 Forwarding Operation Management (30-09-97), (23-06-2009) (30-12-2013)	FB-011-4:2013 Forwarding Operation (30-09-97), (23-06- 2009) (30-12-2013)	FB-011-3:2013 Forwarding Operation (30-09-97) (23-06-2009) (30-12-2013)	FB-011-2:2013 Forwarding Operation (30-09-97), (23-06- 2009) (30-12-2013)	No Level





LEVEL / SUB SECTOR	LEVEL 5	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
<b>Free Commercial Zone (FCZ)</b>	TP-805-5:2014 Free Commercial Zone Management (16-12-2014)	TP-805-4:2014 Free Commercial Zone Administration (16-12-2014)	TP-805-3:2014 Free Commercial Zone Operations (16-12-2014)		
<b>Deck Less Than 500GT</b>		TP-025-4:2012 Navigational Watchkeeping and Cargo Operation (05-04-2012)	TP-025-3:2012 Navigational Watchkeeping and Deck Operation (05-04-2012)	TP-025-2:2012 Navigational Lookout and Deck Operation (05- 04-2012)	TP-025-1:2012 Deck Operation (05-04- 2012)
<b>500 – 3000GT Deck More Than 3000GT</b>	TP-025-5:2012 Navigational and Shipboard Operation (05-04-2012)				
<b>Harbour Tug Boat Crew</b>			TP-201-3:2013 Harbour Tug Boat Operation (30-12-2013)		
<b>Port Vessel Traffic Information System</b>			TP-202-3:2013 Vessel Traffic Information System (VTIS) Operation (Port) (30-12-2013)		
<b>Cargo Shipment Support Services</b>	TP-203-5:2014 Cargo Operation Management (25-09-2014)	TP-203-4:2014 Cargo Operation Management (25-09-2014)	TP-203-3:2013 Cargo Operation Services (30-12-2013) L2		
<b>Seaport Cargo Handling Services</b>			TP-204-3:2013 Port Operation Planning (30-12-2013)		
<b>Port Crane Operation</b>			TP-205-3: Port Equipment Container Operation (30-12-2013)		
<b>Port Maintenance</b>	TP-206-5:2014 Port Equipment Maintenance Management (25-09-2014)	TP-206-4:2014 Port Equipment Maintenance Management (25-09-2014)			



## 2.8 Chapter Summary

Based on the literature review findings, the area of Water Transport Industry and Warehousing & Support Activities for Transportation Industry is seen as one of the main potential contributors to the economic performance and foreign investment. Presently, there are several stakeholders in the industry comprising of government agencies (i.e. MOT, MDM, FPA, etc.) involved in the development and monitoring of the industry in terms of compliance to the relevant acts and regulations. The main industry associations are the MASA and IALA.

There have been 37 NOSS developed for the industry, however, due to the fast-moving advancement of technologies in the industry and in order to increase employment mobility for the workforce, it is imperative that the occupational areas are redefined in the Occupational Structure. To ensure a sustainable Water Transport Industry and Warehousing & Support Activities for Transportation Industry, the Government will take various measures to ensure that the automotive industry is competitive, domestically and globally. In addition to introducing measures that are aligned to global and regional technology changes and developments, the NTP 2018 - 2030 also aims to make Malaysia a notable maritime nation in the ASEAN region.



## CHAPTER 3: METHODOLOGY

### 3.1 CHAPTER INTRODUCTION

This section gives an overview of the strategies for data collection and potential analyses to be performed to meet the deliverables.

### 3.2 RESEARCH METHODOLOGY

There are three approaches to be employed for data collection. These three data collection approaches can be grouped into three different themes: Water Transport Industry and Warehousing & Support Activities for Transportation Industry Profiling, Online Survey, and Focus Group Discussion.

#### 3.2.1 SYSTEMATIC REVIEW

This approach requires rigorous review of existing literature that addresses a clearly formulated question. The review systematically searches, identifies, selects, appraises, and synthesizes research evidence relevant to the question using methodology that is explicit, reproducible, and leads to minimum bias. A systematic review is more exhaustive than a literature review as it includes both published and unpublished literature, often called grey literature. Grey literature is a significant part of a systematic review and adds value to the review. This is because grey literature is often more current than published literature and is likely to have less publication bias. Grey literature includes unpublished studies, reports, dissertations, conference papers and abstracts, and governmental research. This approach is designed to provide a snapshot of the Water Transport Industry and Warehousing & Support Activities for Transportation Industry landscape and outlook (such as industry trends and prospects). It provides a macroeconomic overview of the industry at sectoral level.

#### a. Data Collection Strategy

There are three main strategies for data collection:

- i. Economic Census
- ii. Database from other agencies



### iii. Literature review

For Economic Census, there are some information related to labour that are highly relevant to this study. Thus, the following information has been requested from the Department of Statistics Malaysia (DOSM).

- i. MSIC
- ii. Occupation categories at 1-digit MASCO

Information from the Economic Census serves two purposes:

- I. To provide a snapshot of the current Water Transport Industry and Warehousing & Support Activities for Transportation Industry landscape and outlook.
- II. To serve as control figures and baselining database when assessing data obtained from the online survey.

In addition to the Economic Census, database from other agencies (local and international agencies) that are relevant to Water Transport Industry and Warehousing & Support Activities for Transportation Industry will be collected and analysed. Based on our initial observation, the following database contain relevant information for the industry.

- I. Local database – JPK, MOT, MASA, MIMA and Marine Department
- II. International database – Organization for Economic Co-operation and Development (OECD), World Bank and European Union (EU), UNCTAD, IMO and IALA.

Database in the form of online resources and published reports will be collected from the local and international agencies.

For the literature review, relevant scientific research publications related to the industry will be reviewed. Database and findings from the publications will be emphasized in the review process.

## **b. Analyses**

Based on the three databases, the following analyses are expected to be carried out.



- I. Examining the economic performances of the industry by looking at several macroeconomic indicators (such as GDP, employment and output).
- II. Analysing the industry outlook in relation to regional and global perspectives.
- III. Determining the profile of the current and future workforce (such as occupations, and salaries and wages).
- IV. Reviewing technological development in the industry (such as robotic & automation as well as element of IR4.0).

**c. Outcomes**

The following outcomes are expected to be produced.

- i. The structure of Division 50 & Division 52 in the Water Transport Industry and Warehousing & Support Activities for Transportation Industry
- ii. A snapshot of the industry by linking the economic and labour market segments.
- iii. Benchmarking analysis that provides the perspective of the domestic sector against the regional and global industry outlook.

### **3.2.2 SURVEYS AND QUESTIONNAIRES**

The questionnaire is designed by combining both qualitative and quantitative methods. A specific survey questionnaire has been developed for the online survey. The survey questionnaire has 4 sections, covering the key information shown below. The full questionnaire is also attached in Annex 3 for reference.

#### **Section 1: Competency in Demand**

This section is exploring the competency that is required by the industry. Another objective of this section is trying to figure out the skills gap and how to overcome the gap.

#### **Section 2: Jobs in Demand**

This section is aimed to determine which category of workers that is in shortage supply or over supply, the category is based on MASCO such as skilled workers, semi-skilled workers and low skilled workers.

#### **Section 3: Emerging Skills**



This section is trying to determine the readiness of industry players and the workers in the advent of IR4.0. The technology drives or pillars of IR4.0 is listed and the respondents have to decide the relevancy of each element in their line of duty.

#### **Section 4: Related Issues**

This section is exploring the common issues surrounding the industry. The respondents are asked to suggest ways of overcoming those issues.

The survey duration is estimated to be approximately 15 minutes to include only questions focusing on key information required and to minimise respondents' fatigue that could reduce the accuracy of responses. The researchers are to follow up and collect the completed questionnaire from the respondents.

##### **a. Data Collection Strategy**

Costing is an important consideration that influences the determination of sampling size for a primary survey. The population of the industry is large and will require a significant financial budget if a nationally representative survey is the primary target. The consultation with related associations concluded that a nationally representative survey will not be feasible. Instead of aiming for a nationally representative sample, our survey aims to increase participation rates from industries.

There are three approaches for the data collection.

- i. Approaching the related associations' members. The secretariat of each association has agreed to distribute the questionnaire. Industry engagements/interviews/visits will be scheduled to seek their assistance to distribute the online survey to the members of respective associations.
- ii. Assistance from Marine Department, MASA, MOT&MIMA may also be required to provide the institutional support when engaging the selected respondents.

In the case where the response rates are low, face-to-face interviews will be conducted to complement the online survey.



## **b. Analyses**

The following analyses are expected to be performed for the online survey.

- i. Descriptive analysis of employment profiles and other variables that are included in the questionnaire.
- ii. Analysis of critical occupations identified by the industry
- iii. Analysis of future trend of the occupational demand by various skills category including TVET related occupations.
- iv. Analysis of talent gaps between supply and demand according to NOSS and MQA standards
- v. Analysis of training provided by industries to employees

## **c. Outcomes**

The following outcomes are expected to be produced.

- i. In line with the objectives of the study, the online survey will provide vital information such as job creation, vacancies, hard-to-fill jobs, turnover, redundancies, expected job creation, wages and labour cost.
- ii. Identification critical occupations demanded by the industry
- iii. Linking TVET based on NOSS to the occupational list based on MASCO for the M&E sector
- iv. Talent gaps between supply and demand according to NOSS and MQA standards
- v. Assessment of training provided by industries to employees
- vi. Assessment of skills and competencies analysis of the existing workforce
- vii. Identification of future occupational demand and outlook for various aspects including globalization, consumer behaviour, innovation and technology adoption.



### 3.2.3 FOCUS GROUP DISCUSSION

A series of industry engagement based on focus group discussion (FGD) will be conducted to enable deep-dive discussions on the issues of the industry workforce. The FGD involves the discussion on the occupational structure, job description, assessment of curriculum and training programs; accreditation and qualification based on NOSS and MQA framework; potential workforce challenges; future outlook and strategic recommendations to be proposed.

#### a. Data Collection Strategy

Sector experts are engaged by applying various mediums such as brainstorming, focus group, interview, on-site visit, emails etc. Experts from the Water Transport Industry and Warehousing & Support Activities for Transportation Industry were identified for further communication and contact. The details of the experts are in Annex 2; List of Contributors.

The list of experts involved in FGD is as follows:

NO.	NAME	POSITION & ORGANISATION
1	FaraDelaBinti A Kadir	Secretary Women in Maritime Association Malaysia (Mywima)
2	MohdEszlyFauzi Bin Zulkifli	Dpa/Cso AlamMaritimSdnBhd
3	Mohamad Hisham Bin Ali	KetuaPenolongPengarah
4	Dr. YasminBintiMohdHasni	Ahli Majlis IkhtisasKelautan Malaysia (Ikmal)
5	MohdShuhairi Bin Abdullah	PengurusLatihan Dan Pendidikan Maritime Skills SdnBhd
6	Capt. Jasni Bin Mihat	MalimPelabuhan Penang Port SdnBhd
7	Capt. MohdNazri Bin Sharif	PengurusOperasi PlomoSdnBhd
8	Capt. Abdul Rahim Bin Akob	Managing Director Vessport Technology SdnBhd
9	Capt. Kamal Ariffin Bin Idris	AgmOperasiKawalselia LembagaPelabuhanKlang
10	Capt. Rosli Bin Ahmad	Senior Supervisor VtsKlang





In the process of gathering the input, Brainstorming technique was adopted and were attended by development panel members who discussed the different sub-sectors and areas. Facts obtained during the literature review were also discussed and presented to the development panel members. The information gathered was then used as input to the Occupational Framework of the said sub-sector. Workshops and interviews were conducted during the development of the Water Transport Industry and Warehousing & Support Activities for Transportation Industry Sector Occupational Framework. Follow up discussions with the expert panel members were done in smaller groups to verify the findings of the Occupational Framework.

#### **b. Analyses**

The following analyses are expected to be carried-out for FGD sessions.

- i. Review initial findings obtained from the online survey.
- ii. Assess the potential workforce challenges faced by the overall industry and any important sub-sectors would be useful (such as automation level of an industry).
- iii. Examine the demand and supply of talent in the Water Transport Industry and Warehousing & Support Activities for Transportation Industry sector according to NOSS and MQA standards.
- iv. Review the curriculum and training program relevant for the Water Transport Industry and Warehousing & Support Activities for Transportation Industry workforce occupations in coordination with accreditation (MQA and JPK) and training providers, comprising local academic institutions (universities or colleges), vocational and other training entities.
- v. Analysis of future trend of the occupational demand by various skill categories including TVET related occupations.

#### **c. Outcomes**

The following outcomes are expected to be produced. Some of the outcomes are complement to the deliverables of online survey.



- i. Occupational Structure (OS), Job Description and Critical Job Titles
- ii. Qualitative assessment which will be linked to policy discussion related to industry development and workforce planning.
- iii. Talent gaps between supply and demand of labor according to NOSS and MQA standards
- iv. Assessment of curriculum and training programs provided
- v. Awareness assessment of NOSS and TVET requirements among industry players
- vi. Key strategic recommendations and implementable action plans to address talent gaps.

### **3.3 CHAPTER SUMMARY**

This chapter has elaborated on the methodology used in the study which is through literature review, online survey and focus group discussion. The results of the Occupational Structure and Occupational Description development and skills in-demand identified by focus group and sector surveys are presented in the next chapter, Chapter 4: Findings.



## CHAPTER 4: FINDINGS

### 4.1 Chapter Introduction

This chapter elaborates the findings from the research works. The findings revolve around the objectives set for the study namely; to produce Occupational Structure (OS) from data analysis, interviews, site visits and focus group; to determine job descriptions of each job title from the OS; and to investigate the skills in demand in the sector.

### 4.2 Surveys and Questionnaires Analysis

The respondents for the surveys and questionnaires are involving 37 respondents, the designation of the respondents ranging from HR executives to senior managers. The results of the surveys and questionnaires are presented below:

#### 4.2.1 Section 1: Competency in Demand

This section is exploring the competency that is required by the industry. Another objective of this section is trying to figure out the skills gap and how to overcome the gap.

The respondents have listed 9competencies in demand for workers. The competency is listed as follows and the score is presented in the graphs below:



### Communication skills

37 responses

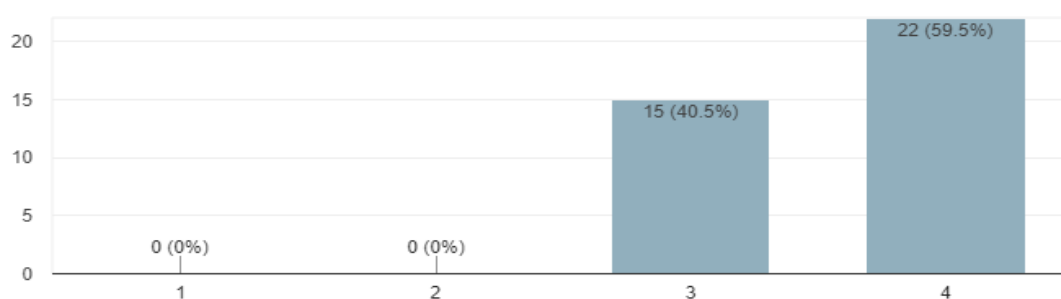


Figure 4.1: Communication skills

### Knowledge of the tools used in the Industry

37 responses

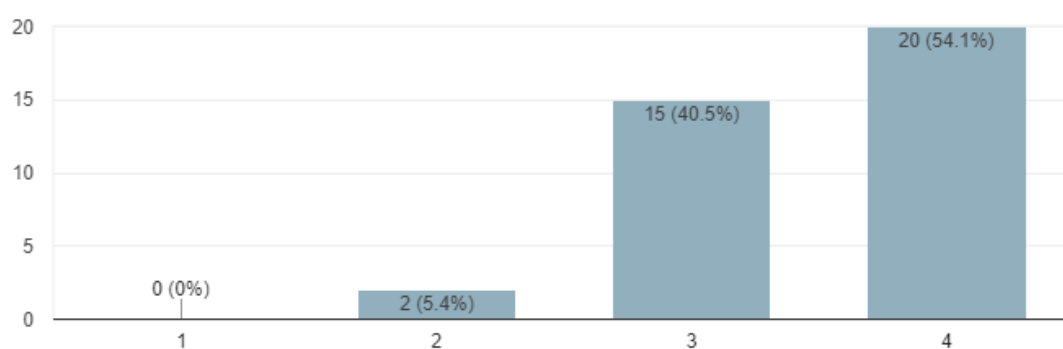


Figure 4.2: Knowledge of the tools used in the industry



### Knowledge of the Industry

37 responses

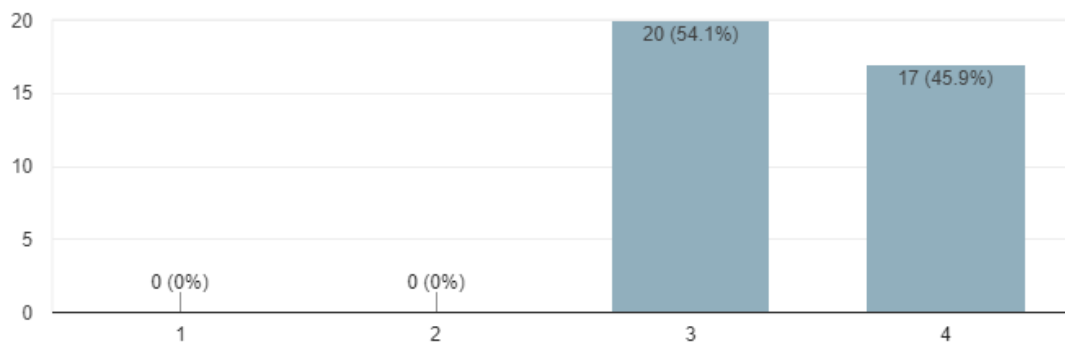


Figure 4.3: Knowledge of the industry

### Knowledge of maritime language

37 responses

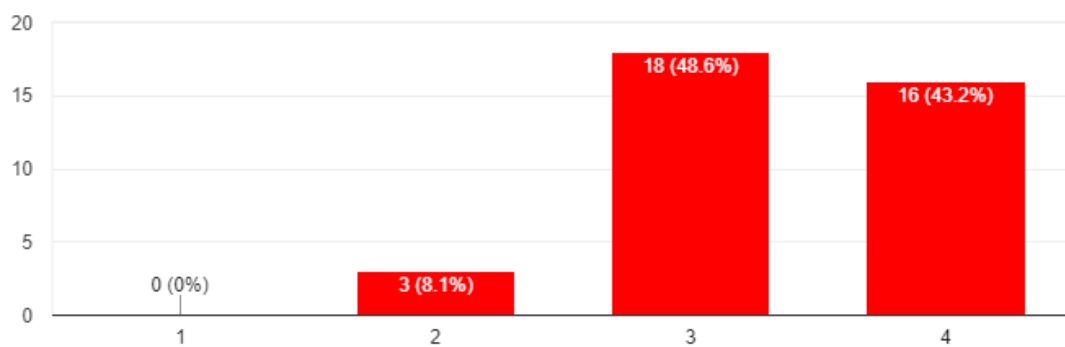


Figure 4.4: Knowledge of maritime language



### Knowledge of Legislation applicable to the Industry

37 responses

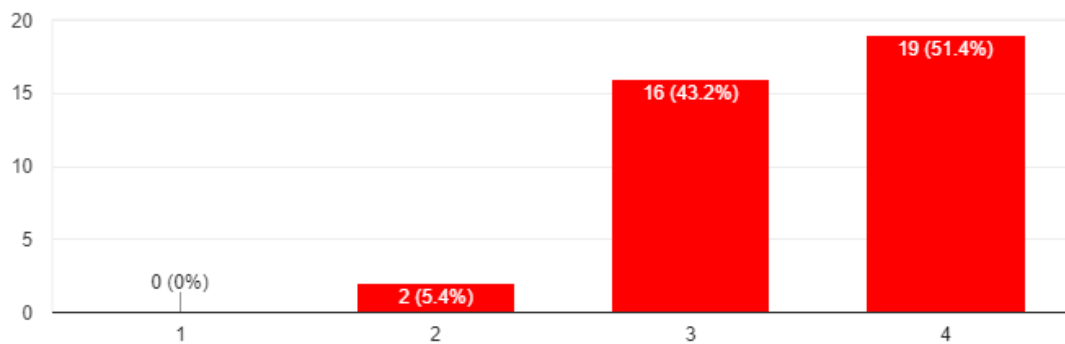


Figure 4.5: Knowledge of Legislation applicable to the industry

### Technical know-how of current technology in the Industry

37 responses

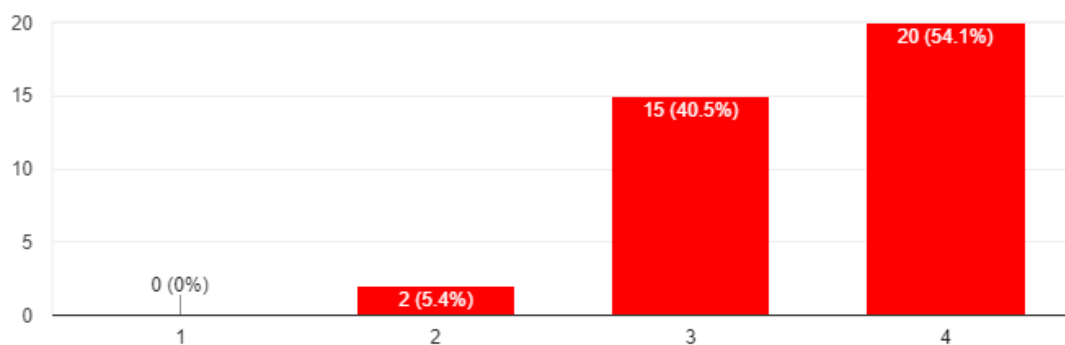


Figure 4.6: Technical know-how of current technology in the industry



## Customer service skills

37 responses

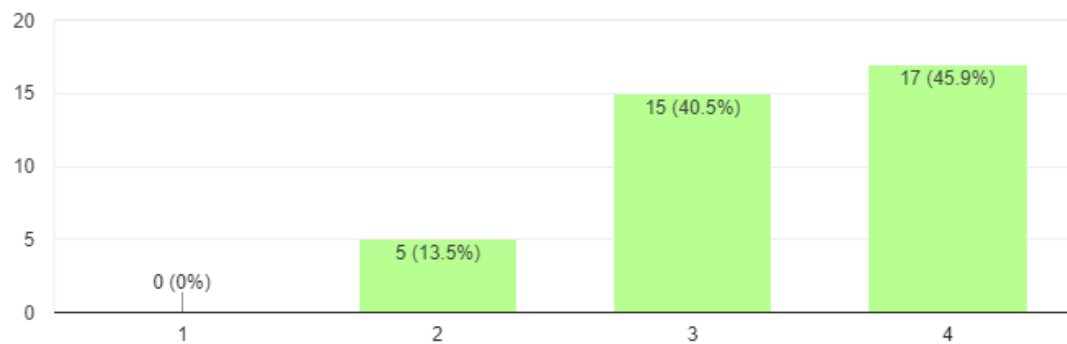


Figure 4.7: Customer service skills

## General attitude towards work (commitment, resourcefulness, teamwork, etc.)

37 responses

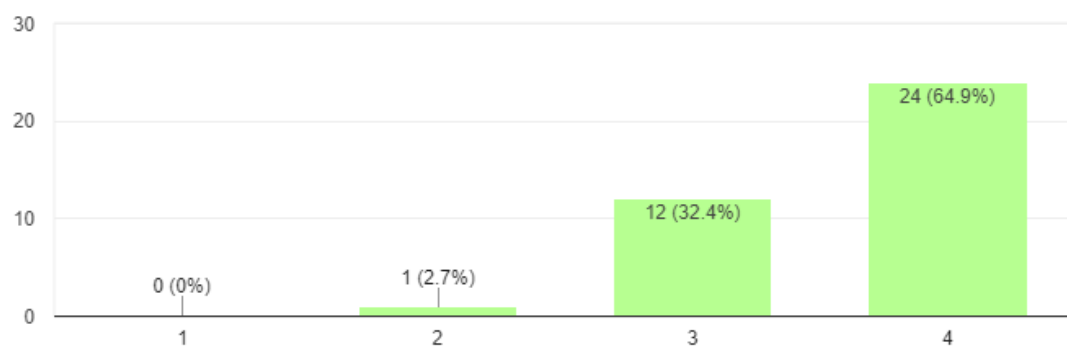


Figure 4.8: General attitude towards work (commitment, resourcefulness, teamwork, etc.)



## Troubleshooting / problem solving skills

37 responses

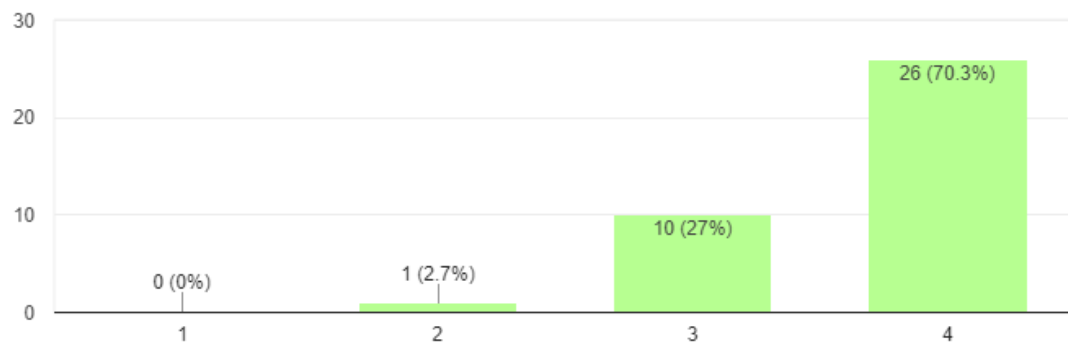


Figure 4.9: Troubleshooting/ problem solving skills

Based on respondent's answer, the skills that highly demanded by the employer for worker are troubleshooting/ problem solving skills and General attitude towards work (commitment, resourcefulness, teamwork, etc.)

Based on your observation, do you think the graduates / trainee / apprentice / current workers possess the skills required by the industry?

37 responses

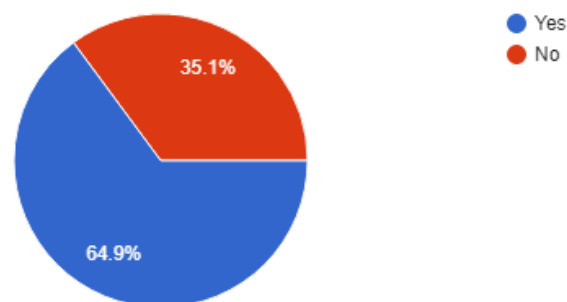


Figure 4.10: Skills mismatch responses

64.9% of the respondents agreed that the graduates / trainee / apprentice / current workers have the required skills by the employers. The reasons for that are shown in the chart below:





### What is/are the reason/s for the skills gap?

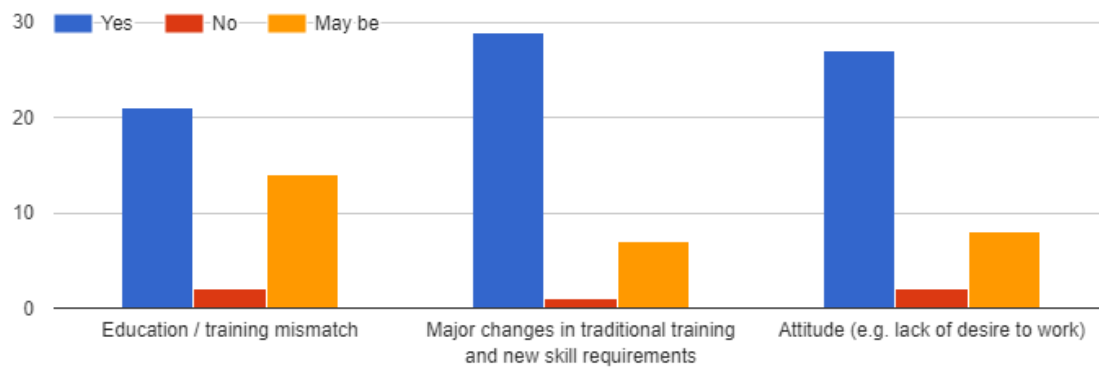


Figure 4.11: Reasons for skills gap

The respondents ranked major changes in traditional training and new skill requirements as the main reason for skills gap and attitude as the second main contributing factor.

