OCCUPATIONAL ANALYSIS

RAIL INDUSTRY

JABATAN PEMBANGUNAN KEMAHIRAN

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1. EXECUTIVE SUMMARY

Malaysia's vibrant economy and fast-moving lifestyle have resulted in an increase in the demand for transportation. The transportation industry includes the transportation of people and goods.

The public transportation system in Malaysia comprises of bus, rail and taxi services. The Klang Valley has an integrated public transportation system incorporating the Light Rail Transit (LRT), monorail, rail and bus services. More development projects to enhance and expand transportation system have been announced and under development. Taxis and limousine services are also available at reasonable rates.

Public transports have become an alternative means of travelling for the urbanites, as the traffic condition is unpredictable. The congested city traffic has resulted in increasing number of locomotives, as to fulfill the service demands. A chain reaction would be ignited with increased number of train drivers, shifts, rail traffic congestion and other challenges. Human performance and reliability are an integral part as to ensure the industry is developed in a very structured way.

To sustain the competitiveness of the Rail industry, value integration through inter-plant synergies is promoted. The development of rail industries is integrating all elements from manpower development, rails infrastructure, and rail technology. These elements are clustered together to create a value chain, which ensures the progressive development of the rail activities.

The need of the workforce requires a comprehensive development process from all sectors including the education and skills training as well as input from the industry. Support from all quarters, especially from the government is essential to ensure that the need of workers in this field will always be sufficient and sustainable.

2. CONCEPT OF OCCUPATIONAL ANALYSIS (OA)

2.1 Introduction

OA is a process used to identify job titles and levels for skilled workers needed in the industry sector. It is a preliminary stage for the National Occupational Skills Standard (NOSS) development in which the identified job titles will be used as a basic reference. It requires inputs from all parties especially industry players, statutory bodies and training institutions. Figure 1.0 shows the significance of OA for NOSS and policy development for skills training in Malaysia.

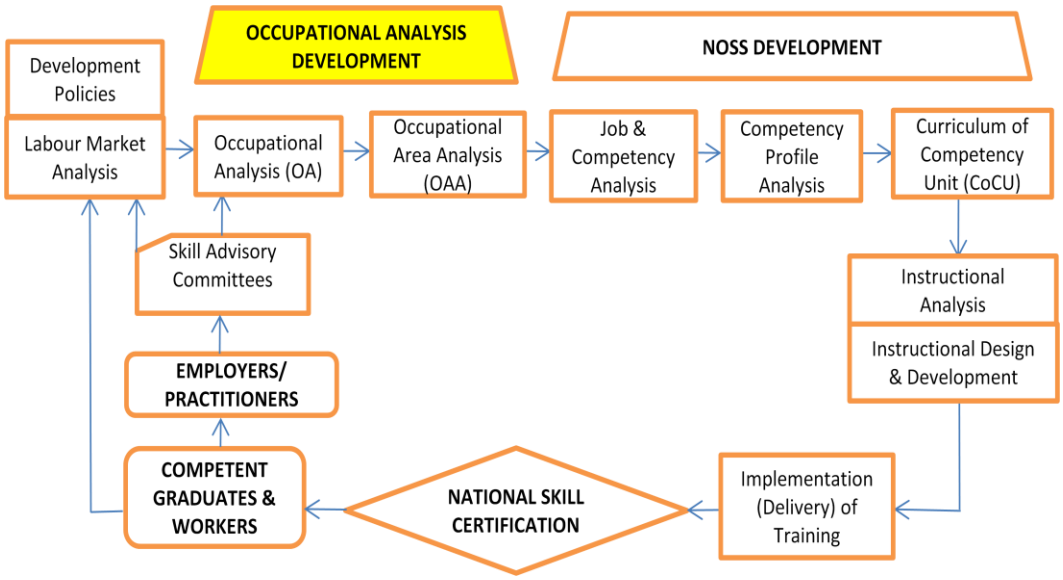


Figure 1.0: A Competency-Based Model for Skills Training in Malaysia

OA will identify sectors, sub-sectors, job areas and job titles for a particular industry in the form of Occupational Structure (OS) as illustrated in Table 1.0. Job scopes of each job title will be detail out in the Occupational Description

(OD). Every job title will be identified according to its level defined in the Malaysian Occupational Skills Qualification Framework (MOSQF) level descriptor (refer to Annex 1).

Table 1.0: Example of OS for Front Office in Hospitality and Tourism

SUB-SECTOR	FRONT OFFICE				
LEVEL/JOB AREA	GUEST SERVICE	TELEPHONE OPERATION	FRONT OFFICE ASSISTANCE	CONCIERGE	RESERVATION
LEVEL 5	Front Office Manager (FOM)				
LEVEL 4	Assistant Front Office Manager (AFOM)			Concierge Manager	Reservation Manager
LEVEL 3	Guest Service Officer	Telephonist Supervisor	Front Office Supervisor	Bell Supervisor	Reservation Officer
LEVEL 2	Guest Service Assistant	Telephonist	Front Office Assistant	Bell Captain	Reservation Clerk
LEVEL 1	No Level			Doorman	No Level

OS can be further analysed to produce the Occupational Area Structure (OAS) through the Occupational Area Analysis (OAA). The objective of OAA is to identify areas which have similar competencies among the job titles. The outcome of OAA is the merging of job titles/areas (horizontally) and/or levels (vertically) within the sectors. This will eventually result in multi-skilling and multi-tasking due to common competencies among job titles/areas and/or levels as shown in Table 2.0.

Table 2.0: Example of OAS for Front Office in Hospitality and Tourism

SUB-SECTOR	FRONT OFFICE				
LEVEL/JOB AREA	GUEST SERVICE	TELEPHONE OPERATION	FRONT OFFICE ASSISTANCE	CONCIERGE	RESERVATION
LEVEL 5	Guest Services Management				
LEVEL 4	Guest Services Management				
LEVEL 3	Guest Services Operation				
LEVEL 2					
LEVEL 1					

All job titles in Levels 1, 2 and 3 are actually the front liners that deal directly with customers. Therefore, they have common competencies which can be merged into the area of guest services operation. Ultimately, we are able to produce multi-skilling and multi-tasking workers required by the industry in line with the high income economic policy.

Nevertheless, in certain cases, due to requirements of industry or regulations, merging is not necessarily required.

2.2 Malaysian Occupational Skills Qualification Framework (MOSQF)

The development of OA is closely monitored in order to comply with MOSQF. MOSQF is a framework that describes all skills qualifications awarded under the Malaysian Skills Certification System. It is an 8-tier framework consists of 8 levels which reflect skills competencies in an occupational area (refer to Annex 1). However, for the training purpose, only the first 5 levels are being offered with

skills qualifications, namely Malaysian Skills Certificate (MSC) Level 1, MSC Level 2, MSC Level 3, Malaysian Skills Diploma (MSD) Level 4 and Malaysian Skills Advanced Diploma (MSAD) Level 5.

MOSQF will serve as an instrument that develops and classifies skills qualifications based on a set of criteria guided by the National Skills Development Act 2006 (Act 652). It was benchmarked against international good practices in defining its level description and was developed in line with the Malaysian Qualifications Framework (MQF). It is primed to become the national skills framework for all parties of interest such as individuals, skills training providers, the Government, associations, professional bodies, the industry sectors and the general public.

2.3 OA Development Process

Below are the main steps involved in OA:

(i) Preliminary information gathering

(a) Literature survey

A literature survey is carried out to get some insights into the scope, policies, programmes and activities in the context of the Malaysian scenario. The scope covered under this survey includes descriptions, current analysis of the sector/sub-sector, current status of the respective industries, skilled worker requirements in the local sectors and the industrial competition at international level.

(b) Survey/Questionnaire

The purpose of the survey is to collect the data and feedback from industries on the supply and demand of skilled workforce, job scope, nature of work, occupational description, occupational structure, career path as well as current and future trend of the industries.

(c) Interview

Interview is one of the methods to reinforce the information gathered from the survey. The interview focuses on main industry players and stakeholders to seek their opinions and/or impressions.

(ii) Identifying industrial experts

Industrial experts represent small, medium and large scale industries that are identified and short listed for further communication and contact. Normally these experts are from Human Resources or managerial level that has overall view of the skilled workforce in the industry. They should have sufficient experience and substantial knowledge on industry growth.

(iii) Brainstorming session

The Developing a Curriculum (DACUM) technique is commonly used in OA. The session is attended by industrial experts and they will discuss exhaustively on the sub-sector and areas involved. The facts obtained during the literature survey will be discussed and presented to the industry experts.

(iv) Analysing the information

Based on the activities done above, substantial data and information will then be collected. The data and information will be discussed and analysed in development workshops attended by selected key persons or experts from the public and private sector. The presence of the key persons or experts ensures that the development of the Occupational Analysis is current and relevant.

During this session, the respective industry is analysed using the DACUM and brainstorming methodology to identify the following:

(a) Scope of the industry and its sub-sector;
(b) Main areas;
(c) Occupational groups of the sector;
(d) Job title;
(e) Critical job title;
(f) Hierarchy structure (Level 1 – 8); and
(g) Occupational description.

(v) Finalising the OA Documentation

Follow up discussions with the industrial experts and proofreader in a small group is vital to ensure all the findings of the occupational analysis are valid, reliable and sufficient.

The final report of OA must be well presented with discussion, conclusion and recommendations in order to guide the general readers and

interested parties to comprehend the skilled workforce scenario in the industries.

Details of the process flow in developing OA is as shown in Figure 2.0

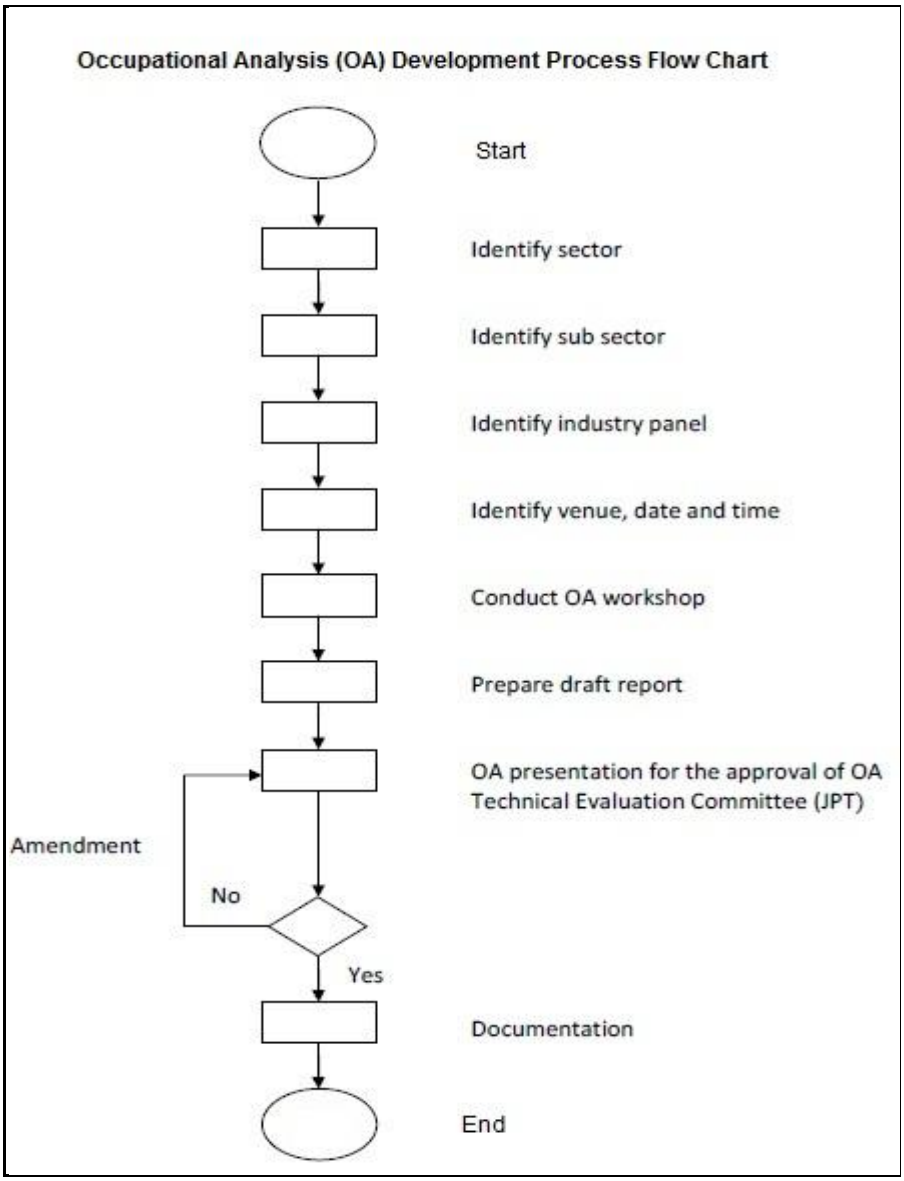


Figure 2.0: OA Development Process Flow Chart

2.4 Occupational Description (OD)

The Occupational Description (OD) is the detailed description of the main job scope of the job title. Below are the main steps in producing OD for the respective job titles:

(i) determine the main sub-sector and areas in the sector;

(ii) identify the job titles; and

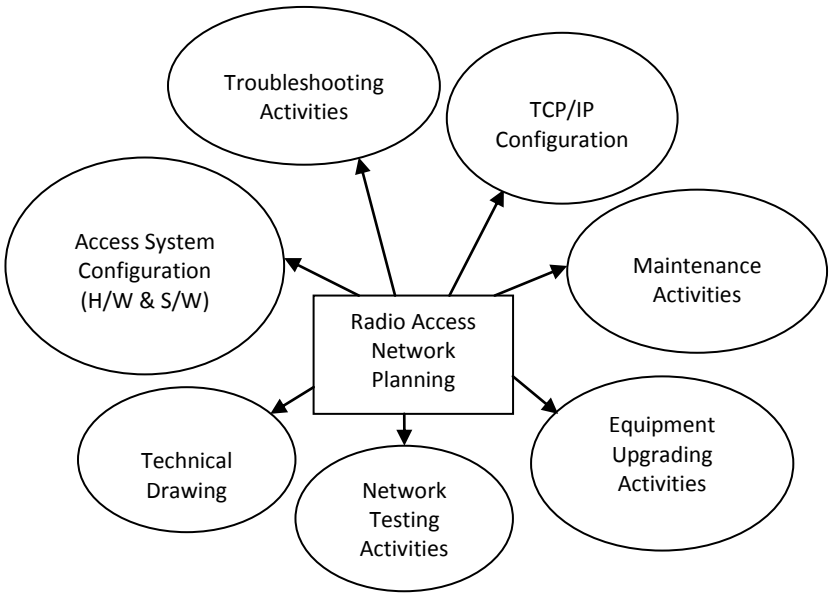
(iii) identify the job scope.

To describe OD clearly, the statement must consist of a Verb, Object and Qualifier. The rationale for determining the description attributes is to facilitate NOSS development especially in job and competency analysis.

a) Object

The object is determined first before the verb and qualifier. It is the main determinant to distinguish one job to another. For example, a demi chef (kitchen sub-sector of the Hotel Sector), deals with food and cooking utensils as the objects in performing tasks. A hairdresser, on the other hand, deals with client's hair and hairdressing chemicals, among others.

The objects are acquired from the industrial experts during a brainstorming session and written on DACUM cards so that all the experts can see the objects identified. The objects of those in the related area or sub-sector are determined as shown in Figure 3.0.



Legend:

: **Sector/Sub-sector/Area/Sub area**

: **Object**

Figure 3.0: Example of Identifying Objects

b) Verb

The verb is then determined based on the level of difficulty of the identified job titles, such as below:

- ***Object*** *: Maintenance activities*
- ***Verb for Level 3 : Carry out***
- ***Verb for Level 4 : Assist in planning***
- ***Verb for Level 5 : Plan***

Hence, the contents of the job descriptions will be as below:

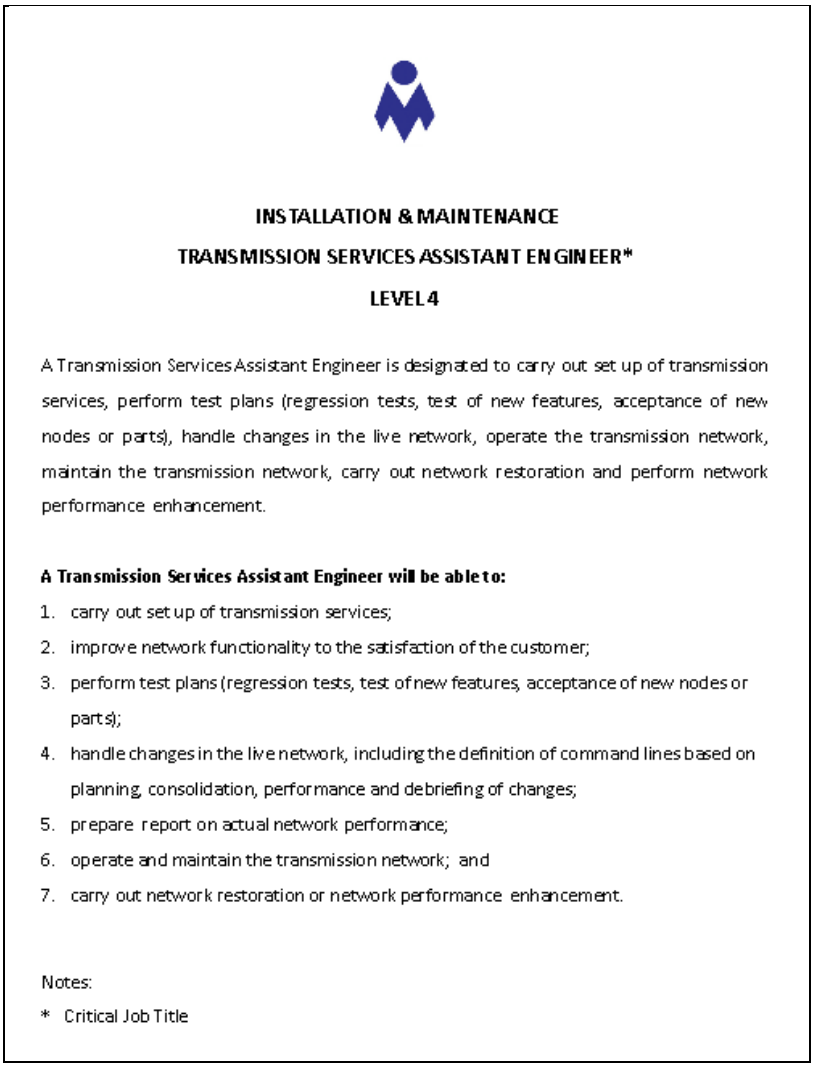
- Radio Access Network Planner (Level 5)
  - ✓ ***Plan*** *maintenance activities + (qualifier)*
- Radio Access Network Assistant Planner (Level 4)
  - ✓ ***Assist in planning*** *maintenance activities + (qualifier)*
- Access Network Technician (Level 3)
  - ✓ ***Carry out*** *maintenance activities + (qualifier)*

c) Qualifier

Based on the example above, the statement is not clear as there is no qualifier for the object, therefore a qualifier must be added to further clarify it. Below is an example:

- ***Plan*** *maintenance activities for* ***Passenger Vehicle Plant Maintenance***

Figure 4.0 shows an example on how to write an appropriate Occupational Description (OD).



INSTALLATION & MAINTENANCE

TRANSMISSION SERVICES ASSISTANT ENGINEER*

LEVEL 4

A Transmission Services Assistant Engineer is designated to carry out set up of transmission services, perform test plans (regression tests, test of new features, acceptance of new nodes or parts), handle changes in the live network, operate the transmission network, maintain the transmission network, carry out network restoration and perform network performance enhancement.

