Legislative Council Panel on Transport
Subcommittee on Matter Relating to Railways

Creation of Two Permanent Directorate Posts in the Railways Branch of the Electrical and Mechanical Services Department to Enhance Monitoring of Railway Safety

PURPOSE

The paper aims to seek Members' views on the proposal to create 2 permanent Chief Electrical and Mechanical / Electronics Engineer (D1) posts in the Railways Branch of the Electrical and Mechanical Services Department (EMSD) to strengthen the regulation on the safety of railway services through a proactive and comprehensive monitoring regime.

BACKGROUND

Railway safety and rising of public expectation

2. The Government has all along adopted railway as the backbone of the public transport system. Under such prevailing policy, the daily patronage of railway lines operated by the MTR Corporation Limited (MTRCL) has significantly increased by 35% from 4.0 million in 2008, when the Railways Branch of EMSD (the Railways Branch) was established[1], to over 5.4 million in 2018, accounting for around 42% of the domestic public transportation. As railway service is highly related to the daily living of the public and any railway service disruption will cause inconvenience to the public, a safe, reliable and efficient railway operation is therefore of paramount importance. The public has very high expectation on the railway services provided by the MTRCL. In order to reduce the occurrence of railway incidents involving power supply failure, train fault, rail crack, and signalling system failure, the Government strives to enhance its regulation over the day-to-day operation of the MTRCL and maintenance of its assets.

[1] RB was established in 2008 and took over the work of the then Hong Kong Railway Inspectorate on railway safety regulation from the Transport and Housing Bureau.

3. The first underground railway line started operation in 1979 with subsequent expansion to the existing railway network to over 257 km[2]. The stations and facilities were designed based on industry standards adopted at the time of construction. With an increasing railway patronage and expanding network, the railway facilities are heavily loaded over the years. Moreover, respective railways and related facilities are entering into their replacement age[3], requiring large-scale retrofitting, maintenance and repair works by the MTRCL. Although individual equipment / system may have been upgraded or renewed throughout the years, for individual lines and relevant legacy railway facilities, especially those which were built some years ago, the MTRCL needs to put in much resources and effort in order to maintain a high level of safety standard against the high utilisation at present.

4. In order to ensure that the MTRCL provides safe and reliable services, the Government has put in place a stringent regulatory system, whereby the Railways Branch regulates and oversees the safe operation of the MTRCL systems, and investigates into railway incidents in accordance with the Mass Transit Railway Ordinance (Cap.556) and Mass Transit Railway Regulations (Cap.556A). Major functions of the Railways Branch include ensuring the adoption of appropriate safety measures by the MTRCL; assessing and vetting new railway projects and major modifications of existing railway facilities; assessing and following up with the MTRCL on improvement measures in respect of railway safety; and investigating into railway incidents.

5. To address the public expectation on railway safety, the expanding railway network, aging legacy infrastructure, and an increasing number of patronage leading to a heavily loaded railway system, the Government considers that a more proactive and comprehensive monitoring regime should be adopted to enhance system safety, lower the risk of occurrence of railway incidents and reduce the number of system interruptions. The Railways Branch would step up its regulation over the MTRCL. In addition to the risk-based approach, the Railways Branch will adopt a more proactive, preventive and railway system-based (including signalling system, power supply system, rolling stock and permanent way) monitoring regime, and carry out more comprehensive and direct audits on the MTRCL's asset and safety management systems in order to identify in the early stage the potential systemic defects and hazards that could lead to incidents to ensure railway safety.

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[2] Total track length of around 747 km.

[3] As reference, typical life time for railway facilities are (a) rolling stock: 30-40 years, (b) signalling system: 20-30 years and (c) power distribution system: 25-40 years.

JUSTIFICATIONS

Increased train frequency and a gradually expanding railway network

6. At present, the MTR railway network has a patronage of over 5.4 million daily average passenger trips. In view of the rising number of patronage, the MTRCL has been increasing its train frequency since 2008. The total number of train trips of its heavy rail system has increased from around 1.69 million in 2008 to 2.12 million in 2018, which shows an increase of about 25%. As for Light Rail, the total number of vehicle trips has also increased from about 1 million in 2008 to about 1.09 million in 2018, which shows an increase of about 9%.