### What is/are solution/s for the skills gap would you suggest?

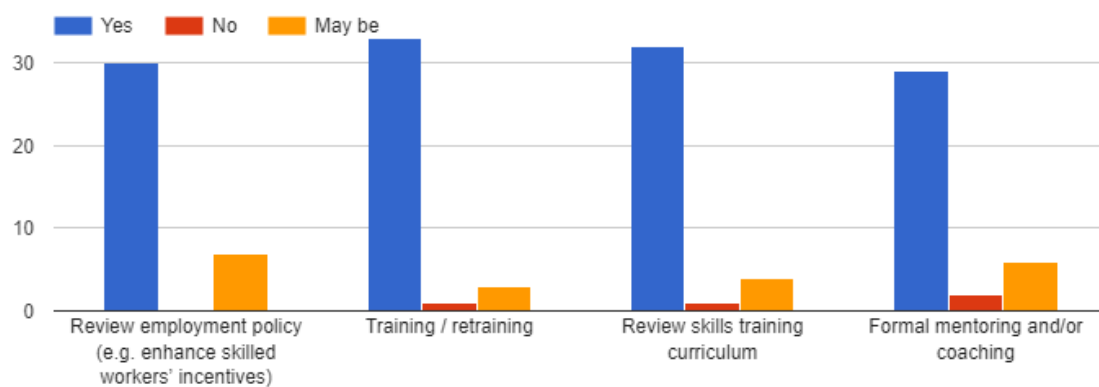


Figure 4.12: Solution of skills gap

Majority of the respondents suggested that training and retraining must be performed and skill training curriculum must be revised and suits the current requirements of the industry.



#### 4.2.2 Section 2: Jobs in Demand

This section is aimed to determine which category of workers that is in shortage supply or over supply, the category is based on MASCO such as skilled workers, semi-skilled workers and low skilled workers.

##### Knowledge of handing tools used within the Industry

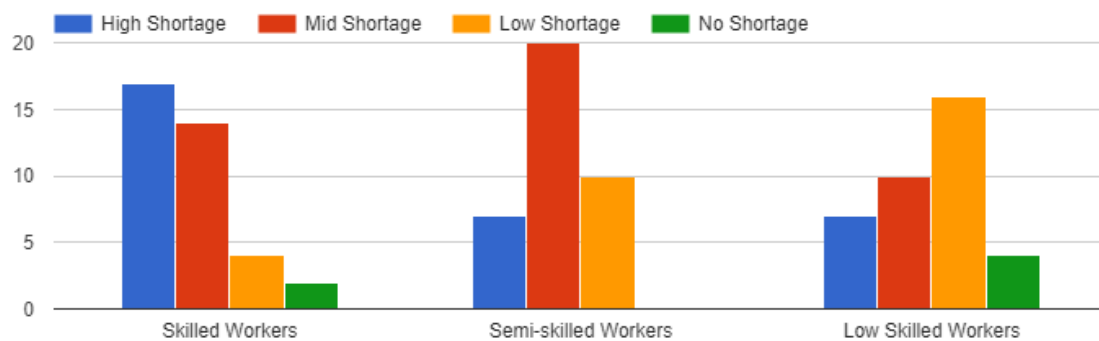


Figure 4.13: Knowledge of the tools used in the industry

The knowledge of handling tools used within the industry for division 50 and group 522 are highly demand skilled workers as skilled worker in this sector are short in manpower.



## Research & Development of Techniques within the Industry

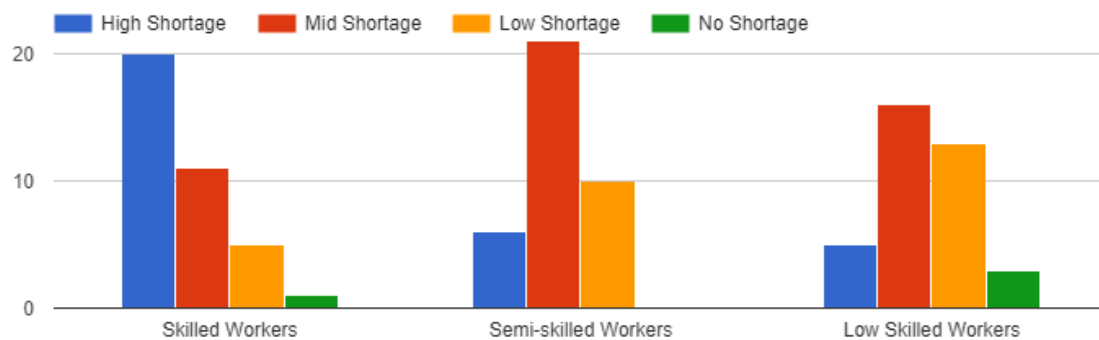


Figure 4.14: Research and Development of Techniques within the Industry

Research and development of technique within the industry for division 50 and group 522 are highly demand skilled workers as skilled worker in this sector are short in manpower.

### 4.2.3 Section 3: Emerging Skills

This section is trying to determine the readiness of industry players and the workers in the advent of IR4.0. The technology drives or pillars of IR4.0 is listed and the respondents have to decide the relevancy of each elements in their line of duty.



## Do you think automation would give an impact to the economic activities?

37 responses

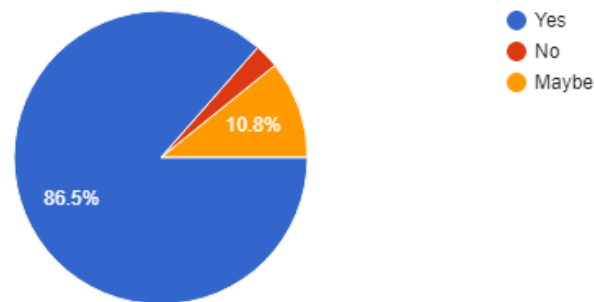


Figure 4.15: Impact of IR40 to the industry

86.5% of the respondents agreed that IR4.0 would give an impact to this sector. The respondents agreed that all the 9 technology pillars would affect the work of water transport industry especially for Level 4 and above as shown in Chart 4.16 below.

Listed below are nine (9) technology pillars of Industrial Revolution (IR) 4.0 - between Knowledge and R&D, which one is most lik... to be affected by these technology pillars

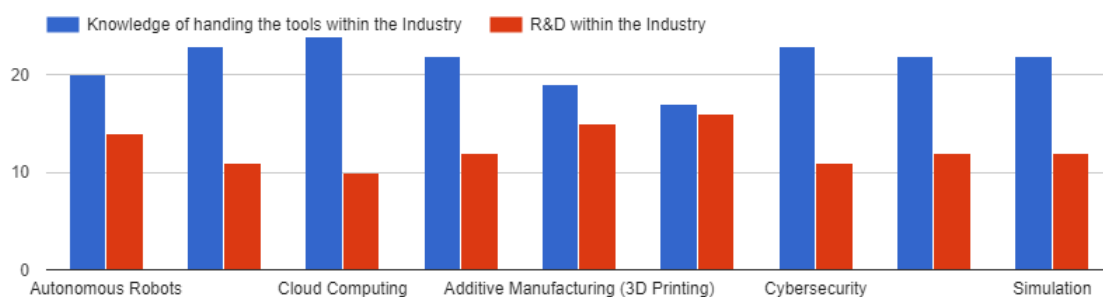


Figure 4.16: The 9 technology drives of IR4.0 in relation to division 50 and group 522



List of important prerequisite and skills required in order to equip the workforce for automation. Select prerequ...kills that are relevant to the job area

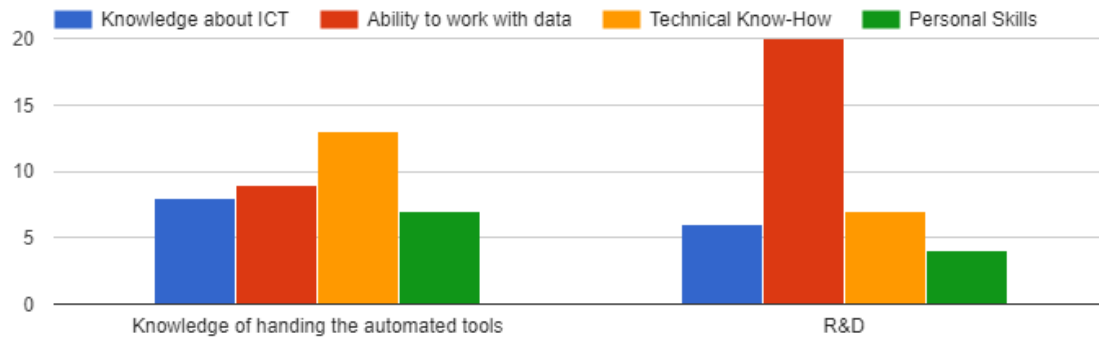


Figure 4.17: Required skills for IR4.0 for Division 50 and group 522

In order to survive in the era of IR4.0, the respondents unanimously ranked ability to work with data and technical know how as the most important required skills for IR4.0.

#### 4.2.4 Section 4: Related Issues

This section is exploring the common issues surrounding the industry. The respondents ranked the most relevant issues for the industry.

##### Insufficient manpower

37 responses

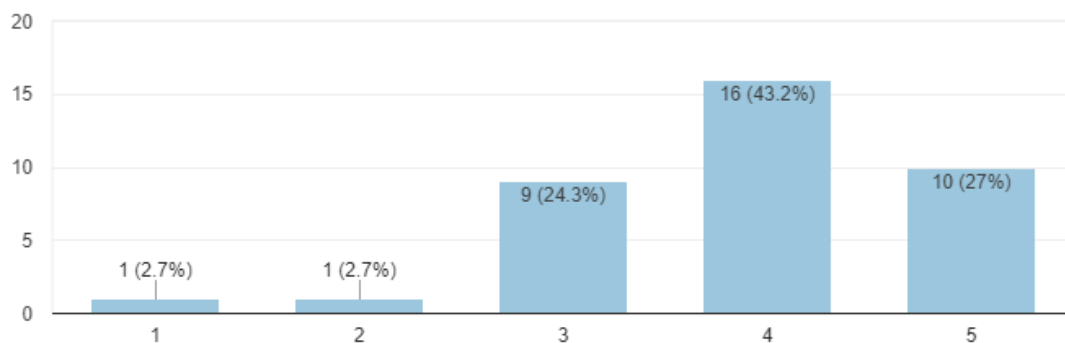


Figure 4.18: Insufficient manpower

### Low skilled and low performance workforce

37 responses

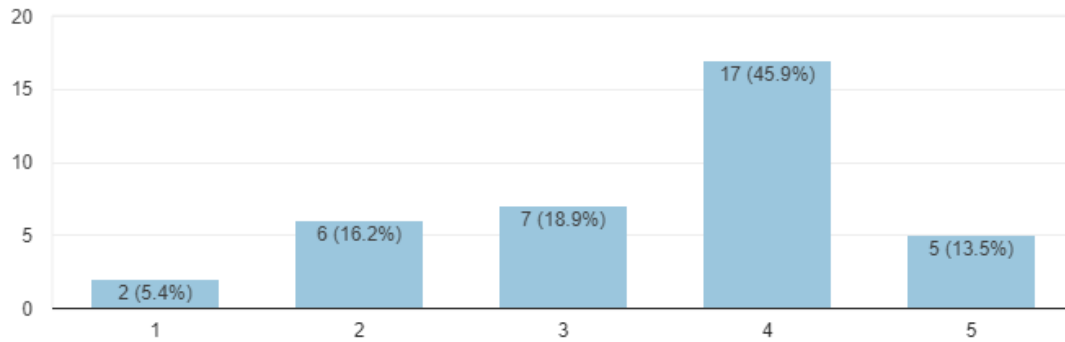


Figure 4.19: Low skilled and low performance workforce

### High dependency on foreign labour

37 responses

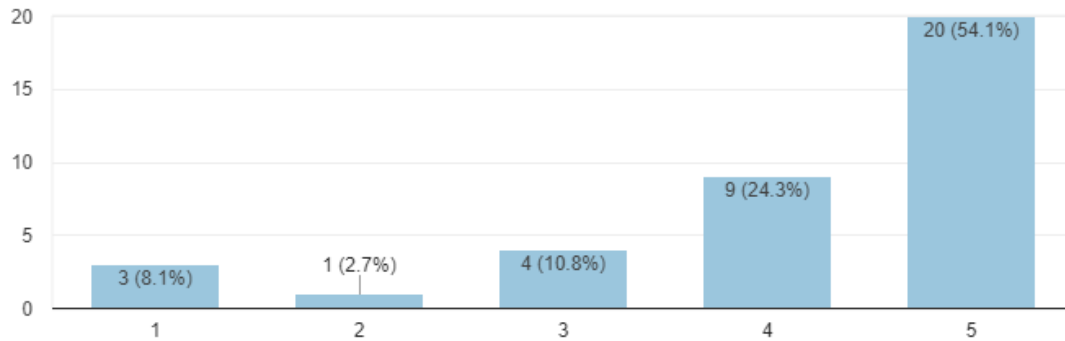


Figure 4.20: High dependency on foreign labour



### Underpayment of wages lead to high turn over

37 responses

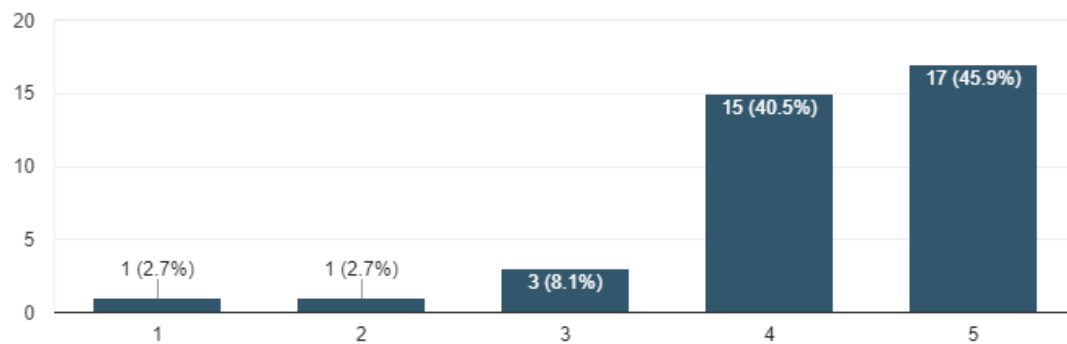


Figure 4.21: Underpayment of wages lead to high turn over

### Government policy/regulation

37 responses

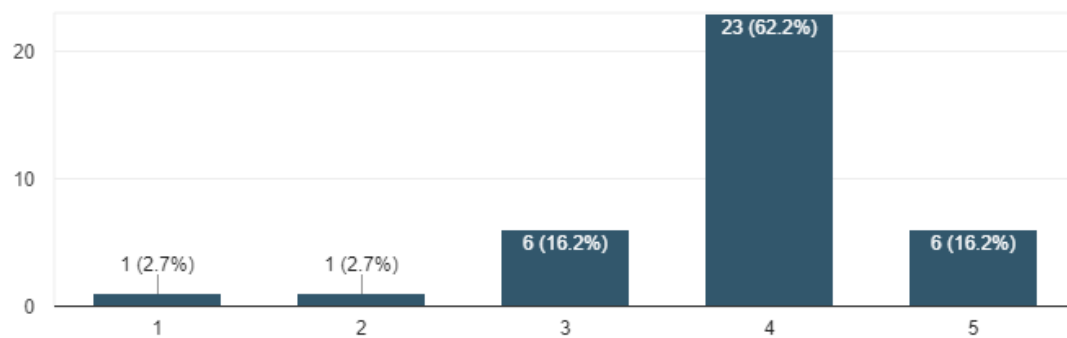


Figure 4.22: Government policy/ regulation



### Labour costs (wages)

37 responses

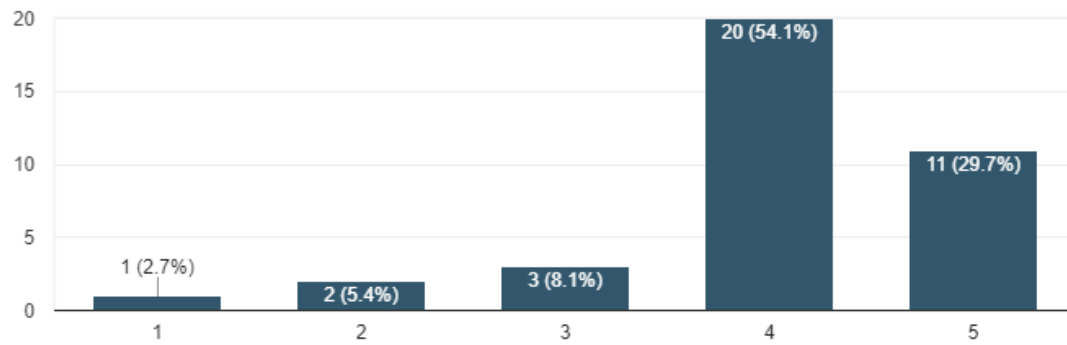


Figure 4.23: Labour costs (wages)

### Labour costs (sub-contractors)

37 responses

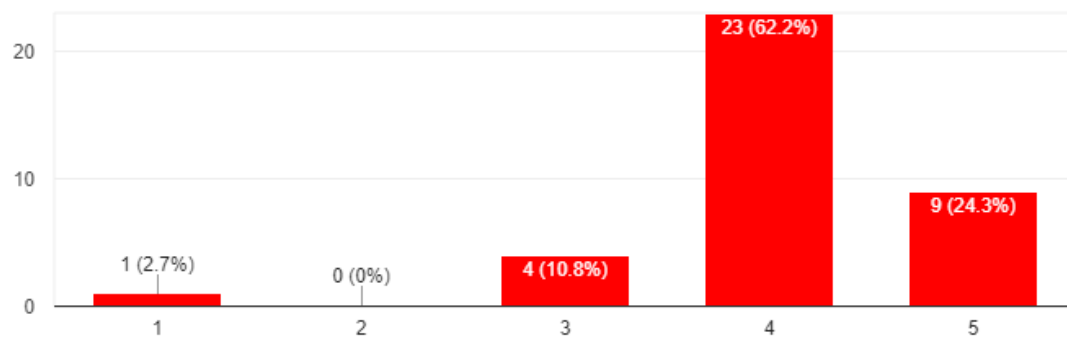


Figure 4.24: Labour costs (sub-contractors)





## Technological change

37 responses

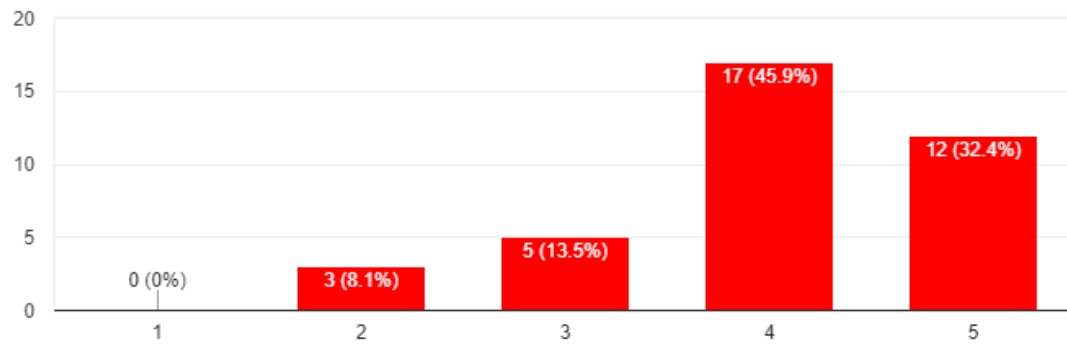


Figure 4.25: Technological Change

## Maintaining profitability

37 responses

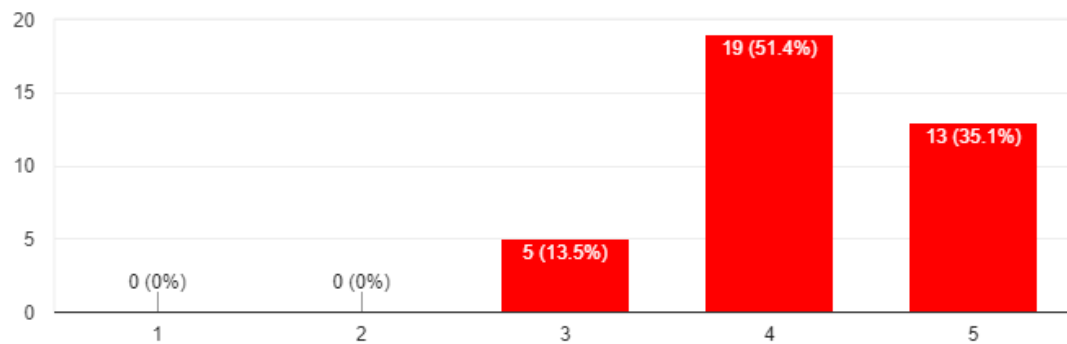


Figure 4.26: Maintaining profitability



## Economic conditions

37 responses

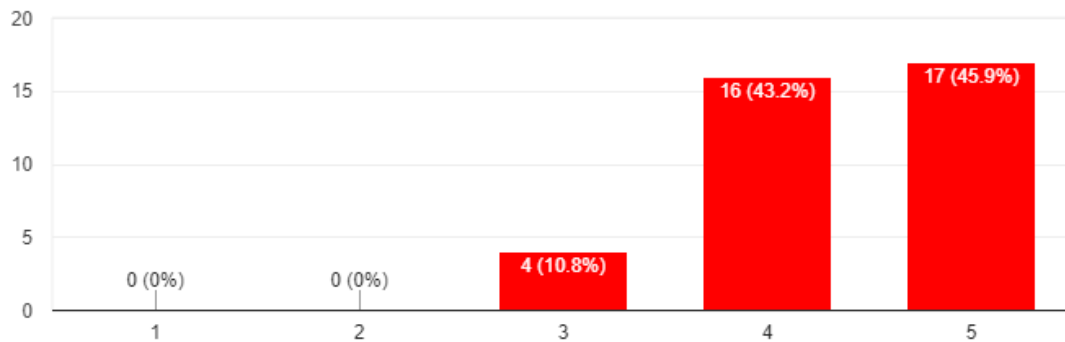


Figure 4.27: Economic conditions

Majority of the respondents agree that government policies/regulations as the main issues and labour costs (sub-contracts) as second main issues for the water transport industry.



### 4.3 OCCUPATIONAL STRUCTURE (OS)

Table 4.1: Group 501 Occupational Structure (1 of 2)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(501) SEA AND COASTAL WATER TRANSPORT				
AREA	Deck - Near Coastal <500GT	Deck - Near Coastal 500GT– 3000GT	Deck - Near Coastal >3000GT	Deck -Unlimited>500GT	Engine - Near Coastal Between 750kWto3000kW
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Master**	Not Available
LEVEL 6	Not Available	Master**	Master**	Chief Officer**	Chief Engineer**
LEVEL 5	Master**	Chief Officer**	Chief Officer**	2 <sup>nd</sup> Officer**	2 <sup>nd</sup> Engineer**
LEVEL 4	Mate/WKO**	WKO* **	WKO* **	3 <sup>rd</sup> Officer**	WKE**
LEVEL 3	Bosun / Able Bodies Seaman	Bosun / Able Bodies Seaman	Bosun / Able Bodies Seaman	Bosun / Able Bodies Seaman	Oiler / Greaser**
LEVEL 2	Ordinary Seaman	Ordinary Seaman	Ordinary Seaman	Ordinary Seaman	Engine Rating
LEVEL 1	No Level	No Level	No Level	No Level	No Level

Note: \*Critical Job Titles

\*\* Jobs relevant to IR 4.0



Table 4.2: Group 501 Occupational Structure (2 of 2)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(501) SEA AND COASTAL WATER TRANSPORT				
AREA	Engine - Near Coastal More Than 3000kW	Engine - Unlimited Between 750kW to 3000kW	Engine - Unlimited More Than 3000kW	Ship Catering	Ship Hotel
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Chief Engineer**	Not Available	Not Available
LEVEL 6	Chief Engineer**	Chief Engineer**	2 <sup>nd</sup> Engineer**	Not Available	Not Available
LEVEL 5	2 <sup>nd</sup> Engineer**	2 <sup>nd</sup> Engineer / 3 <sup>rd</sup> Engineer* **	3 <sup>rd</sup> Engineer* **	Administration Officer	Manager
LEVEL 4	WKE**	WKE**	4 <sup>th</sup> Engineer* **	Chief Steward/Chef	Purser
LEVEL 3	Oiler / Greaser**	Oiler / Greaser**	Oiler / Greaser**	Chief Cook	Supervisor
LEVEL 2	Engine Rating	Engine Rating	Engine Rating	Cook	Waiter
LEVEL 1	No Level	No Level	No Level	Steward	No Level

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0



Table 4.3: Group 502 Occupational Structure (1 of 1)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(502) INLAND WATER TRANSPORT				
AREA	Deck - Domestic <500GT	Engine - Domestic <750kW	Engine - Domestic Between 750kW to 3000kW	Ship Catering	Ship Hotel
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Not Available	Not Available	Not Available	Administration Officer	Manager
LEVEL 4	Master**	Chief Engineer**	Chief Engineer**	Chief Steward/Chef	Purser
LEVEL 3	Mate**	Engine Officer**	Engine Officer**	Chief Cook	Supervisor
LEVEL 2	Bosun / Able Bodies Seaman	Oiler / Greaser**	Oiler / Greaser**	Cook	Waiter
LEVEL 1	No Level	No Level	No Level	Steward	No Level

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0



Table 4.4: Group 522 Occupational Structure (1 of 5)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(522) SUPPORT ACTIVITIES FOR TRANSPORTATION				
AREA	Shipping Agent	Forwarding Agent	Navigational Support	Pilotage	Towage
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Manager**	Manager**	Manager**	Pilot Superintendent**	Not Available
LEVEL 4	Executive**	Documentation Executive	Controller**	Pilot**	Tug Master* **
LEVEL 3	Boarding Officer**	Customer Service	Assistant Controller**	No Level	Tug Officer / Engineer**
LEVEL 2	Clerk	Clerk	No Level	No Level	Able Bodies Seaman*
LEVEL 1	Dispatch	Dispatch	No Level	No Level	No Level

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0



Table 4.5: Group 522 Occupational Structure (2 of 5)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(522) SUPPORT ACTIVITIES FOR TRANSPORTATION				
AREA	Mooring	Mooring	Storage	Distribution / Consolidation	Packaging
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Not Available	Not Available	Warehousing Manager**	Warehousing Manager**	Warehousing Manager**
LEVEL 4	Not Available	Not Available	Warehousing Executive**	Warehousing Executive**	Warehousing Executive**
LEVEL 3	Mooring Supervisor	Mooring Supervisor	Storage Supervisor**	Consolidation & Distribution (C&D) Supervisor**	Packaging Supervisor**
LEVEL 2	Boat Crew*	Mooring Gang*	Storage Assistant	Consolidation & Distribution (C&D) Assistant*	Packaging Assistant
LEVEL 1	No Level	No Level	Cargo / Equipment Handler	Cargo / Equipment Handler	Cargo / Equipment Handler

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0



Table 4.6: Group 522 Occupational Structure (3 of 5)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(522) SUPPORT ACTIVITIES FOR TRANSPORTATION				
AREA	Liquid Storage	Cruise / Passenger	Containerised	Non - Containerised	Stevedoring
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Terminal Manager**	Operation Manager**	Operation Manager**	Operation Manager**	Operation Manager**
LEVEL 4	Assistant Terminal Manager**	OperationAssistant Manager**	Operation Assistant Manager**	OperationAssistant Manager**	Operation Assistant Manager**
LEVEL 3	Supervisor**	EquipmentSupervisor**	EquipmentSupervisor**	Equipment Supervisor**	Stevedore Supervisor**
LEVEL 2	Handler	EquipmentOperator**	EquipmentOperator**	EquipmentOperator**	Signalman**
LEVEL 1	General Worker	Cargo Handler	Cargo Handler	Cargo Handler	Cargo Handler

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0





Table 4.7: Group 522 Occupational Structure (4 of 5)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(522) SUPPORT ACTIVITIES FOR TRANSPORTATION				
AREA	Stevedoring	Liquid Cargo	Liquid Cargo	Bunkering	Bunkering
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Operation Manager**	Master**	Terminal Manager**	Master**	Terminal Manager**
LEVEL 4	Operation Assistant Manager**	Loading Master**	Loading Master**	Chief Engineer**	Assistant Terminal Manager**
LEVEL 3	Stevedore Supervisor**	Supervisor**	Supervisor**	Bunkering Services Supervisor**	Supervisor**
LEVEL 2	Winchman**	Hose Handler	Technician	Pumpman	Technician**
LEVEL 1	Cargo Handler	No Level	No Level	Ship Crew	GW

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0



Table 4.8: Group 522 Occupational Structure (5 of 5)