A Transmission Services Assistant Engineer will be able to:

1. carry out set up of transmission services;
2. improve network functionality to the satisfaction of the customer;
3. perform test plans (regression tests, test of new features, acceptance of new nodes or parts);
4. handle changes in the live network, including the definition of command lines based on planning, consolidation, performance and debriefing of changes;
5. prepare report on actual network performance;
6. operate and maintain the transmission network; and
7. carry out network restoration or network performance enhancement.

Notes:

* Critical Job Title

Figure 4.0: Example of Occupational Description

2.5 Critical Job Titles

Critical job titles can be defined based on the following four main scenarios:

a) shortage of skilled worker supply in the industries;

b) high demand for skilled workers in certain niche areas;

c) mismatch of skills training; and

d) decrease in number of skilled workers in certain areas such as in heritage and cultural related activities.

3. RAIL INDUSTRY IN MALAYSIA (BACKGROUND OF THE SECTOR)

3.1 Preamble

Transportation and logistics are the “back-bone” of a nation’s economy, more so for a country like Malaysia where international trade has been growing significantly over the past few decades. However, in order to compete in the global economy, transportation today not only needs to be able to provide mobility and connectivity, but also the efficiency and effectiveness in a tightly integrated network of multimodal transport. Hence, the ability to connect the economic corridors and hotspots in the country will surely boost the nation’s capability to become more competitive internationally.

Rails in Malaysia began because of the need to transport tin from mines in the hinterland of the West Coast states of Peninsular Malaysia to coastal ports. The first rail line, which was opened on 1 June 1885, was about 13 km long and ran between Port Weld and Taiping, the heart of the tin-rich Larut Valley in Perak state. The second line was opened a year later to link Kuala Lumpur, again the center of tin-mining activities in the Klang Valley, and Klang and subsequently to Port Swettenham (Port Klang today).

Keretapi Tanah Melayu Berhad (**KTMB**) or **Malayan Rails Limited** is the main rail operator in Peninsular Malaysia. The rail system dates back to the British colonial era, when it was first built to transport tins. Previously known as the Federated Malay States Rails (FMSR) and the Malayan Rail Administration (MRA), Keretapi Tanah Melayu acquired its current name on Malaysia's independence in 1962.

The organization was corporatised in 1992, but remains wholly owned by the Malaysian government. Fares are generally reasonable, but the low frequency of the intercity trains does not usually make them competitive with other modes of transportation.

3.2 Definition of the Rail Industry

A rail comprises infrastructure of guide wayed trackage or channels situated on, above, or below ground, facilities, appurtenances, and other necessary elements whereby vehicles may travel throughout the network including transport of passengers and freight by train, rail workshops and garages, maintenance of the track network, and operation of telecommunication networks which regulate train movements.

Rail transport in Malaysia comprises heavy rail (including high-speed rail), light rail transit (LRT), monorail and a funicular rail line. Heavy rail is mostly used for intercity passenger and freight transport as well as some urban public transport, while LRTs are used for urban public transport and some special use such as transporting passengers between airport buildings. There is one high-speed rail line with two high-speed train services linking Kuala Lumpur with the Kuala Lumpur International Airport. The sole monorail line in the country is also used for public transport in Kuala Lumpur while the only funicular rail line is in Penang.

The rail network covers most states in Peninsular Malaysia. In East Malaysia, only the state of Sabah has rails. Singapore, although not part of Malaysia, is served by the Malaysian rail network.

3.3 Current Analysis of Rail Industry

The main intercity passenger train operator is Keretapi Tanah Melayu Berhad (KTMB), a corporation owned by the Malaysian government. It operates KTM Intercity passenger trains on both main lines and the Bukit Mertajam-Butterworth branch. The other branch lines are either used for freight, or not used at all, with the exception of the Kuala Lumpur-Port Klang and Batu Junction-Sentul stretch of the Batu Caves branch lines which are used for its commuter train service, KTM Komuter. The commuter service also uses the double-track and electrified portions of the West Coast Line between Rawang and Seremban. KTMB is also the main operator of freight trains in Malaysia. Besides its own network, KTMB also operates trains on the Kerteh-Kuantan rail under contract with Petronas, the owner of the line.

Since corporatisation of KTMB, a programme of modernisation has been underway. In 1989, it embarked on the double-tracking and electrification of trunk line between Rawang and Seremban and the branch lines between Batu Junction and Sentul, and between Kuala Lumpur and Port Klang which allowed the KTM Komuter service to start running in 1995. The next major project was the Rawang-Ipoh double tracking and electrification project, which started in

2000.This project, which has been beset by problems and delays, was finally completed in early 2008 and fully operational in 2010.

Once completed, KTM expects to introduce frequent intercity service (16 trains/ day) at 160 km/hour. In 2002, the Malaysian government proposed the ambitious project of electrifying and double-tracking the entire western line and awarded contracts in 2003. The project was, however, put on hold by Prime Minister Tun Abdullah B. Hj Ahmad Badawi until March 2007 when Deputy Prime Minister Dato' Sri Mohamad Najib B. Tun Abdul Razak announced the project's revival. In April 2007, the government announced that contracts for certain portions of the project had been awarded. In 2007, work also started to electrify and double-track the stretch of track between Sentul and Batu Caves.

Light Rail Transit system came to Kuala Lumpur in 1998 with the creation of the first section of an automatic mass transit system, running from east to west across one of the fastest growing cities in the world.

It has suffered from severe financial difficulties, and in June 2001 was taken over by the Government. New management took over in September 2002, when the line was renamed Putraline and became the responsibility of Syarikat Prasarana Negara Berhad under the first phase of a mass restructuring of the city's entire public transport network.

Two years later, the system's operation was transferred again to Rapid KL – a Government-owned company – but ownership remained with Syarikat Prasarana

Negara Berhad. The line's name changed again in June 2005 to its present title, the Kelana Jaya and Ampang Line.

Rail Transport System Overview in Kuala Lumpur

Kuala Lumpur's rail-based transit system consists of two Light Rail Transit lines (rapid transit), one monorail line, two commuter rail systems consisting four lines, and an airport rail link.

- Light Rail Transit lines operated by RapidKL Rail:
  - ✓ Kelana Jaya and Ampang Line
- KL Monorail, the sole monorail line
- Commuter rail lines:
  - ✓ Sentul-Port Klang Route, KTM Komuter
  - ✓ Rawang-Seremban Route, KTM Komuter
  - ✓ Rawang-Tanjung Malim Route, KTM Komuter
  - ✓ KLIA Transit, commuter rail service with three additional stops to Kuala Lumpur International Airport, operated by Express Rail Link(ERL)
- KLIA Ekspres, non-stop service to the airport, operated by Express Rail Link (ERL)

Initially, different companies operated the various systems and have developed them separately at different times. As a result, many of the lines do not integrate well, making transferring from system to system inconvenient for passengers. Moving from one system to another often require a lot of walking, stair-climbing, escalator-use and even crossing busy roads. For example, the KL Monorail's “KL Sentral” station is a 140-metre walk away through a busy bazaar and a busy road.

There is also no common ticket for all systems, forcing commuters on continuing journeys to buy new tickets when transferring. However, the LRT, monorail, RAPID KL BUS and KTM Commuter now accept the Touch 'n Go stored value fare card, easing the hassle.

Also, RapidKL Rail, the operator of the three LRT lines as well as RapidKL Bus (which cover about 70% of the Klang Valley's bus network), has come up with a daily bus ticket which cost as low as RM1, and integrated transit daily pass which can be used on both its rail and bus services that costs RM7.

The KL monorail had proposed to extend its line to Sungai Buloh from its Titiwangsa station, but this was not approved. However, extensions for the Kelana Jaya Line and the Ampang Line were approved. Approval was also given to construct a new Kota Damansara-Cheras Line.

3.4 Policies, Associations and Development Plan For The Rail Industry

(i) Policies

Act 463 RAILS ACT 1991 (Amendment 2010).

The **Rails Act 1991** *[Act 463]*, which is referred to as the "principal Act" in this Act, is amended in sections 1, 4 and 7 by substituting for the word "Malaysia" wherever appearing the words "Sabah, Sarawak and the Federal Territory of Labuan".

This Bill seeks to amend the **Rails Act 1991** ("Act 463") mainly as a consequence to the establishment of the Suruhanjaya Pengangkutan Awam Darat which shall be responsible for a safe, reliable and efficient land public transport including the rails in Peninsular Malaysia via the implementation of the **Land Public Transport Act 2010**. As the Suruhanjaya Pengangkutan Awam Darat will be responsible to implement the **Land Public Transport Act 2010** in Peninsular Malaysia, this Bill seeks to amend Act 463 to make the provisions of Act 463, except Part XII which shall apply throughout Malaysia, to only apply to Sabah, Sarawak and the Federal Territory of Labuan.

(ii) Regulatory Body/Association

(a) Department of Rail

The Department of Rails was established on 1st August 1992, when the Malayan Rails Administration was corporatised as Keretapi Tanah Melayu Berhad (KTMB). The Rails Act of 1991, under section 3 authorises the Minister of Transport to appoint the Director General of Rails to carry out his duties and functions in accordance to the Rails Act 1991.

The Department of Rails is the regulatory body of all rails in Malaysia excluding the Sabah State Rail and Penang Hill Rail. The function of

the Department of Rails is to ensure and promote safe, efficient and affordable rail transport system in Malaysia.

(b) Land Public Transport Commission (Suruhanjaya Pengangkutan Awam Darat – SPAD)

The Land Public Transport Commission (Suruhanjaya Pengangkutan Awam Darat - SPAD) is a Malaysian statutory body set up to plan for, regulate and enforce rules concerning land-based public and freight transport in Malaysia.

The commission was set up through the Land Public Transport Commission Act of 2010 which was passed by the Malaysian Parliament in May 2010. The commission's powers are derived from the Land Public Transport Act of 2010 which was passed at the same time. The Land Public Transport Act was gazetted on 3 June 2010, making it the official day of establishment of the Commission.

The Chairman of the Commission is Tan Sri Syed Hamid Albar while the Chief Executive Officer of the Commission is Mohd Nur Ismal Mohamed Kamal. Both were appointed by Malaysian Prime Minister Datuk Seri Mohd Najib Abdul Razak and their appointments were effective since 3rd June 2010.

The scope of power for SPAD includes:

- Planning power

  Create a master plan to ensure comprehensive, integrated and sustainable infrastructure development.

- Regulate power

  Monitor and regulate standard of performance of operators through licensing.

- Enforcing power

  Enhance powers encompassing powers to audit, investigate, suspend/revoke license, seize vehicles, and penalise operators.

(c) Railway Asset Corporation

Railway Assets Corporation (RAC) is a Federal Statutory Body under Ministry of Transport Malaysia. RAC was established under the Railways Act 1991 (Act 463), commence officially as an organisation on 1st August 1992 and gazetted under Volume 36 No.16 on 30th July 1992. RAC was fully operated on 1st October 1992.

In conjunction with the establishment of RAC, the railway operation service was corporatize and Keretapi Tanah Melayu (KTM), a public entity which exists since 1894 was disband and officially known as Keretapi Tanah Melayu Berhad (KTMB).

At the same time, Department of Railway (DOR) was formed to ensure and promote safe, efficient and affordable railway transport system in Malaysia. It is hoped that with the formation of RAC and DOR, KTMB will concentrate to enhance the level and quality of railway services in the country and to rejuvenate their image.

With the corporatisation of railway operations, the responsibilities and roles given to RAC were as below:

- to be in charge of all assets and liabilities which are owned by KTM before 1st August 1992, in order to provide opportunity for KTMB to increase its quality of service without the burden of past debts on its shoulders;
- to execute the development and redevelop the railway infrastructures with the intention that KTMB will concentrate on providing excellent services for the users; and
- to finance railway infrastructure development using sources gathered from various activities such as rental, lease and government allocation.

(iii) Development Plan for Rail Industry

(a) KTMB Extension Plan

The following is a list of previous, current and planned rail development and upgrading works in Malaysia.

- Rehabilitation of 327 km-long meter gauge tracks from Paloh to Singapore and from Slim River to the main Seremban line in Malaysia (1988–1994) (US$ 70 million)

- Double tracking of the Rawang-Seremban route (1990–1994) (US$ 62 million)
- Double tracking of the Kuala Lumpur-Port Klang rail route, including spur lines to Subang Jaya and Sentul (1991–1994) (US$ 66 million)
- Widening of rail tunnels near Seremban (1994–1995) (US$ 4 million)
- Track linking Port Klang to Pulau Indah (1997–1999) (US$ 4 million)
- Construction of rail bridges, road over bridges and underpasses along the Rawang-Kajang route (1991–1994) (US$ 6 million)
- Construction of rail bridges, road over bridges and underpasses along the Kajang-Seremban route (1991–1994) (US$ 16 million)
- Construction of rail culverts and box pushing along the Nilai-Seremban route (1994–1995) (US$ 4 million)
- Construction of the Port of Tanjung Pelepas, a rail link in Johor (1999–2002) (US$ 121 million)
- Track works at Kuala Lumpur Sentral station (1999–2001) (RM 14.3 million)
- Rail link from Subang Jaya to Subang Airport

(b) Syarikat Prasarana Negara Berhad and Light Rail Transit System Extension Plan

Syarikat Prasarana Negara Berhad (Prasarana) is a wholly-owned Government company established by the Ministry of Finance, set up to facilitate, undertake and expedite public infrastructure projects approved by the Government. Prasarana and its group of companies are also asset-owners and operators of several public transport providers, namely the Ampang and Kelana Jaya lines, KL Monorail system, bus operations in Klang Valley and Penang, as well as the cable car services in Langkawi.

Both the LRT, Monorail and bus services are operated by Rangkaian Pengangkutan Integrasi Deras Sdn Bhd (RapidKL), a subsidiary of Prasarana. RapidKL provides an integrated public transport system in the Klang Valley incorporating rail and bus services. Incorporated in July 2004 and operational since November the same year, RapidKL operates the Ampang Line LRT (previously known as STAR-LRT) from Sentul Timur to Ampang and Sri Petaling, and the Kelana Jaya Line LRT (previously known as PUTRA-LRT) from Kelana Jaya to Gombak. RapidKL buses operate in 165 routes covering 980 housing estates in the Klang Valley daily.

In February 2007, the Federal Government announced the need for a major revamp of bus operations in Penang. As a result, Rapid Penang Sdn. Bhd. (Rapid Penang), a wholly-owned subsidiary of Prasarana,

was set up in August 2007, to operate bus services with a fleet of 350 buses.

In December 2007, Prasarana took over the assets and operations of KL Monorail System which is currently being managed by KL StarRail Sdn. Bhd. (KLSR) a wholly-owned subsidiary of Prasarana.

Since January 2003, Prasarana has also been operating and maintaining the cable car services in Langkawi on behalf of the Langkawi Development Authority (LADA), through its fully-owned subsidiary, Panorama Langkawi Sdn. Bhd. (PLSB). The cable car provides a ride to the top of Gunung Mat Chinchang for a panoramic view of Langkawi Island and its surrounding areas.

The project plan of the proposed Kuala Lumpur light rail extension programme, worth RM 7 billion has been unveiled in the capital city of Malaysia. The project involves the extension of the Kelana Jaya automated light metro line to 17km long, with 13 stations. This extension will run from Kelana Jaya station through Subang, USJ and Alam Megah to Putra Heights.

The Ampang LRT extension will include 13 stations on a 17.7km alignment. This extension, beginning at Sri Petaling station, will pass through Puchong and Kinrara and end at Putra Heights, where the two extensions will connect. The project also includes increasing 13

six-car trains for Ampang LRT and 35 four-car trains for the Kelana Jaya line.

In addition, the stations will have modern facilities and access for mobility-impaired passengers. State transport company Syarikat Prasarana Negara Bhd will carry out both the projects. Both lines are expected to be completed by the end of 2012.

The proposed Kelana Jaya LRT extension line will commence from Lembah Subang – Kelana Business Centre, through Subang, USJ, Alam Megah and ending at the hub in Putra Heights. The proposed line will consist of 13 new stations and approximately 17km of guideway.

The proposed Ampang LRT extension line will commence from the present Sri Petaling station, passing through Puchong, Kinrara and ending at the hub in Putra Heights. The proposed line will consist of 13 new stations and approximately 17.7km of guideway. Both lines are expected to be commissioned by end of 2013.

(c) Bullet Train Plan Malaysia – Singapore

A high-speed rail running at 300 km/h (186 mph) to link Kuala Lumpur and Singapore was proposed in 2006 by YTL Corporation, operator of the KLIA Express in Malaysia, although the company did propose a similar system back in the late 1990s. If built, it would be the first transporter high speed line outside of Europe, cutting travel time to 90 minutes, compared with 5 hours of highway drive, 7 hours

currently by standard rail, 4 hours of flight including commuting to and from airport, check in and boarding. A Bangkok - Kuala Lumpur - Singapore line spanning the three nations has been suggested previously, though no action has been taken.

Plans for the project were put on hold in April 2008 due to the high cost to the government, estimated at about RM8 billion. The project also faces opposition from rail operator rivals such as Keretapi Tanah Melayu, and the liberalisation of the Kuala Lumpur-Singapore air route further dampened prospects for the proposal.

In 2007, Siemens expressed interest in becoming the technology provider for the proposed rail link. By the middle of 2009, YTL again revived talk on the project and expressed hope that the Malaysian government would relook at the proposal, claiming that delays in the project has caused development costs to rise over the years.

In 2010, Malaysia had made a proposal to revive the project. In the new proposal, the route will be in two phases. The first one is from Kuala Lumpur to Singapore while the second phase will be from Kuala Lumpur to Penang.

(d) Mass Rapid Transit (MRT) Future Project

The MRT project, which will be the largest infrastructure project in Malaysia, is one of the economic entry points (EPP) identified in the

Greater Kuala Lumpur/Klang Valley National Key Economic Area under the Government's Economic Transformation Programme.

The MRT will improve the public transport modal split from the 12% in 2009 to 50% by 2020 with rail transport carrying 50% of public transport trips. This improved mobility will enable the Greater Kuala Lumpur/Klang Valley conurbation to be transformed into an attractive place for investment and talent.

The MRT project will create 130,000 jobs during its construction. The project is expected to generate gross national income (GNI) of between RM3 billion and RM4 billion per annum from 2011 to 2020 from direct construction and operations, and between RM8 billion and RM12 billion in spillovers resulting from the multiplier impact from the construction. A total of RM21 billion per annum in incremental GNI impact will be generated in 2020 in appreciation of property value and unleashing of productivity of workers.

Construction work for the project is expected to begin in July 2011and will take about six years to complete. The first MRT line will run between Sungai Buloh and Kajang through the centre of Kuala Lumpur. The length of the line is about 60km and has 35 stations. There will be integration stations where the MRT intersects with the KTM Komuter, Kelana Jaya light rail transit (LRT) line and the Ampang LRT line.

The government picked the Sungai Buloh-Kajang line to start the MRT project as this corridor is currently not adequately served by rail-based public transport. Furthermore, the viability of this line has been studied in depth as was proposed by Syarikat Prasarana Negara Berhad in 2006, and recently by MMC-Gamuda Joint Venture Sdn Bhd.

The Sungai Buloh-Kajang line is the first phase of the Klang Valley's MRT network. Future lines have been proposed and are being studied as part of the Urban Public Transport Master Plan being drawn up by the Suruhanjaya Pengangkutan Awam Darat. Construction of these future lines will be carried out in phases.

3.5 Skilled Worker Requirement In The Local Rail Sector

Malaysia needs to beef up on skilled talents in the rail industry with the growing demand for such expertise. Rail industry in Malaysia has experienced tremendous development and will continue to experience for many years to come unprecedented levels of activity, with major projects requiring unprecedented numbers of skilled and specialist workers.

Malaysia is new in the rail industry. Therefore it is understandable that our universities have not been producing rail engineers as there was no demand for them.