7. Apart from the increase in train frequency, the railway network has also been expanding. The railway network of Hong Kong has increased from 211 km in 2008 (when the Railways Branch was established) to over 257 km now, including the West Island Line in March 2015, the Kwun Tong Line extension and South Island Line in October and December of 2016 respectively, and the Guangzhou-Shenzhen-Hong Kong High Speed Rail (Hong Kong Section) in September 2018. Upon the commissioning of these railway projects, the Railways Branch has to continue and strengthen its routine regulatory work, such as participating in and monitoring sample and daily tests and maintenance work conducted on-site by the MTRCL, to ensure an effective monitoring of the safety performance of these railway projects.

8. At the same time, the Railways Branch is also responsible for the safety regulation of the new Automated People Mover (APM) for Three-Runway System (3RS) Project of the Airport Authority Hong Kong (AAHK). The new APM will connect the existing Terminal 2 to the new Third Runway Concourse and will consist of installation of a new guideway system and modifications of the existing APM Lines and Skypier Line. During the testing stage of the railway projects, the Railways Branch will strictly perform its gatekeeping role as the regulator. Besides requesting the MTRCL and AAHK to provide the safety certificates issued by their contractors to confirm the safety of the systems before conducting testing, EMSD will also participate and observe sample safety tests conducted on-site, to ensure an effective monitoring of the safety performance of railway projects and the APM for 3RS.

9. Against the above-mentioned increase in train frequency, railway projects that have been put into service recently and other railway projects (including the

APM of 3RS), it is anticipated that the regulatory work of the Railways Branch will increase significantly. The Railways Branch works together with other government departments (including Buildings Department, Highways Department, Fire Services Department and the Police) to vet the proposals and plans submitted by the MTRCL, conduct on-site tests and grant approval for various railway systems that are related to railway safety (including signalling systems, rolling stock, tracks, power supply systems, station facilities and control systems, communications equipment and other contingency systems) and to scrutinise the contingency plans for emergencies prepared by the MTRCL and monitors the drills for simulated emergency incidents. It is anticipated that the coordination and liaison work of the Railways Branch with the MTRCL and other government departments will increase significantly, including coordination and support work in relation to each railway project, convening of regular and ad hoc meetings etc..

Stable trend of railway incidents, yet huge potential impact

10. As the railway network of the MTRCL has been expanding with an increasing number of patronage, any railway incident which lead to railway service disruption may cause considerable disturbance to the passengers. Hence, it is important to strengthen the safety and reliability of railway services in order to reduce occurrence of incidents.

11. While the overall number of incidents in the MTRCL's network caused by equipment failure and resulting in service disruption of 8 minutes or above remains stable in the past ten years (detailed figures as set out in **Annex 1**), the public has concern about a few of relatively more serious railway incidents recently[4]. Among them, for the Tsuen Wan Line train collision incident on 18 March 2019, the MTRCL has set up an investigation panel to conduct a thorough investigation on the cause of the incident. The report is expected to be completed in three months. The Railways Branch is also conducting an independent investigation on the incident and will release its findings upon reviewing the report of the MTRCL, which would be submitted shortly.

[4] A few railway incidents which lead to serious service disruption in recent years include:
- The Tung Chung Line/Airport Express Line overhead line failure incident on 24 March 2019
- The Tsuen Wan Line collision incident during new signaling system testing on 18 March 2019
- The signalling system failure incident of four railway lines on 16 October 2018
- The East Rail Line train pantograph failure incident on 18 May 2017

12. The Government understands that the public has high expectation on railway services. As the statutory regulatory authority of railway safety, the Railways Branch will adopt a more proactive, forward-looking, and system-based approach to enhance its inspection and monitoring on railway safety. Nonetheless, against the increased frequency of railway service and an expanding railway network, the workload of the Railways Branch has been increasing significantly. The Government thus considers an imminent need to strengthen the manpower of the Railways Branch.

Major asset replacement projects

13. In recent years, the MTRCL has reviewed of the condition and performance of its major railway assets in order to confirm their continual performance as well as to facilitate the planning of asset replacement projects. As a result, several major asset replacement and modification projects have been identified and commissioned, including the replacement of 154 air-cooled chillers from 2017 to 2023, CCTV systems replacement in the whole railway network from 2018 to 2023, upgrading of the signalling system of seven MTR urban lines from 2019 to 2026, as well as replacement of power supply systems in urban railway lines from 2020 to 2047.