SECTION	(H) TRANSPORTATION AND STORAGE		
DIVISION	(50) WATER TRANSPORT		
GROUP	(522) SUPPORT ACTIVITIES FOR TRANSPORTATION		
AREA	Waste Disposal	Ship Chandling	Lashing
LEVEL 8	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available
LEVEL 5	Not Available	Manager**	Manager**
LEVEL 4	Not Available	Assistant Manager**	Assistant Manager**
LEVEL 3	No Level	Chandling Supervisor**	Lasher Supervisor**
LEVEL 2	Equipment Operator	EquipmentOperator**	Lashing Foreman**
LEVEL 1	Cargo Handler	Cargo Handler	Lasher

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0



Table 4.9: Summary of Job Titles

No	Job Area	Level								Total Identified Job Titles
		1	2	3	4	5	6	7	8	
501-SEA AND COASTAL WATER TRANSPORT										
1	DECK - Near Coastal <500GT	N/L	1	1	1	1	N/A	N/A	N/A	4
2	DECK - Near Coastal 500GT - 3000GT	N/L	1	1	1	1	1	N/A	N/A	5
3	DECK - Near Coastal >3000GT	N/L	1	1	1	1	1	N/A	N/A	5
4	DECK - Unlimited>500GT	N/L	1	1	1	1	1	1	N/A	6
5	Engine - Near Coastal Between 750kW to 3000kW	N/L	1	1	1	1	1	N/A	N/A	5
6	Engine - Near Coastal More than 3000kW	N/L	1	1	1	1	1	N/A	N/A	5
7	Engine - Unlimited Between 750kW to 3000kW	N/L	1	1	1	1	1	1	N/A	6
8	Engine - Unlimited More than 3000kW	N/L	1	1	1	1	1	1	N/A	6
9	Ship Catering	1	1	1	1	1	N/A	N/A	N/A	5
10	Ship Hotel	N/L	1	1	1	1	N/A	N/A	N/A	4
502-INLAND WATER TRANSPORT										
1	Deck - Domestic <500GT	N/L	1	1	1	N/A	N/A	N/A	N/A	3
2	Engine - Domestic <750kW	N/L	1	1	1	N/A	N/A	N/A	N/A	3
3	Engine - Domestic Between 750kW to 3000kW	N/L	1	1	1	N/A	N/A	N/A	N/A	3
4	Ship Catering	1	1	1	1	1	N/A	N/A	N/A	5
5	Ship Hotel	N/L	1	1	1	1	N/A	N/A	N/A	4
522- SUPPORT ACTIVITIES FOR TRANSPORTATION										
1	Shipping Agent	1	1	1	1	1	N/A	N/A	N/A	5
2	Forwarding Agent	1	1	1	1	1	N/A	N/A	N/A	5
3	Navigational Support	N/L	N/L	1	1	1	N/A	N/A	N/A	3
4	Pilotage	N/L	N/L	N/L	1	1	N/A	N/A	N/A	2
5	Towage	N/L	1	1	1	N/A	N/A	N/A	N/A	3
6	Mooring	N/L	2	1	N/A	N/A	N/A	N/A	N/A	3
7	Storage	1	1	1	1	1	N/A	N/A	N/A	5



No	Job Area	Level								Total Identified Job Titles
		1	2	3	4	5	6	7	8	
8	Distribution / Consolidation	1	1	1	1	1	N/A	N/A	N/A	5
9	Packaging	1	1	1	1	1	N/A	N/A	N/A	5
10	Liquid Storage	1	1	1	1	1	N/A	N/A	N/A	5
11	Cruise / Passenger	1	1	1	1	1	N/A	N/A	N/A	5
12	Containerised	1	1	1	1	1	N/A	N/A	N/A	5
13	Non - Containerised	1	1	1	1	1	N/A	N/A	N/A	5
14	Stevedoring	1	2	1	1	1	N/A	N/A	N/A	6
15	Liquid Cargo	N/L	2	1	1	2	N/A	N/A	N/A	6
16	Bunkering	2	2	2	2	2	N/A	N/A	N/A	10
17	Waste Disposal	1	1	N/L	N/A	N/A	N/A	N/A	N/A	2
18	Ship Chandling	1	1	1	1	1	N/A	N/A	N/A	5
19	Lashing	1	1	1	1	1	N/A	N/A	N/A	5
Grand Total of Identified Job Titles										159



#### 4.4TABLE OF JOB RESPONSIBILITIES VS NOSS LEVEL (AREA DESCRIPTION)

Section: (H) Transportation and Storage

Division: (50) Water Transport

Group: (501) Sea and coastal water transport

Table 4.10: List of Responsibilities for Group 501 according to NOSS Levelling (1 of 4)

AREA	DECK - NEAR COASTAL <500GT Responsibilities May Include	DECK - NEAR COASTAL 500GT - 3000GT Responsibilities May Include	DECK - NEAR COASTAL >3000GT Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	<b><u>Master</u></b> 1) Plan and conduct a passage and determine position of ship 2) Monitor compliance with legislative requirements and measures to ensure safety of life at sea 3) Maintain vessel stability 4) Maintain seaworthiness of the ship 5) Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes. 6) Plan and conduct safe navigation 7) Manoeuvre the ship 8) Response to emergencies 9) Respond to a distress signal at sea 10) Ensure compliance with pollution-prevention requirements 11) Maintain safe navigation through the use of information from navigation equipment and	<b><u>Master</u></b> 1) Plan and conduct a passage and determine position of ship 2) Monitor compliance with legislative requirements and measures to ensure safety of life at sea 3) Maintain vessel stability 4) Maintain seaworthiness of the ship 5) Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes. 6) Plan and conduct safe navigation 7) Manoeuvre the ship 8) Response to emergencies 9) Respond to a distress signal at sea 10) Ensure compliance with pollution-prevention requirements 11) Maintain safe navigation through the use of information from navigation equipment



AREA	DECK - NEAR COASTAL <500GT Responsibilities May Include	DECK - NEAR COASTAL 500GT - 3000GT Responsibilities May Include	DECK - NEAR COASTAL >3000GT Responsibilities May Include
		system to assist command decision making 12) Forecast weather and oceanographic conditions 13) Develop emergency and damage control plans and handle emergency situations 14) Radio communication	and system to assist command decision making 12) Forecast weather and oceanographic conditions 13) Develop emergency and damage control plans and handle emergency situations 14) Radio communication
Level 5	<b><u>Master</u></b> 1) Directs all onboard activities including all levels of administration. 2) Monitor progress of each maintenance program. 3) Manage and assist the development of his staff to achieve optimum utilization of manpower. 4) Plan and conduct a passage and determine position (Navigation Management) 5) Manage manoeuvring of ship 6) Managing the loading, stowage, securing and unloading of cargoes and their care during the voyage 7) Manage in applying medical first aid on board ship 8) Monitor compliance with legislative requirements 9) Contribute to the safety of personnel and ship 10) Radio Communication (Usage and functionality)	<b><u>Chief Officer</u></b> 1) Responsible for cargo operation, safety, garbage, security, ship stability, medical, deck maintenance 2) Prepare passage plan and determine position (Navigation Operation) 3) Maintain a safe navigational watch 4) Respond to emergencies 5) Respond to a distress signal at sea 6) Control Manoeuvring the ship and operate small ship power plant 7) Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage 8) Maintain seaworthiness of the ship 9) Prevent, control and fight fires on board 10) Operate life-saving appliances 11) Perform in applying medical first aid on board ship 12) Contribute to the safety of personnel and ship 13) Radio Communication (Usage and functionality)	<b><u>Chief Officer</u></b> 1) Responsible for cargo operation, safety, garbage, security, ship stability, medical, deck maintenance 2) Prepare passage plan and determine position (Navigation Operation) 3) Maintain a safe navigational watch 4) Respond to emergencies 5) Respond to a distress signal at sea 6) Control Manoeuvring the ship and operate small ship power plant 7) Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage 8) Maintain seaworthiness of the ship 9) Prevent, control and fight fires on board 10) Operate life-saving appliances 11) Perform in applying medical first aid on board ship 12) Contribute to the safety of personnel and ship 13) Radio Communication (Usage and



AREA	DECK - NEAR COASTAL <500GT Responsibilities May Include	DECK - NEAR COASTAL 500GT - 3000GT Responsibilities May Include	DECK - NEAR COASTAL >3000GT Responsibilities May Include
	11) Allocates duties to all ship staff beyond their normal routine at his discretion when required. 12) Responsible for the safety of the vessel, the crew, the cargo and the environment. 13) Responsible for the safekeeping and records of all shipboard mandatory and trading certificates in compliance with National and International Maritime Laws/Regulations		functionality)
Level 4	<b><u>Mate/Watchkeeping Officer</u></b> 1) Prepare passage plan and determine position (Navigation Operation) 2) Control manoeuvring the ship 3) Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage 4) Perform in applying medical first aid on board ship 5) Contribute to the safety of personnel and ship 6) Radio Communication (Usage and functionality)	<b><u>Watchkeeping Officer</u></b> 1) Help Chief Officer to plan and conduct a passage and determine position 2) Use of radar to maintain safety of navigation 3) Maintain a safe navigational watch 4) Respond to emergencies 5) Respond to a distress signal at sea 6) Help chief Officer to monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage 7) Operate lifesaving appliances 8) Perform in applying medical first aid on board ship 9) Contribute to the safety of personnel and ship 10) Responsible for keeping all navigational charts and publications corrected and updated at all times 11) Responsible for the preparation of Log	<b><u>Watchkeeping Officer</u></b> 1) Help Chief Officer to plan and conduct a passage and determine position 2) Use of radar to maintain safety of navigation 3) Maintain a safe navigational watch 4) Respond to emergencies 5) Respond to a distress signal at sea 6) Help chief Officer to monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage 7) Operate lifesaving appliances 8) Perform in applying medical first aid on board ship 9) Contribute to the safety of personnel and ship 10) Responsible for keeping all navigational charts and publications corrected and



AREA	DECK - NEAR COASTAL <500GT Responsibilities May Include	DECK - NEAR COASTAL 500GT - 3000GT Responsibilities May Include	DECK - NEAR COASTAL >3000GT Responsibilities May Include
		Abstracts and Noon Chits 12) Responsible for shipboard time adjustment and establish chronometer daily rate	updated at all times 11) Responsible for the preparation of Log Abstracts and Noon Chits 12) Responsible for shipboard time adjustment and establish chronometer daily rate
Level 3	<b><u>Bosun / Able Bodies Seaman</u></b> 1) Supervises, coordinates, coaches and evaluates all non-officer deck personal - Able Seaman, Ordinary Seaman positions 2) Receive maintenance order from superior (Mate) 3) Plan maintenance order 4) Distribute maintenance work to subordinate 5) Monitor preparation and maintenance work 6) Perform maintenance work (painting, chipping, greasing, cleaning, housekeeping) 7) Perform watchkeeping duties (at sea and port) 8) Cargo Operation 9) Perform mooring and unmooring 10) Perform anchoring 11) Perform berthing and unberthing 12) Perform in the launch and recovery of tenders, lifeboats and rescue boats	<b><u>Bosun / Able Bodies Seaman</u></b> 1) Supervises, coordinates, coaches and evaluates all non-officer deck personal - Able Seaman, Ordinary Seaman positions 2) Receive maintenance order from superior (Mate) 3) Plan maintenance order 4) Distribute maintenance work to subordinate 5) Monitor preparation and maintenance work 6) Perform maintenance work (painting, chipping, greasing, cleaning, housekeeping) 7) Perform watchkeeping duties (at sea and port) 8) Cargo Operation 9) Perform mooring and unmooring 10) Perform anchoring 11) Perform berthing and unberthing 12) Perform in the launch and recovery of tenders, lifeboats and rescue boats.	<b><u>Bosun / Able Bodies Seaman</u></b> 1) Supervises, coordinates, coaches and evaluates all non-officer deck personal - Able Seaman, Ordinary Seaman positions 2) Receive maintenance order from superior (Mate) 3) Plan maintenance order 4) Distribute maintenance work to subordinate 5) Monitor preparation and maintenance work 6) Perform maintenance work (painting, chipping, greasing, cleaning, housekeeping) 7) Perform watchkeeping duties (at sea and port) 8) Cargo Operation 9) Perform mooring and unmooring 10) Perform anchoring 11) Perform berthing and unberthing 12) Perform in the launch and recovery of tenders, lifeboats and rescue boats





AREA	DECK - NEAR COASTAL <500GT Responsibilities May Include	DECK - NEAR COASTAL 500GT - 3000GT Responsibilities May Include	DECK - NEAR COASTAL >3000GT Responsibilities May Include
Level 2	<b>ORDINARY SEAMAN</b> 1) Perform Lookout (lights, traffic, sound signals) 2) Cleans, maintains and keeps in proper working condition emergency and lifesaving equipment 3) Undergoes on-the-job-training under the supervision of deck crew superiors - Able Seamen and the Bosun 4) Handle safety, security and lifeboat equipment and drills	<b>ORDINARY SEAMAN</b> 1) Perform Lookout (lights, traffic, sound signals) 2) Cleans, maintains and keeps in proper working condition emergency and lifesaving equipment 3) Undergoes on-the-job-training under the supervision of deck crew superiors - Able Seamen and the Bosun 4) Handle safety, security and lifeboat equipment and drills	<b>ORDINARY SEAMAN</b> 1) Perform Lookout (lights, traffic, sound signals) 2) Cleans, maintains and keeps in proper working condition emergency and lifesaving equipment 3) Undergoes on-the-job-training under the supervision of deck crew superiors - Able Seamen and the Bosun 4) Handle safety, security and lifeboat equipment and drills
Level 1	NO LEVEL	NO LEVEL	NO LEVEL



Table 4.11: List of Responsibilities for Group 501 according to NOSS Levelling (2 of 4)

AREA	<b>DECK - UNLIMITED&gt;500GT</b> Responsibilities May Include	<b>ENGINE - NEAR COASTAL BETWEEN 750kW TO 3000kW</b> Responsibilities May Include	<b>ENGINE - NEAR COASTAL MORE THAN 3000kW</b> Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	<b><u>Master</u></b> <ol style="list-style-type: none"> <li>1) Plan and conduct a passage and determine position of ship</li> <li>2) Monitor compliance with legislative requirements and measures to ensure safety of life at sea</li> <li>3) Maintain vessel stability</li> <li>4) Maintain seaworthiness of the ship</li> <li>5) Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.</li> <li>6) Plan and conduct safe navigation</li> <li>7) Manoeuvre the ship</li> <li>8) Response to emergencies</li> <li>9) Respond to a distress signal at sea</li> <li>10) Ensure compliance with pollution-prevention requirements</li> <li>11) Forecast weather and oceanographic conditions</li> <li>12) Develop emergency and damage control plans and handle emergency situations</li> <li>13) Radio communication</li> </ol>	NOT AVAILABLE	NOT AVAILABLE
Level 6	<b><u>Chief Officer</u></b>	<b><u>Chief Engineer</u></b>	<b><u>Chief Engineer</u></b>



AREA	<b>DECK - UNLIMITED&gt;500GT</b> Responsibilities May Include	<b>ENGINE - NEAR COASTAL BETWEEN 750kW TO 3000kW</b> Responsibilities May Include	<b>ENGINE - NEAR COASTAL MORE THAN 3000kW</b> Responsibilities May Include
	<ol style="list-style-type: none"> <li>1) Second in command</li> <li>2) Assist Master to plan a voyage and Voyage planning and conduct navigation</li> <li>3) Responsible for the supervision of the Deck crew</li> <li>4) Determine position and the accuracy of conditions of resultant position fix by any means (Navigational duties)</li> <li>5) Determine and allow for compass error</li> <li>6) Coordinate search and rescue operation</li> <li>7) Establish watchkeeping arrangements and procedures</li> <li>8) Maintain safe navigation through the use of information from navigation equipment and system to assist command decision making</li> <li>9) Obtain weather report and oceanographic conditions</li> <li>10) Respond to navigational emergencies</li> <li>11) Manoeuvre and handle a ship in all conditions</li> <li>12) Manage remote control of propulsion plant and engineering system and services</li> <li>13) Manage and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes</li> <li>14) Assesses reported defect and damage to cargo spaces, hatch covers and ballast tank and take appropriate action</li> <li>15) Maintain safety and security of the ship's</li> </ol>	<ol style="list-style-type: none"> <li>1) Assist the Master in all matters relating to shipboard labour management and vessel operations</li> <li>2) Operate and monitor a vessel's engines and auxiliary equipment.</li> <li>3) Monitor the operation of the vessel's engines, drive train, and auxiliary equipment</li> <li>4) Manage the operation of propulsion machinery and ancillary system</li> <li>5) Maintenance and repairs on a vessel's mechanical and electrical systems</li> <li>6) Prepare engine scheduled maintenance</li> <li>7) Operate vessel's engines and equipment</li> <li>8) Manage the operation of vessel Auxiliary Boilers and service system</li> <li>9) Manage maintenance of mechanical equipment</li> <li>10) Manage the maintenance of vessel electrical equipment</li> <li>11) Manage maintenance of vessel telecommunication and navigation system</li> <li>12) Diagnose faults in mechanical and electrical systems</li> <li>13) Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and protection of the environment</li> <li>14) Manage safety and security of the vessel, crew and passengers and the operational</li> </ol>	<ol style="list-style-type: none"> <li>1) Assist the Master in all matters relating to shipboard labour management and vessel operations</li> <li>2) Operate and monitor a vessel's engines and auxiliary equipment.</li> <li>3) Monitor the operation of the vessel's engines, drive train, and auxiliary equipment</li> <li>4) Manage the operation of propulsion machinery and ancillary system</li> <li>5) Maintenance and repairs on a vessel's mechanical and electrical systems</li> <li>6) Prepare engine scheduled maintenance</li> <li>7) Operate vessel's engines and equipment</li> <li>8) Manage the operation of vessel Auxiliary Boilers and service system</li> <li>9) Manage maintenance of mechanical equipment</li> <li>10) Manage the maintenance of vessel electrical equipment</li> <li>11) Manage maintenance of vessel telecommunication and navigation system</li> <li>12) Diagnose faults in mechanical and electrical systems</li> <li>13) Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and protection of the environment</li> <li>14) Manage safety and security of the vessel, crew and passengers and the operational</li> </ol>



AREA	<b>DECK - UNLIMITED&gt;500GT</b> Responsibilities May Include	<b>ENGINE - NEAR COASTAL BETWEEN 750kW TO 3000kW</b> Responsibilities May Include	<b>ENGINE - NEAR COASTAL MORE THAN 3000kW</b> Responsibilities May Include
	crew and passengers 16) Develop emergency and damage control plans and handle emergency situations	condition of lifesaving, fire-fighting and other safety systems 15) Administer the proper use of supplies in the engine department in order to avoid wastage and minimize expenses. 16) Supervise the operating and repair of the engine	condition of lifesaving, fire-fighting and other safety systems 15) Administer the proper use of supplies in the engine department in order to avoid wastage and minimize expenses. 16) Supervise the operating and repair of the engine
Level 5	<b><u>2<sup>nd</sup> Officer</u></b> 1) Passage Planning - Preparation of the safe routes to be taken with reference to various navigational charts and publications. Passage planning for every voyage the vessel undertakes 2) Ensure that all navigational equipment is properly operated by other officers 3) Responsible for keeping all records and publications of navigational values. Emphasis must be given to the safety and efficient ways of navigating the vessel 4) Responsible for keeping all navigational charts and publications corrected and updated at all times 5) Responsible for the preparation of Log Abstracts and Noon Chits 6) He must also familiarize himself with the cargo operation and assist the Chief	<b><u>2<sup>nd</sup> Engineer</u></b> 1) Plan and schedule operations 2) Start up and shut down main propulsion and auxiliary machinery, including associated system 3) Ensure proper use of equipment assigned to the engineering department. 4) Operate, monitor and evaluate engine performance and capacity 5) Maintain safety of engine equipment, systems, and services 6) Manage fuel and ballast operation 7) Operate electrical and electronic control equipment 8) Test, detect faults, maintain and restore electrical and electronic control equipment to operating condition 9) Responsible for stock keeping, stores, spare gears and its inventory. 10) Organize safe maintenance and repair procedures 11) Responsible for monitoring and	<b><u>2<sup>nd</sup> Engineer</u></b> 1) Plan and schedule operations 2) Start up and shut down main propulsion and auxiliary machinery, including associated system 3) Ensure proper use of equipment assigned to the engineering department. 4) Operate, monitor and evaluate engine performance and capacity 5) Maintain safety of engine equipment, systems, and services 6) Manage fuel and ballast operation 7) Operate electrical and electronic control equipment 8) Test, detect faults, maintain and restore electrical and electronic control equipment to operating condition 9) Responsible for stock keeping, stores, spare gears and its inventory. 10) Organize safe maintenance and repair procedures 11) Responsible for monitoring and



AREA	DECK - UNLIMITED>500GT Responsibilities May Include	ENGINE - NEAR COASTAL BETWEEN 750kW TO 3000kW Responsibilities May Include	ENGINE - NEAR COASTAL MORE THAN 3000kW Responsibilities May Include
	<p>Officer with the cargo work. Keeps port/cargo watches</p> <p>7) Second Officer under Chief Officer's guidance to ensure Medical Locker and medical equipment is properly maintained.</p> <p>8) Keeps inventory of the stationery for the vessel</p> <p>9) Operations connected with mooring and unmooring, normally taking charge of the AFT mooring station</p> <p>10) Responsible for shipboard time adjustment and establish chronometer daily rate.</p> <p>11) Report any undesired events, unsafe practices or near misses observed to the superior officer/s and attempt to rectify them if safely possible.</p>	<p>management of boiler water and cooling water treatment.</p> <p>12) Detect and identify the cause of machinery malfunction and correct faults</p> <p>13) Bunkering operation</p> <p>14) Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and protection of the environment</p> <p>15) Maintain safety and security of the vessel, crew and passengers and the operational condition of lifesaving, fire-fighting and other safety systems</p> <p>16) Develop emergency and damage control plans and handle emergency situations</p>	<p>management of boiler water and cooling water treatment.</p> <p>12) Detect and identify the cause of machinery malfunction and correct faults</p> <p>13) Bunkering operation</p> <p>14) Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and protection of the environment</p> <p>15) Maintain safety and security of the vessel, crew and passengers and the operational condition of lifesaving, fire-fighting and other safety systems</p> <p>16) Develop emergency and damage control plans and handle emergency situations</p>
Level 4	<p><b><u>3<sup>rd</sup> Officer</u></b></p> <p>1) Responsible for the maintenance, administration and proper performance of the safety and lifesaving equipment.</p> <p>2) Responsible for drawing up the MUSTER LIST</p> <p>3) Ensure that Arrival and Departure Port</p>	<p><b><u>Watchkeeper Engineer</u></b></p> <p>1) Use appropriate tools for fabrication and repair operations typically perform on ship</p> <p>2) Use hand tools and measuring equipment for dismantling maintenance, repair and reassembly of shipboard plant and equipment</p>	<p><b><u>Watchkeeper Engineer</u></b></p> <p>1) Use appropriate tools for fabrication and repair operations typically perform on ship</p> <p>2) Use hand tools and measuring equipment for dismantling maintenance, repair and reassembly of shipboard plant and equipment</p>



AREA	<b>DECK - UNLIMITED&gt;500GT</b> Responsibilities May Include	<b>ENGINE - NEAR COASTAL BETWEEN 750kW TO 3000kW</b> Responsibilities May Include	<b>ENGINE - NEAR COASTAL MORE THAN 3000kW</b> Responsibilities May Include
	<p>condition reports are properly completed</p> <p>4) The maintenance and administration of the LSA &amp; FFA equipment on deck under the instruction of the Chief Officer.</p> <p>5) Check that all bridge doors are properly locked and all bridge equipment is safely kept and to see that gangway is properly placed</p> <p>6) Ensure Pilot Ladder and equipment when in use is properly and safely installed and some to be removed and secured after use</p> <p>7) Responsible for the maintenance of berthing apparatus</p>	<p>3) Use hand tools, electrical and electronic measuring and test equipment for fault-finding, maintenance and repair operations</p> <p>4) Maintain a safe engineering watch</p> <p>5) Operate main and auxiliary machinery and associated control systems</p> <p>6) Operate pumping systems and associated control systems</p> <p>7) Operate alternators, generators and control systems</p> <p>8) Maintain marine engineering systems, including control systems</p> <p>9) Operate and adjust electrical equipment</p> <p>10) Operate and adjust vessel electrical propulsion</p>	<p>3) Use hand tools, electrical and electronic measuring and test equipment for fault-finding, maintenance and repair operations</p> <p>4) Maintain a safe engineering watch</p> <p>5) Operate main and auxiliary machinery and associated control systems</p> <p>6) Operate pumping systems and associated control systems</p> <p>7) Operate alternators, generators and control systems</p> <p>8) Maintain marine engineering systems, including control systems</p> <p>9) Operate and adjust electrical equipment</p> <p>10) Operate and adjust vessel electrical propulsion</p>
Level 3	<p><b><u>Bosun / Able Bodies Seaman</u></b></p> <p>1) Supervises, coordinates, coaches and evaluates all non-officer deck personal - Able Seaman, Ordinary Seaman positions</p> <p>2) Receive maintenance order from superior (Mate)</p> <p>3) Plan maintenance order</p> <p>4) Distribute maintenance work to subordinate</p> <p>5) Monitor preparation and maintenance work</p>	<p><b><u>Oiler / Greaser</u></b></p> <p>1) Maintaining, cleaning and, at times, operating ship engine parts, including blowers, compressors, motors, gears, ejectors and other equipment</p> <p>2) Check gauges and dials on the equipment to make sure the equipment is working</p> <p>3) Assist with loading cargo and maintaining the ship's safety system</p> <p>4) Take on unrelated duties relating to</p>	<p><b><u>Oiler / Greaser</u></b></p> <p>1) Maintaining, cleaning and, at times, operating ship engine parts, including blowers, compressors, motors, gears, ejectors and other equipment</p> <p>2) Check gauges and dials on the equipment to make sure the equipment is working</p> <p>3) Assist with loading cargo and maintaining the ship's safety system</p> <p>4) Take on unrelated duties relating to</p>



AREA	<b>DECK - UNLIMITED&gt;500GT</b> Responsibilities May Include	<b>ENGINE - NEAR COASTAL BETWEEN 750kW TO 3000kW</b> Responsibilities May Include	<b>ENGINE - NEAR COASTAL MORE THAN 3000kW</b> Responsibilities May Include
	6) Perform maintenance work (painting, chipping, greasing, cleaning, housekeeping) 7) Perform watchkeeping duties (at sea and port) 8) Cargo Operation 9) Perform mooring and unmooring 10) Perform anchoring 11) Perform berthing and unberthing 12) Perform in the launch and recovery of tenders, lifeboats and rescue boats	sewage, electrical systems, and water on board the ship 5) Records data in ship's log such as weather conditions and distance travelled 6) Monitor and operate engine room machinery	sewage, electrical systems, and water on board the ship 5) Records data in ship's log such as weather conditions and distance travelled 6) Monitor and operate engine room machinery



AREA	DECK - UNLIMITED>500GT Responsibilities May Include	ENGINE - NEAR COASTAL BETWEEN 750kW TO 3000kW Responsibilities May Include	ENGINE - NEAR COASTAL MORE THAN 3000kW Responsibilities May Include
Level 2	<b><u>Ordinary Seaman</u></b> <ol style="list-style-type: none"> <li>1) Perform Lookout (lights, traffic, sound signals)</li> <li>2) Cleans, maintains and keeps in proper working condition emergency and lifesaving equipment</li> <li>3) Undergoes on-the-job-training under the supervision of deck crew superiors - Able Seamen and the Bosun</li> <li>4) Handle safety, security and lifeboat equipment and drills</li> </ol>	<b><u>Engine Rating</u></b> <ol style="list-style-type: none"> <li>1) Identify and recognize the various alarms and indicators in the engine room and act accordingly when such alarms are activated</li> <li>2) Carry out all maintenance work in the engine room as allocated / assigned to him by the Oiler</li> <li>3) Maintain cleanliness of the engine control room and machinery spaces.</li> <li>4) Assist in the receiving of engine room stores and spares.</li> <li>5) Assist in bunkering operations as directed by the 2nd Engineer / Oiler.</li> <li>6) Assist in mooring / unmooring of bunker barges and hose handling during bunkering operations under supervision of the Oiler.</li> <li>7) Assist when required in mooring and unmooring operations of the vessel, normally designated to the AFT station.</li> </ol>	<b><u>Engine Rating</u></b> <ol style="list-style-type: none"> <li>1) Identify and recognize the various alarms and indicators in the engine room and act accordingly when such alarms are activated</li> <li>2) Carry out all maintenance work in the engine room as allocated / assigned to him by the Oiler</li> <li>3) Maintain cleanliness of the engine control room and machinery spaces.</li> <li>4) Assist in the receiving of engine room stores and spares.</li> <li>5) Assist in bunkering operations as directed by the 2nd Engineer / Oiler.</li> <li>6) Assist in mooring / unmooring of bunker barges and hose handling during bunkering operations under supervision of the Oiler.</li> <li>7) Assist when required in mooring and unmooring operations of the vessel, normally designated to the AFT station.</li> </ol>
Level 1	NO LEVEL	NO LEVEL	NO LEVEL