Now there is demand for them and this is an area need to be improved to supply expertise to the rail industry. With the development in the technology and Malaysia's commitment in improving high standards on rail projects, it is believed there is a need of skilled talents in the rail industry that also covers specific skills in the manufacturing and related services sectors. Issues linked to the supply of labour in the appropriate professional and trade occupations in the rail industry need to be identified through a skills audit, and addressed through the development of a rail industry skills development strategy.

3.6 Industrial Competition at International Level

Malaysian rail system that has been driven by KTMB is now facing international competition from international railway companies. These international railway companies are using advanced train technology. There is also appear to be an increasing number of domestic and international players competing for the small domestic infrastructure and rolling stock markets. This suggests that industry nationalisation or resource reallocation may result, unless there is certainty in the domestic market through long-term planning of government procurement, and unless an internationally competitive industry collaborates and pursues export opportunities to at least maintain the current industry structure, level of jobs and capability in Malaysia.

4. METHODOLOGY OF OCCUPATIONAL ANALYSIS – RAIL SECTOR

In conducting the Occupational Analysis, a kick off meeting was held primarily to strategise the Plan of Action in accordance with guidelines as stated by the Department of Skills Development (DSD) in terms of scope of study, time frame and representation by the panel of rail experts from both the public and private sector as stipulated in the letter of offer. After the kick off meeting, a Plan of Action was formulated taking into consideration the activities and time frame required.

This chapter is divided into two (2) sections: the proposed methodology to construct the Occupational Description for the respective job titles and the methodology of the overall occupational analysis process.

4.1 Methodology To Construct Occupational Description

This is a standard development methodology undertaken to develop a job analysis. This methodology is used in order to produce an Occupational Description that is clear on the main job scope of the job title, the verb used is according to level of difficulty and the object is clearly described.

Below are the main steps in producing the Occupational Description for the respective job titles obtained in the Occupational Analysis:

(i) Determine the main sub sectors and areas in the sector

(ii) Identify the job titles

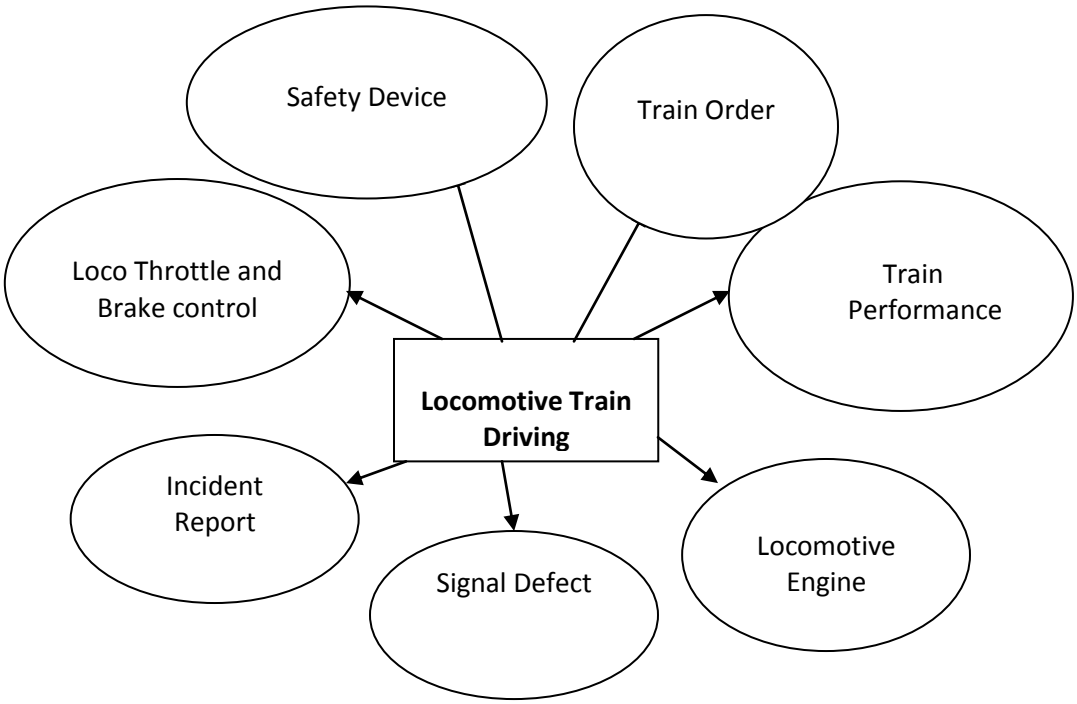
(iii) Identify the job scope

In order to provide a clear and concise the Occupational Description, the statement must consist of a Verb, Object and Qualifier. The rationale of determining the definition attributes are, to ensure consistency and continuity of using those attributes right from Occupational Analysis, Job Analysis to Task Analysis Developmental.

(a) Object

Firstly, the object is determined before the other two attributes. The object of any job is the main determinant of distinguishing one job from another. For example, a Demi-Chef (kitchen sub-sector of the Hotel Industry), deals with food and cooking utensils as the objects in performing tasks, while a hairdresser deals with client's hair, hairdressing chemical, etc.

The Objects are acquired from the expert panel members during a brainstorming session and written on DACUM cards so that all panel members can see the Objects identified. Objects of those in the related area or sub sector of the Rail industry are determined such as in the example below:



Legend:

Control Centre **Sector / Subsector / Area / Subarea**

Incident Report **: Object**

Figure 5.0: Example of Rail Industry Identifying Objects

(b) Verb

The verb is then determined based on the level of difficulty of the identified job titles, such as below:

- ***Object :incident report***
- ***Verb for Level 1 : Prepare***
- ***Verb for Level 2 : Analyse***
- ***Verb for Level 3 : Evaluate***

Hence, the contents of the job descriptions will be as below:

- **Assistant Train Driver (Level 1)**
  - ✓ ***Report*** *train incident+ (qualifier)*
- **Locomotive Driver (Level 2)**
  - ✓ ***Prepare*** *incident report + (qualifier)*
- **Operation Controller (Level 3)**
  - ✓ ***Evaluate*** *incident report + (qualifier)*

(c) Qualifier

Based on the example above, the statement is not clear as there is no qualifier for the object, therefore a qualifier must be added to further clarify it. Below is an example:

- ***Prepare*** *incident report according to company Standard Operating Procedure*

4.2 Methodology Of The Overall Occupational Analysis Process

(a) Surveying Literature

As outlined by the guidelines, a literature survey on the rail industry was carried out to get some insight on the scope, policy, program, activities in the context of the Malaysian scenario. The scope covered under this search includes definitions, current analysis of the sector/sub sector, current status of the rail industry sector, skilled workers requirement in the local industry and the industrial competition at international level.

(b) Identifying Industry & Public Experts

The literature search findings were used as a guide to identify the scope of occupational study and analysis. Experts from the rail sector were identified and short listed for further communication and contact.

(c) Establishing Contact with the Rail Sector Experts

A pool of rail experts from the industry and public sector were contacted. The list of experts is in Annex 2.

(d) Gathering Information

In the process of gathering the information, two methods were adopted, namely brainstorming and the Developing a Curriculum (DACUM) session. The brainstorming and DACUM session was attended by expert panels who discussed the different sub sectors

and areas. The information gathered was then used as input for the occupational analysis of the said industry.

(e) Analysing the Information

Based on the activities done as above, substantial data and information were collected. The data and information were discussed and analysed in several in-house workshops attended by selected key person or experts from the public and industry sector. The presence of the key persons or experts was to help in the development of the Occupational Analysis for this sector. During this session, attempts to reframe the rail sub sector in Malaysia were done using the following framework:

i. Scope of the rail sector and its sub sector
ii. Main area
iii. Major occupational group of the industry
iv. Job title
v. Hierarchy structure (Level 1 – 8)
vi. Occupational description

(f) Organising Workshop with Expert Panels

Several workshops were conducted throughout the development of the Occupational Analysis of the rail sector. The details of the workshops are as below:

(i) Held on the 14th and 15th May, 2011 at the Singgahsana Hotel, Petaling Jaya. The objectives of the workshop were:

- Presentation of preliminary findings.
  - ✓ Outline of Job Title
  - ✓ Career structure
  - ✓ Hierarchy structure (Level 1 – 8)
  - ✓ Occupational Description
- Occupational Analysis Session. and
- Validation of the findings.

5. FINDINGS

5.1 Newly Identified Sub Sectors

During brainstorming conducted with a panel of experts, the input sectors, sub sectors and areas of work were classified according to category. Here are the sectors, sub sectors and areas of work identified as shows in Table 3.0 and Occupational Structure as shows in Table 4.0.

Table 3.0: Newly Identified Sub Sectors

Sector	Sub Sector	Area	Job Area
Rail	Operation	Station Operation	a) Manual train Station Operation b) Auto train Station Operation
		Control Center	a) Manual train control center b) Manual train control center
		Train Operation	- Nil -
	Maintenance	Rolling Stock	a) Mechanical b) Electrical & Electronic
		Permanent Way	a) Track b) Rail
		Automatic Fare Collection	- Nil -
		Signalling & Communication	a) Communication b) Way side c) Signalling
		Electrification	a) Power line b) Electrification competency

Table 4.0: Rail Industry Occupational Structure

5.2 Occupational Structure

SECTOR	RAIL INDUSTRY				
SUB SECTOR	**OPERATION**				
JOB AREA	**STATION OPERATION**		**CONTROL CENTER**		**TRAIN OPERATION**
	MANUAL TRAIN STATION OPERATION	**AUTOMATIC TRAIN STATION OPERATION**	**MANUAL TRAIN CONTROL CENTER**	**AUTOMATIC TRAIN CONTROL CENTER**	
LEVEL 8	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*
LEVEL 7	OPERATION SPECIALIST∗				
LEVEL 6	STATION AND CONTROL OPERATION SPECIALIST∗				TRAIN OPERATION SPECIALIST∗
LEVEL 5	STATION OPERATION MANAGER		CONTROL CENTRE MANAGER		TRAIN OPERATION MANAGER
LEVEL 4	OPERATION EXECUTIVE / SUPERINTENDANT	STATION MANAGER EXECUTIVE	CONTROL CENTRE EXECUTIVE	AUTOMATIC TRAIN CONTROL CENTRE EXECUTIVE	TRAIN EXECUTIVE∗
LEVEL 3	STATION MASTER	CUSTOMER TRANSIT ASSISTANT	OPERATION CONTROLLER		TRAIN SUPERVISOR
LEVEL 2	FREIGHT CLERK	CUSTOMER SERVICE ASSSISTANT	TRAIN DRIVER∗		
LEVEL 1	PORTER		ASSISTANT TRAIN DRIVER		

∗ *Critical Job Title*

Table 4.0: Rail Industry Occupational Structure (continued)

SECTOR	RAIL INDUSTRY				
SUB SECTOR	MAINTENANCE				
JOB AREA	ROLLING STOCK				
	MECHANICAL		ELECTRICAL & ELECTRONIC		
	BODY	BOGIE	LOCOMOTIVE	COACHES & WAGON	ELECTRICAL TRAIN
LEVEL 8	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*
LEVEL 7	ROLLING STOCK MAINTENANCE SPECIALIST				
LEVEL 6	ROLLING STOCK MECHANICAL SPECIALIST∗		ROLLING STOCK ELECTRICAL & ELECTRONIC SPECIALIST∗		
LEVEL 5	ROLLING STOCK MECHANICAL MANAGER		ELECTRICAL/ELECTRONIC LOCOMOTIVE MANAGER	ELECTRICAL/ELECTRONIC COACH & WAGON MANAGER	ELECTRICAL TRAIN MANAGER
LEVEL 4	ROLLING STOCK MECHANICAL EXECUTIVE		ELECTRICAL/ELECTRONIC LOCOMOTIVE EXECUTIVE	ELECTRICAL/ELECTRONIC COACH & WAGON EXECUTIVE	ELECTRICAL TRAIN EXECUTIVE
LEVEL 3	MECHANICAL BODY FOREMAN	MECHANICAL BOGIE FOREMAN	ELECTRICAL/ELECTRONIC LOCOMOTIVE FOREMAN	ELECTRICAL/ELECTRONIC COACH & WAGON FOREMAN	ELECTRICAL TRAIN FOREMAN∗
LEVEL 2	MECHANICAL BODY TECHNICIAN∗	MECHANICAL BOGIE TECHNICIAN∗	ELECTRICAL/ELECTRONIC LOCOMOTIVE TECHNICIAN∗	ELECTRICAL/ELECTRONIC COACH & WAGON TECHNICIAN	ELECTRICAL TRAIN TECHNICIAN∗
LEVEL 1	MECHANICAL BODY FITTER	MECHANICAL BOGIE FITTER	ELECTRICAL/ELECTRONIC LOCOMOTIVE FITTER	ELECTRICAL/ELECTRONIC COACHES & WAGON FITTER	ELECTRICAL TRAIN FITTER

∗ *Critical Job Title*

Table 4.0: Rail Industry Occupational Structure (continued)

SECTOR	RAIL INDUSTRY			
SUB SECTOR	MAINTENANCE			
JOB AREA	PERMANENT WAY			
	TRACK		RAIL	
	STRUCTURE	PERMANENT WAY (TRACK)	TRACK VEHICLES	MECHANISE OPERATION
LEVEL 8	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*
LEVEL 7	PERMANENT WAY MAINTENANCE SPECIALIST			
LEVEL 6	TRACK MAINTENANCE SPECIALIST ∗		MECHANISE MAINTENANCE SPECIALIST ∗	
LEVEL 5	PERMANENT WAY TRACK STRUCTURE MANAGER	PERMANENT WAY MANAGER	PERMANENT WAY MECHANISE MANAGER	
LEVEL 4	PERMANENT WAY TRACK STRUCTURE EXECUTIVE	PERMANENT WAY CHIEF INSPECTOR	PERMANENT WAY MECHANISE EXECUTIVE	
LEVEL 3	PERMANENT WAY TRACK STRUCTURE SUPERVISOR	PERMANENT WAY SENIOR INSPECTOR	MECHANISE SUPERVISOR TRACK & VEHICLES	PERMANENT WAY MECHANISE INSPECTOR
LEVEL 2	PERMANENT WAY TRACK STRUCTURE TECHNICIAN∗	PERMANENT WAY INSPECTOR∗	MECHANISE TECHNICIAN (TRACK & VEHICLES)	MECHANISE PERMANENT WAY TECHNICIAN
LEVEL 1	PERMANENT WAY TRACK STRUCTURE FITTER	PERMANENT WAY TRACKMAN	MECHANISE OPERATOR (TRACK & VEHICLES)	MECHANISE OPERATION OPERATOR

∗ *Critical Job Title*

Table 4.0: Rail Industry Occupational Structure (continued)

SECTOR	RAIL INDUSTRY					
SUB SECTOR	MAINTENANCE					
JOB AREA	SIGNALLING & COMMUNICATION			AUTOMATIC FARE COLLECTION MAINTENANCE	ELECTRIFICATION	
	COMMUNICATION	WAYSIDE	SIGNALLING		POWER LINE	ELECTRIFICATION COMPETENCY
LEVEL 8	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*	*- NO LEVEL -*	ELECTRIFICATION (NCS)
LEVEL 7	*- NO LEVEL -*			*- NO LEVEL -*	*-NO LEVEL -*	
LEVEL 6	SIGNALLING AND COMMUNICATION SPECIALIST*			*- NO LEVEL -*	*-NO LEVEL -*	
LEVEL 5	COMMUNICATION MANAGER	WAYSIDE MANAGER	SIGNALLING MANAGER	AUTOMATIC FARE COLLECTION MAINTENANCE MANAGER	ELECTRIFICATION MANAGER	
LEVEL 4	COMMUNICATION EXECUTIVE	WAYSIDE EXECUTIVE	SIGNALLING EXECUTIVE	AUTOMATIC FARE COLLECTION MAINTENANCE EXECUTIVE	ELECTRIFICATION EXECUTIVE	
LEVEL 3	COMMUNICATION SUPERVISOR	WAYSIDE SUPERVISOR	SIGNALLING SUPERVISOR	AUTOMATIC FARE COLLECTION MAINTENANCE SUPERVISOR	ELECTRIFICATION SUPERVISOR	
LEVEL 2	COMMUNICATION TECHNICIAN*	WAYSIDE TECHNICIAN*	SIGNALLING TECHNICIAN*	AUTOMATIC FARE COLLECTION MAINTENANCE TECHNICIAN	ELECTRIFICATION TECHNICIAN	
LEVEL 1	COMMUNICATION FITTER	WAYSIDE FITTER	SIGNALLING FITTER	AUTOMATIC FARE COLLECTION JUNIOR TECHNICIAN	ELECTRIFICATION SERVICEMAN	

** Critical Job Title*

5.3 Support Industry For Rail Industry

In ensuring progressive move and high profitability for the industry, support from other industries is essential. For rail industry, there are many supporting industries involved including logistics, manufacturing, ICT and etc. Below is a list of supporting industries and sub-sectors involved including as shown in Table 5.0

Table 5.0: Support Industry for Rail Industry

Sector/ Industry	Sub Sector	Support Area
Logistic	i. Facilities Service Provider ii. Road Transport Service Provider iii. Integrated Logistic Service Provider iv. Terminal Operation Service Provider v. MTO Transport Service Provider	The logistics industry covers four main modes of transportation i.e. sea, land, air and rail to enhance the country's industrialization and international trade. Logistics industry comprises largely of single specialised service providers such as freight forwarders, transport companies and warehousing companies. The logistic industry uses rail industry as one of the mechanism to transport goods from one point to another.
Production & Manufacturing	i. Metal Based Production ii. Plastic Based Production	Production is simply the conversion of inputs into outputs. It is an economic process that uses resources to create a commodity that is

Table 5.0: Support Industry for Rail Industry (continued)

Sector/Industry	Sub Sector	Support Area
	iii. Electronic Product Production iv. Construction Material Production v. Wood Based Product Production vi. Textile & Apparel Production vii. Rubber Based Product Production	suitable for exchange. This can include manufacturing, storing, shipping, and packaging. Production industry helps rail industry by proving manufactured goods including tools, equipment and materials.
Welding	i. Structural Fabrication ii. Fabrication SME iii. Structural Welding	Welding is the process of joining materials through the use of heat with or without pressure. Welding industry help rail industry in constructing rail and track and also on fabricating coaches and wagons used by the rail industry.
Information &Communication Technology (ICT)	i. System Integration ii. Data Management iii. ICT System iv. Application System Development v. ICT Security	(ICT) as an umbrella term that includes all technologies for the manipulation and communication of information. The system for new technology of train system will be based on IT and electronic.
Hospitality	i. Accommodation ii. Housekeeping iii. Food & Beverage	Hospitality refers to the relationship between a guest and a host, and it also refers to the act or practice of being hospitable, that is, the reception and entertainment of guests, visitors, or strangers, with liberality and goodwill.

Table 5.0: Support Industry for Rail Industry (continued)

Sector/Industry	Sub Sector	Support Area
		Hospitality industry help rail industry by providing hospitality services in train such as F&B and also hospitality services.
Electrical Industry	i. Electrical ii. Electrification	The Electrical sector can be defined as job scopes dealing with electrically powered machine or vehicles. It also is related to, producing products or those operated by electricity. Now, as electricity becomes one of the main sources of power for train, electrical industry is one of the most critical elements to support rail industry.
Machinery & Equipment	i. Metal working ii. Power Generating iii. Operation Control	The machinery and equipment industry assumes an important role in the industrial development of the country, in view of its extensive linkages to major economic sectors, such as manufacturing, construction, transportation and etc. The industry produces a wide variety of machinery and equipment for various uses, such as power generation, specific industry processing, metalworking and general industrial activities including for rail industry

Table 5.0: Support Industry for Rail Industry (continued)

Sector/Industry	Sub Sector	Support Area
Electronic	i. Power Management ii. Radio Frequency iii. Interface iv. Printed Circuit Board v. Optical Electronic vi. Digital Signal Processing vii. Repair Services viii. Micro Electronic	The electronics product category can be sub-divided into three segments which are electronics components, including semiconductors, passive components, and other components, such as printed circuit boards, metal stamped parts and precision plastic parts. All electronic parts used by train are produced by the electronic manufacturer company.
Mechatronic	i. Industrial Automation ii. Civil Infrastructure	Mechatronics concentrates on mechanics, electronics, control and molecular engineering as well as computing, all combining to produce simpler, economical and versatile systems. Mechatronics help advancing rail technology to be more reliable and efficient.
Professional Services	i. Surveyor ii. Finance iii. Insurance iv. Property v. Market Research vi. Management Consultant vii. Legal & Secretariat viii. Advertising	Apart from the products and services offered, the service industry is really dependent on the people's quality and skills in ensuring the success of the industry. Business & Professional Services sector provide backbone to all industry including rail industry.