14. The replacement works of air-cooled chillers and CCTV systems already commenced in 2017 and 2018 respectively. Upgrading of the signalling systems of seven MTR urban lines are underway. The study and design works for replacement of power supply systems are also underway. These asset replacement projects can avoid safety hazard due to failure of legacy assets thereby enhancing railway safety and service.

15. As replacement projects mentioned above involve major modifications to and interface with existing operating railways, enhanced monitoring of these projects by the Railways Branch is essential to ensure railway safety. Additional manpower for the Railways Branch is thus required to monitor these replacement and modification works so as to review the risk assessments conducted by the MTRCL to ensure that the latest safety standards and statutory requirements have been incorporated and complied, and to monitor the addition and alteration works involved, in order to reduce their impact on the operation of existing railways.

Proactive and comprehensive audit on MTRCL's Asset Management System and Safety Management System

16. The MTR railway system is a huge railway network involving hundreds of thousands of equipment components and over ten thousands of operation and maintenance staff. The MTRCL is obliged to operate and maintain an Asset Management System (AMS) for the effective maintenance management of their railway assets. The MTRCL is also required to operate and maintain a Safety Management System (SMS) to review, control and minimise safety risks as far as practicable. In the light of the expanding railway network, replacement of legacy railway systems, occurrence of railway incidents from time to time, and the potential safety issues, the Railways Branch would strengthen its regulatory role on railway safety and operations of the MTRCL. In addition to the incident-based and risk-based approach through sample site inspection on maintenance procedures and records of safety critical items, as well as compliance audits on asset and safety management systems, the Railways Branch will adopt a more proactive and preventive approach and conduct a comprehensive audit on the AMS and SMS of the whole railway network of the MTRCL to identify in the early stages the potential systematic defects that could lead to incidents in order to ensure railway safety.

17. The proposed comprehensive and direct AMS and SMS assessment will be an on-going work covering all of the four major areas of the railway network, i.e. signalling systems, permanent way, power supply systems, and rolling stock. Specifically, it will cover engineering assets, maintenance regime, risk registries, failure mode analysis, built-in regular review process to identify and mitigate new and existing risks, procedures to monitor railway operational safety in the presence of construction works in vicinity, asset replacement plan, operation & maintenance work instructions and system framework, staff competence, training and qualifications as well as on-site auditing of maintenance work. The Railways Branch will conduct a holistic and proactive review on the effectiveness of AMS/SMS being implemented by the operation & maintenance teams of each MTRCL line in order to identify in the early stage the potential systemic defects that could lead to incidents, to reduce the occurrence of incidents and further ensure railway safety.

Need to strengthen manpower at the directorate level

18. Apart from regulating and monitoring the safe operation of the MTRCL systems, the Railways Branch is also responsible for regulating and monitoring the operation of tramways, peak trams, and APM at the Hong Kong International Airport. The workload is considerably heavy. Currently, the Railways Branch is led by the Assistant Director/Railways (AD/R), ranked at Government Electrical and Mechanical Engineer (D2), and supported by two Chief Engineers (CE/R1 and CE/R2) (D1). With the above justifications, there is an urgent need to strengthen the manpower of the Railways Branch to share the supervisory duties and provide professional advice from a holistic and macro perspective regarding the monitoring of railway safety, including reviewing the mechanism of the Railways Branch for monitoring railway safety and relevant railway projects of the MTRCL from a macro and strategic perspective, supervising the daily work of professional and technical supporting staff (see paragraph 23 below), as well as explaining the Government's regulatory regime and specific work undertaken to the Legislative Council, the media and the public where necessary.

19. In view of the importance and complexity of the railway systems, and the public's concern and expectation on the safety and reliability of railway services, we have to ensure that such high-level duties are undertaken by full-time directorate officers with sound professional knowledge, experience on public administration and leadership. As such, the Government suggests that two permanent Chief Electrical and Mechanical / Electronics Engineer posts be created in the Railways Branch to serve as Chief Engineer/Railways 3 (CE/R3) and Chief Engineer/Railways 4 (CE/R4). The proposed two Chief Engineers and the existing two Chief Engineers will be responsible for different regulatory work. The existing two Chief Engineers are responsible for the safe operation of all the existing railway lines (including regulation of the operation and safety of the eleven heavy rails, eleven light rails, the Guangzhou-Shenzhen-Hong Kong High Speed Rail (Hong Kong Section), tramways, peak trams and the APM of Hong Kong International Airport). The proposed two Chief Engineer posts will be responsible for the comprehensive audit on the MTRCL's AMS and SMS, monitoring of the safety aspects of the MTRCL's major asset replacement projects and other railway projects including the APM of 3RS etc..