Table 4.12: List of Responsibilities for Group 501 according to NOSS Levelling (3 of 4)

AREA	ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW Responsibilities May Include	ENGINE - UNLIMITED MORE THAN 3000kW Responsibilities May Include	SHIP CATERING Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7		<b><u>Chief Engineer</u></b> <ol style="list-style-type: none"> <li>1) Responsible for the operation and maintenance of machinery and other equipment under the responsibility of the Engine Department</li> <li>2) Ensures that all equipment thereat is in good running condition</li> <li>3) Supervise engine operations, trials, or repairs on deficiencies detected in the engine</li> <li>4) Make regular maintenance test of all machinery/equipment and shall perform necessary repairs when necessary</li> <li>5) Assume responsibility for the maintenance of machinery in the engine room and the management of fuel and lubricating oil and other ship stores</li> <li>6) Administer the proper use of supplies in the engine department in order to avoid wastage and minimize expenses</li> <li>7) Make efforts to load more cargo and increase operating efficiency of the machinery and use of fuel oil and lubricating oil</li> </ol>	NOT AVAILABLE



AREA	<b>ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW</b> Responsibilities May Include	<b>ENGINE - UNLIMITED MORE THAN 3000kW</b> Responsibilities May Include	<b>SHIP CATERING</b> Responsibilities May Include
		<ul style="list-style-type: none"> <li>8) Ensure that the efficiency of fuel and lubricating oils are maximized</li> <li>9) Personally, supervise the bunkering operations</li> <li>10) Take measures to prevent air pollution and marine pollution when carrying out various tasks</li> <li>11) Ensure the proper use and handling of fuel oil, lube oil, lubricants, chemicals used in his department to avoid pollution to the environment</li> <li>12) Pay particular attention to the accuracy of measuring instruments</li> <li>13) Ensure that measuring devices are set accurately in order to ensure a prompt and safe voyage onboard</li> <li>14) Supervise the operating and repair of the engine</li> <li>15) Guide subordinates and evaluate their performance according to prescribed guidelines</li> <li>16) Ensure that oils and combustible gases in the engine room are handled carefully and take measures to prevent the fires and explosions</li> <li>17) Manage matters related to safety and health</li> </ul>	



AREA	ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW Responsibilities May Include	ENGINE - UNLIMITED MORE THAN 3000kW Responsibilities May Include	SHIP CATERING Responsibilities May Include
		<p>in the engine department</p> <p>18) Maintain important documents, drawings and other records under the responsibility of the Engine Department in safe custody</p> <p>19) Prepare engine log abstracts and shall ensure the accuracy of the same</p>	
Level 6	<p><b><u>Chief Engineer</u></b></p> <ol style="list-style-type: none"> <li>1) Responsible for the operation and maintenance of machinery and other equipment under the responsibility of the Engine Department</li> <li>2) Ensures that all equipment thereat is in good running condition</li> <li>3) Supervise engine operations, trials, or repairs on deficiencies detected in the engine</li> <li>4) Make regular maintenance test of all machinery/equipment and shall perform necessary repairs when necessary</li> <li>5) Assume responsibility for the maintenance of machinery in the engine room and the management of fuel and lubricating oil and other ship stores</li> <li>6) Administer the proper use of supplies in the engine department in order to avoid wastage and minimize expenses</li> </ol>	<p><b><u>2<sup>nd</sup> Engineer</u></b></p> <ol style="list-style-type: none"> <li>1) Plan and schedule operations</li> <li>2) Start up and shut down main propulsion system (&gt;3000 kW) and auxiliary machinery, boiler including associated system</li> <li>3) Ensure proper use of equipment assigned to the engineering department.</li> <li>4) Operate, monitor and evaluate engine performance and capacity</li> <li>5) Maintain safety of engine equipment, systems, and services</li> <li>6) Manage fuel system (&gt;3000 kW) and ballast operation</li> <li>7) Operate electrical system (&gt;3000 kW) and electronic control equipment</li> <li>8) Test, detect faults, maintain and restore electrical and electronic control equipment to operating condition</li> <li>9) Organize safe maintenance and repair</li> </ol>	NOT AVAILABLE



AREA	<b>ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW</b> Responsibilities May Include	<b>ENGINE - UNLIMITED MORE THAN 3000kW</b> Responsibilities May Include	<b>SHIP CATERING</b> Responsibilities May Include
	<ul style="list-style-type: none"> <li>7) Make efforts to load more cargo and increase operating efficiency of the machinery and use of fuel oil and lubricating oil</li> <li>8) Ensure that the efficiency of fuel and lubricating oils are maximized</li> <li>9) Personally, supervise the bunkering operations</li> <li>10) Take measures to prevent air pollution and marine pollution when carrying out various tasks</li> <li>11) Ensure the proper use and handling of fuel oil, lube oil, lubricants, chemicals used in his department to avoid pollution to the environment</li> <li>12) Pay particular attention to the accuracy of measuring instruments</li> <li>13) Ensure that measuring devices are set accurately in order to ensure a prompt and safe voyage onboard</li> <li>14) Supervise the operating and repair of the engine</li> <li>15) Guide subordinates and evaluate their performance according to prescribed guidelines</li> <li>16) Ensure that oils and combustible gases in</li> </ul>	<ul style="list-style-type: none"> <li>procedures</li> <li>10) Detect and identify the cause of machinery malfunction and correct faults</li> <li>11) Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and protection of the environment</li> <li>12) Maintain safety and security of the vessel, crew and passengers and the operational condition of lifesaving, fire-fighting and other safety systems</li> <li>13) Develop emergency and damage control plans and handle emergency situations</li> </ul>	



AREA	ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW Responsibilities May Include	ENGINE - UNLIMITED MORE THAN 3000kW Responsibilities May Include	SHIP CATERING Responsibilities May Include
	<p>the engine room are handled carefully and take measures to prevent the fires and explosions</p> <p>17) Manage matters related to safety and health in the engine department</p> <p>18) Maintain important documents, drawings and other records under the responsibility of the Engine Department in safe custody</p> <p>19) Prepare engine log abstracts and shall ensure the accuracy of the same</p>		
Level 5	<p><b><u>2<sup>nd</sup> Engineer/3<sup>rd</sup> Engineer</u></b></p> <p>1) Responsible for the maintenance and efficient operational condition of the following machinery: -</p> <p>a) Generator/Alternator engines including shaft generator, emergency generator and associated plant and fuel injection equipment.</p> <p>b) All air compressors and compressed air equipment and systems including M/E starting air system.</p> <p>c) Life boat engines.</p> <p>d) Emergency fire pump.</p> <p>e) Cargo machinery – i.e. cranes, reefer containers and cargo pumps.</p> <p>2) Technical supervision of the work force as</p>	<p><b><u>3<sup>rd</sup> Engineer</u></b></p> <p>1) Responsible for the maintenance and efficient operational condition of the following machinery: -</p> <p>a) Generator/Alternator engines including shaft generator, emergency generator and associated plant and fuel injection equipment.</p> <p>b) All air compressors and compressed air equipment and systems including M/E starting air system.</p> <p>c) Life boat engines.</p> <p>d) Emergency fire pump.</p> <p>e) Cargo machinery – i.e. cranes, reefer containers and cargo pumps.</p> <p>2) Stores and spare gear allocated to his</p>	<p><b><u>Administration Officer</u></b></p> <p>1) Responsible for the organization, discipline and efficiency of Catering Department including assignment of duties and working hours. Safety of catering personnel working directly under his care.</p> <p>2) Plans, organizes, co-ordinates the administration of the Catering Department to achieve efficient cost controls, well-planned meals and good general hygiene.</p> <p>3) Provide practical advice on the fundamental rules of food hygiene consistent with industry standards.</p> <p>4) Responsible for proper standards in menu planning, preparation of food for cooking and to propose menus to Master on weekly</p>



AREA	ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW Responsibilities May Include	ENGINE - UNLIMITED MORE THAN 3000kW Responsibilities May Include	SHIP CATERING Responsibilities May Include
	<p>required;</p> <ol style="list-style-type: none"> <li>3) Routine maintenance on all machinery and equipment</li> <li>4) Control and usage of spare parts for the machinery and equipment</li> <li>5) Maintain up to date inventory of all machinery spare parts</li> <li>6) Comply with principles and guidance for keeping safe and efficient engine room watch</li> <li>7) Operate, monitor and evaluate engine performance and capacity</li> <li>8) Maintain safety of engine equipment, systems, and services</li> <li>9) Manage fuel and ballast operation</li> <li>10) Operate electrical and electronic control equipment</li> <li>11) Test, detect faults, maintain and restore electrical and electronic control equipment to operating condition</li> <li>12) Organize safe maintenance and repair procedures</li> <li>13) Detect and identify the cause of machinery malfunction and correct faults</li> </ol>	<p>charge by the 2nd Engineer;</p> <ol style="list-style-type: none"> <li>3) Technical supervision of the work force as required;</li> <li>4) Routine maintenance on all machinery and equipment</li> <li>5) Control and usage of spare parts for the machinery and equipment</li> <li>6) Maintain up to date inventory of all machinery spare parts</li> <li>7) Comply with principles and guidance for keeping safe and efficient engine room watch</li> </ol>	<p>basis.</p> <ol style="list-style-type: none"> <li>5) Carry out daily inspection of the galleys, public areas within the accommodation, pantry, mess rooms, dining saloon and other spaces related to catering services and housekeeping to ensure that cleanliness and tidiness is maintained. Special attention to be taken for those areas where food is stored or prepared.</li> </ol>



AREA	ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW Responsibilities May Include	ENGINE - UNLIMITED MORE THAN 3000kW Responsibilities May Include	SHIP CATERING Responsibilities May Include
Level 4	<b><u>Watchkeeper Engineer</u></b> <ol style="list-style-type: none"> <li>Specifically entrusted to maintain and ensure good working condition of the following machinery: -               <ol style="list-style-type: none"> <li>Auxiliary boilers and economizer including all associated fittings and safety trips and alarms</li> <li>Purifiers for L.O, F.O and D.O</li> <li>All pumps related to boiler systems including SW &amp; FW pumps</li> <li>Deck machinery, windlass, mooring winches, lifeboat winches, hatch cover winches</li> <li>Fresh Water generator and associated pumps.</li> <li>Filters for FW, FO, LO, DO and bilge lines.</li> <li>Incinerators, sanitary system, domestic water system, FW cooling system and lubricating system</li> <li>All control valves associated with F.O / D.O transfer / bunker lines for settling &amp; service tanks.</li> <li>Keep up to date inventory of spare parts for above machinery.</li> </ol> </li> <li>Supervise any repair work being carried</li> </ol>	<b><u>4<sup>th</sup> Engineer</u></b> <ol style="list-style-type: none"> <li>Specifically entrusted to maintain and ensure good working condition of the following machinery: -               <ol style="list-style-type: none"> <li>Auxiliary boilers and economizer including all associated fittings and safety trips and alarms</li> <li>Purifiers for L.O, F.O and D.O</li> <li>All pumps related to boiler systems including SW &amp; FW pumps</li> <li>Deck machinery, windlass, mooring winches, lifeboat winches, hatch cover winches</li> <li>Fresh Water generator and associated pumps.</li> <li>Filters for FW, FO, LO, DO and bilge lines.</li> <li>Incinerators, sanitary system, domestic water system, FW cooling system and lubricating system</li> <li>All control valves associated with F.O / D.O transfer / bunker lines for settling &amp; service tanks.</li> <li>Keep up to date inventory of spare parts for above machinery.</li> </ol> </li> <li>Supervise any repair work being carried out</li> </ol>	<b><u>Chief Steward/Chef</u></b> <ol style="list-style-type: none"> <li>Plans, organises, co-ordinates the administration of the Catering Department to achieve efficient cost controls, well planned meals and general hygiene.</li> <li>Responsible for the efficient administration of the Catering Department.</li> <li>Responsible of victualling stores, bonded stores and associated accounts and documentation</li> <li>Responsible for ordering of victualling provisions and sundries, and the proficient storage of such provisions in the designated stores or cold rooms.</li> <li>Responsible for efficient control of the consumption of the victualling provisions on board</li> <li>Maintaining the inventory of linen, cutlery, furnishing, fittings and see that they are in good and clean condition.</li> <li>Carry out daily inspection of the galley/s, public areas within the accommodation, pantry, mess rooms, dining saloon and other spaces related to catering services and housekeeping.</li> <li>Maintain inventory of cabin stores</li> </ol>



AREA	ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW Responsibilities May Include	ENGINE - UNLIMITED MORE THAN 3000kW Responsibilities May Include	SHIP CATERING Responsibilities May Include
	<p>out by shore repairers as directed by 2nd Engineer/ Chief Engineer.</p> <p>3) Assist 2nd Engineer/Chief Engineer in bunkering operations or fuel transfer operations.</p> <p>4) Assist in receiving engine stores, spares, chemicals, lubricating oil and gases.</p> <p>5) Comply with principles and guidance for keeping safe and efficient engine room watch.</p>	<p>by shore repairers as directed by 2nd Engineer/ Chief Engineer.</p> <p>3) Assist 2nd Engineer/Chief Engineer in bunkering operations or fuel transfer operations.</p> <p>4) Assist in receiving engine stores, spares, chemicals, lubricating oil and gases.</p> <p>5) Comply with principles and guidance for keeping safe and efficient engine room watch.</p>	<p>9) Responsible for garbage management on board.</p>
Level 3	<p><b><u>Oiler / Greaser</u></b></p> <p>1) Maintaining, cleaning and, at times, operating ship engine parts, including blowers, compressors, motors, gears, ejectors and other equipment</p> <p>2) Check gauges and dials on the equipment to make sure the equipment is working</p> <p>3) Assist with loading cargo and maintaining the ship's safety system</p> <p>4) Take on unrelated duties relating to sewage, electrical systems, and water on board the ship</p> <p>5) Records data in ship's log such as weather conditions and distance travelled</p> <p>6) Monitor and operate engine room machinery</p>	<p><b><u>Oiler / Greaser</u></b></p> <p>1) Maintaining, cleaning and, at times, operating ship engine parts, including blowers, compressors, motors, gears, ejectors and other equipment</p> <p>2) Check gauges and dials on the equipment to make sure the equipment is working</p> <p>3) Assist with loading cargo and maintaining the ship's safety system</p> <p>4) Take on unrelated duties relating to sewage, electrical systems, and water on board the ship</p> <p>5) Records data in ship's log such as weather conditions and distance travelled</p> <p>6) Monitor and operate engine room machinery</p>	<p><b><u>Chief Cook</u></b></p> <p>1) Determine how food should be presented, and create decorative food displays</p> <p>2) Determine production schedules and staff requirements necessary to ensure timely delivery of services</p> <p>3) Estimate amounts and costs of required supplies, such as food and ingredients</p> <p>4) Inspect supplies, equipment, and work areas to ensure conformance to established standards</p> <p>5) Instruct cooks and other workers in the preparation, cooking, garnishing, and presentation of food</p> <p>6) Recruit and hire staff, including cooks and other kitchen workers</p>





AREA	ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW Responsibilities May Include	ENGINE - UNLIMITED MORE THAN 3000kW Responsibilities May Include	SHIP CATERING Responsibilities May Include
			7) Analyze recipes to assign prices to menu items, based on food, labor, and overhead costs 8) Prepare and cook foods of all types, either on a regular basis or for special guests or functions 9) Supervise and coordinate activities of cooks and workers engaged in food preparation 10) Check the quality of raw and cooked food products to ensure that standards are met
Level 2	<b><u>Engine Rating</u></b> 1) Identify and recognize the various alarms and indicators in the engine room and act accordingly when such alarms are activated 2) Carry out all maintenance work in the engine room as allocated / assigned to him by the Oiler 3) Maintain cleanliness of the engine control room and machinery spaces. 4) Assist in the receiving of engine room stores and spares. 5) Assist in bunkering operations as directed by the 2nd Engineer / Oiler.	<b><u>Engine Rating</u></b> 1) Identify and recognize the various alarms and indicators in the engine room and act accordingly when such alarms are activated 2) Carry out all maintenance work in the engine room as allocated / assigned to him by the Oiler 3) Maintain cleanliness of the engine control room and machinery spaces. 4) Assist in the receiving of engine room stores and spares. 5) Assist in bunkering operations as directed by the 2nd Engineer / Oiler.	<b><u>Cook</u></b> 1) Cook and provide for well balanced meals to all the ship's complement where meals shall be of sufficient quantity, acceptable quality and be ready to be served in time as per the designated meal times on board. 2) Work closely with the Catering Officer/Chief Steward/Administration Officer in the preparation of a sensible and well-balanced menu 3) Ensures that the galley, fridge spaces and store rooms are kept in a clean and tidy condition at all times and that any



AREA	ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW Responsibilities May Include	ENGINE - UNLIMITED MORE THAN 3000kW Responsibilities May Include	SHIP CATERING Responsibilities May Include
	6) Assist in mooring / unmooring of bunker barges and hose handling during bunkering operations under supervision of the Oiler. 7) Assist when required in mooring and unmooring operations of the vessel, normally designated to the AFT station.	6) Assist in mooring / unmooring of bunker barges and hose handling during bunkering operations under supervision of the Oiler. 7) Assist when required in mooring and unmooring operations of the vessel, normally designated to the AFT station.	defects are reported immediately to the Catering Officer/ Chief Steward/ Administration Officer. 4) Assist in receiving all the catering stores. 5) Assist in onboard waste management activities as instructed by the shipboard management.
Level 1	NO LEVEL	NO LEVEL	<u><b>Steward</b></u> 1) Carry out all work instructed by the Catering Officer/Chief Steward or Cook in an efficient, safe and proper manner. 2) Serve the officers their meals and / or to prepare and lay out the cutlery on meal tables. 3) Keep the Officers' Dining Saloon, Duty Mess Room, Officers' Lounge, Pantry and Mess Room areas clean and tidy. 4) Keep accommodation alleyways, staircases, toilets, common bathrooms clean and in hygienic condition. 5) Assist in receiving all catering stores.



Table 4.13: List of Responsibilities for Group 501 according to NOSS Levelling (4 of 4)

AREA	<b>SHIP CATERING</b> Responsibilities May Includes	<b>SHIP HOTEL</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE
Level 5	<b><u>Administration Officer</u></b> <ol style="list-style-type: none"> <li>1) Responsible for the organization, discipline and efficiency of Catering Department including assignment of duties and working hours. Safety of catering personnel working directly under his care.</li> <li>2) Plans, organizes, co-ordinates the administration of the Catering Department to achieve efficient cost controls, well-planned meals and good general hygiene.</li> <li>3) Provide practical advice on the fundamental rules of food hygiene consistent with industry standards.</li> <li>4) Responsible for proper standards in menu planning, preparation of food for cooking and to propose menus to Master on weekly basis.</li> <li>5) Carry out daily inspection of the galleys, public areas within the accommodation, pantry, mess rooms, dining saloon and other spaces related to catering services and housekeeping to ensure that cleanliness and tidiness is maintained. Special attention to be taken for those areas where food is stored or prepared.</li> </ol>	<b><u>Manager</u></b> <ol style="list-style-type: none"> <li>1) Planning and managing the hotel and other hotel services.</li> <li>2) Preparing the budgets and financial planning for the hotel.</li> <li>3) Setting up a target and achieving sales and profits.</li> <li>4) Planning for the work schedules of an individuals and teams.</li> <li>5) Observing and monitoring the worker's performance to make sure that the company rules and regulations are being followed.</li> <li>6) Cooperating with other department managers for coordinating the activities such as wedding, any special events and conferences.</li> <li>7) Coordinating with the duties of the front- office and resolving problems.</li> <li>8) Supervising the maintenance, renovations and furnishings of the hotel.</li> <li>9) Scheduling the work activities, duties and hours of the staff.</li> <li>10) Handling the customer grievances and complaints.</li> <li>11) They are responsible for day to day hotel management and hold accountability for directing, organizing and planning all hotel-services.</li> </ol>
Level 4	<b><u>Chief Steward/Chef</u></b> <ol style="list-style-type: none"> <li>1) Plans, organises, co-ordinates the administration of the</li> </ol>	<b><u>Purser</u></b> <ol style="list-style-type: none"> <li>1) Post all charges and guest credits in MXP to ensure accurate</li> </ol>



AREA	SHIP CATERING Responsibilities May Includes	SHIP HOTEL Responsibilities May Includes
	<p>Catering Department to achieve efficient cost controls, well planned meals and general hygiene.</p> <ol style="list-style-type: none"> <li>2) Responsible for the efficient administration of the Catering Department.</li> <li>3) Responsible of victualling stores, bonded stores and associated accounts and documentation</li> <li>4) Responsible for ordering of victualling provisions and sundries, and the proficient storage of such provisions in the designated stores or cold rooms.</li> <li>5) Responsible for efficient control of the consumption of the victualling provisions on board</li> <li>6) Maintaining the inventory of linen, cutlery, furnishing, fittings and see that they are in good and clean condition.</li> <li>7) Carry out daily inspection of the galley/s, public areas within the accommodation, pantry, mess rooms, dining saloon and other spaces related to catering services and housekeeping.</li> <li>8) Maintain inventory of cabin stores</li> <li>9) Responsible for garbage management on board.</li> </ol>	<p>accounting.</p> <ol style="list-style-type: none"> <li>2) Process guest credit-card payment for end of voyage settlement.</li> <li>3) Prepare billing statements (interim, final) for all guests as well as port debarks.</li> <li>4) Understand all facets of shipboard organization and services, ports of call, shore excursions, inventory, guest services.</li> <li>5) Support 2nd Purser Admin for checking all passenger information, including passport.</li> <li>6) Support 2nd Purser Admin to control ship's documentation in/out ports.</li> <li>7) Liaising with agents and HODs for all Port Operation matters.</li> <li>8) Support Crew Purser and 2nd Purser with immigration procedure.</li> <li>9) Maintains a good relationship with all local authorities at ports of call to ensure cooperation with all officials whilst onboard.</li> <li>10) Organize passenger embarkation and disembarkation in conjunction with all relative parties to ensure proper execution.</li> </ol>
Level 3	<p><b><u>Chief Cook</u></b></p> <ol style="list-style-type: none"> <li>1) Determine how food should be presented, and create decorative food displays</li> <li>2) Determine production schedules and staff requirements necessary to ensure timely delivery of services</li> <li>3) Estimate amounts and costs of required supplies, such as food and ingredients</li> <li>4) Inspect supplies, equipment, and work areas to ensure conformance to established standards</li> </ol>	<p><b><u>Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Supervise All Departments- Hotel supervisors supervise operations in all hotel departments. This includes the laundry room, housekeeping, and the kitchen.</li> <li>2) Supervise Front Desk Operations- Hotel supervisors supervise front desk operations such as guest check-in and check-out, room inventory, and incoming phone calls.</li> <li>3) Manage Hotel Staff- Hotel supervisors supervise staff members and delegate tasks as necessary.</li> </ol>



AREA	SHIP CATERING Responsibilities May Includes	SHIP HOTEL Responsibilities May Includes
	<ul style="list-style-type: none"> <li>5) Instruct cooks and other workers in the preparation, cooking, garnishing, and presentation of food</li> <li>6) Recruit and hire staff, including cooks and other kitchen workers</li> <li>7) Analyze recipes to assign prices to menu items, based on food, labor, and overhead costs</li> <li>8) Prepare and cook foods of all types, either on a regular basis or for special guests or functions</li> <li>9) Supervise and coordinate activities of cooks and workers engaged in food preparation</li> <li>10) Check the quality of raw and cooked food products to ensure that standards are met</li> </ul>	<ul style="list-style-type: none"> <li>4) Maintain Inventory- Hotel supervisors maintain the hotel's inventory and order new items as needed.</li> <li>5) Interact with Guests- Hotel supervisors interact with hotel guests to ensure they receive a quality experience. This includes answering questions and addressing customer complaints.</li> <li>6) Inspect Rooms- Hotel supervisors inspect guest rooms and all other hotel areas for cleanliness and to ensure that hotel protocols are being followed</li> </ul>
Level 2	<p><b><u>Cook</u></b></p> <ul style="list-style-type: none"> <li>1) Cook and provide for well balanced meals to all the ship's complement where meal shall be of sufficient quantity, acceptable quality and be ready to be served in time as per the designated meal times on board.</li> <li>2) Work closely with the Catering Officer/Chief Steward/Administration Officer in the preparation of a sensible and well-balanced menu</li> <li>3) Ensures that the galley, fridge spaces and store rooms are kept in a clean and tidy condition at all times and that any defects are reported immediately to the Catering Officer/ Chief Steward/ Administration Officer.</li> <li>4) Assist in receiving all the catering stores.</li> <li>5) Assist in onboard waste management activities as instructed by the shipboard management.</li> </ul>	<p><b><u>Waiter</u></b></p> <ul style="list-style-type: none"> <li>1) Responsible for all food and service related issues within his/ her work station and serves passengers according to the highest standards set by the cruise line.</li> <li>2) The Waiter / Waitress must know passengers by name, escorts them to their tables, presents the food and beverage menus, suggest particular courses and wines and would kindly answer to any questions they may have regarding menu items and wine list.</li> <li>3) Responsible for setting the tables, obtaining and arranging linen, silverware, china and glassware.</li> <li>4) Must relay all passengers' orders to the galley, then would serve the various courses and beverages making sure that all items look presentable and are properly garnished and decorated before serving.</li> <li>5) Helps to set up special events and functions as instructed by the ship's management.</li> </ul>



AREA	SHIP CATERING Responsibilities May Includes	SHIP HOTEL Responsibilities May Includes
		6) In addition to the routine restaurant duties, he / she may be required to perform some other functions, such as greeting passengers upon embarkation, serving at afternoon teas and Captain's Welcome cocktail parties.
Level 1	<b><u>Steward</u></b> 1) Carry out all work instructed by the Catering Officer/Chief Steward or Cook in an efficient, safe and proper manner. 2) Serve the officers their meals and / or to prepare and lay out the cutlery on meal tables. 3) Keep the Officers' Dining Saloon, Duty Mess Room, Officers' Lounge, Pantry and Mess Room areas clean and tidy. 4) Keep accommodation alleyways, staircases, toilets, common bathrooms clean and in hygienic condition. 5) Assist in receiving all catering stores.	NO LEVEL



## TABLE OF JOB RESPONSIBILITIES VS NOSS LEVEL (AREA DESCRIPTION)

Section : (H) Transportation and Storage

Division : (50) Water Transport

Group : (502) Inland water transport

Table 4.14: List of Responsibilities for Group 502 according to NOSS Levelling (1 of 2)

AREA	<b>DECK - DOMESTIC &lt;500GT</b> Responsibilities May Include	<b>ENGINE - DOMESTIC &lt;750kW</b> Responsibilities May Include	<b>ENGINE - DOMESTIC BETWEEN 750kW to 3000kW</b> Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 4	<b><u>Master</u></b> <ol style="list-style-type: none"> <li>1) Plan and conduct a passage and determine position</li> <li>2) Maintain a safe navigational watch</li> <li>3) Respond to emergencies</li> <li>4) Respond to a distress signal at sea</li> <li>5) Manoeuvre the ship and operate small ship power plant</li> <li>6) Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage</li> <li>7) Maintain seaworthiness of the ship</li> <li>8) Prevent, control and fight fires on board</li> <li>9) Operate life-saving appliances</li> <li>10) Apply medical first aid on board ship</li> </ol>	<b><u>Chief Engineer</u></b> <ol style="list-style-type: none"> <li>1) Operate and monitor a vessel's engines and auxiliary equipment.</li> <li>2) Monitor the operation of the vessel's engines, drive train, and auxiliary equipment</li> <li>3) Maintain propulsion machinery</li> <li>4) Maintenance and repairs on a vessel's mechanical and electrical systems</li> <li>5) Scheduled maintenance</li> <li>6) Operate vessel's engines and equipment</li> <li>7) Maintain outboard motor</li> <li>8) Operate Auxiliary Equipment</li> <li>9) Diagnose faults in mechanical and electrical systems</li> </ol>	<b><u>Chief Engineer</u></b> <ol style="list-style-type: none"> <li>1) Operate and monitor a vessel's engines and auxiliary equipment.</li> <li>2) Monitor the operation of the vessel's engines, drive train, and auxiliary equipment</li> <li>3) Maintain propulsion machinery</li> <li>4) Maintenance and repairs on a vessel's mechanical and electrical systems</li> <li>5) Scheduled maintenance</li> <li>6) Operate vessel's engines and equipment</li> <li>7) Maintain outboard motor</li> <li>8) Operate Auxiliary Equipment</li> <li>9) Diagnose faults in mechanical and electrical systems</li> <li>10) Prepare the vessel for the slip</li> </ol>