Table 5.0: Support Industry for Rail Industry (continued)

Sector/Industry	Sub Sector	Support Area
Business Management	i. E-Administrator ii. Secretary iii. Corporate Management iv. Human Resources	Business management is associated with running a company such as controlling, leading, monitoring and planning a business operation. This sector supports all rail company in managing the business aspect.
Construction Industry	i. Building Construction ii. Architectural iii. Structural iv. Civil v. Plant Machinery vi. Construction Site Supervisory	Construction is the act or method of building including construction, alteration, repairs, and demolition. Construction industry contributes to rail industry by constructing facilities and tracks used by the train.
Security Services	i. Safety & Security ii. Guard Services iii. Cash In Transit	Security services provide prevention of and protection for rail industry against assault, damage, fire, fraud, invasion of privacy, theft, unlawful entry, and other such occurrences caused by deliberate action

**** Occupational Framework for each sector can be obtain from Department Of Skills Development (www.dsd.gov.my)*

5.4 Occupational Descriptions

Under the Rail Industry, there are 94 job titles and 1 National Competency Standard (NCS) are identified and defined. Each of the job title is given job descriptions as specified. The descriptions for all job titles can be seen in Annex 3.

5.5 Critical Job Title

The critical job titles have been determined based on the analysis of the Rail industry conducted with the panel experts. In the process of gathering the critical job title, four methods were adopted. The methods used are questionnaire/surveys, face to face interview with industry sector, observation and committee process (DACUM). These critical job titles are described as critical because they are currently in demand. The critical sector arise from factor such as retirement, no succession planning, out sourcing labor demand, non qualified candidates, development within industries with higher wages from contractor such as double track North South, Iskandar Project, Klang Valley MRT and other future development plan for Rail Industry in Malaysia. Formal skills training and certification are required in order to recognise and maintain the competency standards of the workforce in the Rail Industry. There are 20 critical job titles and 1 National Competency Standard (NCS) that have been identified. Below are the lists of the critical job titles from the most critical to the least critical as shown in Table 6.0 and 7.0.

Table 6.0: List of Critical Job Titles

No.	Job Title	Level	Job Area
i)	ELECTRICAL TRAIN TECHNICIAN	2	ELECTRICAL TRAIN
ii)	PERMANENT WAY TRACK STRUCTURE TECHNICIAN	2	STRUCTURE
iii)	ELECTRICAL/ELECTRONIC LOCOMOTIVE TECHNICIAN	2	LOCOMOTIVE
iv)	PERMENANT WAY INSPECTOR	2	PERMANENT WAY (TRACK)
v)	COMMUNICATION TECHNICIAN	2	COMMUNICATION
vi)	WAYSIDE TECHNICIAN	2	WAYSIDE
vii)	SIGNALLING TECHNICIAN	2	SIGNALLING
viii)	TRAIN EXECUTIVE	4	TRAIN OPERATION
ix)	ELECTRICAL TRAIN FOREMAN	3	ELECTRICAL TRAIN
x)	TRAIN DRIVER	2	CONTROL CENTER & ELECTRICAL TRAIN
xi)	MECHANICAL BODY TECHNICIAN	2	MECHANICAL (BODY)
xii)	MECHANICAL BOGIE TECHNICIAN	2	MECHANICAL (BOGIE)
xiii)	STATION AND CONTROL OPERATION SPECIALIST	6	STATION OPERATION & CONTROL CENTER
xiv)	TRAIN OPERATION SPECIALIST	6	TRAIN OPERATION
xv)	OPERATION SPECIALIST	7	OPERATION
xvi)	ROLLING STOCK MECHANICAL SPECIALIST	6	MECHANICAL
xvii)	ROLLING STOCK ELECTRICAL & ELECTRONIC SPECIALIST	6	ELECTRICAL & ELECTRONIC

Table 6.0: List of Critical Job Titles (continued)

No.	Job Title	Level	Job Area
xviii)	TRACK MAINTENANCE SPECIALIST	6	TRACK
xix)	MECHANISE MAINTENANCE SPECIALIST	6	RAIL
xx)	SIGNALLING AND COMMUNICATION SPECIALIST	6	SIGNALLING & COMMUNICATION
xxi)	ELECTRIFICATION	NATIONAL COMPETENCY STANDARD (NCS)	ELECTRIFICATION

Table 7.0: Summary of Critical & Non Critical Job Titles

SECTOR	SUB-SECTOR		LEVEL								Total
			L1	L2	L3	L4	L5	L6	L7	L8	
Rail Industry	Operation	*Critical*	0	1	0	1	0	2	1	0	5
		Non-Critical	2	2	4	4	3	0	0	0	15
	Maintenance	*Critical*	0	9	1	0	0	5	0	0	15
		Non-Critical	14	5	13	12	12	0	2	0	58
		Critical	1 (National Competency Standard)								1
		TOTAL	Critical								21
			Non-critical								73
TOTAL JOB TITTLES											94

6. CONCLUSION AND RECOMMENDATION

Based on preliminary analysis carried out, the rail industry is an industry that requires a comprehensive development on producing skilled worker.

Public transportation has become an alternative to the urbanites due to the worsening condition of the traffic congestion today. This will result in the increasing number of locomotives to fulfill the service demands and this, in turn, will increase the number of skilled workers in train operations, shifts, rail traffic congestions and other challenges. Another important issue will rise from this situation; safety. It is important to understand and investigate the performance of the worker in this field in order to ensure safety. Human performance and reliability become very important today when error and accident causation are, sometimes, blamed on human error. The purpose of this analysis is to identify skill requirement related rail industry. The review adopts a comprehensive literature review from numerous published sources via journals, books and electronic databases and also from DACUM methodology.

Hopefully, this analysis will provide practical benefits in the form of advice, recommendations, guidelines and standards to develop manpower that can have a demonstrable effect on the efficiency, effectiveness, reliability, quality and safety of the rails. The valuable data and information could be shared and provided among rail industry workers, Government of Malaysia and rail services to improve their design of workplace and tasks, train infrastructure as well as raise the level of awareness among employees. It can help the company remain profitable and competitive, keep up with the technology, and prevent employees overworking.

Endowed with strong government support and a substantial human resource, this industry could expand by the strong corporation between government, rail companies and education centre.

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ANNEX 1: MALAYSIAN OCCUPATIONAL SKILLS QUALIFICATION (MOSQF) LEVEL DESCRIPTOR

MALAYSIAN OCCUPATIONAL SKILLS QUALIFICATIONS FRAMEWORK (MOSQF) LEVEL DESCRIPTOR

Level	Level Description
1	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**.
2	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.
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 an area of study or work.
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 **under-standing of different** perspective or approaches within an area of study or work.
5	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to address **broadly-defined, complex problem**s. 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.**
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.**
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 area of study or work.**
8	Achievement at this level reflects the **ability to develop original understanding** and extend an 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.

ANNEX 2: LIST OF PANELS AND FACILITATOR OF THE RAIL INDUSTRY OCCUPATIONAL ANALYSIS DEVELOPMENT

LIST OF PANELS OF RAIL INDUSTRY

OCCUPATIONAL ANALYSIS DEVELOPMENT

No.	Name	Organization
1	En. Hasnol Azahari Bin Hj Aman	Curriculum & Assessment Manager Malaysian Railway Academy
2	Pn. Nor Hashimah Bte Basri	Human Resource Senior Manager ERL Maintenance Support Sdn Bhd
3	Pn. Suhaila Bte Palal	Research & Development Standard Executive Suruhanjaya Pengangkutan Awam Darat (SPAD)
4	En. Jaafar Bin Md Amin	Train Operations Manager KL StarRail Sdn Bhd
5	En. Subramaniam a/l MS Maniam	Project Manager Malnaga Sdn Bhd
6	En. Norhasim Bin Hasan	Track Network Manager Rangkaian Pengangkutan Integrasi Deras Sdn Bhd (Rapid KL)
7	En. Saat Bin Md Jamil	Rail Operations Head of Department Rangkaian Pengangkutan Integrasi Deras Sdn Bhd (Rapid KL)
8	En. Harpajan Singh a/l Jeswant Singh	Senior Training Manager Rangkaian Pengangkutan Integrasi Deras Sdn Bhd (Rapid KL)
9	En. Abdullah Bin Ismail	Senior Training Executive Keretapi Tanah Melayu Berhad (KTMB)

Facilitator
En. Basharudin Bin Mohamed

Co-Facilitator
Y.M Engku Mohd Azmi Bin Engku Hatim
En. Khairul Anuar Bin Yahya

Proofreader
En. Abu Musa Bin Mohamad Isa

ANNEX 3: OCCUPATIONAL DESCRIPTIONS FOR RAIL INDUSTRY

SECTOR: RAIL INDUSTRY

STATION OPERATION

LEVEL 1

PORTER

A Porter is designated to assist passengers and ensure passengers' luggages are transferred to the designated area, carry out station cleanliness and perform customer service.

A Porter will be able to:

1. assist passengers aboard;
2. perform customer service;
3. carry out station cleanliness;
4. handle passengers' baggage;
5. arrange customers' luggage on container; and
6. assist to ensure luggage container is transferred to and/or from luggage-car.

STATION OPERATION

LEVEL 2

FREIGHT CLERK

A Freight Clerk is designated to compile documents, prepare bill for transport, contact terminal for clearance, carry out stamps bill of lading, and compute bills and charges.

A Freight Clerk will be able to:

1. compile documents on incoming cargo shipments to expedite removal of cargo from point of origin;
2. prepare bill for transport charges;
3. examine goods manifest and prepare bills of lading according to work procedures for releasing cargo;
4. communicate with terminal/station employees to determine when cargo will be available for removal from terminal /station;
5. communicate with consignee or agent of arrival dates of consignee, customs clearance requirements, and tonnage of goods;
6. stamp bill of lading so that cargo can be removed from terminal /station;
7. compute bills of lading, transport, storage, and demurrage charges; and
8. prepare bill for charges and submit it to accounting department for collection.

STATION OPERATION

LEVEL 2

CUSTOMER SERVICE ASSISTANT

A Customer Service Assistant is designated to manage the daily station counter sales and to provide service and assistance to customers.

A Customer Service Assistant will be able to:

1. perform daily ticket sales and ensure the correct tickets are issued to the customers with the correct fare;
2. handle and entertain customer enquiries and complaints;
3. ensure Automatic Fare Collection (AFC) equipment is functioning;
4. operate ticket machines and responsible for accurate reconciliation of cash at end of shift;
5. ensure sufficient float money and ticket for smooth transactions;
6. declare all sales, shortages and excess at end of shift via report for reconciliation process;
7. ensure that the ticket service counters are adequately manned at all times;
8. provide accurate information and attend to all front-line customer service matters in good manners;
9. ensure compliance of hygiene, safety and security aspects at stations;
10. attend to lost & found inquiries;

11. monitor unauthorised entry to “paid area” via manual gates;
12. attend to customers during service disruption to ensure service standards are maintained; and
13. respond to any failure or incidents at station levels.

STATION OPERATION

LEVEL 3

STATION MASTER

A Station Master is designated to manage the station operations including supervising and monitoring daily station operation, prevent unauthorized persons to stay on station premises for extended period, report on malfunctioning of equipment and to handle emergency situations.

A Station Master will be able to:

1. supervise and monitor daily station operations;
2. supervise passenger flow and train cleanliness interior and exterior;
3. supervise safety and security at the station areas;
4. prevent unauthorized persons to stay on station premises for extended period;
5. supervise station operation staff including cleaners and security staff;
6. carry out periodically check stations concourse, platform, passage away and staircase;
7. observe CCTV monitors, fire alarms another control panels with regards to safety and security;
8. maintain and ensure all station equipment is in good working conditions;
9. report on malfunctioning of equipment;

10. maintain high standard of customer care and cooperate with personnel from ticketing;
11. maintain good rapport and communications with customers; and
12. handle evacuation of passengers at the station during emergencies.

STATION OPERATION

LEVEL 3

CUSTOMER TRANSIT ASSISTANT

A Customer Transit Assistant is designated to manage the daily station counters and train operations, provide service and assistance to customers and perform role as train driver during emergencies and train failures.

A Customer Transit Assistant will be able to:

1. perform daily ticket sales and ensure the correct tickets are issue to customers;
2. handle and entertain customer enquiries and complaints in order to meet customers' satisfaction and attaining excellent customer service;
3. ensure Automatic Fare Collection (AFC) equipment is functioning and maintain adequate ticket stock level;
4. ensure sufficient float money and ticket for smooth transactions;
5. declare all sales, shortages and excess at end of shift via report for reconciliation process;
6. attend to lost & found inquiries;
7. monitor unauthorised entry to "paid area" via manual gates;
8. attend to customers during service disruption to ensure service standards are maintained;
9. respond to any failure or incidents at station levels;

10. monitor, check and respond to system failure and train performance;
11. drive train manually during train failure and emergency;
12. communicate with control centre on operational matters; and
13. monitor, check and report all auto train error code.

STATION OPERATION

LEVEL 4

OPERATION EXECUTIVE/SUPERINTENDANT

An Operation Executive/Superintendant is designated to supervise and coordinate all staff and activities of station operations in line with the company's objective and mission.

An Operation Executive/Superintendant will be able to:

1. coordinate all activities of operations department in line with the department and company's objective and mission;
2. prepare reports including monthly ridership analysis;
3. assist Head Of Department (HOD) in constructing, developing, formulating, identifying and preparing train operations policies and procedure;
4. assist the HOD in ensuring all approved policies, procedures and procedures are disseminated, consistently implemented and administered;
5. provide solution for operation problems and implement departmental activities improvement;
6. carry out and coordinate training programmes on safety aspects, cost effective and efficient operation of trains with the guidelines of the management instruction, rules and regulations;

7. assume the role of the key personnel and report to relevant department/parties in case of incidents;
8. liaise with other department on station operations matters;
9. organize replacement, schedules and alteration in case of staff absences;
10. conduct performance evaluation for confirmation, increment and promotion; and
11. prepare section budget.

STATION OPERATION

LEVEL 4

STATION MANAGER EXECUTIVE

A Station Manager Executive is designated to coordinate all activities of operations department, prepare reports including monthly ridership analysis, manage and control bulk ticket, conduct performance evaluation and prepare section budget.

A Station Manager Executive will be able to:

1. coordinate all activities of operations department in line with the department and company's objective and mission;
2. prepare reports including monthly ridership analysis;
3. assist HOD in constructing, developing, formulating, identify and preparing train operations policies and procedure;
4. assist the HOD in ensuring all approved policies, procedures and procedures are disseminated, consistently implemented and administered;
5. carry out and coordinate training programmes on safety aspects, cost effective and efficient operation of trains with the guidelines of the management instruction, rules and regulations;
6. monitor and report on the availability of monitoring systems (e.g. CCTV and recordings) to ensure a high degree of availability;
7. manage staff master plan, daily roster, overtime, leave and coverage;

8. manage and control bulk ticket and report any discrepancies to immediate superior;
9. verify ticket refund and replacement and liaise with relevant department on customer refund and payment process;
10. conduct performance evaluation for confirmation, increment and promotion; and
11. perform administration work, staff coaching and counselling.

STATION OPERATION

LEVEL 5

STATION OPERATION MANAGER

A Station Operation Manager is designated to manage departmental operation, review and analyse the station reports including the monthly ridership analysis, construct, develop, formulate, identify and prepare train operations policies and procedure, evaluate section budget and ensure emergency response plan and any unplanned events guidelines are complied with.

A Station Operation Manager will be able to:

1. manage departmental operation in line with the department and company's objective and mission;
2. review and analyse the station reports including the monthly ridership analysis;
3. construct, develop, formulate, identify and prepare train operations policies and procedure;
4. ensure all approved policies and procedures are implemented and enforced;
5. ensure staff are equip with relevant competency and skill by attending proper training;
6. ensure all stations are well equipped and functioning to support operational requirement;

7. ensure audits are performed for improvement and upkeep of existing assets under customer service custody;
8. conduct performance evaluation for confirmation, increment and promotion;
9. evaluate section budget;
10. ensure that daily ticket sales and reconciliation process are in accordance to the company standard operating procedures; and
11. ensure Emergency Response Plan (ERP) and any unplanned events guidelines are complied with at all times during system failures and operations disruptions.

CONTROL CENTRE

LEVEL 1

ASSISTANT TRAIN DRIVER

An Assistant Train Driver is designated to prepare locomotive unit for operation, prepare wagon formation, attach and detach wagon or coaches form locomotive and check train formation.

An Assistant Train Driver will be able to:

1. inspect locomotive front and rear portion;
2. inspect locomotive underframe;
3. inspect locomotive engine combustion room;
4. inspect locomotive power room;
5. inspect locomotive cooling room;
6. inspect locomotive driving cab;
7. inspect locomotive switches and circuit breakers;
8. attach locomotive with wagons or coaches; and
9. inspect train formation.

CONTROL CENTRE

LEVEL 2

TRAIN DRIVER*

A Train Driver is designated to perform driving from point of origin to destination, rectify locomotive failure, identify signal and track, respond to emergency information, monitor assistant locomotive driver, determine train order and prepare incident report.

A Train Driver will be able to:

1. start-up locomotive engine;
2. validate safety device;
3. coordinate with train controller;
4. determine train order;
5. perform loco throttle and brake control;
6. inspect train performance;
7. rectify wagon failure;
8. monitor signal defect;
9. identify track defective;
10. identify overhead line defective;
11. identify locomotive system failure;
12. respond to emergency information;
13. identify train guard emergency signal;

14. identify heavy jerk while driving; and

15. prepare incident report.

Notes:

*Critical Job Title

CONTROL CENTRE

LEVEL 3

OPERATION CONTROLLER

An Operation Controller is designated to perform controlling and monitoring network train operation, station monitoring, handle communication medium, control power supply distribution, produce daily report and plan maintenance activities. He/she is also expected to perform administrative function.

An Operation Controller will be able to:

1. check train availability;
2. interpret train graph, movement and alarm;
3. determine station system and equipment failure;
4. update daily event;
5. record signalling and train failure;
6. record power supply and equipment failure;
7. respond through radio communication;
8. make public announcements;
9. update passenger information system;
10. manage power isolation and restoration;
11. authorize maintenance work;
12. prepare incident / accident report;

13. supervise station staff;
14. diagnose system fault; and
15. plot and analyse maintenance activities.

CONTROL CENTRE

LEVEL 4

CONTROL CENTRE EXECUTIVE

A Control Centre Executive is designated to carry out enforce company rules and regulations, deploy field staff, attend customers enquiries and implement evacuation procedure and arrange for rescue for emergency situation. He/she is also expected to provide remote technical support and perform administrative function.

A Control Centre Executive will be able to:

1. enforce company rules and regulation;
2. deploy field staff;
3. organize special event;
4. supervise new staff;
5. attend customers' enquiries;
6. prepare train operation report;
7. respond to emergency calls;
8. implement evacuation procedure and arrange for rescue for emergency situation;
9. implement alternate service; and
10. resume to normal service.