20. The job descriptions of the two proposed directorate posts (CE/R 3 and CE/R 4) are set out at **Annex II**. The revised job descriptions of the existing two Chief Engineers (CE/R 1 and CE/R 2) are set out at **Annex III**.

21. Upon the creation of the two directorate posts, AD/R, as the head of the Railways Branch, will be responsible for the overall supervisory work. He/She will have the capacity to monitor the safety performance of railway, tramways, peak trams, and APM at the Hong Kong International Airport from a macro and strategic perspective, as well as maintaining close liaison with the management of the MTRCL, senior officers of Mainland railway safety regulator and operator, and other experienced overseas railway regulators, so as to ensure that the Government's monitoring work can be effectively carried out and is on a par with international standards.

Alternatives considered

22. We have carefully examined the feasibility of sharing the duties of the two proposed Chief Electrical and Mechanical / Electronics Engineer posts amongst the incumbent officers of the same rank in the EMSD's Regulatory Services arm. As the current workload of these officers are very heavy, they do not have spare capacity to further absorb the additional workload of the proposed Chief Engineer posts for the enhanced regulatory regime, the comprehensive audit on the MTRCL's AMS and SMS, monitoring of the major asset replacement projects and related work. The current organisation chart of the EMSD's Regulatory Services arm and the duties of its Chief Engineers are set out in **Annexes IV** and **V** respectively.

Non-directorate support

23. Apart from the two proposed directorate posts, the Government will also create 18 non-directorate officer posts in the Railways Branch so as to strengthen our safety inspection and monitoring of the expanding railway services. As such works need to be carried out continually to monitor railway safety, the additional manpower should also be permanent posts. The proposed organisation chart of the Railways Branch is at **Annex VI**.

FINANCIAL IMPLICATIONS

24. The proposed creation of two Chief Electrical and Mechanical/Electronics Engineer posts will incur an additional notional annual salary cost at mid-point of $3,673,200 as follows –

Directorate post	Number of posts	Notional annual salary cost at mid-point ($)
Chief Electrical and Mechanical/Electronics Engineer (D1)	1	1,836,600
Chief Electrical and Mechanical/Electronics Engineer (D1)	1	1,836,600
Total	2	3,673,200

The additional full annual average staff cost, including salaries and staff on-cost, for the two posts is about $5,057,000.

25. Besides, the creation of 18 non-directorate posts will bring about an additional notional annual salary cost at mid-point of $15,292,230. The additional full annual average staff cost, including salaries and staff on-cost, is about $24,262,000.

26. We have included the necessary funding provision to meet the staff cost of this proposal.

ADVICE SOUGHT

27. Members are invited to comment on the proposal of creating two permanent directorate posts as set out in paragraph 18-21 above.

28. Subject to the comments of this Subcommittee, we will subsequently seek funding support according to established procedures.

Transport and Housing Bureau
Electrical and Mechanical Services Department
June 2019

Annex 1

Number of incidents in the MTRCL's network caused by equipment failure and resulting in service disruption of 8 minutes or above

Year	Service disruptions of 8 minutes or above due to equipment failure (Number of cases)	Service disruptions of 8 minutes or above due to equipment failure (Every million revenue car-kilometers)
2008	141	0.51
2009	133	0.48
2010	153	0.54
2011	169	0.59
2012	129	0.44
2013	123	0.41
2014	140	0.45
2015	127	0.40
2016	105	0.33
2017	119	0.35
2018	111	0.32

Annex II

Job Description
Proposed Chief Engineer/Railways 3
Railways Branch, Electrical and Mechanical Services Department

Rank : Chief Electrical and Mechanical/Electronics Engineer (D1)
Responsible to : Assistant Director/Railways (AD/R)

The aim of the post

To oversee and steer the implementation of comprehensive assessment on Asset Management System (AMS) and Safety Management System (SMS) of the entire railway network for strengthening railway safety regulation through comprehensive and proactive assessment of the maintenance regime, risk classification, failure mode analysis, and the review and improvement processes of the AMS and SMS of the MTRCL to identify and eliminate root cause of failure due to equipment and human factors.