AREA	<b>DECK - DOMESTIC &lt;500GT</b> Responsibilities May Include	<b>ENGINE - DOMESTIC &lt;750kW</b> Responsibilities May Include	<b>ENGINE - DOMESTIC BETWEEN 750kW to 3000kW</b> Responsibilities May Include
	11) Monitor compliance with legislative requirements 12) Monitor surrounding to detect hazard 13) Handling of passenger 14) Maintenance of Vessel (Deck) 15) Mooring and unmooring 16) Vessel handling in extreme weather 17) Ropework and access 18) Bridges, Tides and current 19) Anchor work 20) Ship stability	10) Prepare the vessel for the slip 11) Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and protection of the environment 12) Maintain safety and security of the vessel, crew and passengers and the operational condition of lifesaving, fire-fighting and other safety systems 13) Supervise the operating and repair of the engine	11) Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and protection of the environment 12) Maintain safety and security of the vessel, crew and passengers and the operational condition of lifesaving, fire-fighting and other safety systems 13) Supervise the operating and repair of the engine
Level 3	<b><u>Mate</u></b> 1) Watchkeeping duties 2) Monitor surrounding to detect hazard 3) Handling of passenger 4) Observe loading and unloading cargo 5) Maintenance of Vessel (Deck) 6) Ship manoeuvring 7) Mooring and unmooring 8) Pollution prevention 9) Meteorology 10) Vessel handling in extreme weather 11) Ropework and access 12) Basic engineering and machinery 13) Emergency 14) Generic chartwork and Compass work	<b><u>Engine Officer</u></b> 1) Perform engine maintenance work 2) Supervises, coordinates, coaches and evaluates all non-officer engine personal - Oiler 3) In conjunction with the Chief Engineer plans and schedules all activities in regards to regular maintenance of all areas of the vessel maintained by the engineering department 4) Assigns daily tasks to the engine crew and checks the completed work for compliance with the cruise lines standards and operating procedures 5) Maintaining, cleaning and, at times,	<b><u>Engine Officer</u></b> 1) Perform engine maintenance work 2) Supervises, coordinates, coaches and evaluates all non-officer engine personal - Oiler 3) In conjunction with the Chief Engineer plans and schedules all activities in regards to regular maintenance of all areas of the vessel maintained by the engineering department 4) Assigns daily tasks to the engine crew and checks the completed work for compliance with the cruise lines standards and operating procedures 5) Maintaining, cleaning and, at times, operating ship engine parts, including blowers,





AREA	<b>DECK - DOMESTIC &lt;500GT</b> Responsibilities May Include	<b>ENGINE - DOMESTIC &lt;750kW</b> Responsibilities May Include	<b>ENGINE - DOMESTIC BETWEEN 750kW to 3000kW</b> Responsibilities May Include
	15) Bridges, Tides and current 16) Anchor work	operating ship engine parts, including blowers, compressors, motors, gears, ejectors and other equipment 6) Check gauges and dials on the equipment to make sure the equipment is working 7) Help deck workers and officers with shipping tasks 8) Responsible for repairing the equipment 9) Assist with loading cargo and maintaining the ship's safety system 10) Take on unrelated duties relating to sewage, electrical systems, and water on board the ship 11) Records data in ship's log such as weather conditions and distance travelled	compressors, motors, gears, ejectors and other equipment 6) Check gauges and dials on the equipment to make sure the equipment is working 7) Help deck workers and officers with shipping tasks 8) Responsible for repairing the equipment 9) Assist with loading cargo and maintaining the ship's safety system 10) Take on unrelated duties relating to sewage, electrical systems, and water on board the ship 11) Records data in ship's log such as weather conditions and distance travelled
Level 2	<b><u>Bosun / Able Bodies Seaman</u></b> 1) Reports to the Mate 2) Responsible for the routine maintenance of the decks, hull and superstructure of the ship - cleaning, painting, removing rust accumulations etc. 3) Perform in ropes and lines handling and warping during berthing and departing	<b><u>Oiler/Greaser</u></b> 1) Reports to the Engine Officer 2) Responsible for the routine maintenance of the engine, hull and superstructure of the ship 3) Carrying out the tasks and responsibilities assigned by the Engineer Officers with regards to the	<b><u>Oiler/Greaser</u></b> 1) Reports to the Engine Officer 2) Responsible for the routine maintenance of the engine, hull and superstructure of the ship 3) Carrying out the tasks and responsibilities assigned by the Engineer Officers with regards to the ship's operations and maintenance on machinery and equipment.



AREA	<b>DECK - DOMESTIC &lt;500GT</b> Responsibilities May Include	<b>ENGINE - DOMESTIC &lt;750kW</b> Responsibilities May Include	<b>ENGINE - DOMESTIC BETWEEN 750kW to 3000kW</b> Responsibilities May Include
	<p>movement of the vessel</p> <p>4) Cleans, maintains and keeps in proper working condition emergency and lifesaving equipment</p> <p>5) Perform in the launch and recovery of tenders, lifeboats and rescue boats</p> <p>6) Undergoes on-the-job-training under the supervision of deck crew superiors - Mate</p> <p>7) Handle safety, security and lifeboat equipment and drills</p>	<p>ship's operations and maintenance on machinery and equipment.</p> <p>4) Cleans, maintains and keeps in proper working condition emergency and lifesaving equipment</p> <p>5) Check monitoring instruments linked to the ship's mechanical, electrical and hydraulic systems</p>	<p>4) Cleans, maintains and keeps in proper working condition emergency and lifesaving equipment</p> <p>5) Check monitoring instruments linked to the ship's mechanical, electrical and hydraulic systems</p>
Level 1	NO LEVEL	NO LEVEL	NO LEVEL



Table 4.15: List of Responsibilities for Group 502 according to NOSS Levelling (1 of 2)

AREA	<b>SHIP CATERING</b> Responsibilities May Includes	<b>SHIP HOTEL</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE
Level 5	<b><u>Administration Officer</u></b> <ol style="list-style-type: none"> <li>1) Responsible for the organization, discipline and efficiency of Catering Department including assignment of duties and working hours. Safety of catering personnel working directly under his care.</li> <li>2) Plans, organizes, co-ordinates the administration of the Catering Department to achieve efficient cost controls, well-planned meals and good general hygiene.</li> <li>3) Provide practical advice on the fundamental rules of food hygiene consistent with industry standards.</li> <li>4) Responsible for proper standards in menu planning, preparation of food for cooking and to propose menus to Master on weekly basis.</li> <li>5) Carry out daily inspection of the galleys, public areas within the accommodation, pantry, mess rooms, dining saloon and other spaces related to catering services and housekeeping to ensure that cleanliness and tidiness is maintained. Special attention to be taken for those areas where food is stored or prepared.</li> </ol>	<b><u>Manager</u></b> <ol style="list-style-type: none"> <li>1) Planning and managing the hotel and other hotel services.</li> <li>2) Preparing the budgets and financial planning for the hotel.</li> <li>3) Setting up a target and achieving sales and profits.</li> <li>4) Planning for the work schedules of an individuals and teams.</li> <li>5) Observing and monitoring the worker's performance to make sure that the company rules and regulations are being followed.</li> <li>6) Cooperating with other department managers for coordinating the activities such as wedding, any special events and conferences.</li> <li>7) Coordinating with the duties of the front- office and resolving problems.</li> <li>8) Supervising the maintenance, renovations and furnishings of the hotel.</li> <li>9) Scheduling the work activities, duties and hours of the staff.</li> <li>10) Handling the customer grievances and complaints.</li> <li>11) They are responsible for day to day hotel management and hold accountability for directing, organizing and planning all hotel-services.</li> </ol>
Level 4	<b><u>Chief Steward/Chef</u></b> <ol style="list-style-type: none"> <li>1) Plans, organises, co-ordinates the administration of the Catering Department to achieve efficient cost controls, well planned meals and general hygiene.</li> </ol>	<b><u>Purser</u></b> <ol style="list-style-type: none"> <li>1) Post all charges and guest credits in MXP to ensure accurate accounting.</li> <li>2) Process guest credit-card payment for end of voyage settlement.</li> <li>3) Prepare billing statements (interim, final) for all guests as well as port</li> </ol>



AREA	<b>SHIP CATERING</b> Responsibilities May Includes	<b>SHIP HOTEL</b> Responsibilities May Includes
	2) Responsible for the efficient administration of the Catering Department. 3) Responsible of victualling stores, bonded stores and associated accounts and documentation 4) Responsible for ordering of victualling provisions and sundries, and the proficient storage of such provisions in the designated stores or cold rooms. 5) Responsible for efficient control of the consumption of the victualling provisions on board 6) Maintaining the inventory of linen, cutlery, furnishing, fittings and see that they are in good and clean condition. 7) Carry out daily inspection of the galley/s, public areas within the accommodation, pantry, mess rooms, dining saloon and other spaces related to catering services and housekeeping. 8) Maintain inventory of cabin stores 9) Responsible for garbage management on board.	debarks. 4) Understand all facets of shipboard organization and services, ports of call, shore excursions, inventory, guest services. 5) Support 2nd Purser Admin for checking all passenger information, including passport. 6) Support 2nd Purser Admin to control ship's documentation in/out ports. 7) Liaising with agents and HODs for all Port Operation matters. 8) Support Crew Purser and 2nd Purser with immigration procedure. 9) Maintains a good relationship with all local authorities at ports of call to ensure cooperation with all officials whilst onboard. 10) Organize passenger embarkation and disembarkation in conjunction with all relative parties to ensure proper execution.
Level 3	<b><u>Chief Cook</u></b> 1) Determine how food should be presented, and create decorative food displays 2) Determine production schedules and staff requirements necessary to ensure timely delivery of services 3) Estimate amounts and costs of required supplies, such as food and ingredients 4) Inspect supplies, equipment, and work areas to ensure conformance to established standards 5) Instruct cooks and other workers in the preparation, cooking, garnishing, and presentation of food	<b><u>Supervisor</u></b> 1) Supervise All Departments- Hotel supervisors supervise operations in all hotel departments. This includes the laundry room, housekeeping, and the kitchen. 2) Supervise Front Desk Operations- Hotel supervisors supervise front desk operations such as guest check-in and check-out, room inventory, and incoming phone calls. 3) Manage Hotel Staff- Hotel supervisors supervise staff members and delegate tasks as necessary. 4) Maintain Inventory- Hotel supervisors maintain the hotel's inventory and order new items as needed.



AREA	<b>SHIP CATERING</b> Responsibilities May Includes	<b>SHIP HOTEL</b> Responsibilities May Includes
	6) Recruit and hire staff, including cooks and other kitchen workers 7) Analyze recipes to assign prices to menu items, based on food, labor, and overhead costs 8) Prepare and cook foods of all types, either on a regular basis or for special guests or functions 9) Supervise and coordinate activities of cooks and workers engaged in food preparation 10) Check the quality of raw and cooked food products to ensure that standards are met	5) Interact with Guests- Hotel supervisors interact with hotel guests to ensure they receive a quality experience. This includes answering questions and addressing customer complaints. 6) Inspect Rooms- Hotel supervisors inspect guest rooms and all other hotel areas for cleanliness and to ensure that hotel protocols are being followed
Level 2	<b><u>Cook</u></b> 1) Cook and provide for well balanced meals to all the ship's complement where meal shall be of sufficient quantity, acceptable quality and be ready to be served in time as per the designated meal times on board. 2) Work closely with the Catering Officer/Chief Steward/Administration Officer in the preparation of a sensible and well-balanced menu 3) Ensures that the galley, fridge spaces and store rooms are kept in a clean and tidy condition at all times and that any defects are reported immediately to the Catering Officer/ Chief Steward/ Administration Officer. 4) Assist in receiving all the catering stores. 5) Assist in onboard waste management activities as instructed by the shipboard management.	<b><u>Waiter</u></b> 1) Responsible for all food and service related issues within his/ her work station and serves passengers according to the highest standards set by the cruise line. 2) The Waiter / Waitress must know passengers by name, escorts them to their tables, presents the food and beverage menus, suggest particular courses and wines and would kindly answer to any questions they may have regarding menu items and wine list. 3) Responsible for setting the tables, obtaining and arranging linen, silverware, china and glassware. 4) Must relay all passengers' orders to the galley, then would serve the various courses and beverages making sure that all items look presentable and are properly garnished and decorated before serving. 5) Helps to set up special events and functions as instructed by the ship's management. 6) In addition to the routine restaurant duties, he / she may be required to perform some other functions, such as greeting passengers upon



AREA	<b>SHIP CATERING</b> Responsibilities May Includes	<b>SHIP HOTEL</b> Responsibilities May Includes
		embarkation, serving at afternoon teas and Captain's Welcome cocktail parties.
Level 1	<b><u>Steward</u></b> 1) Carry out all work instructed by the Catering Officer/Chief Steward or Cook in an efficient, safe and proper manner. 2) Serve the officers their meals and / or to prepare and lay out the cutlery on meal tables. 3) Keep the Officers' Dining Saloon, Duty Mess Room, Officers' Lounge, Pantry and Mess Room areas clean and tidy. 4) Keep accommodation alleyways, staircases, toilets, common bathrooms clean and in hygienic condition. 5) Assist in receiving all catering stores.	NO LEVEL



## TABLE OF JOB RESPONSIBILITIES VS NOSS LEVEL (AREA DESCRIPTION)

Section: (H) Transportation and Storage

Division:(50) Water Transport

Group: (522) Support activities for transportation

Table 4.16: List of Responsibilities for Group 522 according to NOSS Levelling (1 of 8)

AREA	SHIPPING AGENT Responsibilities May Include	FORWARDING AGENT Responsibilities May Include	NAVIGATIONAL SUPPORT Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	<b><u>Manager</u></b> <ol style="list-style-type: none"> <li>1) Ensure all shipping documentation are prepared</li> <li>2) Ensure all customs documentation relative to vessel and cargo clearance are in place</li> <li>3) Ensure good communication with all parties</li> <li>4) Make proper plan for operations</li> <li>5) Interface between external Authorities And management</li> <li>6) Ensure operation not affected negatively due to shipping</li> <li>7) Manage administrative issue</li> <li>8) Maintain financial report for NPA and NIMASA accounts</li> <li>9) Prepare report on operations for management</li> </ol>	<b><u>Manager</u></b> <ol style="list-style-type: none"> <li>1) Ensure all forwarding documentation are prepared</li> <li>2) Ensure all customs documentation relative to vessel and cargo clearance are in place</li> <li>3) Ensure good communication with all parties</li> <li>4) Make proper plan for operations</li> <li>5) Interface between external Authorities And management</li> <li>6) Ensure operation not affected negatively due to forwarding</li> <li>7) Manage administrative issue</li> <li>8) Maintain financial report for NPA and NIMASA accounts</li> <li>9) Prepare report on operations for management</li> </ol>	<b><u>Manager</u></b> <ol style="list-style-type: none"> <li>1) Prevent ships under their navigational control from engaging in unsafe operations</li> <li>2) Manage system tracking and radar tracking by controlling range scale, bearing cursor and distance cursor</li> <li>3) Manage radar communication, control tower communication, port system communication and the related equipment or devices</li> <li>4) Manage port system speed, port system efficiency and control tower safety</li> </ol>



AREA	<b>SHIPPING AGENT</b> Responsibilities May Include	<b>FORWARDING AGENT</b> Responsibilities May Include	<b>NAVIGATIONAL SUPPORT</b> Responsibilities May Includes
	10) Prepare vessel and cargo file for invoicing 11) Deal with all Authorities on operational matter 12) Maintain good relationship with customers and Authorities 13) Ensure good relationship with suppliers 14) Ensure an efficient service is supplied to clients 15) Ensure proper execution of all shipping project 16) Assure compliance with company operational policy	10) Prepare vessel and cargo file for invoicing 11) Deal with all Authorities on operational matter 12) Maintain good relationship with customers and Authorities 13) Ensure good relationship with suppliers 14) Ensure an efficient service is supplied to clients 15) Ensure proper execution of all forwarding project 16) Assure compliance with company operational policy	
Level 4	<b><u>Executive</u></b> 1) Hire and train sales associates to work on the floor as well as in shipping 2) Allow your knowledge of emerging and consistent trends to inform purchasing and inventory decisions and solutions 3) Continually advance your product knowledge and that of other employees 4) Maintain accurate customer records for loyalty program 5) Manage and evaluate revenue and expense reports 6) Become liaison with corporate office and use contacts to promote the business and align with brand values	<b><u>Documentation Executive</u></b> 1) Ensure the organization files precise documentation for all its exports 2) Acts as a link between customers and sales groups 3) Check on the processes of handling goods both internationally and nationally. 4) The export documentation supervisor, who has expertise in sea freight and export air documentation, ensures that all exports are documented correctly 5) Analyze and negotiate shipping cost with freight forwarders on the basis of weight and consignment volume. 6) Responsible for the design and	<b><u>Controller</u></b> 1) Prevent ships under their navigational control from engaging in unsafe operations 2) Supervise system tracking and radar tracking by controlling range scale, bearing cursor and distance cursor 3) Supervise radar communication, control tower communication, port system communication and the related equipment or devices 4) Supervise port system speed, port system efficiency and control tower safety





AREA	<b>SHIPPING AGENT</b> Responsibilities May Include	<b>FORWARDING AGENT</b> Responsibilities May Include	<b>NAVIGATIONAL SUPPORT</b> Responsibilities May Includes
		implementation of all export plans and activities, ensuring conformity to all project requirements.	
Level 3	<b><u>Boarding Officer</u></b> <ol style="list-style-type: none"> <li>1) Handle vessels' arrival/departure formalities</li> <li>2) Care for the vessel's husbandry needs</li> <li>3) Work with principals (shipowners or operators) in matters related to ship callings</li> <li>4) Acquire and allocate resources to support operations</li> <li>5) Handle cargo documentation, invoices and inwards shipment</li> <li>6) Identify and solicit prospective clients</li> <li>7) Liaise with clients on status of cargo clearance</li> <li>8) Liaise with local agencies on daily work matters</li> <li>9) Monitor cargo loading and unloading operations</li> <li>10) Monitor vessel arrival and departure</li> <li>11) Optimise utilisation of resources</li> <li>12) Prepare quotations and proforma disbursements as required by clients, shipowners and shipping lines</li> </ol>	<b><u>Customer Service</u></b> <ol style="list-style-type: none"> <li>1) Process sales invoicing in accordance with established procedures and standards.</li> <li>2) Receive supplier purchase invoices ensuring they are correct and passed to appropriate department for processing.</li> <li>3) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>4) Maintain and file all records in accordance with company procedure.</li> <li>5) Constantly review working processes with carriers and transport companies to ensure best practice</li> <li>6) Assist the sales team with quotations and client/product knowledge.</li> <li>7) Responsibilities and essential job functions include, but are not limited to the following:</li> <li>8) Arranges shipments by examining destination, route, rate, delivery time; dispatches to carriers.</li> <li>9) Verifies merchandise shipped by matching</li> </ol>	<b><u>Assistant Controller</u></b> <ol style="list-style-type: none"> <li>1) Carry out radar communication, port system communication and control tower communication.</li> <li>2) Carry out system tracking and radar tracking by controlling range scale, bearing cursor and distance cursor</li> <li>3) Assist in checking related equipment or devices</li> <li>4) Assist in preventing ships under their navigational control from engaging in unsafe operation</li> <li>5) Assist in supervising port system speed and port system efficiency</li> <li>6) Assist in control tower safety</li> </ol>



AREA	SHIPPING AGENT Responsibilities May Include	FORWARDING AGENT Responsibilities May Include	NAVIGATIONAL SUPPORT Responsibilities May Includes
	13) Process all formalities and declarations in a timely manner to ensure smooth entry or departure of ships assigned 14) Propose workflow improvements to improve efficiency 15) Solve problems arising from the course of work 16) Supervise and guide Shipping Clerks (Documentation)	bills of lading; reconciling quantities; noting discrepancies. 10) Keeps customers informed by forwarding notices, shipment date and method, and current status; answering questions. 11) Benchmark freight rates. 12) Negotiate rate structures, including consolidation lanes, capacity, and customer programs. Present finding to Management. 13) Collect and analyze service issue and carrier quality information and develop clear and concise reports.	
Level 2	<u>Clerk</u> 1) Monitoring the merchandise leaving a company's warehouse 2) Creating shipping documents, such as invoices and purchase orders, and pulling inventory from the shelves 3) Monitoring each shipment to make sure that outgoing packages are packed correctly and accurately 4) Print shipping labels, schedule pick-ups, and ensure that each package has the proper postage 5) Perform inventory control and track a shipment's delivery status 6) Keep and verify records on incoming and	<u>Clerk</u> 1) Monitoring the merchandise leaving a company's warehouse 2) Creating shipping documents, such as invoices and purchase orders, and pulling inventory from the shelves 3) Monitoring each shipment to make sure that outgoing packages are packed correctly and accurately 4) Print shipping labels, schedule pick-ups, and ensure that each package has the proper postage 5) Perform inventory control and track a shipment's delivery status 6) Keep and verify records on incoming and	NO LEVEL



AREA	SHIPPING AGENT Responsibilities May Include	FORWARDING AGENT Responsibilities May Include	NAVIGATIONAL SUPPORT Responsibilities May Includes
	outgoing shipments 7) Prepare items for shipment 8) Determine method of shipment by utilizing knowledge of shipping procedures, rates and routes 9) Attach shipping labels on packed stencils or cartons; identify shipping information on goods, using stenciling equipment 10) Examine outgoing shipments and make sure they conform with specifications 11) Maintain inventory of shipping materials as well as supplies	outgoing shipments 7) Prepare items for shipment 8) Determine method of shipment by utilizing knowledge of shipping procedures, rates and routes 9) Attach shipping labels on packed stencils or cartons; identify shipping information on goods, using stenciling equipment 10) Examine outgoing shipments and make sure they conform with specifications 11) Maintain inventory of shipping materials as well as supplies	
Level 1	<u><b>Despatch</b></u> 1) Identifying items and containers of incoming and outgoing shipments and verifying them against consignment records 2) Ensuring outgoing shipments are in good condition and meet specifications 3) Arranging internal distribution of goods received 4) Organising the despatch of goods with completed documentation 5) Maintaining prescribed records of goods received and despatched 6) Examining shipping documents and verifying cargo to be released	<u><b>Despatch</b></u> 1) Identifying items and containers of incoming and outgoing shipments and verifying them against consignment records 2) Ensuring outgoing shipments are in good condition and meet specifications 3) Arranging internal distribution of goods received 4) Organising the despatch of goods with completed documentation 5) Maintaining prescribed records of goods received and despatched 6) Examining shipping documents and verifying cargo to be released	NO LEVEL



AREA	SHIPPING AGENT Responsibilities May Include	FORWARDING AGENT Responsibilities May Include	NAVIGATIONAL SUPPORT Responsibilities May Includes
	<ul style="list-style-type: none"> <li>7) Recording customs clearance requirements and authorizing collection of cargo</li> <li>8) Calculating storage and clearance charges and billing customers</li> <li>9) Receiving details of outgoing cargo, and arranging bookings of freight space and collection of goods from customers</li> <li>10) Providing information to customers on custom tariffs, tariff classifications and concessions, and methods of clearing goods</li> <li>11) Organizes item orders by editing for price, promotions, weight compliance.</li> <li>12) Arranges shipments by checking stock to determine inventory levels; anticipating delivery requirements; placing and expediting orders.</li> <li>13) Ships items by examining items, destination, route, rate, delivery time; ordering carriers.</li> <li>14) Verifies items shipped by matching bills of lading; reconciling quantities; noting discrepancies.</li> <li>15) Keeps customers informed by forwarding notice of item availability, shipment date and method, and current status; answering questions.</li> </ul>	<ul style="list-style-type: none"> <li>7) Recording customs clearance requirements and authorizing collection of cargo</li> <li>8) Calculating storage and clearance charges and billing customers</li> <li>9) Receiving details of outgoing cargo, and arranging bookings of freight space and collection of goods from customers</li> <li>10) Providing information to customers on custom tariffs, tariff classifications and concessions, and methods of clearing goods</li> <li>11) Organizes item orders by editing for price, promotions, weight compliance.</li> <li>12) Arranges shipments by checking stock to determine inventory levels; anticipating delivery requirements; placing and expediting orders.</li> <li>13) Ships items by examining items, destination, route, rate, delivery time; ordering carriers.</li> <li>14) Verifies items shipped by matching bills of lading; reconciling quantities; noting discrepancies.</li> <li>15) Keeps customers informed by forwarding notice of item availability, shipment date and method, and current status; answering questions.</li> </ul>	



AREA	<b>SHIPPING AGENT</b> Responsibilities May Include	<b>FORWARDING AGENT</b> Responsibilities May Include	<b>NAVIGATIONAL SUPPORT</b> Responsibilities May Includes
	16) Replaces damaged items, shortages, and miss shipments by determining optimal response of replacement or credit.	16) Replaces damaged items, shortages, and miss shipments by determining optimal response of replacement or credit.	