CONTROL CENTRE

LEVEL 4

AUTOMATIC TRAIN CONTROL CENTRE EXECUTIVE

An Automatic Train Control Center Executive is to be responsible for operating automatic and manual train power distribution system and all associated system and ensure correct implementation of operation plan and failure management strategic as well as coordinating operations and support staff towards a safe, reliable and efficient train and system service.

An Automatic Train Control Centre Executive will be able to:

1. operate vital system Automatic Control system (ATC), SCADA and communications;
2. implement all operations and maintenance plan;
3. be responsible for the safe operations of Automatic Train Operation (ATO) and manual train;
4. supervise and guide staff on site for the correct implementation of alternate service or failure management;
5. responsible to deliver effective communication announcement during failure management or crisis;
6. report all defects, tracking the status and coordinate supporting department in restoring them to normality;

7. support higher management in preparing incident reports and any requested data for continuous learning process;
8. maintain high level of concentration by adopting multi skilled function and adaptive to all work station;
9. supervise all control executive in the absence of the control manager;
10. coordinate all operations and maintenance activities;
11. coordinate the implementation of alternate service or failure management and optimisation of response and resources;
12. provide effective communication during failure management or crises especially to customers; and
13. ensure all operations and maintenance activities are keeping up with the safety requirement, operating plan and maintenance plan.

CONTROL CENTER

LEVEL 5

CONTROL CENTRE MANAGER

A Control Centre Manager is designated to manage the control centre department in operating the automatic and manual train, get synergise action from all supporting department in recovery work and optimise utilisation of resources for a safe rail reliable, efficient and cost effective train and system service.

A Control Centre Manager will be able to:

1. manage and administer human resources matters, duty roster and training needs;
2. plan, strategise and ensure all operations and maintenance activities;
3. ensure safe operations of automatic and manual train;
4. manage the implementation of alternate service or failure management for maximum safety;
5. enhance the failure management strategies and Standard Operating Procedures (SOP) for operating automatic and manual train;
6. ensure all communication flow during failure management or crisis is well disseminated to customer;
7. maintain and keep abreast with the technical problem and changes in automatic train control system and its associated system for a safe diversion of operation strategies;

8. monitor and control the department expenditure for cost-effective operations and achieving company profit;
9. verify implementation of Emergency Response Plan (ERP) and Failure Management Strategies (FMS) for a safe train and system operation;
10. determine the departmental objectives and Key Performance Indicator (KPIs); and
11. conduct and review fair Performance Management System (PMS) for all staff in the department.

OPERATION

LEVEL 6

STATION AND CONTROL OPERATION SPECIALIST*

A Station And Control Operation Specialist is designated to manage the rail operation for synergise operations between control centre and field operations as well as optimising the resources inclusive of the development of staff skills and the improvement of failure management strategies for a safe, reliable, efficient and cost effective train and system services at all times.

A Station And Control Operation Specialist will be able to:

1. review, maintain and enhance company's operations plan for optimisation of resources and meeting the service agreement / license governing bodies;
2. plan, strategise and ensure all operation and maintenance activities are keeping up with the safety requirement, operating plans and maintenance plans;
3. maintain and review company's policies and procedures, as well as generating and approving the operations bulletin & special instructions for the safe, efficient and reliable train and systems service;
4. maintain and keep abreast with the technical problems and changes in automatic train control system;
5. coordinate with human resource for recruitment in achieving division's budgeted headcount;

6. prepare the short and long term budget as well as the business plan;
7. monitor and control the expenditure and automatic trains operations;
8. review and develop response procedures on failure management strategies, crisis management and emergencies;
9. handle major emergencies for damage control in maintaining safe and reliable train and system service;
10. review and advise the operations requirement for any new project for smooth implementation of service for the nation;
11. determine and approve the departmental objectives and KPIs; and
12. conduct and review fair performance management system for all staff in the department.

Notes:

*Critical Job Title

CONTROL CENTRE

LEVEL 3

TRAIN SUPERVISOR

A Train Supervisor is designated to perform activities such as verifying, coordinating and monitoring assistant locomotive driver, senior assistant locomotive driver and locomotive driver in their designated activities.

A Train Supervisor will be able to:

1. prepare train schedule;
2. prepare train crew roster;
3. arrange train activities;
4. prepare event report;
5. diagnosis rectifies train failure;
6. operate manual route setting;
7. monitor work activities;
8. monitor crew movement;
9. supervise staff discipline;
10. inspect crew performance;
11. conduct session meeting;
12. evaluate staff performance; and
13. conduct subordinate coaching.

CONTROL CENTRE

LEVEL 4

TRAIN EXECUTIVE*

A Train Executive is a person who is designated to perform activities such as verifying, coordinating and monitoring assistant locomotive driver, senior assistant locomotive driver and locomotive driver in their designated activities.

A Train Executive will be able to:

1. implement manpower planning;
2. align staff competency;
3. evaluate staff performance;
4. implement train operation procedures;
5. perform train operation function;
6. monitor train handling technique;
7. monitor traction unit availability;
8. manage and verify train failure report;
9. manage logistic supply;
10. manage training programme for external parties;
11. conduct in-house training for refresher and route knowledge;

12. perform safety operation; and

13. publish train crew roster.

Notes:

*Critical Job Title

CONTROL CENTRE

LEVEL 5

TRAIN OPERATION MANAGER

A Train Operation Manager is a person who is designated to perform activities such as verifying, coordinating and monitoring assistant locomotive driver, senior assistant locomotive driver and locomotive driver in their designated activities.

A Train Operation Manager will be able to:

1. lead, direct and motivate train operations staff;
2. ensure train are operated safely in accordance with Standard Operating Procedure (SOP);
3. maintain resources and provide adequate staff to operate the system;
4. develop, formulate and prepare policies and procedures;
5. maintain staff competency standards through training courses and on the job development;
6. coordinate with human resource for recruitment, staff performance and human resource issues;
7. review and prepare annual budgetary requirements within yearly budget approved;
8. manage the efficient scheduling of train to achieve required service level; and
9. prepare and analyse monthly service availability, train headway, train trips and service failure report for management review on operations performance level.

CONTROL CENTRE

LEVEL 6

TRAIN OPERATION SPECIALIST*

A Train Operation Specialist is a person who is designated to perform activities such as verifying, coordinating and monitoring assistant locomotive driver, senior assistant locomotive driver and locomotive driver in their designated activities.

A Train Operation Specialist will be able to:

1. review, maintain and enhance company's operations plan for optimization of resources and meeting the service agreement/license governing bodies;
2. plan, strategize and ensure all operation and maintenance activities are keeping up with the safety requirement, operating plans and maintenance plans;
3. maintain and review company's policies and procedures, as well as generating and approving the operations bulletin & special instructions for the safe, efficient and reliable train and systems service;
4. maintain and keep abreast with the technical problems and changes in traction unit / train control system;
5. verify department operation including recruitment, training development, performance appraisal, coaching and motivation;
6. prepare the short and long term budget as well as the business plan for meeting the company's business goals and aspirations;

7. monitor and control the expenditure of manpower versus train operations in term of capacity provided versus demand;
8. represent the company as employer in the company's safety committee for balancing the benefit for staff and the operations requirement as well as providing safe and conducive work area to all employees;
9. review and develop response procedures on failure management strategies, crisis management and emergencies;
10. manage emergencies for damage control in maintaining safe and reliable train and system service;
11. review and advise the operations crew requirement for any new project for smooth implementation of service for the nation;
12. determine and approve the departmental objectives and KPIs; and
13. conduct and review fair performance management system.

Notes:

*Critical Job Title

CONTROL CENTRE

LEVEL 7

OPERATION SPECIALIST*

An Operation Specialist is a person who is designated to perform activities such as planning, coordinating and monitoring for operation work.

A Train Operation Specialist will be able to:

1. strategise company's operations for optimization of resources and meeting the service agreement / license governing bodies;
2. carry out analysis on planning, strategize and ensure all operation and maintenance activities are keeping up with the safety requirement, operating plans and maintenance plans;
3. verify company's policies and procedures, as well as generating and approving the operations bulletin & special instructions for the safe, efficient and reliable train and systems service;
4. monitor and evaluate technical problems and changes in control system;
5. plan department operation including recruitment, training development, performance appraisal, coaching and motivation;
6. verify the short and long term budget as well as the business plan for meeting the company's business goals and aspirations;

7. analyse and verify the expenditure of manpower versus train operations in term of capacity provided versus demand;
8. verify response procedures on failure management strategies, crisis management and emergencies;
9. monitor emergencies for damage control in maintaining safe and reliable train and system service;
10. evaluate and verify the operations crew requirement for any new project for smooth implementation of service for the nation;
11. plan departmental objectives and KPIs; and
12. plan performance management system.

Notes:

*Critical Job Title

ROLLING STOCK

LEVEL 1

MECHANICAL BODY FITTER

A Mechanical Body Fitter is designated to perform and preserve reliability of the asset by performing routine maintenance as practised by rail industries.

A Mechanical Body Fitter will be able to:

1. perform periodic maintenance of car body structure and fittings;
2. assist in carry out component troubleshooting activities;
3. carry out survey on car body auxiliary fittings requirement;
4. carry out site cleanliness;
5. carry out mobilization of equipment and material;
6. carry out reliability check of auxiliary equipment installed;
7. carry out function of assembling and dismantle auxiliary component at car body for maintenance and replacement; and
8. inspect overall fitting of car body.

ROLLING STOCK

LEVEL 2

MECHANICAL BODY TECHNICIAN*

A Mechanical Body Technician is designated to carry out periodic inspection, prepare report, order requisition of spare parts, organize maintenance and repair work, up keep record of all carriage structure, ensure installations are according to specifications and perform supervisory functions.

A Mechanical Body Technician will be able to:

1. carry out periodic inspection of car body structure and fittings;
2. prepare report conditions of car body and main structure fittings;
3. order requisition of spare parts and components of car body and fittings;
4. organize maintenance and repair works of car body structure and fittings;
5. check work order according to work schedule;
6. upkeep records of all carriage structure;
7. keep of all carriage register for Maintenance, Repair and Overhaul (MRO);
8. upkeep records and submits returns to supervisor;
9. inspect all car body components are according to specification before assembling;
10. ensure installations are according to prescribe reading and tolerance; and

11. maintain maintenance operating procedure and safety.

Notes:

*Critical Job Title

ROLLING STOCK

LEVEL 3

MECHANICAL BODY FOREMAN

A Mechanical Body Foreman is designated to perform and preserve reliability of the asset by performing routine maintenance as practised by rail industries. he/she is also expected to perform task functions.

A Mechanical Body Foreman will be able to:

1. verify car body defect report;
2. verify periodical maintenance for car body assemblies;
3. monitor weekly work program;
4. verify work process as per Standard Operating Procedure (SOP) and maintenance manual;
5. prepare budget and expenditure;
6. carry out spare parts and component stock taking;
7. certify car body operation and fittings as per technical specification;
8. Carry out Non Destructive Test (NDT) for main car body structure;
9. verify installation of doors and fittings, brake assemblies and fitting, air cooling system unit, couplers and windows; and
10. verify installation of electrical compartment in car body.

ROLLING STOCK

LEVEL 1

MECHANICAL BOGIE FITTER

A Mechanical Bogie Fitter is designated to perform and preserve reliability of the asset by performing routine maintenance as practised by rail industries.

A Mechanical Bogie Fitter will be able to:

1. perform periodic maintenance of bogie/truck structure and fittings;
2. assist in carry out component troubleshooting activities;
3. carry out survey on auxiliary fittings requirement;
4. carry out site cleanliness;
5. carry out mobilization of equipment and material;
6. carry out reliability check of auxiliary equipment installed; and
7. carry out function of assembling and dismantle bogie /truck.

ROLLING STOCK

LEVEL 2

MECHANICAL BOGIE TECHNICIAN*

A Mechanical Bogie Technician is designated to perform and preserve reliability of the asset by performing routine maintenance as practised by rail industries.

A Mechanical Bogie Technician will be able to:

1. carry out periodic inspection of bogie structure and fittings;
2. prepare report conditions of bogie/truck and main fittings;
3. order requisition of spare parts and components of bogie;
4. organize maintenance and repair works of bogie/truck structure;
5. check work order according to work schedule;
6. upkeep records of all bogie/truck structure;
7. keep all bogie/truck register for Maintenance, Repair and Overhaul (MRO);
8. upkeep records and submit returns to supervisor;
9. verify all bogie components are according to specification before assembling;
10. ensure installations are according to prescribe reading and tolerance; and
11. maintain maintenance operating procedure and safety.

Notes:

*Critical Job Title

ROLLING STOCK

LEVEL 3

MECHANICAL BOGIE FOREMAN

A Mechanical Bogie Foreman is designated to verify bogie defect, monitor weekly work program, prepare budget and expenditure, carryout stock taking, carry out structure ndt and verify assemblies installation according to manual and procedures.

A Mechanical Bogie Foreman will be able to:

1. verify bogie defect report;
2. verify periodical maintenance for bogie assemblies;
3. monitor weekly work program;
4. verify work process as per Standard Operating Procedure (SOP) and maintenance manual;
5. prepare budget and expenditure;
6. carry out spare parts and component stock taking;
7. certify bogie operation and fittings as per technical specification;
8. carry out Non Destructive Test (NDT) for main frame/truck structure;
9. verify installation of dampers and fittings, brake assemblies and fitting, primary and secondary suspension, traction motor and hanger and to validate installation of bogie to carriage; and
10. verify correct wheel set installed within truck

ROLLING STOCK

LEVEL 4

ROLLING STOCK MECHANICAL EXECUTIVE

A Rolling Stock Mechanical Executive is designated to manage the activities of maintenance and overhauling, monitor defect and record data, monitor structure standard, re-evaluate annual program work calendar, prepare budget and expenditure, verify ride index data and monitor rolling stock requirement.

A Rolling Stock Mechanical Executive will be able to:

1. manage the activities of maintenance and overhauling;
2. monitor rolling stock defects and recording data;
3. monitor rolling stock structure standard;
4. evaluate annual calendar work program;
5. monitor on weekly work schedule;
6. verify Maintenance, Repair and Overhaul (MRO) work process;
7. prepare budget and expenditure;
8. monitor rolling stock MRO on brake apparatus requirement;
9. monitor rolling stock auxiliary control maintenance requirement;
10. monitor bogie and wheel set apparatus assembling requirement;
11. verify rolling stock post maintenance operation standard; and
12. verify ride index data.

ROLLING STOCK

LEVEL 5

ROLLING STOCK MECHANICAL MANAGER

A Rolling Stock Mechanical Technical Manager is designated to manage and control the activities of maintenance and overhauling, monitor and evaluate rolling stock structure and ride index and ensure an effective forecast of spare parts and material requirements.

A Rolling Stock Mechanical Technical Manager will be able to:

1. manage and control the activities of maintenance and overhauling;
2. monitor rolling stock defects rectification through Maintenance Management System (MMS);
3. monitor and evaluate rolling stock structure and ride index;
4. prepare annual budgetary requirements to suit effective annual programs;
5. manage and control budget and expenditure;
6. effectively plan and manage manpower and resources;
7. review on monthly and annual work schedule;
8. prepare material stock requisition for annual works program;
9. lead and manage department employee i.e. acquisition of training, appointment and development;

10. ensure an effective forecast of spare parts and material requirements;
11. plan effective continuous activities for present and future development to reduce failure;
12. propose item modification if required for life cycle replenishment; and
13. perform managerial duties.

ROLLING STOCK

LEVEL 6

ROLLING STOCK MECHANICAL SPECIALIST*

A Rolling Stock Mechanical Specialist is designated to perform maintenance, repair, and overhaul, be responsible for observance safe work practice, ensure installation and repair according to standard, undertake maintenance, repair and testing equipment, monitor training progress, analyse machinery fault and perform high standard of housekeeping.

A Mechanical Specialist will be able to:

1. verify maintenance, repair, overhaul and testing activities of a wide variety of mechanical equipment and systems associated with rolling stock;
2. observe safe work practice and ensure that the personnel under his jurisdiction follow applicable safety procedures and regulations;
3. ensure that all installation and repair work is carried out according to the appropriate standards and codes of practice;
4. analyse machinery faults and make recommendations regarding corrective action;
5. undertake the company's warehousing system and stock control methods;
6. prepare stock withdrawal orders on a daily basis; and

7. ensure that all such equipment is in good condition prior to use.

Notes:

*Critical Job Title

ROLLING STOCK

LEVEL 1

ELECTRICAL/ELECTRONIC LOCOMOTIVE FITTER

An Electrical/Electronic Locomotive Fitter is designated to perform and preserve reliability of the asset by performing routine maintenance as practised by rail industries.

An Electrical/ Electronic Locomotive Fitter will be able to:

1. inspect static inverter and battery charger system;
2. service static inverter and battery charger system;
3. repair electrical and electronic control;
4. inspect bogies and under frame structure;
5. repair bogies and under frame structure;
6. inspect propulsion system and dynamic brake;
7. examine pneumatic brake system;
8. repair pneumatic brake system;
9. inspect and repair car body structure;
10. inspect safety device and system;
11. inspect air conditioning and ventilation system;
12. service air conditioning and ventilation system;
13. inspect pneumatic and hydraulic system;
14. service pneumatic and hydraulic system; and

15. service and repair door system.

ROLLING STOCK

LEVEL 2

ELECTRICAL/ELECTRONIC LOCOMOTIVE TECHNICIAN*

An Electrical/Electronic Locomotive Technician is designated to carry out periodic inspection, prepare report, order requisition of spare parts, organise maintenance and repair work, up keep record of all carriage structure, ensure installations are according to specifications and perform supervisory functions.

An Electrical/Electronic Locomotive Technician will be able to:

1. troubleshoot static inverter and battery charger system;
2. repair static inverter and battery charger system;
3. carry out static inverter and battery charger system testing;
4. troubleshoot and test bogies and under frame;
5. troubleshoot propulsion system and dynamic brake system;
6. repair propulsion system and dynamic brake system;
7. troubleshoot and test brake system;
8. troubleshoot and repair safety system;
9. troubleshoot and repair air condition and ventilation system;
10. troubleshoot repair and test pneumatic and hydraulic system;
11. inspect, trouble shoot and repair door system;
12. inspect power to current collector equipment and power distribution system; and

13. service pneumatic and hydraulic system.

Notes:

*Critical Job Title

ROLLING STOCK

LEVEL 3

ELECTRICAL/ELECTRONIC LOCOMOTIVE FOREMAN

An Electrical/Electronic Locomotive Foreman is designated to perform and preserve reliability of the asset by performing routine maintenance for static inverter and battery charger system, electrical and electronic control unit, bogies and under frame structure, pneumatic brake system and device, safety device and grounding system and other components.

An Electrical/ Electronic Locomotive Foreman will be able to:

1. verify static inverter and battery charger system;
2. diagnose and troubleshoot electrical and electronic control unit;
3. verify bogies and under frame structure;
4. test and verify propulsion system and dynamic brake system;
5. verify pneumatic brake system and device;
6. verify car body structure;
7. verify safety device and grounding system;
8. verify air conditioning and ventilation system;
9. verify pneumatic and hydraulic system;
10. verify door operation device system;
11. ensure power to current collector equipment and power distribution system;

12. troubleshoot, repair and calibrate power to current collector equipment and power distribution system; and
13. prepare maintenance schedule and organise manpower.

ROLLING STOCK

LEVEL4

ELECTRICAL/ELECTRONIC LOCOMOTIVE EXECUTIVE

An Electrical/Electronic Locomotive Executive is designated to monitor train corrective maintenance, analyse train failure report, perform train testing & commissioning, verify automatic train operation and protection, carry out survey on auxiliary fittings requirement, verify power to current collector equipment and power distribution system, and verify automatic train operation and protection and to carry out administrative duties.