Table 4.17: List of Responsibilities for Group 522 according to NOSS Levelling (2 of 8)

AREA	<b>PILOTAGE</b> Responsibilities May Include	<b>TOWAGE</b> Responsibilities May Include	<b>MOORING</b> Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	<b><u>Pilot Superintendent</u></b> <ol style="list-style-type: none"> <li>1) Analyse VHF radio communication and the efficiency of VHF radio usage</li> <li>2) Consult maps, charts, weather reports, and navigation equipment to determine and direct ship movements</li> <li>3) Monitor the speed of pilot boat based on specialized knowledge of local winds, weather, water depths, tides, currents, and hazards</li> <li>4) Manage pilot office safety at port in accordance with safety regulations provided</li> <li>5) Plan the activities of port pilot office</li> <li>6) Plan manpower tasking and schedule and pilot boat complaints management</li> </ol>	NOT AVAILABLE	NOT AVAILABLE
	<b><u>Pilot</u></b> <ol style="list-style-type: none"> <li>1) Interpret VHF radio instruction</li> <li>2) Prepare and setup equipment and devices for VHF communication</li> <li>3) Carry out VHF radio communication</li> <li>4) Supervise the efficiency of VHF radio usage</li> </ol>	<b><u>Tug Master</u></b> <ol style="list-style-type: none"> <li>1) Determine course and towing speed on basis of specialised knowledge of local winds, weather, tides and current</li> <li>2) Check navigation devices, such as radar, sonic depth finder, compass and sextant and other aids to navigation, such as</li> </ol>	



AREA	PILOTAGE Responsibilities May Include	TOWAGE Responsibilities May Include	MOORING Responsibilities May Include
Level 4	5) Supervise pilot office safety at port in accordance with safety regulations provided 6) Guide pilot boat direction to destination 7) Assist in guiding the speed of boat to reach the destination based on specialised knowledge of local winds, weather, water depths, tides, currents, and hazards 8) Implement manpower tasking according to schedule 9) Coordinate pilot boat complaint management	lighthouses and buoys 3) Perform general maintenance work 4) Supervise ship movements in ports 5) Supervise workers on deck to rig towlines 6) Supervise the steering of the tugboat, to push or pull vessels to destination and to berth and un-berth ships, avoiding reefs, outlying shoals, and other hazards to shipping 7) Assist in giving instruction to tugboat	NOT AVAILABLE
Level 3	NO LEVEL	<u><b>Tug Officer/Engineer</b></u> 1) Identify course and towing speed on basis of specialised knowledge of local winds, weather, tides and current 2) Steer tugboat to push or pull vessels to destination and to berth and un-berth ships, avoiding reefs, outlying shoals, and other hazards to shipping 3) Utilise navigation devices, such as radar, sonic depth finder, compass and sextant and other aids to navigation, such as lighthouses and buoys 4) Assist in ship movements in ports and in giving instruction to tugboat	<u><b>Mooring Supervisor</b></u> 1) Supervise ocean-going oil tanker lightering operations 2) Supervise the transfer of oil into the lightering vessel to ensure that no leaks or spills occur 3) Supervise the disengagement of hoses and manoeuvring of vessels upon completion of the operation 4) Ensure that safe and environmental procedures, operating procedures and weather parameters are followed 5) Ensure that workers of both the lightering vessel and the vessel to be lightered are



AREA	<b>PILOTAGE</b> Responsibilities May Include	<b>TOWAGE</b> Responsibilities May Include	<b>MOORING</b> Responsibilities May Include
		5) Assist in performance of general maintenance work 6) Assist in operation of all vessel equipment 7) Assist workers on deck to rig towlines	familiar with the comply with safety requirements
Level 2	NO LEVEL	<u><b>Able Bodied Seaman</b></u> 1) Identify rig towing and mooring lines 2) Utilise first aid equipment 3) Act as the surface swimmer 4) Assist in operating damage control equipment	<u><b>Boat Crew</b></u> 1) Identify rig towing and mooring lines 2) Utilise first aid equipment 3) Act as the surface swimmer 4) Assist in operating damage control equipment
Level 1	NO LEVEL	NO LEVEL	NO LEVEL





Table 4.18: List of Responsibilities for Group 522 according to NOSS Levelling (3 of 8)

AREA	<b>MOORING</b> Responsibilities May Include	<b>STORAGE</b> Responsibilities May Include	<b>DISTRIBUTION / CONSOLIDATION</b> Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	NOT AVAILABLE	<b><u>Warehousing Manager</u></b> 1) Create cargo compatibility principles 2) Consult cargo consignee/shipper 3) Analyse cargo consignment volume 4) Formulate cargo storage policy 5) Manage cargo inventory 6) Manage area/space stacking, segregation policy and space utilization 7) Manage equipment fleet size & capacity and cost-effectiveness 8) Review transportation type and origin/destination 9) Manage transportation cost effectiveness and urgency 10) Manage documentation correct and complete. 11) Review packaging material suitability, value add, cost, and design.	<b><u>Warehousing Manager</u></b> 1) Create cargo compatibility principles 2) Consult cargo consignee/shipper 3) Analyse cargo consignment volume 4) Formulate cargo storage policy 5) Manage cargo inventory 6) Manage area/space stacking, segregation policy and space utilization 7) Manage equipment fleet size & capacity and cost-effectiveness 8) Review transportation type and origin/destination 9) Manage transportation cost effectiveness and urgency 10) Manage documentation correct and complete. 11) Review packaging material suitability, value add, cost, and design.
		<b><u>Warehousing Executive</u></b> 1) Administer cargo compatibility principles 2) Administer equipment fleet size, capacity	<b><u>Warehousing Executive</u></b> 1) Administer cargo compatibility principles 2) Administer equipment fleet size, capacity



AREA	MOORING Responsibilities May Include	STORAGE Responsibilities May Include	DISTRIBUTION / CONSOLIDATION Responsibilities May Include
Level 4	NOT AVAILABLE	and cost-effectiveness 3) Coordinate cargo consignee/shipper 4) Collate cargo consignment volume 5) Monitor cargo inventory 6) Monitor transportation urgency and cost-effectiveness 7) Monitor documentation correct and complete 8) Propose area/space stacking and segregation policy 9) Propose cargo storage policy 10) Monitor area/space utilization 11) Confirm transportation type 12) Propose packaging material suitability, material value add, cost and design	and cost-effectiveness 3) Coordinate cargo consignee/shipper 4) Collate cargo consignment volume 5) Monitor cargo inventory 6) Monitor transportation urgency and cost-effectiveness 7) Monitor documentation correct and complete 8) Propose area/space stacking and segregation policy 9) Propose cargo storage policy 10) Monitor area/space utilization 11) Confirm transportation type 12) Propose packaging material suitability, material value add, cost and design
Level 3	<b><u>Mooring Supervisor</u></b> 1) Supervise ocean-going oil tanker lightering operations 2) Supervise the transfer of oil into the lightering vessel to ensure that no leaks or spills occur 3) Supervise the disengagement of hoses and maneuvering of vessels upon completion of the operation 4) Ensure that safe and environmental procedures, operating procedures and weather parameters are followed	<b><u>Storage Supervisor</u></b> 1) Check import/export documentation to determine cargo contents 2) Check cargo inventory 3) Monitor cargo consignment volume 4) Supervise storage area/space stacking 5) Supervise storage area/space segregation 6) Supervise storage area/space utilisation 7) Ensure a storage area/space compatibility 8) Confirm equipment suitability	<b><u>Consolidation &amp; Distribution (C&amp;D) Supervisor</u></b> 1) Confirm cargo consignment volume 2) Confirm equipment capacity 3) Confirm transportation origin/ destination, transportation urgency, transportation capacity and transportation 4) Supervise area/space compatibility 5) Supervise transportation activities 6) Prepare import/export documentation to determine cargo contents 7) Schedule equipment suitability



AREA	<b>MOORING</b> Responsibilities May Include	<b>STORAGE</b> Responsibilities May Include	<b>DISTRIBUTION / CONSOLIDATION</b> Responsibilities May Include
	5) Ensure that workers of both the lightering vessel and the vessel to be lightered are familiar with the comply with safety requirements		
Level 2	<b><u>Mooring Gang</u></b> <ol style="list-style-type: none"> <li>1) Steer the boat or any type of transportation used in or on the water safely and smoothly</li> <li>2) Perform watch keeping duties on the bridge and steers the ship applying the helm orders given by watchkeeping officer</li> <li>3) Carry out routine maintenance checks on the engine and weed-hatch as laid down in the ship</li> <li>4) Operate fire equipment and ship's rescue boats</li> <li>5) Assist in checking and responding to the information shown on the instrument panel on the boat</li> <li>6) Assist the bridge officers in ship's navigation, maintenance of nautical charts and maps</li> </ol>	<b><u>Storage Assistant</u></b> <ol style="list-style-type: none"> <li>1) Assist in checking import/export documentation to determine cargo contents</li> <li>2) Ensure cargo consignment volume</li> <li>3) Record cargo inventory</li> <li>4) Comply to area/space stacking factor</li> <li>5) Carry out storage area/space segregation</li> <li>6) Confirm storage area/ space utilisation</li> <li>7) Identify storage equipment suitability</li> <li>8) Check storage area/ space compatibility</li> </ol>	<b><u>Consolidation &amp; Distribution (C&amp;D) Assistant</u></b> <ol style="list-style-type: none"> <li>1) Identify the types of cargo and goods carried on a ship</li> <li>2) Identify cargo consignment volume</li> <li>3) Identify equipment capacity</li> <li>4) Identify transportation type</li> <li>5) Locate consignee/shipper cargo</li> <li>6) Record cargo inventory</li> <li>7) Carry out cargo compatibility confirmation</li> <li>8) Carry out transportation from origin to destination</li> <li>9) Execute warehouse area or space segregation at the port</li> <li>10) Assist in preparing import/export documentation to determine cargo contents</li> <li>11) Assist in scheduling equipment suitability</li> <li>12) Ensure warehouse area/space compatibility</li> <li>13) Ensure transportation urgency, capacity and compatibility</li> </ol>
Level 1		<b><u>Cargo / Equipment Handler</u></b> <ol style="list-style-type: none"> <li>1) Identify the types of cargo and goods carried on a ship</li> </ol>	<b><u>Cargo / Equipment Handler</u></b> <ol style="list-style-type: none"> <li>1) Identify the types of cargo and goods carried on a ship</li> </ol>



AREA	<b>MOORING</b> Responsibilities May Include	<b>STORAGE</b> Responsibilities May Include	<b>DISTRIBUTION / CONSOLIDATION</b> Responsibilities May Include
	NO LEVEL	2) Identify warehouse area or space utilisation 3) Identify cargo compatibility 4) Obtain cargo consignee/shipper and details of consignee/shipper 5) Segregate warehouse area or space at the port 6) Confirm equipment compatibility in allocated space	2) Identify warehouse area or space utilisation 3) Identify cargo compatibility 4) Obtain cargo consignee/shipper and details of consignee/shipper 5) Segregate warehouse area or space at the port 6) Confirm equipment compatibility in allocated space



Table 4.19: List of Responsibilities for Group 522 according to NOSS Levelling (4 of 8)

AREA	<b>PACKAGING</b> Responsibilities May Include	<b>LIQUID STORAGE</b> Responsibilities May Include	<b>CRUISE/PASSANGER</b> Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	<b><u>Warehousing Manager</u></b> <ol style="list-style-type: none"> <li>1) Create cargo compatibility principles</li> <li>2) Consult cargo consignee/shipper</li> <li>3) Analyse cargo consignment volume</li> <li>4) Formulate cargo storage policy</li> <li>5) Manage cargo inventory</li> <li>6) Manage area/space stacking, segregation policy and space utilization</li> <li>7) Manage equipment fleet size &amp; capacity and cost-effectiveness</li> <li>8) Review transportation type and origin/destination</li> <li>9) Manage transportation cost effectiveness and urgency</li> <li>10) Manage documentation correct and complete.</li> <li>11) Review packaging material suitability, value add, cost, and design.</li> </ol>	<b><u>Terminal Manager</u></b> <ol style="list-style-type: none"> <li>1) Coordinate all inbound and outbound liquid activities into the refining facility, including all truck and rail loading and off-loading operations</li> <li>2) Ensure quality assurance: loading of correct products to specific customers, load to accurate legal weights, proper filtration, sampling and identification of fuel loads for retaining samples</li> <li>3) Coordinate terminal schedules and assignments including PTO and overtime requirements</li> <li>4) Prepare related shipping documentation for all shipments sent to customers</li> <li>5) Manage all bulk liquids, storage, and transfer process through the facility tank farm</li> <li>6) Log pertinent information associated with loading and transportation for both regulatory and Noble Oil (SOP) compliance.</li> <li>7) Ensure clean and well-organized work</li> </ol>	<b><u>Operation Manager</u></b> <ol style="list-style-type: none"> <li>1) Plan and analyse port information, vessel data and vessel performance data</li> <li>2) Plan and schedule voyages</li> <li>3) Manage the preventing of cargo claims and vessel damage claims</li> <li>4) Interact with sales team to develop cargo transportation solutions</li> <li>5) Monitor the operations assistant manager duties</li> <li>6) Verify selection of vendors for bunkers, agency, support services and stevedoring in consultation with the technical services</li> <li>7) Verify the availability of cargo handling and securing equipment in ports according to technical department requirements.</li> </ol>



AREA	<b>PACKAGING</b> Responsibilities May Include	<b>LIQUID STORAGE</b> Responsibilities May Include	<b>CRUISE/PASSANGER</b> Responsibilities May Include
		areas 8) Ensure accurate physical inventory reports of bulk products in the tank farm 9) Ensure quality control of all inbound and outbound loads to confirm tanker cleanliness and safety 10) Interact with Maintenance personnel for daily and project-based maintenance activities	
Level 4	<b><u>Warehousing Executive</u></b> 1) Administer cargo compatibility principles 2) Administer equipment fleet size, capacity and cost-effectiveness 3) Coordinate cargo consignee/shipper 4) Collate cargo consignment volume 5) Monitor cargo inventory 6) Monitor transportation urgency and cost-effectiveness 7) Monitor documentation correct and complete 8) Propose area/space stacking and segregation policy 9) Propose cargo storage policy 10) Monitor area/space utilization 11) Confirm transportation type 12) Propose packaging material suitability, material value add, cost and design	<b><u>Assistant Terminal Manager</u></b> 1) Administer cargo compatibility principles 2) Administer equipment fleet size, capacity and cost-effectiveness 3) Coordinate cargo consignee/shipper 4) Collate cargo consignment volume 5) Monitor cargo inventory 6) Monitor transportation urgency and cost-effectiveness 7) Monitor documentation correct and complete 8) Propose area/space stacking and segregation policy 9) Propose cargo storage policy 10) Monitor area/space utilization 11) Confirm transportation type 12) Propose packaging material suitability, material value add, cost and design	<b><u>Assistant Operation Manager</u></b> 1) Monitor the operations supervisor duties 2) Schedule voyages in consultation 3) Present to all meeting attendees a concise but complete summary of the status of each vessel under the Operation Manager's control 4) Coordinate cargo loading operations with the assigned Port Captain and Line Manager 5) Determine the availability of cargo handling and securing equipment in ports according to Technical department requirements. 6) Prepare a written report following each vessel attendance, summarising all relevant information and forwarding it to the Operations Manager



AREA	<b>PACKAGING</b> Responsibilities May Include	<b>LIQUID STORAGE</b> Responsibilities May Include	<b>CRUISE/PASSANGER</b> Responsibilities May Include
			7) Implement ISO procedures in operational matters.
Level 3	<b><u>Packaging Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Check space utilization</li> <li>2) Prepare complete documentation</li> <li>3) Confirm cargo types and cargo fragility</li> <li>4) Confirm packaging material type</li> <li>5) Confirm packaging material value-add</li> <li>6) Confirm packaging material cost</li> <li>7) Confirm packaging material design</li> <li>8) Ensure cargo ease of handling</li> </ol>	<b><u>Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Supervise day to day operations of liquid storage tanks and a DOT regulated pipeline.</li> <li>2) Monitor SCADA computer and troubleshoot problems as they arise.</li> <li>3) Record gauges, temperature readings, and take samples from liquid storage tanks.</li> <li>4) Supervise product transfer alignments including piping, pumps, &amp; associated valves.</li> <li>5) Perform daily inspections of pipelines and valves.</li> <li>6) Responsible for the safe and efficient loading and unloading of rail cars and tank trucks</li> <li>7) Inspect all containers before loading and after loading to ensure that the container meets Department of Transportation regulations and standards.</li> <li>8) Ensure that proper documentation is completed on all shipments including but not limited to: proper shipping weights,</li> </ol>	<b><u>Equipment Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Carry out clerical work and data entry</li> <li>2) Coordinate cargo loading operations with the assigned Operation Manager</li> <li>3) Confirm vendors for bunkers, agency, support services and stevedoring in consultation with the Operation Manager and Technical Services.</li> <li>4) Confirm the availability of cargo handling and securing equipment in ports according to Technical department requirements.</li> <li>5) Assist in preparing a written report following each vessel attendance, summarising all relevant information and forwarding it to the Operations Manager</li> </ol>



AREA	<b>PACKAGING</b> Responsibilities May Include	<b>LIQUID STORAGE</b> Responsibilities May Include	<b>CRUISE/PASSANGER</b> Responsibilities May Include
		seal numbers are recorded, and logs are completed.	
Level 2	<b><u>Packaging Assistant</u></b> <ol style="list-style-type: none"> <li>1) Assist in confirming cargo types</li> <li>2) Assist in confirming cargo fragility</li> <li>3) Assist in ensuring cargo ease of handling</li> <li>4) Assist in double checking space utilization</li> <li>5) Assist in preparing a correct and complete documentation</li> <li>6) Identify packaging material type, packaging material value-add, packaging material cost and packaging material design</li> </ol>	<b><u>Handler</u></b> <ol style="list-style-type: none"> <li>1) Attach identifying tags to containers or mark them with identifying information.</li> <li>2) Read work orders or receive oral instructions to determine work assignments or material or equipment needs.</li> <li>3) Record numbers of units handled or moved, using daily production sheets or work tickets.</li> <li>4) Move freight, stock, or other materials to and from storage or production areas, loading docks, delivery vehicles, ships, or containers, by hand or using trucks, tractors, or other equipment.</li> <li>5) Sort cargo before loading and unloading.</li> <li>6) Assemble product containers or crates, using hand tools and pre-cut lumber.</li> <li>7) Load and unload ship cargo, using winches or other hoisting devices.</li> <li>8) Connect hoses and operate equipment to move liquid materials into and out of storage tanks on vessels.</li> <li>9) Pack containers and re-pack damaged containers.</li> </ol>	<b><u>Equipment Operator</u></b> <ol style="list-style-type: none"> <li>1) Determine types of material</li> <li>2) Determine materials quantity</li> <li>3) Determine materials suppliers</li> <li>4) Carry out delivery at wharf</li> <li>5) Carry out delivery at anchorage</li> <li>6) Assist in documentation</li> </ol>
Level 1	<b><u>Cargo/Equipment Handler</u></b>	<b><u>General Worker</u></b>	<b><u>Cargo Handler</u></b>





AREA	<b>PACKAGING</b> Responsibilities May Include	<b>LIQUID STORAGE</b> Responsibilities May Include	<b>CRUISE/PASSANGER</b> Responsibilities May Include
	<ol style="list-style-type: none"> <li>1) Identify the types of cargo and goods carried on a ship</li> <li>2) Identify warehouse area or space utilisation</li> <li>3) Identify cargo compatibility</li> <li>4) Obtain cargo consignee/shipper and details of consignee/shipper</li> <li>5) Segregate warehouse area or space at the port</li> <li>6) Confirm equipment compatibility in allocated space</li> </ol>	<ol style="list-style-type: none"> <li>1) Identify the types of cargo and goods carried on a ship</li> <li>2) Identify warehouse area or space utilisation</li> <li>3) Identify cargo compatibility</li> <li>4) Obtain cargo consignee/shipper and details of consignee/shipper</li> <li>5) Segregate warehouse area or space at the port</li> <li>6) Confirm equipment compatibility in allocated space</li> </ol>	<ol style="list-style-type: none"> <li>1) Identify the types of cargo and goods carried on a ship</li> <li>2) Identify cargo consignee/shipper details</li> <li>3) Identify allocated cargo area or space utilisation</li> <li>4) Identify if equipment is suitable for cargo handling work</li> <li>5) Segregate area or space at the designated area</li> </ol>



Table 4.20: List of Responsibilities for Group 522 according to NOSS Levelling (5 of 8)

AREA	<b>CONTAINERISED</b> Responsibilities May Include	<b>NON – CONTAINERISED</b> Responsibilities May Include	<b>STEVEDORING</b> Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	<b><u>Operation Manager</u></b> 1) Plan and analyse port information, vessel data and vessel performance data 2) Plan and schedule voyages 3) Manage the preventing of cargo claims and vessel damage claims 4) Interact with sales team to develop cargo transportation solutions 5) Monitor the operations assistant manager duties 6) Verify selection of vendors for bunkers, agency, support services and stevedoring in consultation with the technical services 7) Verify the availability of cargo handling and securing equipment in ports according to technical department requirements.	<b><u>Operation Manager</u></b> 1) Plan and analyse port information, vessel data and vessel performance data 2) Plan and schedule voyages 3) Manage the preventing of cargo claims and vessel damage claims 4) Interact with sales team to develop cargo transportation solutions 5) Monitor the operations assistant manager duties 6) Verify selection of vendors for bunkers, agency, support services and stevedoring in consultation with the technical services 7) Verify the availability of cargo handling and securing equipment in ports according to technical department requirements.	<b><u>OPERATION MANAGER</u></b> 1) Plan and analyse port information, vessel data and vessel performance data 2) Plan and schedule voyages 3) Manage the preventing of cargo claims and vessel damage claims 4) Interact with sales team to develop cargo transportation solutions 5) Monitor the operations assistant manager duties 6) Verify selection of vendors for bunkers, agency, support services and stevedoring in consultation with the technical services 7) Verify the availability of cargo handling and securing equipment in ports according to technical department requirements.
Level 4	<b><u>Assistant Operation Manager</u></b> 1) Monitor the operations supervisor duties 2) Schedule voyages in consultation	<b><u>Assistant Operation Manager</u></b> 1) Monitor the operations supervisor duties 2) Schedule voyages in consultation 3) Present to all meeting attendees a concise but	<b><u>Assistant Operation Manager</u></b> 1) Monitor the operations supervisor duties 2) Schedule voyages in consultation 3) Present to all meeting attendees a concise



AREA	CONTAINERISED Responsibilities May Include	NON – CONTAINERISED Responsibilities May Include	STEVEDORING Responsibilities May Include
	<ul style="list-style-type: none"> <li>3) Present to all meeting attendees a concise but complete summary of the status of each vessel under the Operation Manager's control</li> <li>4) Coordinate cargo loading operations with the assigned Port Captain and Line Manager</li> <li>5) Determine the availability of cargo handling and securing equipment in ports according to Technical department requirements.</li> <li>6) Prepare a written report following each vessel attendance, summarising all relevant information and forwarding it to the Operations Manager</li> <li>7) Implement ISO procedures in operational matters.</li> </ul>	<ul style="list-style-type: none"> <li>complete summary of the status of each vessel under the Operation Manager's control</li> <li>4) Coordinate cargo loading operations with the assigned Port Captain and Line Manager</li> <li>5) Determine the availability of cargo handling and securing equipment in ports according to Technical department requirements.</li> <li>6) Prepare a written report following each vessel attendance, summarising all relevant information and forwarding it to the Operations Manager</li> <li>7) Implement ISO procedures in operational matters.</li> </ul>	<ul style="list-style-type: none"> <li>but complete summary of the status of each vessel under the Operation Manager's control</li> <li>4) Coordinate cargo loading operations with the assigned Port Captain and Line Manager</li> <li>5) Determine the availability of cargo handling and securing equipment in ports according to Technical department requirements.</li> <li>6) Prepare a written report following each vessel attendance, summarising all relevant information and forwarding it to the Operations Manager</li> <li>7) Implement ISO procedures in operational matters.</li> </ul>
Level 3	<b><u>Equipment Supervisor</u></b> <ul style="list-style-type: none"> <li>1) Carry out clerical work and data entry</li> <li>2) Coordinate cargo loading operations with the assigned Operation Manager</li> <li>3) Confirm vendors for bunkers, agency, support services and stevedoring in consultation with the Operation Manager and Technical Services.</li> <li>4) Confirm the availability of cargo handling and securing equipment in</li> </ul>	<b><u>Equipment Supervisor</u></b> <ul style="list-style-type: none"> <li>1) Carry out clerical work and data entry</li> <li>2) Coordinate cargo loading operations with the assigned Operation Manager</li> <li>3) Confirm vendors for bunkers, agency, support services and stevedoring in consultation with the Operation Manager and Technical Services.</li> <li>4) Confirm the availability of cargo handling and securing equipment in ports according to Technical department requirements.</li> </ul>	<b><u>Stevedore Supervisor</u></b> <ul style="list-style-type: none"> <li>1) Supervise stevedores in their port and ensure that the team's work is done safely and to the requirements of the port and its customers.</li> <li>2) Supervise loading and unloading a ship's cargo and must follow the ship's plan to ensure that cargo is loaded and unloaded correctly</li> <li>3) Supervise and operates material-handling</li> </ul>



AREA	CONTAINERISED Responsibilities May Include	NON – CONTAINERISED Responsibilities May Include	STEVEDORING Responsibilities May Include
	<p>ports according to Technical department requirements.</p> <p>5) Assist in preparing a written report following each vessel attendance, summarising all relevant information and forwarding it to the Operations Manager</p>	<p>5) Assist in preparing a written report following each vessel attendance, summarising all relevant information and forwarding it to the Operations Manager</p>	<p>equipment (i.e., power winch, grain trimmer, crane, and lift truck) to transfer cargo into or from the hold of ships and around dock area.</p> <p>4) Move large cargo containers to and from trucks and other ships</p> <p>5) Execute basic clerical duties and to moor and unmoor vessels upon arrival and departure</p>
Level 2	<p><b><u>Equipment Operator</u></b></p> <p>1) Determine types of material</p> <p>2) Determine materials quantity</p> <p>3) Determine materials suppliers</p> <p>4) Carry out delivery at wharf</p> <p>5) Carry out delivery at anchorage</p> <p>6) Assist in documentation</p>	<p><b><u>Equipment Operator</u></b></p> <p>1) Determine types of material</p> <p>2) Determine materials quantity</p> <p>3) Determine materials suppliers</p> <p>4) Carry out delivery at wharf</p> <p>5) Carry out delivery at anchorage</p> <p>6) Assist in documentation</p>	<p><b><u>Signalman</u></b></p> <p>1) Interpret and break down any visual or radio message heading</p> <p>2) Report lost/damaged/inoperable equipment</p> <p>3) Hoist and haul down PREP for sunrise, morning and evening colors, and frequently signals morning and evening colors by whistle</p> <p>4) Report to the Officer of The Deck (OOD) of all ships departing and arriving in the port and the movement of small boats in the harbour, and to provide the OOD with advance warning of possible dangers</p>
Level 1	<p><b><u>Cargo Handler</u></b></p> <p>1) Identify the types of cargo and goods carried on a ship</p>	<p><b><u>Cargo Handler</u></b></p> <p>1) Identify the types of cargo and goods carried on a ship</p>	<p><b><u>Cargo Handler</u></b></p> <p>1) Identify the types of cargo and goods carried on a ship</p>



AREA	<b>CONTAINERISED</b> Responsibilities May Include	<b>NON – CONTAINERISED</b> Responsibilities May Include	<b>STEVEDORING</b> Responsibilities May Include
	2) Identify cargo consignee/shipper details 3) Identify allocated cargo area or space utilisation 4) Identify if equipment is suitable for cargo handling work 5) Segregate area or space at the designated area	2) Identify cargo consignee/shipper details 3) Identify allocated cargo area or space utilisation 4) Identify if equipment is suitable for cargo handling work 5) Segregate area or space at the designated area	2) Identify cargo consignee/shipper details 3) Identify allocated cargo area or space utilisation 4) Identify if equipment is suitable for cargo handling work 5) Segregate area or space at the designated area



Table 4.21: List of Responsibilities for Group 522 according to NOSS Levelling (6 of 8)

AREA	<b>STEVEDORING</b> Responsibilities May Include	<b>LIQUID CARGO</b> Responsibilities May Include	<b>LIQUID CARGO</b> Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	<b><u>Operation Manager</u></b> <ol style="list-style-type: none"> <li>1) Plan and analyse port information, vessel data and vessel performance data</li> <li>2) Plan and schedule voyages</li> <li>3) Manage the preventing of cargo claims and vessel damage claims</li> <li>4) Interact with sales team to develop cargo transportation solutions</li> <li>5) Monitor the operations assistant manager duties</li> <li>6) Verify selection of vendors for bunkers, agency, support services and stevedoring in consultation with the technical services</li> <li>7) Verify the availability of cargo handling and securing equipment in ports according to technical department requirements.</li> </ol>	<b><u>Master</u></b> <ol style="list-style-type: none"> <li>1) Create cargo compatibility principles</li> <li>2) Consult cargo consignee/shipper</li> <li>3) Analyse cargo consignment volume</li> <li>4) Formulate cargo storage policy</li> <li>5) Manage cargo inventory</li> <li>6) Manage area/space stacking, segregation policy and space utilization</li> <li>7) Manage equipment fleet size &amp; capacity and cost-effectiveness</li> <li>8) Review transportation type and origin/destination</li> <li>9) Manage transportation cost effectiveness and urgency</li> <li>10) Manage documentation correct and complete.</li> <li>11) Review packaging material suitability, value add, cost, and design.</li> </ol>	<b><u>Terminal Manager</u></b> <ol style="list-style-type: none"> <li>1) Coordinate all inbound and outbound liquid activities into the refining facility, including all truck and rail loading and off-loading operations</li> <li>2) Ensure quality assurance: loading of correct products to specific customers, load to accurate legal weights, proper filtration, sampling and identification of fuel loads for retaining samples</li> <li>3) Coordinate terminal schedules and assignments including PTO and overtime requirements</li> <li>4) Prepare related shipping documentation for all shipments sent to customers</li> <li>5) Manage all bulk liquids, storage, and transfer process through the facility tank farm</li> <li>6) Log pertinent information associated with loading and transportation for both regulatory and Noble Oil (SOP) compliance.</li> <li>7) Ensure quality control of all inbound and</li> </ol>



AREA	<b>STEVEDORING</b> Responsibilities May Include	<b>LIQUID CARGO</b> Responsibilities May Include	<b>LIQUID CARGO</b> Responsibilities May Include
			outbound loads to confirm tanker cleanliness and safety 8) Interact with Maintenance personnel for daily and project-based maintenance activities
Level 4	<b><u>Assistant Operation Manager</u></b> <ol style="list-style-type: none"> <li>1) Monitor the operations supervisor duties</li> <li>2) Schedule voyages in consultation</li> <li>3) Present to all meeting attendees a concise but complete summary of the status of each vessel under the Operation Manager's control</li> <li>4) Coordinate cargo loading operations with the assigned Port Captain and Line Manager</li> <li>5) Determine the availability of cargo handling and securing equipment in ports according to Technical department requirements.</li> <li>6) Prepare a written report following each vessel attendance, summarising all relevant information and forwarding it to the Operations Manager</li> </ol>	<b><u>Loading Master</u></b> <ol style="list-style-type: none"> <li>1) Administer cargo compatibility principles</li> <li>2) Administer equipment fleet size, capacity and cost-effectiveness</li> <li>3) Coordinate cargo consignee/shipper</li> <li>4) Collate cargo consignment volume</li> <li>5) Monitor cargo inventory</li> <li>6) Monitor transportation urgency and cost-effectiveness</li> <li>7) Monitor documentation correct and complete</li> <li>8) Propose area/space stacking and segregation policy</li> <li>9) Propose cargo storage policy</li> <li>10) Monitor area/space utilization</li> <li>11) Confirm transportation type</li> <li>12) Propose packaging material suitability, material value add, cost and design</li> </ol>	<b><u>Loading Master</u></b> <ol style="list-style-type: none"> <li>1) Administer cargo compatibility principles</li> <li>2) Administer equipment fleet size, capacity and cost-effectiveness</li> <li>3) Coordinate cargo consignee/shipper</li> <li>4) Collate cargo consignment volume</li> <li>5) Monitor cargo inventory</li> <li>6) Monitor transportation urgency and cost-effectiveness</li> <li>7) Monitor documentation correct and complete</li> <li>8) Propose area/space stacking and segregation policy</li> <li>9) Propose cargo storage policy</li> <li>10) Monitor area/space utilization</li> <li>11) Confirm transportation type</li> <li>12) Propose packaging material suitability, material value add, cost and design</li> </ol>
Level 3	<b><u>Stevedore Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Supervise stevedores in their port and</li> </ol>	<b><u>Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Check import/export documentation to</li> </ol>	<b><u>Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Check import/export documentation to</li> </ol>