An Electrical/Electronic Locomotive Executive will be able to:

1. monitor train corrective maintenance;
2. review maintenance schedule;
3. monitor utilization of equipment and manpower;
4. monitor work according to safety procedure;
5. analyse train failure report;
6. monitor train overhaul standard and procedure;
7. perform train testing and commissioning;
8. verify train power distribution system;
9. verify automatic train operation and protection;
10. verify automatic protection and grounding system;

11. assist in carry out component troubleshooting activities;
12. carry out survey on auxiliary fittings requirement;
13. monitor mobilization of equipment and material;
14. verify reliability check of auxiliary equipment installed; and
15. verify power to current collector equipment and power distribution system.

ROLLING STOCK

LEVEL 5

ELECTRICAL/ELECTRONIC LOCOMOTIVE MANAGER

An Electrical/Electronic Locomotive Manager is designated to manage and control the activities of track recording data analysis, prepare annual budgetary requirements to suit effective annual programmes, carry out effective planning and managing manpower and resources, ensure an effective forecast of spare parts and material requirements and monitor and approve financial allocation of subordinates.

An Electrical/Electronic Locomotive Manager will be able to:

1. manage and control the activities of track recording data analysis;
2. monitor track defects of track recording data;
3. evaluate track standards to comply with specification of quality and safety standards;
4. prepare annual budgetary requirements to suit effective annual programs;
5. manage and control budget and expenditure;
6. carry out effective planning and managing manpower and resources;
7. review on monthly and annual work schedule;
8. liaise with other departments and third party for work programs;
9. prepare material stock requisition for annual works program;

10. lead and manage department employee i.e. acquisition of training, appointment and development;
11. ensure an effective forecast of spare parts and material requirements;
12. plan effective continuous activities for present and future development to reduce failure; and
13. monitor and approve financial allocation of subordinates.

ROLLING STOCK

LEVEL 1

ELECTRICAL/ELECTRONIC COACH& WAGON FITTER

An Electrical/Electronic Coach & Wagon Fitter is designated to perform and preserve reliability of the asset by performing routine maintenance as practised by rail industries.

An Electrical/Electronic Coach& Wagon Fitter will be able to:

1. inspect static inverter and battery charger system;
2. service static inverter and battery charger system;
3. repair electrical and electronic control;
4. inspect bogies and under frame structure;
5. repair bogies and under frame structure;
6. inspect propulsion system and dynamic brake;
7. examine pneumatic brake system;
8. repair pneumatic brake system;
9. inspect and repair car body structure;
10. inspect safety device and system;
11. inspect air conditioning and ventilation system;
12. service air conditioning and ventilation system;
13. inspect pneumatic and hydraulic system;
14. service pneumatic and hydraulic system; and

15. service and repair door system.

ROLLING STOCK

LEVEL 2

ELECTRICAL/ELECTRONIC COACH & WAGON TECHNICIAN

An Electrical/Electronic Coach & Wagon Technician is designated to carry out periodic inspection, prepare report, order requisition of spare parts, organise maintenance and repair work, up keep record of all carriage structure, ensure installations are according to specifications and perform supervisory functions.

An Electrical/Electronic Coach & Wagon Technician will be able to:

1. troubleshoot static inverter and battery charger system;
2. repair static inverter and battery charger system;
3. carry out static inverter and battery charger system testing;
4. troubleshoot and test bogies and under frame;
5. troubleshoot propulsion system and dynamic brake system;
6. repair propulsion system and dynamic brake system;
7. troubleshoot and test brake system;
8. troubleshoot and repair safety system;
9. troubleshoot and repair air condition and ventilation system;
10. troubleshoot repair and test pneumatic and hydraulic system;
11. inspect, trouble shoot and repair door system;
12. inspect power to current collector equipment and power distribution system; and

13. service pneumatic and hydraulic system.

ROLLING STOCK

LEVEL 3

ELECTRICAL/ELECTRONIC COACH & WAGON FOREMAN

An Electrical/Electronic Coach & Wagon Foreman is designated to perform and preserve reliability of the asset by performing routine maintenance for static inverter and battery charger system, electrical and electronic control unit, bogies and under frame structure, pneumatic brake system and device, safety device and grounding system and other components.

An Electrical/Electronic Coach & Wagon Foreman will be able to:

1. verify static inverter and battery charger system;
2. diagnose and troubleshoot electrical and electronic control unit;
3. verify bogies and under frame structure;
4. test and verify propulsion system and dynamic brake system;
5. verify pneumatic brake system and device;
6. verify car body structure;
7. verify safety device and grounding system;
8. verify air conditioning and ventilation system;
9. verify pneumatic and hydraulic system;
10. verify door operation device system;
11. ensure power to current collector equipment and power distribution system;

12. troubleshoot, repair and calibrate power to current collector equipment and power distribution system; and
13. prepare maintenance schedule and organise manpower.

ROLLING STOCK

LEVEL 4

ELECTRICAL/ELECTRONIC COACH& WAGON EXECUTIVE

An Electrical/Electronic Coach & Wagon Executive is designated to monitor train corrective maintenance, analyze train failure report, perform train testing & commissioning, verify automatic train operation and protection, carry out survey on auxiliary fittings requirement, verify power to current collector equipment and power distribution system, verify automatic train operation and protection and to carry out administrative duties.

An Electrical/Electronic Coach & Wagon Executive will be able to:

1. monitor train corrective maintenance;
2. review maintenance schedule;
3. monitor utilization of equipment and manpower;
4. monitor work according to safety procedure;
5. analyze train failure report;
6. monitor train overhaul standard and procedure;
7. perform train testing & commissioning;
8. verify train power distribution system;
9. verify automatic train operation and protection;
10. verify automatic protection and grounding system;

11. assists in carry out component troubleshooting activities;
12. carry out survey on auxiliary fittings requirement;
13. monitor mobilization of equipment and material;
14. verify reliability check of auxiliary equipment installed; and
15. verify power to current collector equipment and power distribution system.

ROLLING STOCK

LEVEL 5

ELECTRICAL/ELECTRONIC COACH& WAGON MANAGER

An Electrical/Electronic Coach & Wagon Technical Manager is designated to manage and control the activities of track recording data analysis, prepare annual budgetary requirements to suit effective annual programmes, carry out effective planning and managing manpower and resources, ensure an effective forecast of spare parts and material requirements and monitor and approve financial allocation of subordinates.

An Electrical/Electronic Coach & Wagon Manager will be able to:

1. manage and control the activities of track recording data analysis;
2. monitor track defects of track recording data;
3. evaluate track standards to comply with specification of quality and safety standards;
4. prepare annual budgetary requirements to suit effective annual programs;
5. manage and control budget and expenditure;
6. carry out effective planning and managing manpower and resources;
7. review on monthly and annual work schedule;
8. liaise with other departments and third party for work programs;
9. prepare material stock requisition for annual works program;

10. lead and manage department employee i.e. acquisition of training, appointment and development;
11. ensure an effective forecast of spare parts and material requirements;
12. plan effective continuous activities for present and future development to reduce failure; and
13. monitor and approve financial allocation of subordinates.

ROLLING STOCK

LEVEL 1

ELETRICAL TRAIN FITTER

An Electrical Train Fitter is designated to perform and preserve reliability of the asset by performing routine maintenance as per practised by rail industries.

An Electric Train Fitter will be able to:

1. inspect static inverter and battery charger system;
2. service static inverter and battery charger system;
3. repair electrical and electronic control;
4. inspect bogies and under frame structure;
5. repair bogies and under frame structure;
6. inspect propulsion system and dynamic brake;
7. examine pneumatic brake system;
8. repair pneumatic brake system;
9. inspect and repair car body structure;
10. inspect safety device and system;
11. inspect air conditioning and ventilation system;
12. service air conditioning and ventilation system;
13. inspect pneumatic and hydraulic system;
14. service pneumatic and hydraulic system; and

15. service and repair door system.

ROLLING STOCK

LEVEL 2

ELECTRICAL TRAIN TECHNICIAN*

An Electrical Train Technician is designated to carry out periodic inspection, prepare report, order requisition of spare parts, organize maintenance and repair work, up keep record of all carriage structure, ensure installations are according to specifications and perform supervisory functions.

An Electric Train Technician will be able to:

1. troubleshoot static inverter and battery charger system;
2. repair static inverter and battery charger system;
3. carry out static inverter and battery charger system testing;
4. troubleshoot and test bogies and under frame;
5. troubleshoot propulsion system and dynamic brake system;
6. repair propulsion system and dynamic brake system;
7. troubleshoot and test brake system;
8. troubleshoot and repair safety system;
9. troubleshoot and repair air condition and ventilation system;
10. troubleshoot repair and test pneumatic and hydraulic system;
11. inspect, trouble shoot and repair door system;
12. inspect power to current collector equipment and power distribution system; and

13. service pneumatic and hydraulic system.

Notes:

*Critical Job Title

ROLLING STOCK

LEVEL 3

ELECTRICAL TRAIN FOREMAN*

An Electrical Train Foreman is designated to perform and preserve reliability of the asset by performing routine maintenance for static inverter and battery charger system, electrical and electronic control unit, bogies and under frame structure, pneumatic brake system and device, safety device and grounding system and other components.

An Electric Train Foreman will be able to:

1. verify static inverter and battery charger system;
2. diagnose and troubleshoot electrical and electronic control unit;
3. verify bogies and under frame structure;
4. test and verify propulsion system and dynamic brake system;
5. verify pneumatic brake system and device;
6. verify car body structure;
7. verify safety device and grounding system;
8. verify air conditioning and ventilation system;
9. verify pneumatic and hydraulic system;
10. verify door operation device system;
11. ensure power to current collector equipment and power distribution system;

12. troubleshoot, repair and calibrate power to current collector equipment and power distribution system; and
13. prepare maintenance schedule and organise manpower.

Notes:

*Critical Job Title

ROLLING STOCK

LEVEL4

ELECTRICAL TRAIN EXECUTIVE

An Electrical Train Executive is designated to monitor train corrective maintenance, analyse train failure report, perform train testing & commissioning, verify automatic train operation and protection, carry out survey on auxiliary fittings requirement, verify power to current collector equipment and power distribution system, verify automatic train operation and protection and to carry out administrative duties.

An Electric Train Executive will be able to:

1. monitor train corrective maintenance;
2. review maintenance schedule;
3. monitor utilisation of equipment and manpower;
4. monitor work according to safety procedure;
5. analyze train failure report;
6. monitor train overhaul standard and procedure;
7. perform train testing & commissioning;
8. verify train power distribution system;
9. verify automatic train operation and protection;
10. verify automatic protection and grounding system;
11. assists in carry out component troubleshooting activities;

12. carry out survey on auxiliary fittings requirement;

13. verify reliability check of auxiliary equipment installed; and

14. verify power to current collector equipment and power distribution system.

ROLLING STOCK

LEVEL 5

ELECTRICAL TRAIN MANAGER

An Electric Train Manager is designated to manage and control the activities of track recording data analysis, prepare annual budgetary requirements to suit effective annual programs, carry out effective planning and managing manpower and resources, ensure an effective forecast of spare parts and material requirements and monitor and approve financial allocation of subordinates.

An Electric Train Manager will be able to:

1. manage and control the activities of track recording data analysis;
2. monitor track defects of track recording data;
3. Evaluate track standards to comply with specification of quality and safety standards;
4. prepare annual budgetary requirements to suit effective annual programs;
5. manage budget and expenditure;
6. carry out effective planning and managing manpower and resources;
7. review on monthly and annual work schedule;
8. liaise with other departments and third party for work programs;
9. prepare material stock requisition for annual works program;

10. lead and manage department employees i.e. acquisition of training, appointment and development;
11. ensure an effective forecast of spare parts and material requirements; and
12. plan effective continuous activities for present and future development to reduce failure.

ROLLING STOCK

LEVEL 6

ROLLING STOCK ELECTRICAL & ELECTRONIC SPECIALIST*

A Rolling Stock Electrical & Electronic Specialist is designated to perform maintenance, repair, overhaul, be responsible for observance safe work practice, ensure installation and repair according to standard, undertake maintenance, repair and testing equipment, monitor training progress, analyse machinery fault and perform high standard of housekeeping.

A Rolling Stock Electrical & Electronic Specialist will be able to:

1. verify maintenance, repair, overhaul and testing activities of a wide variety of rolling stock equipment and systems associated with rolling stock;
2. observe safe work practice and ensuring that the personnel under his jurisdiction follow applicable safety procedures and regulations;
3. ensure that all installation and repair work is carried out according to the appropriate standards and codes of practice;
4. analyse machinery faults and makes recommendations regarding corrective action;
5. undertake the company's warehousing system and stock control methods;
6. prepare stock withdrawal orders on a daily basis; and

7. ensure that all such equipment is in good condition prior to use.

Notes:

*Critical Job Title

MAINTENANCE

LEVEL 7

ROLLING STOCK MAINTENANCE SPECIALIST

A Rolling Stock Maintenance Specialist is a person who is designated to perform activities such as planning, coordinating and monitoring for maintenance work.

A Rolling Stock Maintenance Specialist will be able to:

1. strategise company's maintenances for optimization of resources and meeting the service agreement/license governing bodies;
2. carry out analysis on planning, strategize and ensure all maintenance activities are keeping up with the safety requirement, operating plans and maintenance plans;
3. verify company's policies and procedures, as well as generating and approving the maintenances bulletin & special instructions for the safe, efficient and reliable train and systems service;
4. monitor and evaluate technical problems and changes in control system;
5. plan department operation on maintenance activities including recruitment, training development, performance appraisal, coaching and motivation;
6. verify the short and long term budget as well as the business plan for meeting the company's business goals and aspirations;
7. verify response procedures on failure management strategies, crisis management and emergencies;

8. monitor emergencies for damage control in maintaining safe and reliable train and system service;
9. evaluate and verify the maintenances crew requirement for any new project for smooth implementation of service for the nation; and
10. plan departmental objectives and KPIs.

PERMANENT WAY STRUCTURE

LEVEL 1

PERMANENT WAY TRACK STRUCTURE FITTER

A Permanent Way Structure Fitter is designated to layout, position, align, and fit together fabricated parts of structural metal products preparatory to welding or riveting of railway structural bridges, culverts and tunnels.

A Permanent Way Track Structure Fitter will be able to:

1. carry out repair works on metal structural bridges, culverts and tunnels;
2. carry out temporary crib formations fabrication for temporary bridges and culverts;
3. execute welding and riveting works on steel bridges;
4. execute minor repair works on the substructure of the bridges;
5. execute minor repair works on the superstructure of the bridges;
6. execute painting and anti corrosive treatment to steel bridges;
7. carry out minor repairs and rectification to railway culvert settlement and potholes; and
8. carry out minor repairs to waterway scouring occurrence to the superstructure of bridges and culverts.

PERMANENT WAY STRUCTURE

LEVEL 2

PERMANENT WAY TRACK STRUCTURE TECHNICIAN*

A Permanent Way Structure Technician is designated to inspect, supervise and conduct annual safety in-depth assessment of structural bridges, culverts and tunnels as well as executing the planned maintenance program for bridges, culverts and tunnels.

A Permanent Way Track Structure Technician will be able to:

1. carry out detailed inspection of the permanent way structural bridges, culverts and tunnels;
2. supervise in fabrication of temporary crib formations for temporary bridges and culverts;
3. execute the planned program of the maintenance of bridges, culverts and tunnels;
4. supervise repair works on the substructure of the bridges;
5. supervise repair works on the superstructure of the bridges;
6. supervise painting and anti-corrosive treatment to steel bridges;
7. supervise repairs and rectification to railway culvert settlement and potholes;
8. supervise repairs to waterway scouring occurrence to the superstructure of bridges and culverts;
9. conduct in-depth annual inspection on bridges, culverts and tunnels to ensure safety of the travelling public; and

10. upkeep records in the transportation management systems bridge inspection database structure ratings and degrees of deterioration of all bridges and culverts.

Notes:

*Critical Job Title

PERMANENT WAY STRUCTURE

LEVEL 3

PERMANENT WAY TRACK STRUCTURE SUPERVISOR

A Permanent Way Track Structure Supervisor is designated to inspect construction projects ensuring the work is completed according to specifications, ensure proper certification of materials, maintain records, prepare daily reports and project progress reports. perform inspection on construction items such as culverts and drainage structures, base or surface course, placement of guardrail and erosion control, inspect permit work. inspect bridge deck forming, bridge repair, sand-blast cleaning operation, inspect phases of bridge, and painting operation, prepare written inspection reports and records as required. assist with inspection of utility installations, railway bridges, viaducts, culverts and tunnels.

A Permanent Way Track Structure Supervisor will be able to:

1. carry out inspection of the construction of railway structural bridges, viaduct, culverts and tunnel is completed;
2. ascertain the proper certification of materials and equipment is used;
3. ensure proper documentation is maintained of construction and maintenance of bridges, viaduct, culverts and tunnels;
4. ensure the execution of the planned maintenance program of bridges, culverts, viaducts, and tunnels are within the achievable range;

5. oversee repair works on the superstructure of the bridges;
6. manage the painting and anti corrosive treatment of steel bridges;
7. administer repairs and rectification to railway culvert settlement and potholes;
8. oversee repairs to waterway scouring occurrence to the superstructure of bridges and culverts;
9. oversee detailed annual inspection on bridges, viaducts, culverts and tunnels to ensure safety of the travelling public as per bridge manual requirement;
10. upkeep records in the transportation management systems bridge inspection database structure ratings and degrees of deterioration of all bridges and culverts; and
11. review plans for rectification works according to priority ratings.

PERMANENT WAY STRUCTURE

LEVEL 4

PERMANENT WAY TRACK STRUCTURE EXECUTIVE

A Permanent Way Structure Executive is designated to inspect construction projects ensuring the work is completed according to specifications, ensure proper certification of materials, maintaining records, prepare daily reports and project progress reports. he/she is also required to perform inspection on construction items such as culverts and drainage structures, base or surface course, placement of guardrail and erosion control, inspect permit work, inspect bridge deck forming, bridge repair, sand-blast cleaning operation, inspect phases of bridge, and painting operation, prepare written inspection reports and records.

A Permanent Way Track Structure Executive will be able to:

1. review inspection of the construction of railway structural bridges, viaduct, culverts and tunnel is completed;
2. confirm the proper certification of materials and equipment used;
3. review proper documentation is maintained for construction and maintenance of bridges, viaduct, culverts and tunnels;
4. monitor the execution of the planned maintenance program of bridges, culverts, viaducts, and tunnels are within the achievable range;
5. verify repair works on the superstructure of the bridges;

6. review the schedule of painting and anti-corrosive treatment of steel bridges;
7. monitor repairs and rectification to railway culvert settlement and potholes;
8. monitor repairs to waterway scouring occurrence to the superstructure of bridges and culverts;
9. monitor detailed annual inspection on bridges, viaducts, culverts and tunnels to ensure safety of the travelling public as per bridge manual requirement; and
10. review records in the management systems of bridge inspection database structure ratings and degrees of deterioration of all structures.

PERMANENT WAY STRUCTURE

LEVEL 5

PERMANENT WAY TRACK STRUCTURE MANAGER

A Permanent Way Structure Manager is designated to manage construction projects by ensuring the work is completed according to specifications, comply with proper certification of materials, maintaining records, review daily reports and project progress reports. he/she is also required to approve permit work, review bridge deck forming, bridge repair, sand-blast cleaning operation.

A Permanent Way Track Structure Technical Manager will be able to:

1. recommend rectification to data analysed;
2. approve the proper certification of materials and equipment as per specification;
3. certify proper documentation is maintained for construction and maintenance of bridges, viaduct, culverts and tunnels;
4. approve and verify the execution of the planned maintenance program of bridges, culverts, viaducts, and tunnels are within approved specification;
5. prepare annual budgetary requirements to suit effective annual programs;
6. manage and control budget and expenditure;
7. effective planning and managing manpower and resources;
8. review on monthly and annual work schedule;
9. liaise with other departments and third party for work programs;

10. prepare material stock requisition for annual works program;
11. lead and manage department employee i.e. acquisition of training, appointment and development;
12. ensure an effective forecast of spare parts and material requirements; and
13. plan effective continuous activities for present and future development to reduce failure.

PERMENANT WAY STRUCTURE

LEVEL 6

TRACK MAINTENANCE SPECIALIST*

A Track Maintenance Specialist is designated to perform maintenance, repair, responsible for observance safe work practice, ensure installation and repair according to standard, undertake maintenance, repair and testing equipment, monitor training progress, analyse machinery fault and perform high standard of housekeeping.

A Track Maintenance Specialist will be able to:

1. verify maintenance, repair, and testing activities of a wide variety of permanent way equipment and systems associated with permanent way;
2. observe safe work practice and ensure that the personnel under his jurisdiction follow applicable safety procedures and regulations;
3. ensure that all installation and repair work is carried out according to the appropriate standards and codes of practice;
4. analyse machinery faults and makes recommendations regarding corrective action;
5. undertake the company's warehousing system and stock control methods;
6. prepare stock withdrawal orders on a daily basis; and

7. ensure that all such equipment is in good condition prior to use.

Notes:

*Critical Job Title

PERMANENT WAY

LEVEL 1

PERMANENT WAY TRACKMAN

A Permanent Way Trackman is a person who is designated to perform activities such as surveying, patrolling, inspecting, servicing on turnout, levelling crossing, repairing and constructing yard and siding, welding works, repairing and replacing sleeper track-fittings, supervising a working group on permanent way activities and cleanliness works.

A Permanent Way Trackman will be able to:

1. carry out survey on ballast requirement;
2. carry out survey on fittings requirement;
3. carry out track sleeper renewal works;
4. carry out rail renewal work;
5. carry out service on level crossing;
6. carry out service on turnout;
7. carry out site cleanliness;
8. carry out daily patrolling;
9. carry out inspection on yard and sidings;
10. carry out inspection on track signage; and
11. carry out mobilization of equipment and material.

PERMANENT WAY

LEVEL 2

PERMANENT WAY INSPECTOR*

A Permanent Way Inspector is designated to perform activities such as preparing prospect and program work schedule, constructing track, inspecting bridges, culverts, viaduct, analysing track standard, preparing contingency work plan and review.

A Permanent Way Inspector will be able to:

1. carry out survey rail, sleeper/barrier requirement;
2. carry out survey on work need on turn out and level crossing;
3. carry out survey on third rail/power rail and track defect and prioritize;
4. carry out track surface levelling and ballast cleaning work;
5. carry out distressing work;
6. carry out welding and grinding of rail;
7. carry out realignment of curve;
8. carry out refurbish third/power rail;
9. carry out inspection on turnout;
10. carry out inspection on bridge/culvert/tunnel and viaduct;
11. carry out inspection on offset and electric stagger;
12. carry out work documentation process;
13. carry out site supervision; and

14. carry out emergency rectification work.

Notes:

*Critical Job Title

PERMANENT WAY

LEVEL 3

PERMANENT WAY SENIOR INSPECTOR

A Permanent Way Senior Inspector is designated to perform activities to design in their unit activities, prepare weekly work programme, scrutinize work process, prepare unit budget and expenditure, supervise works to maintain track standards, carry out stock taking and perform supervisory functions.

A Permanent Way Senior Inspector will be able to:

1. analyse track recording;
2. carry out review on track defects;
3. supervise works to maintain track standards;
4. design yearly calendar work program;
5. prepare weekly work program;
6. apply on weekly work schedule;
7. analyze work process;
8. prepare budget and expenditure; and
9. carry out stock taking.

PERMANENT WAY

LEVEL 4

PERMANENT WAY CHIEF INSPECTOR

A Permanent Way Chief Inspector is designated to perform activities to design in their regional activities, manage weekly monthly and annual works programme, analyze work process, prepare unit budget and expenditure, monitor track standard and safety, verify stock taking and perform management administrative functions.

A Permanent Way Chief Inspector will be able to:

1. manage the activities of track recording data analysis;
2. monitor track defects of track recording data;
3. evaluate track standards;
4. evaluate yearly calendar work program;
5. verify weekly work program;
6. monitor on weekly work schedule;
7. verify work process;
8. prepare budget and expenditure; and
9. verify stock taking.

PERMANENT WAY

LEVEL 5

PERMANENT WAY MANAGER

A Permanent Way Technical Manager is designated to manage and control activities to suit organizational needs, monitor and review monthly and annual work programme, review work process, prepare organization budget and expenditure, re-evaluate track standard, review material stock acquisition and perform monitoring organization functions.

A Permanent Way Technical Manager will be able to:

1. manage and control the activities of track recording data analysis;
2. monitor track defects of track recording data;
3. evaluate track standards to comply with specification of quality and safety standards;
4. prepare annual budgetary requirements to suit effective annual programs;
5. manage and control budget and expenditure;
6. effectively plan and manage manpower and resources;
7. review on monthly and annual work schedule;
8. liaise with other departments and third party for work programs;
9. prepare material stock requisition for annual works program;

10. lead and manage department employee i.e. acquisition of training, appointment and development;
11. ensure an effective forecast of spare parts and material requirements;
12. plan effective continuous activities for present and future development to reduce failure; and
13. monitor and approve financial allocation of subordinates.

PERMANENT WAY

LEVEL 1

MECHANISE OPERATOR (TRACK & VEHICLE)

A Permanent Way Mechanise Operator (Track & Vehicle) is designated to perform inspection of track vehicle as per the checklist, prepare reports of track vehicle components failure, carry out daily maintenance of track vehicles and adhere to safety requirements.

A Permanent Way Mechanise Operator (Track & Vehicle) will be able to:

1. perform inspection of track vehicle as per the checklist;
2. prepare reports of track vehicle components failure;
3. carry out daily maintenance of track vehicles;
4. adhere to safety requirements; and
5. ensure cleanliness of track vehicles.

PERMANENT WAY

LEVEL 2

MECHANISE TECHNICIAN (TRACK & VEHICLE)

A Mechanise Technician (Track & Vehicle) is designated to carry out periodic inspection of track vehicles, prepare reports condition of track vehicles, carry out requisition of spare parts, organize maintenance and repair works of track vehicles and upkeep records of all track vehicles.

A Mechanise Technician (Track & Vehicles) will be able to:

1. carry out periodic inspection of track vehicles;
2. prepare reports condition of track vehicles;
3. carry out requisition of spare parts and components of track vehicles;
4. organize maintenance and repair works of track vehicles;
5. check work order according to work schedule;
6. upkeep records of all track vehicles; and
7. Keep track of all vehicles register for Maintenance, Repair and Overhaul (MRO).

PERMANENT WAY

LEVEL 3

MECHANISE SUPERVISOR (TRACK & VEHICLE)

A Mechanise Supervisor (Track & Vehicle) is designated to carry out review on track vehicles defect, prepare annual maintenance track vehicles work program, prepare budget and expenditure, carry out spare part and component stock taking and prepare and conduct continuous training program for track vehicles operators.

A Mechanise Supervisor (Track & Vehicles) will be able to:

1. interpret track vehicles failure reports;
2. carry out review on track vehicles defect;
3. prepare annual maintenance track vehicles work program;
4. prepare weekly work program;
5. prepare budget and expenditure;
6. carry out spare part and component stock taking;
7. conduct periodic inspection of track vehicles; and
8. prepare and conduct continuous training program for track vehicles operators.

PERMANENT WAY

LEVEL 1

MECHANISE OPERATION OPERATOR

A Mechanise Operation Operator is designated to perform operating activities of mechanise machine.

A Mechanise Operation Operator will be able to:

1. comply with company rules and regulations;
2. operate mechanise machine according to operation manuals;
3. perform inspection of mechanise machine as per the checklist;
4. prepare reports of mechanise machine components failure;
5. carry out daily maintenance of mechanise machine;
6. adhere to safety requirement; and
7. ensure cleanliness of mechanise machine.

PERMANENT WAY

LEVEL 2

MECHANISE PERMANENT WAY TECHNICIAN

A Mechanise Permanent Way Technician is designated to perform mechanise track maintenance activities, keep records, requisite spare parts, check work order and prepare records.

A Mechanise Permanent Way Technician will be able to:

1. carry out periodic inspection of mechanise machine;
2. prepare reports condition of mechanise machine;
3. requisite spare parts and components of mechanise machine;
4. organize maintenance and repair works of mechanise machine;
5. check work order according to work schedule;
6. upkeep records of all mechanise machine;
7. Store all mechanise machine register for Maintenance, Repair and Overhaul (MRO);
8. collect and analyze track geometry data for track rectification;
9. execute mechanise operation in track rectification;
10. collect and re-analyze track information of track rectification;
11. liaise with other unit for track works according to program; and
12. upkeep records and submit returns to supervisor.

PERMANENT WAY

LEVEL 3

PERMANENT WAY MECHANISE INSPECTOR

A Permanent Way Mechanise Inspector is designated to perform activities to verify, monitor, conduct mechanise maintenance programme, verify weekly works programme and verify budget expenditure.

A Permanent Way Mechanise Inspector will be able to:

1. verify track vehicles failure reports;
2. verify annual maintenance track vehicles work program;
3. monitor weekly work program;
4. verify work process as per Standard Operating Procedure (SOP);
5. prepare budget and expenditure;
6. carry out spare part and component stock taking;
7. conduct periodic inspection of mechanise machines;
8. certify mechanise operation activities as per technical specification;
9. prepare and conduct continuous training program for mechanise machines operators; and
10. liaise with other departments for line possession.

PERMANENT WAY

LEVEL 4

PERMANENT WAY MECHANISE EXECUTIVE

A Permanent Way Mechanise Executive is designated to perform activities to manage mechanised operation, monitor, verify, organise and evaluate mechanise operation.

A Permanent Way Mechanise Executive will be able to:

1. manage the activities of track recording data analysis;
2. monitor track defects of track recording data;
3. evaluate track mechanise operation standards;
4. evaluate annual calendar work program;
5. verify monthly work program;
6. monitor on weekly work schedule;
7. organise periodic inspections on mechanise operation activities;
8. verify work process;
9. prepare budget and expenditure; and
10. organise continuous training programs for improvement of mechanise unit.

PERMANENT WAY

LEVEL 5

PERMANENT WAY MECHANISE MANAGER

A Permanent Way Mechanise Manager is designated to manage and control activities to suit organizational needs, monitor and review monthly and annual work programme, review work process, prepare organization budget and expenditure, re-evaluate track standard, review material stock acquisition and perform monitoring organization function.

A Permanent Way Mechanise Manager will be able to:

1. manage and control the activities of track recording data analysis;
2. monitor track defects rectification through mechanise maintenance;
3. evaluate track standards to comply with specification of quality and safety standards;
4. prepare annual budgetary requirements to suit effective annual programs;
5. manage and control budget and expenditure;
6. effectively plan and manage manpower and resources;
7. review on monthly and annual work schedule;
8. liaise with other departments and third party for work programs;
9. prepare material stock requisition for annual works program;

10. lead and manage department employee i.e. acquisition of training, appointment and development;
11. ensure an effective forecast of spare parts and material requirements;
12. plan effective continuous activities for present and future development to reduce failure;
13. monitor and approve financial allocation of subordinates; and
14. evaluate mechanise track machines performance according to operating manual.

PERMENANT WAY

LEVEL 6

MECHANISE MAINTENANCE SPECIALIST

A Mechanise Maintenance Specialist is designated to perform maintenance, repair, responsible for observance safe work practice, ensure installation and repair according to standard, undertake maintenance, repair and testing equipment, monitor training progress, analyse machinery fault and perform high standard of housekeeping.

A Mechanise Maintenance Specialist will be able to:

1. verify maintenance, repair, and testing activities of a wide variety of permanent way equipment and systems associated with permanent way;
2. observe safe work practice and ensure that the personnel under his jurisdiction follow applicable safety procedures and regulations;
3. ensure that all installation and repair work is carried out according to the appropriate standards and codes of practice;
4. analyse machinery faults and makes recommendations regarding corrective action;
5. undertake the company's warehousing system and stock control methods;
6. prepare stock withdrawal orders on a daily basis; and

7. ensure that all such equipment is in good condition prior to use.

Notes:

11. *Critical Job Title

MAINTENANCE

LEVEL 7

PERMENANT WAY MAINTENANCE SPECIALIST

A Permanent Way Maintenance Specialist is a person who is designated to perform activities such as planning, coordinating and monitoring for maintenance work.

A Permanent Way Maintenance Specialist will be able to:

1. strategise company's maintenances for optimization of resources and meet the service agreement/license governing bodies;
2. carry out analysis on planning, strategize and ensure all maintenance activities are keeping up with the safety requirement, operating plans and maintenance plans;
3. verify company's policies and procedures, as well as generating and approving the maintenances bulletin & special instructions for the safe, efficient and reliable train and systems service;
4. monitor and evaluate technical problems and changes in control system;
5. plan department operation on maintenance activities including recruitment, training development, performance appraisal, coaching and motivation;
6. verify the short and long term budget as well as the business plan for meeting the company's business goals and aspirations;
7. verify response procedures on failure management strategies, crisis management and emergencies;

8. monitor emergencies for damage control in maintaining safe and reliable train and system service;
9. evaluate and verify the maintenances crew requirement for any new project for smooth implementation of service for the nation; and
10. plan departmental objectives and KPIs.

COMMUNICATION

LEVEL 1

COMMUNICATION FITTER

A Communication Fitter is designated to perform periodic maintenance of communication equipment, assist in carrying out troubleshooting activities, and rectify communication failure.

A Communication Fitter will be able to:

1. perform periodic maintenance of communication equipment;
2. assist in carry out troubleshooting activities;
3. carry out survey on communication fittings requirement;
4. carry out site cleanliness; and
5. carry out mobilization of equipment and material.

COMMUNICATION

LEVEL 2

COMMUNICATION TECHNICIAN*

A Communication Technician is designated to record and update communication equipment inventories, supervise corrective and preventive maintenance activities, perform and inspect troubleshooting activities, ensure sufficient tools and equipment for maintenance activities and ensure all works are in compliance with Standard Operating Procedure (SOP).

A Communication Technician will be able to:

1. record and update communication equipment inventories;
2. inspect corrective and preventive maintenance activities;
3. perform and inspect troubleshooting activities;
4. prepare and update failure reports;
5. ensure sufficient tools and equipment for maintenance activities;
6. ensure the safety procedures adhered; and
7. ensure that all works are in compliance to Standard Operating Procedure (SOP).

Notes:

*Critical Job Title

COMMUNICATION

LEVEL 3

COMMUNICATION SUPERVISOR

A Communication Supervisor is designated to rectify PABX system failure, rectify infotainment system failure, rectify radio system failure, rectify SCADA system failure and perform supervisory functions.

A Communication Supervisor will be able to:

1. rectify Private Automated Branch Exchange (PABX) system failure;
2. rectify Information and Entertainment (INFOTAINMENT) system failure;
3. rectify radio system failure;
4. rectify Supervisory Control and Data Acquisition (SCADA) system failure;
5. prepare job schedule;
6. organize utilization of manpower;
7. evaluate work performance;
8. conduct in-house training; and
9. coordinate work with other department.

COMMUNICATION

LEVEL 4

COMMUNICATION EXECUTIVE

A Communication Executive is designated to plan and manage periodic maintenance of communication equipment, organize rectification PABX system failure, organize rectification radio system failure, organize rectification SCADA system failure and perform administrative duties.

A Communication Executive will be able to:

1. plan and manage periodic maintenance of communication equipment;
2. organise rectification Private Automated Branch Exchange (PABX) system failure;
3. organise rectification Information and Entertainment (INFOTAINMENT) system failure;
4. organise rectification radio system failure;
5. organise rectification Supervisory Control and Data Acquisition (SCADA) system failure;
6. verify and monitor job schedule;
7. conduct in-house training;
8. prepare tools and spare parts requisition;
9. coordinate work with other department; and
10. prepare and approve financial allocation of works requirement

COMMUNICATION

LEVEL 5

COMMUNICATION MANAGER

A Communication Manager is designated to approve periodic maintenance plan of communication equipment, prepare regional communication maintenance budget, evaluate and verify technical specifications and procedures, plan effective improvement activities for present and future developments and perform managerial duties.

A Communication Manager will be able to:

1. approve periodic maintenance plan of communication equipment;
2. verify and monitor rectification of communication equipment failures;
3. organize training programs;
4. approve tools and spare parts requisition;
5. prepare regional communication maintenance budget;
6. comply with communication standard operating procedure;
7. evaluate and verify technical specifications and procedures;
8. lead and manage approved maintenance budget prudently;
9. plan effective improvement activities for present and future developments; and
10. ensure an effective forecast of communication failures with sufficient spare parts.

WAYSIDE

LEVEL 1

WAYSIDE FITTER

A Wayside Fitter is designated to perform periodic maintenance of wayside equipment, assist in carrying out troubleshooting activities, carry out survey on wayside fittings requirement, carry out service on level crossing wayside equipment and carry out mobilization of equipment and material.

A Wayside Fitter will be able to:

1. perform periodic maintenance of wayside equipment;
2. assist in carry out troubleshooting activities;
3. carry out service on wayside equipment;
4. carry out survey on wayside fittings requirement;
5. carry out site cleanliness; and
6. carry out mobilization of equipment and material.

WAYSIDE

LEVEL 2

WAYSIDE TECHNICIAN*

A Wayside Technician is designated record and update wayside equipment inventories, support and assist Wayside Electrical And Electronic System (WEES) maintenance, inspect corrective and preventive maintenance activities, perform and coordinate troubleshooting activities, prepare and update failure reports and ensure all works are in compliance with Standard Operating Procedure (SOP).

A Way Side Technician will be able to:

1. provide report and update wayside equipment modification, maintenance and inventories;
2. support and assist Wayside Electrical and Electronic System (WEES) maintenance;
3. execute planned and unplanned maintenance in term of quality;
4. supervise corrective and preventive maintenance activities;
5. perform and supervise troubleshooting activities;
6. prepare and update failure reports;
7. perform in depth trouble shooting and repair fault in WEES subsystem;
8. interpret maintenance manuals, blueprints, schematic drawing and prepare drawings to communicate with technical personnel;
9. ensure sufficient tools and equipment for maintenance activities;

10. ensure the safety procedures adhered; and

11. ensure all works are in compliance to Standard Operating Procedure (SOP).

Notes:

*Critical Job Title

WAYSIDE

LEVEL 3

WAYSIDE SUPERVISOR

A Wayside Supervisor is designated to supervise periodic maintenance of power supply equipment, trouble shoot wayside system failure, supervise and rectify automatic train protection system failure, supervise and rectify interlocking equipment failure, and perform supervisory functions.

A Way side supervisor will be able to:

1. rectify wayside system failure;
2. plan/schedule the work permit occupancy clearance on the track via weekly work planning meeting;
3. supervise and rectify wayside system failure;
4. ensure time closing for periodical maintenance and critical maintenance work orders;
5. maintain work order for future reference and auditing purpose;
6. maintain effective communication between other working parties;
7. ensure work orders are completed and closed in Maintenance, Repair and Overhaul (MRO) and is compiled;
8. supervise and rectify automatic train control system failure;
9. supervise and rectify wayside power supply equipment failure;

10. prepare job schedule;

11. conduct in-house training; and

12. coordinate work with other department.

WAYSIDE

LEVEL 4

WAYSIDE EXECUTIVE

A Wayside Executive is designated to plan and manage periodic maintenance of Wayside Power System (WSP), organize rectification of Centralize Traffic Management (CTM) system failure, organize rectification of automatic train protection system failure, organize rectification of way side power supply equipment failure, prepare tools and spare parts requisition and perform supervisory functions.

A Wayside Executive will be able to:

1. plan and manage Wayside Power System (WSP) periodic maintenance;
2. organise rectification wayside system failure;
3. organise rectification Automatic Train Control (ATC) system failure;
4. organize rectification wayside power supply system failure;
5. supervise and manage all Line Replaceable Unit (LRU) to appropriate maintenance shop;
6. ensure electrical installation comply with regulatory and statutory requirement;
7. supervise performance of maintenance technician and supervisor;
8. perform in depth equipment trouble shooting;
9. verify and monitor job schedule;
10. conduct in-house training;

11. prepare tools and spare parts requisition;
12. coordinate work with other department; and
13. prepare and approve financial allocation of works requirement.