AREA	<b>STEVEDORING</b> Responsibilities May Include	<b>LIQUID CARGO</b> Responsibilities May Include	<b>LIQUID CARGO</b> Responsibilities May Include
	<p>ensure that the team's work is done safely and to the requirements of the port and its customers.</p> <p>2) Supervise loading and unloading a ship's cargo and must follow the ship's plan to ensure that cargo is loaded and unloaded correctly</p> <p>3) Supervise and operates material-handling equipment (i.e., power winch, grain trimmer, crane, and lift truck) to transfer cargo into or from the hold of ships and around dock area.</p> <p>4) Move large cargo containers to and from trucks and other ships</p> <p>5) Execute basic clerical duties and to moor and unmoor vessels upon arrival and departure</p>	<p>determine cargo contents</p> <p>2) Check cargo inventory</p> <p>3) Monitor cargo consignment volume</p> <p>4) Supervise storage area/space stacking</p> <p>5) Supervise storage area/space segregation</p> <p>6) Supervise storage area/space utilisation</p> <p>7) Ensure a storage area/space compatibility</p> <p>8) Confirm equipment suitability</p>	<p>determine cargo contents</p> <p>2) Check cargo inventory</p> <p>3) Monitor cargo consignment volume</p> <p>4) Supervise storage area/space stacking</p> <p>5) Supervise storage area/space segregation</p> <p>6) Supervise storage area/space utilisation</p> <p>7) Ensure a storage area/space compatibility</p> <p>8) Confirm equipment suitability</p>
Level 2	<p><b><u>Winchman</u></b></p> <p>1) Determine loads or materials according to weight and size specifications</p> <p>2) Move levers, pedals, and throttles in order to stop, start and regulate speeds of hoist or winch drums in response to hand, bell, buzzer, telephone, loud-speaker, or whistle signals, or by observing dial indicators or cable marks.</p>	<p><b><u>Hose Handler</u></b></p> <p>1) Attach identifying tags to containers or mark them with identifying information.</p> <p>2) Read work orders or receive oral instructions to determine work assignments or material or equipment needs.</p> <p>3) Record numbers of units handled or moved, using daily production sheets or work tickets.</p> <p>4) Move freight, stock, or other materials to and from storage or production areas, loading</p>	<p><b><u>Technician</u></b></p> <p>1) Assist in checking import/export documentation to determine cargo contents</p> <p>2) Ensure cargo consignment volume</p> <p>3) Record cargo inventory</p> <p>4) Comply to area/space stacking factor</p> <p>5) Carry out storage area/space segregation</p> <p>6) Confirm storage area/ space utilisation</p> <p>7) Identify storage equipment suitability</p>





AREA	<b>STEVEDORING</b> Responsibilities May Include	<b>LIQUID CARGO</b> Responsibilities May Include	<b>LIQUID CARGO</b> Responsibilities May Include
	<ul style="list-style-type: none"> <li>3) Start engines of hoists or winches and use levers and pedals to wind or unwind cable on drums</li> <li>4) Observe equipment gauges and indicators and hand signals of other workers in order to verify load positions and/or depths.</li> <li>5) Operate compressed air, diesel, electric, gasoline, or steam-driven hoists or winches in order to control movement of cableway, cages, derricks, draglines, loaders, railcars, or skips.</li> <li>6) Move or reposition hoists, winches, loads, and materials, manually or using equipment and machines such as trucks, cars, and hand trucks.</li> </ul>	<ul style="list-style-type: none"> <li>docks, delivery vehicles, ships, or containers, by hand or using trucks, tractors, or other equipment.</li> <li>5) Sort cargo before loading and unloading.</li> <li>6) Assemble product containers or crates, using hand tools and pre-cut lumber.</li> <li>7) Load and unload ship cargo, using winches or other hoisting devices.</li> <li>8) Connect hoses and operate equipment to move liquid materials into and out of storage tanks on vessels.</li> <li>9) Pack containers and re-pack damaged containers.</li> </ul>	<ul style="list-style-type: none"> <li>8) Check storage area/ space compatibility</li> </ul>
Level 1	<u><b>Cargo Handler</b></u> <ul style="list-style-type: none"> <li>1) Identify the types of cargo and goods carried on a ship</li> <li>2) Identify cargo consignee/shipper details</li> </ul>		



AREA	<b>STEVEDORING</b> Responsibilities May Include	<b>LIQUID CARGO</b> Responsibilities May Include	<b>LIQUID CARGO</b> Responsibilities May Include
	3) Identify allocated cargo area or space utilisation 4) Identify if equipment is suitable for cargo handling work 5) Segregate area or space at the designated area	NO LEVEL	NO LEVEL



Table 4.22: List of Responsibilities for Group 522 according to NOSS Levelling (7 of 8)

AREA	<b>BUNKERING</b> Responsibilities May Include	<b>BUNKERING</b> Responsibilities May Include	<b>WASTE DISPOSAL</b> Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	<b><u>Master</u></b> 1) Administer in confirm bunker type 2) Administer in confirm bunker amount 3) Administer in confirm bunker price 4) Administer in confirm bunker delivery time 5) Ensure documentation accuracy and completeness 6) Adhere to safety international standards 7) Comply to vessel requirement safety	<b><u>Terminal Manager</u></b> 1) Manage supplier relationships (with oil majors/minor, traders and brokers) 2) Negotiate and execute all bunker purchasing contracts with suppliers 3) Ensure timely and efficient delivery of fuels for the global fleet 4) Develop a strategic approach to group bunker purchases 5) Manage supplier relationships (with oil majors/minor, traders and brokers) 6) Negotiate and execute all bunker purchasing contracts with suppliers 7) Ensure timely and efficient delivery of fuels for the global fleet 8) Develop a strategic approach to group bunker purchases	NOT AVAILABLE
	<b><u>Chief Engineer</u></b> 1) Assist master in confirm bunker type 2) Assist master in confirm bunker amount 3) Assist master in confirm bunker price 4) Assist master in confirm bunker	<b><u>Assistant Terminal Manager</u></b> 1) Assist terminal manager in confirm bunker type 2) Assist terminal manager in confirm bunker amount 3) Assist terminal manager in confirm bunker	



AREA	<b>BUNKERING</b> Responsibilities May Include	<b>BUNKERING</b> Responsibilities May Include	<b>WASTE DISPOSAL</b> Responsibilities May Include
Level 4	delivery time 5) Ensure documentation accuracy and completeness 6) Adhere to safety international standard 7) Comply to vessel requirement safety	price 4) Assist terminal manager in confirm bunker delivery time 5) Ensure documentation accuracy and completeness 6) Adhere to safety international standards 7) Comply to vessel requirement safety	
Level 3	<u><b>Bunkering Services Supervisor</b></u> 1) Confirm bunker type 2) Confirm bunker amount 3) Confirm bunker price 4) Confirm bunker delivery time 5) Ensure documentation accuracy and completeness 6) Adhere to safety international standards 7) Comply to vessel requirement safety	<u><b>Supervisor</b></u> 1) Confirm bunker type 2) Confirm bunker amount 3) Confirm bunker price 4) Confirm bunker delivery time 5) Ensure documentation accuracy and completeness 6) Adhere to safety international standards 7) Comply to vessel requirement safety.	NO LEVEL
Level 2	<u><b>Pumpman</b></u> 1) Carry out liquid transfer pumps, valves, strainers, deck machinery and piping 2) Perform condition-based monitoring and general maintenance actions 3) Perform minor mechanical duties 4) Perform minor engineering duties as assigned 5) Assist in monitoring and maintains well pressurization	<u><b>Technician</b></u> 1) Carry out liquid transfer pumps, valves, strainers, deck machinery and piping 2) Perform condition-based monitoring and general maintenance actions 3) Perform minor mechanical duties 4) Perform minor engineering duties as assigned 5) Assist in monitoring and maintains well pressurization 6) Assist in repairing and rebuilding valves,	<u><b>Equipment Operator</b></u> 1) Determine types of waste 2) Determine waste quantity 3) Determine waste disposal point 4) Determine waste receptacle type 5) Follow signage instructions



AREA	<b>BUNKERING</b> Responsibilities May Include	<b>BUNKERING</b> Responsibilities May Include	<b>WASTE DISPOSAL</b> Responsibilities May Include
	6) Assist in repairing and rebuilding valves, fittings, pumps, glands and stuffing tubes 7) Participate in casualty drills, fire drills, collision and evacuation drills	fittings, pumps, glands and stuffing tubes 7) Participate in casualty drills, fire drills, collision and evacuation drills	
Level 1	<u><b>Ship Crew</b></u> 1) Identify bunker samples 2) Identify bunker amount 3) Adhere bunker bunkering point 4) Adhere mode via wharf 5) Comply mode via barge 6) Comply safety standard 7) Comply to safety vessel requirement	<u><b>GW</b></u> 1) Identify bunker samples 2) Identify bunker amount 3) Adhere bunker bunkering point 4) Adhere mode via wharf 5) Comply mode via barge 6) Comply safety standard 7) Comply to safety vessel requirement	<u><b>Cargo Handler</b></u> 1) Identify types of waste 2) Identify waste quantity 3) Identify waste disposal point 4) Identify waste receptacle type 5) Assist in completing checklist



Table 4.23: List of Responsibilities for Group 522 according to NOSS Levelling (8 of 8)

AREA	<b>SHIP CHANDLING</b> Responsibilities May Include	<b>LASHING</b> Responsibilities May Include
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE
Level 5	<b><u>Manager</u></b> <ol style="list-style-type: none"> <li>1) Specialists in supplies or equipment for ships</li> <li>2) Responsible for the safety of the gangs/stevedores working onboard ship/vessel to prevent such accident like hazardous materials from small to big piece of metals that may fall from gantry &amp; containers as well as lashing materials that splattered all vessel especially on top of hatch covers, access way walk &amp; cross walk.</li> <li>3) Preparing &amp; making a report to the managers &amp; supervisors for completion of jobs hand over to the next duty foreman, gangs/stevedores for other status if the vessel is still not completed.</li> <li>4) Promoting a good leadership, communications &amp; coordination to the ship's crew for better &amp; smooth operations. Evaluates financial statements and makes budget proposals.</li> <li>5) Responsible for hiring Purchase Manager</li> </ol>	<b><u>Manager</u></b> <ol style="list-style-type: none"> <li>1) Supervising gangs / stevedores, giving correct information &amp; assign jobs of their duties &amp; responsibilities such as lashings &amp; unlashings of cargoes according to the plan</li> <li>2) Coordinating to control / ship planner &amp; others supervisors of shipside / quay yard, stacking yard areas as well as equipment controller foreman/supervisor for work cue activities.</li> <li>3) Making an immediate decision &amp; sharing idea to the ship planners as well as equipment controller foreman on some miscalculation of work cues, job orders for the discharging &amp; loading containers for better &amp; smooth operations.</li> <li>4) Responsible for the safety of the gangs/stevedores working onboard ship/vessel to prevent such accident like hazardous materials from small to big piece of metals that may fall from gantry &amp; containers as well as lashing materials that splattered all vessel especially on top of hatch covers, access way walk&amp; cross walk.</li> <li>5) Preparing &amp; making a report to the managers &amp; supervisors for completion of jobs hand over to the next duty foreman, gangs/stevedores for other status if the vessel is still not completed.</li> </ol>
Level 4	<b><u>Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage in confirm types of material</li> <li>2) Manage in confirm materials quantity</li> <li>3) Manage in confirm delivery point at wharf</li> </ol>	<b><u>Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Responsible to confirm vessel types, vessel bay plan, vessel lasing plan and vessel total exchange calculation</li> <li>2) Determine container type</li> </ol>



AREA	<b>SHIP CHANDLING</b> Responsibilities May Include	<b>LASHING</b> Responsibilities May Include
	<ul style="list-style-type: none"> <li>4) Manage in confirm delivery point at anchorage</li> <li>5) Supervise delivery activities</li> <li>6) Perform documentation corrections</li> </ul>	<ul style="list-style-type: none"> <li>3) Confirm lashing materials type conformation, lashing materials quantity confirmation and lashing materials location</li> <li>4) Confirm number of manpower</li> <li>5) Supervise vessel loading &amp; discharge sequence</li> </ul>
Level 3	<b><u>Handling Supervisor</u></b> <ul style="list-style-type: none"> <li>1) Confirm types of material</li> <li>2) Confirm materials quantity</li> <li>3) Confirm delivery point at wharf</li> <li>4) Confirm delivery point at anchorage</li> <li>5) Supervise delivery activities</li> <li>6) Perform documentation corrections</li> </ul>	<b><u>Lasher Supervisor</u></b> <ul style="list-style-type: none"> <li>1) Responsible to confirm vessel types, vessel bay plan, vessel lashing plan and vessel total exchange calculation</li> <li>2) Determine container type</li> <li>3) Confirm lashing materials type conformation, lashing materials quantity confirmation and lashing materials location</li> <li>4) Confirm number of manpower</li> <li>5) Supervise vessel loading &amp; discharge sequence</li> </ul>
Level 2	<b><u>EQUIPMENT OPERATOR</u></b> <ul style="list-style-type: none"> <li>1) Determine types of materials</li> <li>2) Determine materials quantity</li> <li>3) Determine materials suppliers</li> <li>4) Carry out delivery at wharf</li> <li>5) Carry out delivery at anchorage</li> <li>6) Assist in documentation</li> </ul>	<b><u>Lashing Foreman</u></b> <ul style="list-style-type: none"> <li>1) Determine vessel types</li> <li>2) Determine vessel bay plan</li> <li>3) Confirm vessel lashing plan</li> <li>4) Confirm vessel total exchange confirmation</li> <li>5) Confirm vessel loading &amp; discharge sequence</li> <li>6) Confirm lashing materials type</li> <li>7) Confirm lashing materials location</li> <li>8) Determine container type</li> </ul>
Level 1	<b><u>Cargo Handler</u></b> <ul style="list-style-type: none"> <li>1) Identify types of materials</li> <li>2) Identify material quantity</li> <li>3) Assist delivery at wharf</li> </ul>	<b><u>Lasher</u></b> <ul style="list-style-type: none"> <li>1) Identify vessel types</li> <li>2) Identify vessel bay plan</li> <li>3) Identify vessel lashing plan</li> </ul>



AREA	<b>SHIP CHANDLING</b> Responsibilities May Include	<b>LASHING</b> Responsibilities May Include
	4) Assist delivery at anchorage	4) Identify vessel total exchange 5) Identify types of lashing materials 6) Identify lashing materials quantity 7) Identify lashing materials location 8) Identify container type 9) Carry out vessel loading & discharge sequence 10)





#### 4.5 MAPPING OS vs AVAILABLE NOSS

Table 4.24: Group 501 Occupational Structure (1 of 2)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(501) SEA AND COASTAL WATER TRANSPORT				
AREA	DECK - NEAR COASTAL <500GT	DECK - NEAR COASTAL 500GT - 3000GT	DECK - NEAR COASTAL >3000GT	DECK -UNLIMITED>500GT	ENGINE - NEAR COASTAL BETWEEN 750kW to 3000kW
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Master	Not Available
LEVEL 6	Not Available	Master	Master	Chief Officer	Chief Engineer
LEVEL 5	Master	TP-025-5-2012	TP-025-5-2012	H501-001-5-2016	2 <sup>nd</sup> Engineer
LEVEL 4	TP-025-4-2012	TP-025-4-2012	TP-025-4-2012	H501-001-4-2016	TP-090-4
LEVEL 3	TP-025-3-2012	TP-025-3-2012	TP-025-3-2012	Bosun / Able Bodies Seaman	H501-002-3-2017
LEVEL 2	TP-025-2-2012	TP-025-2-2012	TP-025-2-2012	Ordinary Seaman	H501-002-2-2017
LEVEL 1	No Level	No Level	No Level	No Level	No Level



Table 4.25: Group 501 Occupational Structure (2 of 2)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(501) SEA AND COASTAL WATER TRANSPORT				
AREA	ENGINE - NEAR COASTAL MORE THAN 3000KW	ENGINE - UNLIMITED BETWEEN 750kW TO 3000kW	ENGINE - UNLIMITED MORE THAN 3000kW	SHIP CATERING	SHIP HOTEL
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Chief Engineer	Chief Engineer	Not Available	Not Available
LEVEL 6	Chief Engineer	2 <sup>nd</sup> Engineer	2 <sup>nd</sup> Engineer	Not Available	Not Available
LEVEL 5	TP-090-5	H502-001-5:2016	H502-001-5:2016	Administration Officer	Manager
LEVEL 4	WKE	H502-001-4:2016	H502-001-4:2016	Chief Steward	Purser
LEVEL 3	Oiler / Greaser	Oiler / Greaser	Oiler / Greaser	Chief Cook	Supervisor
LEVEL 2	Engine Rating	Engine Rating	Engine Rating	Cook	Waiter
LEVEL 1	No Level	No Level	No Level	Steward	No Level



Table 4.26: Group 502 Occupational Structure (1 of 1)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(502) INLAND WATER TRANSPORT				
AREA	DECK - DOMESTIC <500GT	ENGINE - DOMESTIC <750kW	ENGINE - DOMESTIC BETWEEN 750kW TO 3000kW	SHIP CATERING	SHIP HOTEL
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Not Available	Not Available	Not Available	Administration Officer	Manager
LEVEL 4	TP-025-4-2012	H502-001-4:2016	H502-001-4:2016	Chief Steward	Purser
LEVEL 3	TP-025-3-2012	Engine Officer	Engine Officer	Chief Cook	Supervisor
LEVEL 2	TP-025-2-2012	Oiler / Greaser	Oiler / Greaser	Cook	Waiter
LEVEL 1	No Level	No Level	No Level	Steward	No Level



Table 4.27: Group 522 Occupational Structure (1 of 5)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(522) SUPPORT ACTIVITIES FOR TRANSPORTATION				
AREA	SHIPPING AGENT	FORWARDING AGENT	NAVIGATIONAL SUPPORT	PILOTAGE	TOWAGE
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Manager	FB-011-5:2013	Manager	Pilot Superintendent	Not Available
LEVEL 4	Executive	FB-011-4:2013	Controller	Pilot	Tug Master
LEVEL 3	Boarding Officer	FB-011-3:2013	Assistant Controller	No Level	TP-201-3:2013
LEVEL 2	Clerk	FB-011-2:2013	No Level	No Level	Able Bodies Seaman
LEVEL 1	Dispatch	Dispatch	No Level	No Level	No Level



Table 4.28: Group 522 Occupational Structure (2 of 5)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(522) SUPPORT ACTIVITIES FOR TRANSPORTATION				
AREA	MOORING	MOORING	STORAGE	DISTRIBUTION / CONSOLIDATION	PACKAGING
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Not Available	Not Available	Warehousing Manager	Warehousing Manager	Warehousing Manager
LEVEL 4	Not Available	Not Available	Warehousing Executive	Warehousing Executive	Warehousing Executive
LEVEL 3	Mooring Supervisor	Mooring Supervisor	Storage Supervisor	Consolidation & Distribution (C&D) Supervisor	Packaging Supervisor
LEVEL 2	Boat Crew	Mooring Gang	Storage Assistant	Consolidation & Distribution (C&D) Assistant	Packaging Assistant
LEVEL 1	No Level	No Level	Cargo / Equipment Handler	Cargo / Equipment Handler	Cargo / Equipment Handler



Table 4.29: Group 522 Occupational Structure (3 of 5)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(522) SUPPORT ACTIVITIES FOR TRANSPORTATION				
AREA	LIQUID STORAGE	CRUISE / PASSENGER	CONTAINERISED	NON - CONTAINERISED	STEVEDORING
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Terminal Manager	TP-203-5:2014	TP-203-5:2014	TP-203-5:2014	Operation Manager
LEVEL 4	Assistant Terminal Manager	TP-203-4:2014	TP-203-4:2014	TP-203-4:2014	Operation Assistant Manager
LEVEL 3	Supervisor	Equipment Supervisor	Equipment Supervisor	Equipment Supervisor	H522-003-3:2017
LEVEL 2	Handler	Equipment Operator	Equipment Operator	Equipment Operator	H522-003-2:2017
LEVEL 1	General Worker	Cargo Handler	Cargo Handler	Cargo Handler	Cargo Handler



Table 4.30: Group 522 Occupational Structure (4 of 5)

SECTION	(H) TRANSPORTATION AND STORAGE				
DIVISION	(50) WATER TRANSPORT				
GROUP	(522) SUPPORT ACTIVITIES FOR TRANSPORTATION				
AREA	STEVEDORING	LIQUID CARGO	LIQUID CARGO	BUNKERING	BUNKERING
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Operation Manager	Master	Terminal Manager	Master	Terminal Manager
LEVEL 4	Operation Assistant Manager	Loading Master	Loading Master	Chief Engineer	Assistant Terminal Manager
LEVEL 3	H522-003-3:2017	Supervisor	Supervisor	Bunkering Services Supervisor	Supervisor
LEVEL 2	H522-003-2:2017	Hose Handler	Technician	Pumpman	Technician
LEVEL 1	Cargo Handler	No Level	No Level	Ship Crew	GW



Table 4.31: Group 522 Occupational Structure (5 of 5)

SECTION	(H) TRANSPORTATION AND STORAGE		
DIVISION	(50) WATER TRANSPORT		
GROUP	(522) SUPPORT ACTIVITIES FOR TRANSPORTATION		
AREA	WASTE DISPOSAL	SHIP CHANDLING	LASHING
LEVEL 8	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available
LEVEL 5	Not Available	Manager	Manager
LEVEL 4	Not Available	Assistant Manager	Assistant Manager
LEVEL 3	No Level	Chandling Supervisor	Lasher Supervisor
LEVEL 2	Equipment Operator	Equipment Operator	Lashing Foreman
LEVEL 1	Cargo Handler	Cargo Handler	Lasher





#### **4.6 Occupational Description (OD)**

Occupational Description is a broad, general, and written statement of a specific job, based on the findings of a job analysis. It generally includes duties, purpose, responsibilities, scope, and working conditions of a job along with the job's title, and the name or designation of the person to whom the employee reports. The Occupational Description provided in Annex 4 are the job titles that have been identified as critical or hard-to-fill job as suggested by industry representatives from focus group.

#### **4.7 Skills in Demand**

The findings on this sub topic are discussed in sub topic 4.2.

#### **4.8 Chapter Summary**

Based on the discussions with panel members during the development workshops and survey findings, the OS of the industry is produced in this chapter. The OS would provide information of the competency or job areas applicable to the industry, and the skill level of the different job titles, according to the MOSQF Level Descriptors, and the available career paths.

The responsibilities of each job titles are listed according to competency levels as to give the overall picture of the job scope and as a guide to determine NOSS development in the future. The similarity of job scope may give the indication that the skill set is the same and the job areas may be merged for NOSS development.



## **CHAPTER 5:**

### **DISCUSSION, RECOMMENDATION AND CONCLUSION**

#### **5.1 Discussion**

Based on the findings obtained throughout the Occupational Analysis on the industry, 34 job areas with 159 job titles have been identified and confirmed to be in tandem with MSIC. The job titles identified require a holistic view in development of standard, skills training and also certification for recognition. If the competency requirements documented in NOSS format, the personnel in these areas will obtain a more structured skills training and will also enable personnel who are experienced and skilled to be certified.

#### **5.2 Recommendation**

It is hoped that the result of this Occupational Framework will be used as reference to fulfil the future plans of developing skilled personnel and certifying Malaysians in this sector towards improving the quality of the local sector and thus spurring Malaysia's global competitiveness.

There are several options when addressing or mitigating workforce demand and supply. It may include establishing and maintaining partnerships with other agencies or departments, or educational institutions to increase external talent pools and also through the training of existing staff in line with new skills requirements.

Based on the above discussions, specific recommendations are listed below:

- i) To continue and streamline efforts in NOSS development for areas under the sector in line with the findings of this analysis. This includes the development of the NOSS for the job areas that are in demand and have not been developed.
- ii) To encourage apprenticeship training (National Dual Training System – NDTs) for the related job areas.



- iii) Promote certification of existing and experienced personnel in the sector through Recognition via Prior Achievements (Pengiktirafan Pencapaian Terdahulu– PPT).

### 5.3 Conclusion

The conclusion is based on the specified objectives of the Occupational Framework as elaborated below:

#### **Objective 1: Occupational Structure**

The findings and discussions with expert panel members from various organizations, a total of 34 job areas and 159 job titles have been identified. By planning and conducting the training and certification of this job area personnel in the near future, it is hoped that there will be a steady flow of local skilled and certified workers.

#### **Objective 2: Occupational Descriptions**

The Occupational Descriptions for all the different job titles were obtained during the workshops and further confirmed during the survey. These Occupational Descriptions will also serve as reference of job scope and the required competencies for NOSS development.

#### **Objective 3: Skills in Demand**

Based on the survey findings, the survey respondents highlighted the skills in demand are as follows:

- Communication skills
- Knowledge of the Industry
- Knowledge of the tools used in the Industry
- Knowledge of maritime language
- Knowledge of Legislation applicable to the Industry
- Customer service skills
- General attitude towards work (commitment, resourcefulness, teamwork, etc.)



- Troubleshooting / problem solving ability

Troubleshooting / problem solving skills, General attitude towards work, and Communication skills are the top 3 skills in high demand for worker by the industry. The skills above are encouraged to be included in the training curriculum according to the respective areas.

### Critical Job Titles

The respondents and Focus Group Discussion members have reviewed the list and specified the critical job titles as in the table below. The list is arranged according to level of priority in term of urgency to fill up the manpower shortage.

Table 5.1: List of Critical Job Titles

No.	Critical Job Title	Group/Area	Level
1.	Watch Keeping Officer (WKO)	501/Deck - Near Coastal 500 Gt – 3000 Gt	4
2.	Watch Keeping Officer (WKO)	501/Deck - Near Coastal >3000 Gt	4
3.	3 <sup>rd</sup> Engineer	501/Engine – Unlimited Between 750 Kw – 3000 Kw	5
4.	3 <sup>rd</sup> Engineer	501/Engine – Unlimited More Than 3000 Kw	5
5.	4 <sup>th</sup> Engineer	501/Engine – Unlimited More Than 3000 Kw	4
6.	Engine Officer	502/Engine – Domestic More Than 750 Kw	3
7.	Engine Officer	502/Engine – Domestic Between 750 Kw – 3000 Kw	3
8.	Pilot	522/Pilotage	4
9.	Tug Master	522/Towage	4
10.	Able Bodies Seaman	522/Towage	2
11.	Boat Crew	522/Mooring	2
12.	Mooring Gang	522/Mooring	2
13.	Storage Assistant	522/Storage	3
14.	Cargo/Equipment Handler	522/Storage	2



No.	Critical Job Title	Group/Area	Level
15.	Distribution & Consolidation Assistant	522/Distribution & Consolidation	2

### Overall Conclusion

Several essential steps need to be undertaken jointly by stakeholders from industry, training/academic institutions and the relevant accreditations authorities to ensure that the critical occupation needs of industry are addressed.

- i) Identify and assess the qualifications, National Occupational Skills Standard (NOSS), and competencies associated with the identified critical job titles.
- ii) Align and evaluate the existing training curriculum and training packages.
- iii) Coordination among stakeholder to
  - Revise or develop required curriculum and training packages
  - Expand or create new apprenticeships/ internships / attachments schemes
  - Joint technology and knowledge transfer between instructor / training entities with industry experts

The result of this Occupational Framework research and development work will be able to be used as a reference as how to fulfil the future plans of developing skilled personnel and certifying Malaysians in the job area of water transport industry towards enhancing the industry by upgrading the reputation of water transport economic activities and attract more local manpower.



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## **ANNEX 1: MOSQF LEVEL DESCRIPTORS**





**MALAYSIAN OCCUPATIONAL SKILLS QUALIFICATION FRAMEWORK (MOSQF)  
LEVEL DESCRIPTOR**

Level	Level Description
8	Achievement at this level reflects the ability to develop original understanding and extend a sub-area of knowledge or professional practice. It reflects the ability to address problematic situations that involve many complexes, interacting factors through initiating, designing and undertaking research, development or strategic activities. It involves the exercise of broad autonomy, judgement and leadership in sharing responsibility for the development of a field of work or knowledge, or for creating substantial professional or organisational change. It also reflects a critical understanding of relevant theoretical and methodological perspectives and how they affect the field of knowledge or work.
7	Achievement at this level reflects the ability to reformulate and use relevant understanding, methodologies and approaches to address problematic situations that involve many interacting factors. It includes taking responsibility for planning and developing courses of action that initiate or underpin substantial change or development, as well as exercising broad autonomy and judgment. It also reflects an understanding of theoretical and relevant methodological perspectives, and how they affect their sub-area of study or work.
6	Achievement at this level reflects the ability to refine and use relevant understanding, methods and skills to address complex problems that have limited definition. It includes taking responsibility for planning and developing courses of action that are able to underpin substantial change or development, as well as exercising broad autonomy and judgment. It also reflects an understanding of different perspectives, approaches of schools of thought and the theories that underpin them.
5	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to address broadly-defined, complex problems. It includes taking responsibility for planning and developing courses of action as well as exercising autonomy and judgment within broad parameters. It also reflects understanding of different perspectives, approaches or schools of thought and the reasoning behind them.
4	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to address problems that are well defined but complex and non-routine. It includes taking responsibility for overall courses of action as well as exercising autonomy and judgment within fairly broad parameters. It also reflects understanding of different perspective or approaches within a sub-area of study or work.
3	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to complete task and address problems



	that are well defined with a measure of complexity. It includes taking responsibility for initiating and completing tasks and procedures as well as exercising autonomy and judgments within limited parameter. It also reflects awareness of different perspectives or approaches within a sub-area of study or work.
<b>2</b>	Achievement at this level reflects the ability to select and use relevant knowledge, ideas, skills and procedures to complete well-defined tasks and address straightforward problem. It includes taking responsibility for completing tasks and procedures, and exercising autonomy and judgment subject to overall direction or guidance.
<b>1</b>	Achievement at this level reflects the ability to use relevant knowledge, skills and procedures to complete routine and predictable tasks that include responsibility for completing tasks and procedures subject to direction or guidance.



## **ANNEX 2: LIST OF CONTRIBUTORS**



NO	NAME	POSITION & ORGANISATION
1	FARA DELA BINTI A KADIR	SETIAUSAHA WOMEN IN MARITIME ASSOCIATION MALAYSIA (MyWIMA)
2	MOHD ESZLY FAUZI BIN ZULKIFLI	DPA/CSO ALAM MARITIM SDN BHD
3	MOHAMAD HISHAM BIN ALI	KETUA PENOLONG PENGARAH
4	DR. YASMIN BINTI MOHD HASNI	AHLI MAJLIS IKHTISAS KELAUTAN MALAYSIA (IKMAL)
5	MOHD SHUHAIRI BIN ABDULLAH	PENGURUS LATIHAN DAN PENDIDIKAN MARITIME SKILLS SDN BHD
6	CAPT. JASNI BIN MIHAT	MALIM PELABUHAN PENANG PORT SDN BHD
7	CAPT. MOHD NAZRI BIN SHARIF	PENGURUS OPERASI PLOMO SDN BHD
8	CAPT. ABDUL RAHIM BIN AKOB	MANAGING DIRECTOR VESSPORT TECHNOLOGY SDN BHD
9	CAPT. KAMAL ARIFFIN BIN IDRIS	AGM OPERASI KAWALSELIA LEMBAGA PELABUHAN KLANG
10	CAPT. ROSLI BIN AHMAD	SENIOR SUPERVISOR VTS KLANG



### LIST OF OCCUPATIONAL FRAMEWORK TECHNICAL EVALUATION COMMITTEE

NO.	NAME	ORGANISATION
1.		
2.		
3.		

### LIST OF DEPARTMENTS OF SKILLS DEVELOPMENT(DSD) OFFICERS INVOLVED IN OCCUPATIONAL FRAMEWORK DEVELOPMENT

NO.	NAME	ORGANISATION
1.	Siti Hasmah Binti Mustapha	Principal Assistant Director Department of Skills Development
2.	Ahmad Azran Bin Ranaai	Senior Assistant Director Department of Skills Development
3.		

### LIST OF INDUSTRY LEAD BODY (ILB) OFFICERS INVOLVED IN OCCUPATIONAL FRAMEWORK DEVELOPMENT

NO.	NAME	ORGANISATION
1		
2		



#### LIST OF RESEARCH TEAM AND SECRETARIAT

NO.	NAME	POSITION/ ORGANISATION
1	Ah FaezalHusni Bin Hj. Arshad	Facilitator/ Researcher
2	Dr Yasmin binti Mohd Hasni	Researcher



## **ANNEX 3: QUESTIONNAIRE**



## Occupational Framework Survey for Water Transport Industry & Warehousing and Support Activities

The Department of Skills Development (DSD), Ministry of Human Resources has appointed the Marine Department Malaysia (MARDEP), Ministry of Transport as the Industrial Lead Body (ILB) in Shipping and Port. MARDEP ILB team is currently conducting an analysis on the Occupational Framework in Shipping. From this analysis, the industry framework, occupational structure, occupational job titles, and job description will be summarised for the use of the government, private sector, investors, employers, employees, educators or any personnel involved either directly or indirectly with the industry.

The main objective of this research is to enhance SKILLS TRAINING in water transport and supporting activities. The result of this survey would be used to determine entry level for any job in this industry. Also input from this survey would provide a reference of competency skills required by workers in this industry. This survey will be treated as a basis to conduct a comprehensive analysis of the industry's Occupational Framework. The target group for this survey is stakeholders of the Water Transport Industry & Warehousing and Support Activities

\* Required

### 1. Organization \*

---

## SECTION 1: COMPETENCY IN DEMAND

We need to understand what sort of competencies are in demand in the Water Transport Industry and Support Activities related to Water Transport. Please rate how high or how low the demand is for each skill listed below :-

### 2. Communication skills \*

Mark only one oval.

	1	2	3	4	
Not in Demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High in Demand

### 3. Knowledge of the Industry \*

Mark only one oval.

	1	2	3	4	
Not in demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High in Demand

### 4. Knowledge of the tools used in the Industry \*

Mark only one oval.

	1	2	3	4	
Not in demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High in Demand





**5. Knowledge of maritime language \****Mark only one oval.*

	1	2	3	4	
Not in demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High in Demand

**6. Knowledge of Legislation applicable to the Industry \****Mark only one oval.*

	1	2	3	4	
Not in demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High in Demand

**7. Technical know-how of current technology in the Industry \****Mark only one oval.*

	1	2	3	4	
Not in demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High in Demand

**8. Customer service skills \****Mark only one oval.*

	1	2	3	4	
Not in Demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High in Demand

**9. General attitude towards work (commitment, resourcefulness, teamwork, etc.) \****Mark only one oval.*

	1	2	3	4	
Not in Demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High in Demand

**10. Troubleshooting / problem solving skills \****Mark only one oval.*

	1	2	3	4	
Not in Demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High in Demand

**11. Based on your observation, do you think the graduates / trainee / apprentice / current workers possess the skills required by the industry? \****Mark only one oval.*

☐ Yes

☐ No



**12. What is/are the reason/s for the skills gap? \***

Mark only one oval per row.

	Yes	No	May be
Education / training mismatch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Major changes in traditional training and new skill requirements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attitude (e.g. lack of desire to work)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**13. What is/are solution/s for the skills gap would you suggest? \***

Mark only one oval per row.

	Yes	No	May be
Review employment policy (e.g. enhance skilled workers' incentives)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training / retraining	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Review skills training curriculum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Formal mentoring and/or coaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**SECTION 2: JOBS IN DEMAND**

Listed below are Based on your observation, which job area is experiencing shortage of manpower

Category of Skills	Description
<b>Skilled Workers</b>	Managers, Professionals, Technicians and Associate Professionals
<b>Semi-Skilled Workers</b>	Clerical Support, Service and Sales, Craft and related Trades Workers and Plant and Machine Operators and Assemblers
<b>Low Skilled Workers</b>	Elementary Workers

**14. Knowledge of handling tools used within the Industry \***

Mark only one oval per row.

	High Shortage	Mid Shortage	Low Shortage	No Shortage
Skilled Workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Semi-skilled Workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Low Skilled Workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**15. Research & Development of Techniques within the Industry \***

Mark only one oval per row.

	High Shortage	Mid Shortage	Low Shortage	No Shortage
Skilled Workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Semi-skilled Workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Low Skilled Workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**SECTION 3: EMERGING SKILLS**

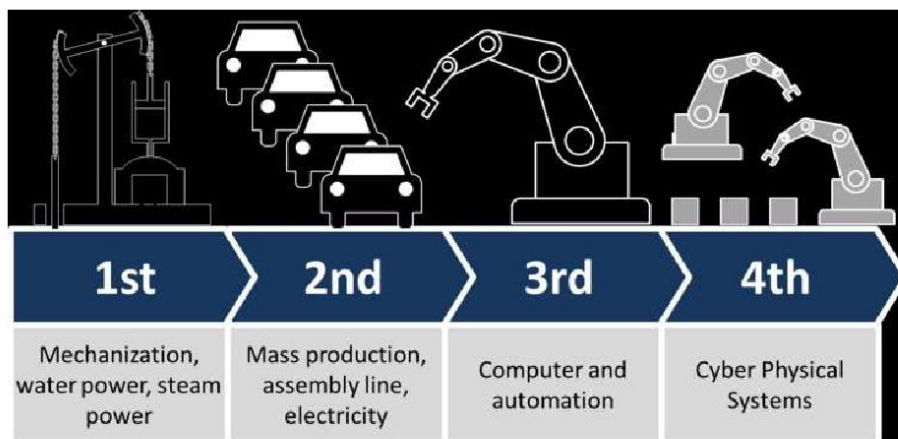
(Note: Emerging Skills are skills that are predicted to be imperative to the industry in the near future based on recent development, trend or study)

**16. Do you think automation would give an impact to the economic activities? \***

Mark only one oval.

- ☐ Yes  
☐ No  
☐ Maybe

**The Industrial Revolution 4.0**



**17. Listed below are nine (9) technology pillars of Industrial Revolution (IR) 4.0 - between Knowledge and R&D, which one is most likely to be affected by these technology pillars**

Mark only one oval per row.

	Knowledge of handling the tools within the Industry	R&D within the Industry
Autonomous Robots	<input type="radio"/>	<input type="radio"/>
Big Data Analytics	<input type="radio"/>	<input type="radio"/>
Cloud Computing	<input type="radio"/>	<input type="radio"/>
Internet of Things	<input type="radio"/>	<input type="radio"/>
Additive Manufacturing (3D Printing)	<input type="radio"/>	<input type="radio"/>
System Integration	<input type="radio"/>	<input type="radio"/>
Cybersecurity	<input type="radio"/>	<input type="radio"/>
Augmented Reality	<input type="radio"/>	<input type="radio"/>
Simulation	<input type="radio"/>	<input type="radio"/>



**18. List of important prerequisite and skills required in order to equip the workforce for automation. Select prerequisite and skills that are relevant to the job area \***

PREREQUISITE & SKILLS	KNOWLEDGE ABOUT ICT	ABILITY TO WORK WITH DATA	TECHNICAL KNOW-HOW	PERSONAL SKILLS
DETAILS	<ul style="list-style-type: none"> <li>Basic Information Technology knowledge</li> <li>Ability to use and interact with computers and smart machines like robots, tablets etc.</li> <li>Understanding machine to machine communication, IT security &amp; data protection</li> </ul>	<ul style="list-style-type: none"> <li>Ability to process and analyze data and information obtained from machines</li> <li>Understanding visual data output &amp; making decisions</li> <li>Basic statistical knowledge</li> </ul>	<ul style="list-style-type: none"> <li>Inter-disciplinary &amp; generic knowledge about technology</li> <li>Specialized knowledge about manufacturing activities and processes in place</li> <li>Technical know-how of machines to carry out maintenance related activities</li> </ul>	<ul style="list-style-type: none"> <li>Adaptability &amp; ability to change</li> <li>Decision making</li> <li>Working in team</li> <li>Communication skills</li> <li>Mindset change for lifelong learning</li> </ul>

Mark only one oval per row.

	Knowledge about ICT	Ability to work with data	Technical Know-How	Personal Skills
Knowledge of handling the automated tools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&D	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## SECTION 4: RELATED ISSUES

Please rate ALL the key issues by using the scale below

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1	2	3	4	5

40% Negative      20% Neutral "Undecided" "Don't Know" "Don't Care"      40% Positive

**19. Insufficient manpower**

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree



**20. Low skilled and low performance workforce \****Mark only one oval.*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

**21. High dependency on foreign labour \****Mark only one oval.*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

**22. Underpayment of wages lead to high turn over \****Mark only one oval.*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

**23. Government policy/regulation \****Mark only one oval.*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

**24. Labour costs (wages) \****Mark only one oval.*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

**25. Labour costs (sub-contractors) \****Mark only one oval.*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

**26. Technological change \****Mark only one oval.*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree



**27. Maintaining profitability \****Mark only one oval.*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

**28. Economic conditions \****Mark only one oval.*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

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## **ANNEX 4: OCCUPATIONAL DESCRIPTIONS (OD)**



**SECTION : (H) TRANSPORTATION AND STORAGE**  
**DIVISION : (50) WATER TRANSPORT**





**MSIC GROUP :501**

**AREA : DECK - NEAR COASTAL 500 GT – 3000 GT**

**LEVEL : 4**

### **RESPONSIBILITIES**

The Watch Keeping Officer is responsible to Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage.

#### **Knowledge:**

- Knowledge of Navigation
- Knowledge of Chartwork
- Understands the difference between ground and water track
- Knowledge of Watchkeeping
- Knowledge of factors affecting safe maneuvering and handling and proper procedures for anchoring and mooring

#### **Skills:**

- Prepare passage plan and determine position (Navigation Operation)
- Control manoeuvring the ship
- Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage
- Perform in applying medical first aid on board ship
- Contribute to the safety of personnel and ship
- Radio Communication (Usage and functionality)

#### **Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill
- Good Imaginative skill towards creativity
- Very independent and corporative
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations





**MSIC GROUP : 501**

**AREA : DECK - NEAR COASTAL >3000 GT**

**LEVEL : 4**

### **RESPONSIBILITIES**

The Watch Keeping Officer is responsible to Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage.

#### **Knowledge:**

- Knowledge of Navigation
- Knowledge of Chartwork
- Understands the difference between ground and water track
- Knowledge of Watchkeeping
- Knowledge of factors affecting safe maneuvering and handling and proper procedures for anchoring and mooring

#### **Skills:**

- Prepare passage plan and determine position (Navigation Operation)
- Control manoeuvring the ship
- Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage
- Perform in applying medical first aid on board ship
- Contribute to the safety of personnel and ship
- Radio Communication (Usage and functionality)

#### **Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill
- Good Imaginative skill towards creativity
- Very independent and corporative
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations



**MSIC GROUP :501****AREA : ENGINE – UNLIMITED BETWEEN 750 KW – 3000 KW****LEVEL : 5****RESPONSIBILITIES**

The Third Engineer is responsible to Operate, monitor and evaluate engine performance and capacity

**Knowledge:**

- Knowledge of piping system
- Ability to keep the operation of the propulsion plant under control during any situation
- Ability to prepare the shutdown and of supervising the cooling down of the engine.
- Knowledge of thermodynamic
- Knowledge of Naval Architecture

**Skills:**

- Plan and schedule operations
- Start up and shut down main propulsion system (>3000 kW) and auxiliary machinery, boiler including associated system
- Ensure proper use of equipment assigned to the engineering department.
- Operate, monitor and evaluate engine performance and capacity
- Maintain safety of engine equipment, systems, and services
- Manage fuel system (>3000 kW) and ballast operation
- Operate electrical system (>3000 kW) and electronic control equipment
- Test, detect faults, maintain and restore electrical and electronic control equipment to operating condition
- Organize safe maintenance and repair procedures
- Detect and identify the cause of machinery malfunction and correct faults

**Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill



- Good Imaginative skill towards creativity
- Very independent and corporative
- Knowledgeable and highly in professionalism
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations



**MSIC GROUP :501**

**AREA : ENGINE – UNLIMITED MORE THAN 3000 KW**

**LEVEL : 5**

### **RESPONSIBILITIES**

The Third Engineer is responsible to Operate, monitor and evaluate engine performance and capacity

#### **Knowledge:**

- Knowledge of piping system
- Ability to keep the operation of the propulsion plant under control during any situation
- Ability to prepare the shutdown and of supervising the cooling down of the engine.
- Knowledge of thermodynamic
- Knowledge of Naval Architecture

#### **Skills:**

- Plan and schedule operations
- Start up and shut down main propulsion system (>3000 kW) and auxiliary machinery, boiler including associated system
- Ensure proper use of equipment assigned to the engineering department.
- Operate, monitor and evaluate engine performance and capacity
- Maintain safety of engine equipment, systems, and services
- Manage fuel system (>3000 kW) and ballast operation
- Operate electrical system (>3000 kW) and electronic control equipment
- Test, detect faults, maintain and restore electrical and electronic control equipment to operating condition
- Organize safe maintenance and repair procedures
- Detect and identify the cause of machinery malfunction and correct faults

#### **Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill
- Good Imaginative skill towards creativity



- Very independent and corporative
- Knowledgeable and highly in professionalism
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations



**MSIC GROUP :501**

**AREA : ENGINE – UNLIMITED MORE THAN 3000 KW**

**LEVEL : 4**

## **RESPONSIBILITIES**

The Fourth Engineer is responsible to operate main and auxiliary machinery, associated control systems and pumping systems and operate alternators, generators and control systems.

### **Knowledge:**

- Knowledge of construction and safe use of the hand tools
- Knowledge of construction and safe operation of the power tools
- Knowledge of Storage and handling of flammable liquids used for testing, cleaning, painting; lubrication additives and fuel additives
- Knowledge of lubricants and lubricant additives
- Knowledge of appropriate basic mechanical and knowledge and skills

### **Skills:**

- Identification and maintenance of firefighting and lifesaving equipment
- Use appropriate tools for fabrication and repair operations typically perform on ship
- Use hand tools and measuring equipment for dismantling maintenance, repair and reassembly of shipboard plant and equipment
- Use hand tools, electrical and electronic measuring and test equipment for fault-finding, maintenance and repair operations
- Maintain a safe engineering watch
- Operate main and auxiliary machinery and associated control systems
- Operate pumping systems and associated control systems
- Operate alternators, generators and control systems
- Maintain marine engineering systems, including control systems.

### **Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill





- Good Imaginative skill towards creativity
- Very independent and corporative
- Knowledgeable and highly in professionalism
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations



**MSIC GROUP :502**

**AREA : ENGINE – DOMESTIC MORE THAN 750 KW**

**LEVEL : 3**

## **RESPONSIBILITIES**

The Engine Officer is responsible to Supervises, coordinates, coaches and evaluate Engine rating.

### **Knowledge:**

- Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance
- Spatial Orientation - The ability to know your location in relation to the environment or to know where other objects are in relation to you
- Manual Dexterity - The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects
- Trunk Strength - The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing
- Wrist-Finger Speed - The ability to make fast, simple, repeated movements of the fingers, hands, and wrists

### **Skills:**

- Supervises, coordinates, coaches and evaluate Engine rating.
- Assigns daily tasks to the deck crew and checks the completed work for compliance with the cruise lines standards and operating procedures
- Maintaining, cleaning and, at times, operating ship engine parts, including blowers, compressors, motors, gears, ejectors and other equipment
- Check gauges and dials on the equipment to make sure the equipment is working
- Help deck workers and officers with shipping tasks
- Responsible for repairing the equipment
- Assist with loading cargo and maintaining the ship's safety system
- Take on unrelated duties relating to sewage, electrical systems, and water on board the ship
- Records data in ship's log such as weather conditions and distance travelled.



**Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill
- Good Imaginative skill towards creativity
- Very independent and corporative
- Knowledgeable and highly in professionalism
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations
- Ability towards navigation skill



**MSIC GROUP :502**

**AREA : ENGINE – DOMESTIC BETWEEN 750 KW – 3000 KW**

**LEVEL : 3**

## **RESPONSIBILITIES**

The Engine Officer is responsible to Supervises, coordinates, coaches and evaluate Engine rating.

### **Knowledge:**

- Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance
- Far Vision - The ability to see details at a distance
- Spatial Orientation - The ability to know your location in relation to the environment or to know where other objects are in relation to you
- Manual Dexterity - The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects
- Trunk Strength - The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing
- Wrist-Finger Speed - The ability to make fast, simple, repeated movements of the fingers, hands, and wrists

### **Skills:**

- Supervises, coordinates, coaches and evaluate Engine rating.
- Assigns daily tasks to the deck crew and checks the completed work for compliance with the cruise lines standards and operating procedures
- Maintaining, cleaning and, at times, operating ship engine parts, including blowers, compressors, motors, gears, ejectors and other equipment
- Check gauges and dials on the equipment to make sure the equipment is working
- Help deck workers and officers with shipping tasks
- Responsible for repairing the equipment
- Assist with loading cargo and maintaining the ship's safety system
- Take on unrelated duties relating to sewage, electrical systems, and water on board the ship
- Records data in ship's log such as weather conditions and distance travelled.



**Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill
- Good Imaginative skill towards creativity
- Very independent and corporative
- Knowledgeable and highly in professionalism
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations



**MSIC GROUP :522**

**AREA : PILOTAGE**

**LEVEL : 4**

## **RESPONSIBILITIES**

The Pilot is responsible to supervise the efficiency of VHF radio usage and supervise pilot office safety at port in accordance with safety regulations provided

### **Knowledge:**

- Knowledge of Pilotage
- Knowledge of procurement and licensing and updating procedures
- Knowledge of the voyage log requirements and procedures
- Safety Certificates and Documentation Knowledge
- Knowledge of the structural requirements and features of a vessel

### **Skills:**

- Interpret VHF radio instruction
- Prepare and setup equipment and devices for VHF communication
- Carry out VHF radio communication
- Supervise the efficiency of VHF radio usage
- Supervise pilot office safety at port in accordance with safety regulations provided
- Guide pilot boat direction to destination
- Assist in guiding the speed of boat to reach the destination based on specialised knowledge of local winds, weather, water depths, tides, currents, and hazards
- Implement manpower tasking according to schedule
- Coordinate pilot boat complaint management

### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations



**MSIC GROUP :522**

**AREA : TOWAGE**

**LEVEL : 4**

## **RESPONSIBILITIES**

The Tug Master is responsible to supervised ship movements, workers on deck and the steering of the tugboat.

### **Knowledge:**

- Knowledge of Towing
- Knowledge of First Aid
- Knowledge of the voyage log requirements and procedures
- Safety Certificates and Documentation Knowledge
- Knowledge of the structural requirements and features of a vessel

### **Skills:**

- Determine course and towing speed on basis of specialised knowledge of local winds, weather, tides and current
- Check navigation devices, such as radar, sonic depth finder, compass and sextant and other aids to navigation, such as lighthouses and buoys
- Perform general maintenance work
- Supervise ship movements in ports
- Supervise workers on deck to rig towlines
- Supervise the steering of the tugboat, to push or pull vessels to destination and to berth and un-berth ships, avoiding reefs, outlying shoals, and other hazards to shipping
- Assist in giving instruction to tugboat
- 

### **Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations



**MSIC GROUP :522**

**AREA : Towage**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Able Bodies Seaman is responsible to assist in operating equipment.

#### **Knowledge:**

- Knowledge of Towage
- Knowledge of First Aid
- Knowledge of the voyage log requirements and procedures
- Safety Certificates and Documentation Knowledge
- Knowledge of the structural requirements and features of a vessel

#### **Skills:**

- Identify rig towing and mooring lines
- Utilise first aid equipment
- Act as the surface swimmer
- Assist in operating damage control equipment

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP :522**

**AREA : MOORING**





**LEVEL : 2**

## **RESPONSIBILITIES**

The Boat Crew is responsible to assist in operating equipment.

### **Knowledge:**

- Knowledge of Mooring
- Knowledge of First Aid
- Knowledge of procurement and licensing and updating procedures
- Knowledge of the voyage log requirements and procedures
- Safety Certificates and Documentation Knowledge
- Knowledge of the structural requirements and features of a vessel

### **Skills:**

- Identify rig towing and mooring lines
- Utilise first aid equipment
- Act as the surface swimmer
- Assist in operating damage control equipment

### **Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill
- Good Imaginative skill towards creativity
- Very independent and corporative
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations



**MSIC GROUP :522**

**AREA : MOORING**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Mooring Gang is responsible to assist in checking and responding to the information shown on the instrument panel on the boat and assist the bridge officers in ship's navigation, maintenance of nautical charts and maps.

#### **Knowledge:**

- Knowledge of Mooring
- Safety Certificates and Documentation Knowledge
- Knowledge of the structural requirements and features of a vessel

#### **Skills:**

- Steer the boat or any type of transportation used in or on the water safely and smoothly
- Perform watch keeping duties on the bridge and steers the ship applying the helm orders given by watchkeeping officer
- Carry out routine maintenance checks on the engine and weed-hatch as laid down in the ship
- Operate fire equipment and ship's rescue boats
- Assist in checking and responding to the information shown on the instrument panel on the boat
- Assist the bridge officers in ship's navigation, maintenance of nautical charts and maps

#### **Attributes (Attitude/Safety/Environmental):**

- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill
- Good Imaginative skill towards creativity
- Very independent and corporative
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations



**MSIC GROUP :522**

**AREA : STORAGE**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Storage Assistant is responsible to assist in management of the storage.

#### **Knowledge:**

- Passage Planning Knowledge
- Knowledge of procurement and licensing and updating procedures
- Knowledge of the voyage log requirements and procedures
- Safety Certificates and Documentation Knowledge
- Knowledge of the structural requirements and features of a vessel

#### **Skills:**

- Assist in checking import/export documentation to determine cargo contents
- Ensure cargo consignment volume
- Record cargo inventory
- Comply to area/space stacking factor
- Carry out storage area/space segregation
- Confirm storage area/ space utilisation
- Identify storage equipment suitability
- Check storage area/ space compatibility

#### **Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill
- Good Imaginative skill towards creativity
- Very independent and corporative
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations



**MSIC GROUP : 522**

**AREA : STORAGE**

**LEVEL : 1**

## **RESPONSIBILITIES**

The Cargo/Equipment handler is responsible to assist in management of the storage.

### **Knowledge:**

- Knowledge of Storage
- Knowledge of procurement and licensing and updating procedures
- Safety Certificates and Documentation Knowledge
- Knowledge of the structural requirements and features of a vessel

### **Skills:**

- Identify the types of cargo and goods carried on a ship
- Identify warehouse area or space utilisation
- Identify cargo compatibility
- Obtain cargo consignee/shipper and details of consignee/shipper
- Segregate warehouse area or space at the port
- Confirm equipment compatibility in allocated space

### **Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill
- Good Imaginative skill towards creativity
- Very independent and corporative
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations



**MSIC GROUP :522**

**AREA : DISTRIBUTION & CONSOLIDATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Distribution & Consolidation Assistant is responsible to identify, locate and transportation of cargo

#### **Knowledge:**

- Knowledge of Cargo and Warehouse management
- Knowledge of the voyage log requirements and procedures
- Safety Certificates and Documentation Knowledge
- Knowledge of the structural requirements and features of a vessel

#### **Skills:**

- Identify the types of cargo and goods carried on a ship
- Identify cargo consignment volume
- Identify equipment capacity
- Identify transportation type
- Locate consignee/shipper cargo
- Record cargo inventory
- Carry out cargo compatibility confirmation
- Carry out transportation from origin to destination
- Execute warehouse area or space segregation at the port
- Assist in preparing import/export documentation to determine cargo contents
- Assist in scheduling equipment suitability
- Ensure warehouse area/space compatibility
- Ensure transportation urgency, capacity and compatibility

#### **Attributes (Attitude/Safety/Environmental):**

- Poses boundless enthusiasm
- Poses high credibility, loyalty and better adaptability
- Good team Player and communication skill



- Good Imaginative skill towards creativity
- Very independent and corporative
- Ability to work under pressure and strong team player
- Adhere to safety and environmental regulations