WAYSIDE

LEVEL 5

WAYSIDE MANAGER

A Wayside Manager is designated to approve periodic maintenance plan of wayside equipment, trouble shoot wayside system failure, prepare regional wayside maintenance budget, evaluate and verify technical specifications and procedures, ensure an effective forecast of wayside failures with sufficient spare parts and perform managerial functions.

A Wayside Manager will be able to:

1. approve periodic maintenance plan of wayside equipment;
2. verify and monitor rectification of wayside equipment failures;
3. approve and verify job schedule;
4. monitor and control overtime activities;
5. organize training programs;
6. approve tools and spare parts requisition;
7. coordinate work with other department;
8. prepare regional wayside maintenance budget;
9. comply with signalling and communication Standard Operating Procedure (SOP);
10. evaluate and verify technical specifications and procedures;
11. plan and manage resources effectively;

12. lead and manage approved maintenance budget prudently;

13. plan effective improvement activities for present and future developments; and

14. ensure an effective forecast of wayside failures with sufficient spare parts.

SIGNALLING

LEVEL 1

SIGNALLING FITTER

A Signalling Fitter is designated to perform periodic maintenance of signalling equipment, assist in carrying out troubleshooting activities, carry out survey on signalling fittings requirement, carry out service on level crossing signalling equipment and carry out mobilization of equipment and material.

A Signalling Fitter will be able to:

1. perform periodic maintenance of signalling equipment;
2. assist in carrying out troubleshooting activities;
3. carry out survey on signalling fittings requirement;
4. carry out service on level crossing signalling equipment;
5. carry out service motor-point equipment in turnout;
6. carry out site cleanliness; and
7. carry out mobilization of equipment and material.

SIGNALLING

LEVEL 2

SIGNALLING TECHNICIAN*

A Signalling Technician is designated record and updates signalling equipment inventories, inspect corrective and preventive maintenance activities, perform and coordinate troubleshooting activities, prepare and update failure reports and ensure all works are in compliance with Standard Operating Procedure (SOP).

A Signalling Technician will be able to:

1. record and update signalling equipment inventories;
2. inspect corrective and preventive maintenance activities;
3. perform and coordinate troubleshooting activities;
4. prepare and update failure reports;
5. ensure sufficient tools and equipment for maintenance activities;
6. ensure the safety procedures adhered; and
7. ensure all works are in compliance to Standard Operating Procedure (SOP).

Notes:

*Critical Job Title

SIGNALLING

LEVEL 3

SIGNALLING SUPERVISOR

A Signalling Supervisor is designated to supervise periodic maintenance of power supply equipment, trouble shoot signalling system failure, supervise and rectify automatic train protection system failure, supervise and rectify interlocking equipment failure, and perform supervisory functions.

A Signalling supervisor will be able to:

1. supervise periodic maintenance of power supply equipment;
2. oversee Centralize Traffic Management (CTM) System failure;
3. supervise and rectify transmission system failure;
4. supervise and rectify automatic train protection system failure;
5. supervise and rectify interlocking equipment failure;
6. supervise and rectify signalling power supply equipment failure;
7. prepare job schedule;
8. conduct in-house training; and
9. coordinate work with other department.

SIGNALLING

LEVEL 4

SIGNALLING EXECUTIVE

A Signalling Executive is designated to plan and manage periodic maintenance of power supply equipment, organize rectification of Centralize Traffic Management (CTM) system failure, organize rectification of automatic train protection system failure, organize rectification of signalling power supply equipment failure, prepare tools and spare parts requisition and perform supervisory functions.

A Signalling Executive will be able to:

1. plan and manage periodic maintenance of power supply equipment;
2. organise rectification of Centralize Traffic Management (CTM) System failure;
3. organise rectification of transmission system failure;
4. organise rectification of automatic train protection system failure;
5. organise rectification of interlocking equipment failure;
6. organise rectification of signalling power supply equipment failure;
7. verify and monitor job schedule;
8. conduct in-house training;
9. prepare tools and spare parts requisition;
10. coordinate work with other department; and
11. prepare and approve financial allocation of works requirement.

SIGNALLING

LEVEL 5

SIGNALLING MANAGER

A Signalling Manager is designated to manage signalling system, trouble shoot signalling system failure and perform managerial functions.

A Signalling Manager will be able to:

1. approve periodic maintenance plan of power supply equipment;
2. verify and monitor rectification of signalling equipment failures;
3. approve and verify job schedule;
4. organize training programs;
5. approve tools and spare parts requisition;
6. coordinate work with other department;
7. prepare regional signalling maintenance budget;
8. comply with signalling standard operating procedure;
9. evaluate and verify technical specifications and procedures;
10. plan and manage resources effectively;
11. lead and manage approved maintenance budget prudently;
12. plan effective improvement activities for present and future developments; and
13. ensure an effective forecast of signal failures with sufficient spare parts.

SIGNALLING AND COMMUNICATION

LEVEL 6

SIGNALLING AND COMMUNICATION SPECIALIST*

A Signalling and Communication Specialist is designated to verify maintenance and repair, and also be responsible for observation of safe work practice, ensure installation and repair according to standard, undertake maintenance, repair and test equipment, and monitor training progress and analyse equipment fault.

A Signalling and Communication Specialist will be able to:

1. verify maintenance, repair, overhaul and testing activities of a wide variety of signalling and communication equipment and systems associated with signalling & communication;
2. observe safe work practice and ensure that the personnel under his jurisdiction follow applicable safety procedures and regulations;
3. ensure that all installation and repair work is carried out according to the appropriate standards and codes of practice;
4. analyse equipment faults and make recommendations regarding corrective action;
5. undertake the company's warehousing system and stock control methods;
6. prepare stock withdrawal orders on a daily basis; and

7. ensure that all such equipment is in good condition prior to use.

Notes:

*Critical Job Title

AUTOMATIC FARE COLLECTION

LEVEL 1

AUTOMATIC FARE COLLECTION JUNIOR TECHNICIAN

An Automatic Fare Collection Junior Technician is designated to maintain automatic fare collection system by carrying out maintenance and trouble-shooting of the equipment and to perform equipment cleanliness and mobilization of equipment.

An Automatic Fare Collection Junior Technician will be able to:

1. perform periodic maintenance of Automatic Fare Collection (AFC) equipment;
2. assist in carry out troubleshooting activities;
3. carry out service on Automatic Fare Collection (AFC) equipment;
4. carry out survey on Automatic Fare Collection (AFC) fittings requirement;
5. carry out site cleanliness; and
6. carry out mobilization of equipment and material.

AUTOMATIC FARE COLLECTION

LEVEL 2

AUTOMATIC FARE COLLECTION TECHNICIAN

An Automatic Fare Collection Maintenance Technician is designated to maintain automatic fare collection system reliability and efficiency, ensure performance of AFC modules, prepare update failure reports and ensure work comply with safety and Standard Operating Procedure (SOP).

An Automatic Fare Collection Maintenance Technician will be able to:

1. perform trouble-shooting and repair of Automatic Fare Collection (AFC) modules;
2. ensure performance of Automatic Fare Collection (AFC) Modules;
3. attend to breakdown calls and rectify faults of equipment;
4. close work orders for the preventive and corrective maintenance work;
5. prepare and update failure reports in Management Maintenance System (MMS) system;
6. ensure sufficient tools and equipment for maintenance activities;
7. ensure the safety procedures adhered; and
8. ensure all works are in compliance to Standard Operating Procedure (SOP).

AUTOMATIC FARE COLLECTION

LEVEL 3

AUTOMATIC FARE COLLECTION MAINTENANCE SUPERVISOR

An Automatic Fare Collection Maintenance Supervisor is designated to monitor the preventive and corrective maintenance, prepare shift schedule, compile record of failure, conduct in-house training and perform supervisory functions.

An Automatic Fare Collection Maintenance Supervisor will be able to:

1. monitor the preventive and corrective maintenance of Automatic Fare Collection (AFC) equipment and completion of all work orders;
2. ensure proper closing of work orders and all failures recorded and entered into the Management Maintenance System (MMS) system to ensure proper recording of the failures to enable further analysis;
3. administer the staff's work matters;
4. prepare the shift schedules of staff and maintenance activities for smooth implementations of Automatic Fare Collection (AFC) activities;
5. monitor staff activities at stations to ensure compliance to policies and procedures for proper maintenance works are carried out and downtime of equipment is reduced;
6. carry out the relevant Management Maintenance System (MMS) operations with regard to the Automatic Fare Collection (AFC) maintenance;

7. monitor the consumables, materials, tools and equipment required by the technicians to carry out works and feedback for maintenance analysis; and
8. standby throughout the operational hours for emergency major Automatic Fare Collection (AFC) failures and manpower to ensure equipment operational availability.

AUTOMATIC FARE COLLECTION

LEVEL 4

AUTOMATIC FARE COLLECTION MAINTENANCE EXECUTIVE

An Automatic Fare Collection Maintenance Executive is designated to investigate customer complaint, perform audit reconciliation, prepare TVM float report, perform replenishment for coin stock, ensure security of coin stock, lead training and coaching for staff and perform supervisory functions.

An Automatic Fare Collection Maintenance Executive will be able to:

1. investigate customer complaints and inquiries related to Ticket Vending Machine (TVM) Exact Fare conditions and provide response and findings to Customer Service Division or the management to ensure good customer service by the Company;
2. perform audit and reconciliation of the replenishment performed by staff to prevent loss and internal pilferage or detect any internal abuse;
3. prepare the monthly Ticket Vending Machine (TVM) float reports as required by finance and other relevant reports as necessary to ensure all coins taken from the company are accounted.
4. supervise the Ticket Vending Machine (TVM) Replenishment team and their activities to ensure works are carried out according to replenishment requirement so that the Ticket Vending Machine (TVM) are reliable, usable and provide convenience to customers;

5. monitor the Ticket Vending Machine (TVM) exact fare conditions at customer services offices in exact fare mode;
6. prepare and review the replenishment schedule for any change in user volumes or purchasing patterns;
7. perform intelligent estimates and plan for coin replenishment requirement for high crowd and minimize customer complaints;
8. initiate coin stock requests and make arrangement for delivery of coins via liaison with the company and finance division to ensure adequate coin stock is available to enable replenishment activities be carried out efficiently;
9. ensure security of coin stock and adequate supply is available throughout operational hours; and
10. resolve issues relating to replenishment by performing necessary improvements to the activities or take necessary disciplinary action on staff if necessary to ensure Ticket Vending Machine (TVM) replenishment activities are performed to the standards set by the company.

RAILWAY AUTOMATIC FARE COLLECTION

LEVEL 5

AUTOMATIC FARE COLLECTION MAINTENANCE MANAGER

An Automatic Fare Collection Maintenance Technical Manager designated to prepare KPI report and target, carry out failure analysis, conduct meetings, monitor schedule preventive maintenance, monitor closure of work orders, perform random audits, prepare input of specification, provide technical specification and perform testing and commissioning.

An Automatic Fare Collection Maintenance Technical Manager will be able to:

1. prepare consolidated Key Performance Indicator (KPI) reports for Automatic Fare Collection (AFC) department and monitor the KPI target achievement to ensure the AFC equipment performance meet the targets set;
2. carry out failure analysis on repetitive failures at stations to find root cause and actions required in order to resolve the problems;
3. conduct regular meetings with field maintenance to provide feedback on failure analysis findings, propose corrective action and ensure rectification action or resolution to improve AFC equipment performance and minimize equipment failures;
4. provide regular feedbacks or reports on findings to the AFC Management to ensure awareness of AFC failure issues by the AFC Management;

5. study the pattern of failures and maintenance related issues and propose action in order to prevent possible major failures from occurring;
6. monitor schedule preventive maintenance activities in Management Maintenance System (MMS) system and monitor completion of works;
7. monitor closure of work orders in the MMS system to ensure maintenance data and failure information are recorded for further analysis;
8. review the adequacy of the ongoing preventive maintenance and perform random audits to ensure preventive maintenance is carried out;
9. prepare technical input for specifications for spares to be purchased by Procurement Division to facilitate procurement and to ensure spares purchased are suitable for use in the AFC equipment;
10. provide technical evaluation and testing of spares from new suppliers is compliant to specification; and
11. provide necessary assistance for AFC projects i.e. perform technical study, preparation of prototype (if applicable), installation, testing and commissioning.

POWER LINE

LEVEL 1

ELECTRIFICATION SERVICEMAN

An Electrification Serviceman is designated to assist Overhead Catenary System(OCS) technician in carrying out switching works for isolation activity in 25KV electrification system, operate manual isolators/switches in live, install and remove local earths on OCS during isolation activity, test OCS with live line tester to prove the line is alive or dead during isolation process, carry out height & stagger measurement of OCS with height & stagger gauge and to carry out tripping patrol in electrification system to identify/investigate tripping cause and assist OCS technician in finding the fault.

An Electrification Serviceman will be able to:

1. assist Overhead Catenary System (OCS) technician in carrying out switching works for isolation activity in 25KV electrification system;
2. assist OCS technician to operate manual isolators/switches in live, install and remove local earths on OCS during isolation activity;
3. assist OCS technician to test OCS with live line tester to prove the line is alive or dead during isolation process;
4. carry out height & stagger measurement of OCS;
5. carry out tripping patrol in electrification system to identify/investigate tripping cause and assist OCS technician in finding the fault; and

6. perform as a Lookout man (LOOKOUT) during OCS maintenance activity.

POWER LINE

LEVEL 2

ELECTRIFICATION TECHNICIAN

An Electrification Technician is designated to carry out switching for isolation, issue permit to work, inspect periodically, prepare report, requisite spare parts, organize maintenance and repair work, upkeep records of all carriage structure, ensure installations are according to specifications and perform supervisory functions.

An Electrification Technician will be able to:

1. carry out switching for isolation activity in 25 KV Electrification System, issuing Permit To Work (PTW) or High voltage permit for contractors to work on, closed to or adjacent to the railway electrification system;
2. responsible to lead a group of isolation team;
3. operate manual isolator/switches in live;
4. responsible for testing Overhead Catenary System (OCS) with live line tester to prove the line is alive or dead during isolation process;
5. responsible for organising, planning and supervising OCS routine or corrective maintenance carried out by maintenance contractor during maintenance activity;
6. responsible to lead and carry out tripping patrol in Electrification System to indentify/investigate tripping cause, prepare tripping report and advise/assist OCS Executive;

7. perform as a Person Incharge of Work (PICOW) and Person In Charge of Possession (PICOP) during OCS maintenance activity; and
8. responsible in leading OCS maintenance team to carry out height & stagger measurement of OCS with height & stagger gauge.

POWER LINE

LEVEL 3

ELECTRIFICATION SUPERVISOR

An Electrification Supervisor is designated to perform and preserve reliability of the asset by performing routine maintenance as per practised by rail industries. He/she is also required to ensure all safety procedures are strictly being adhered to by all staff while working on, closed to or adjacent to overhead line equipment in the railway electrification system and attend any OCS incident on site, assist and advice OCS engineer on investigating of equipment failure or incident and suggest or implement procedure/solution to prevent re-occurrence

An Electrification Supervisor will be able to:

1. organise, supervise and monitor Overhead Catenary System (OCS) maintenance activity including routine or corrective maintenance;
2. ensure maintenance being done according to technical specification & requirements;
3. organize and perform the switching and isolation work for Overhead Catenary System (OCS) in order to provide safe working environment for the staff as well as other contractors to work on, closed to or adjacent to the railway electrification system;
4. assist OCS engineer to analyze the maintenance activity;

5. recommend alterations/implementation on maintenance schedule or procedures to improve the reliability of the equipment and systems;
6. ensure all safety procedures are strictly being followed by all staff while working on, closed to or adjacent to overhead line equipment in the railway electrification system;
7. attend any Overhead Catenary System (OCS) incident on site, assist and advice OCS Engineer on investigating of equipment failure OCS or incident and suggest or implement procedure/solution to prevent re-occurrence;
8. ensure all tools and equipment being used for switching & isolation activity and high voltage equipment's are tested and meets the safety requirements; and
9. responsible for monitoring and updating key performance indicator (i.e tripping analysis), compiling records, summarizing and producing monthly tripping report for electrification department.

POWER LINE

LEVEL 4

ELECTRIFICATION EXECUTIVE

An Electrification Executive is designated to ensure that the Overhead Catenary System (OCS) and power supply infrastructure are maintained, analyse the maintenance activity, implement alteration to maintenance schedule and procedures to improve the reliability of the equipment and systems, to investigate and analyse on equipment failure or incident and suggest and implement procedure or solution to prevent re-occurrence and be responsible for the spare part inventory system including procurement of spare and testing tools to meet maintenance requirements. He/she is also required to liaise with Tenaga Nasional Berhad (TNB) for the coordination of feeder station maintenance work and outage programme and perform administrative duties.

An Electrification Executive will be able to:

1. ensure that the Overhead Catenary System (OCS) and power supply infrastructure are maintained in good working condition, safe for operation and will not in any way endanger to life of the persons who are working/operating the equipment;
2. implement alteration to maintenance schedule and procedures to improve the reliability of the equipment and systems;
3. ensure that all safety procedure are strictly adhered by the electrical engineers, chargemens and technicians, in accordance with the working instruction for AC

electrified lines so as to avoid accidents and fatality;

4. investigate and analyse on equipment failure or incident and suggest and implement procedure or solution to prevent re-occurrence;
5. ensure all tools and equipment being used for high voltage maintenance is tested and meets the safety requirements;
6. identify and develop staff training program to enhance staff workings skills and work performance;
7. responsible for the spare part inventory system including procurement of spare and testing tools to meet maintenance requirements;
8. ensure all maintenance plant and machinery in the depot including workshop and company vehicles is maintained in good working condition and meets safety requirements; and
9. liaise with Tenaga Nasional Berhad (TNB) for the coordination of feeder station maintenance work and outage program.

POWER LINE

LEVEL 5

ELECTRIFICATION MANAGER

An Electrification Technical Manager is designated to perform and preserve reliability of the asset by performing routine maintenance as per practised by rail industries. He/she is also expected to perform task functions.

An Electrification Technical Manager will be able to:

1. ensure that the Overhead Catenary System (OCS) and power supply infrastructure are maintained in good working condition, safe for operation and will not in any way endanger to the life of the persons who are working/operating the equipment;
2. analyse the maintenance activity, implement alteration to maintenance schedule and procedures to improve the reliability of the equipment and systems;
3. ensure that all safety procedure are strictly adhered by the electrical engineers, chargemens and technicians, in accordance with the working instruction for AC electrified lines so as to avoid accidents and fatality;
4. investigate and analyse on equipment failure or incident and suggest and implement procedure or solution to prevent re-occurrence;
5. be responsible for the spare part inventory system including procurement of spare and testing tools to meet maintenance requirements;

6. ensure all maintenance plant and machinery in the depot including workshop and company vehicles is maintained in good working condition and meets safety requirements; and
7. liaise with Tenaga Nasional Berhad (TNB) for the coordination of feeder station maintenance work and outage program.

ELECTRIFICATION

NATIONAL COMPETENCY STANDARD (NCS)

ELECTRIFICATION COMPETENCY

1. maintain electrical equipment on rail industry in accordance with Standard Operating Procedure (SOP);
2. adhere to safety procedure in accordance with the working instruction for AC electrified lines;
3. perform troubleshooting and analysis on equipment failure or incident and suggest and implement procedure or solution to prevent re-occurrence on rail industry;
4. carries out testing for tools and equipment being used for high voltage maintenance meets the safety requirements; and
5. carries out electrical equipment and parts installation in accordance with rail industry Standard Operating Procedure (SOP).