Main Duties and responsibilities:

(i) To formulate strategy and implement the proactive and comprehensive audits of the AMS and SMS of the entire railway network;

(ii) To conduct a comprehensive assessment on the effectiveness of the maintenance regime, risks identification and mitigations, failure mode analysis, and corrective/preventive measures, on the entire railways network, and to raise corresponding improvements in the AMS and SMS to reduce failure due to equipment and human factors;

(iii) To oversee the benchmarking of the current AMS and SMS with the corresponding railway safety management systems in overseas railways network;

(iv) To provide the Transport and Housing Bureau with professional advice and technical support on issues relating to the comprehensive audits of the AMS and SMS;

(v) To attend meetings of the Legislative Council Panel on Transport and its Subcommittee on Matters Relating to Railways; and

(vi) Other duties as required by AD/R.

Job Description
Proposed Chief Engineer/Railways 4
Railways Branch, Electrical and Mechanical Services Department

Rank : Chief Electrical and Mechanical/Electronics Engineer (D1)
Responsible to : Assistant Director/Railways (AD/R)

The aim of the post
To oversee safety regulation of the asset replacement projects and railway projects of the MTRCL; to step-up monitoring of the permanent way systems.

Duties and responsibilities

(i) To oversee the safety aspects of asset replacement projects and major modification works in railway premises including High Voltage /Low Voltage power system replacement projects, CCTV system and air-cooled chiller replacement projects;

(ii) To oversee safety regulation of railway projects of the MTRCL (including the North South Line of the Shatin to Central Link);

(iii) To chair some of the meetings of the inter-departmental Safety and Security Coordinating Committee and Trackside Safety Coordinating Committee and assist in inter-departmental coordination work on matters concerning railway safety and security;

(iv) To oversee safety regulation of Automated People Mover (APM) of the Airport and the new APM for Three Runway System (3RS) Project with subsequent operations and maintenance; major asset management and replacement of existing APM system;

(v) To attend meetings of the Legislative Council Panel on Transport and its Subcommittee on Matters Relating to Railways; and

(vi) Other duties as required by AD/R.

Annex III

Revised Job Description
Chief Engineer/Railways 1
Railways Branch, Electrical and Mechanical Services Department

Rank : Chief Electrical and Mechanical/Electronics Engineer (D1)
Responsible to : Assistant Director/Railways (AD/R)

Main Duties and responsibilities:

(i) To formulate policy and strategy concerning railway safety, and oversee safe operation of the existing railway lines (including Kwun Tong Line, Tseung Kwan O Line, Tsuen Wan Line, Airport Express, Tung Chung Line, Disneyland Resort Line and Light Rail), Trams and Peak Tramway;

(ii) To lead the Railways Branch in executing the regulatory functions in accordance with the relevant Ordinances, Regulations and Operating Agreement (i.e. the Mass Transit Railway (MTR) Ordinance (Cap.556), Tramway Ordinance (Cap.107) and Peak Tramway (Safety) Regulations (Cap.265A));

(iii) To oversee the investigations of railway incidents and provide guidance and advice on matters concerning railway safety and major modifications of the existing railway lines;

(iv) To oversee the safety preventive measures on railway operation of the MTRCL;

(v) To assist in inter-departmental coordination work on matters concerning railway safety and security;

(vi) To attend meetings of the Legislative Council Panel on Transport and its Subcommittee on Matters Relating to Railways; and

(vii) Other duties as required by AD/R.

Revised Job Description
Chief Engineer/Railways 2
Railways Branch, Electrical and Mechanical Services Department

Rank : Chief Electrical and Mechanical/Electronics Engineer (D1)
Responsible to : Assistant Director/Railways (AD/R)

Main Duties and responsibilities:

(i) To oversee the safe operation of the existing railway lines (including Island Line, South Island Line, West Rail Line, Ma On Shan Line, East Rail Line and High Speed Rail) in accordance with the MTR Ordinance (Cap.556);

(ii) To oversee the investigations of railway incidents and the improvement measures of the railway operator;

(iii) To oversee the safety preventive measures on railway operation of the MTRCL;

(iv) To oversees safety related matters of railway projects (including Tuen Ma Line) (including the interface with the existing railway system, safety inspections, tests and trial-runs) and to oversee the safety performance after commencement of operation;

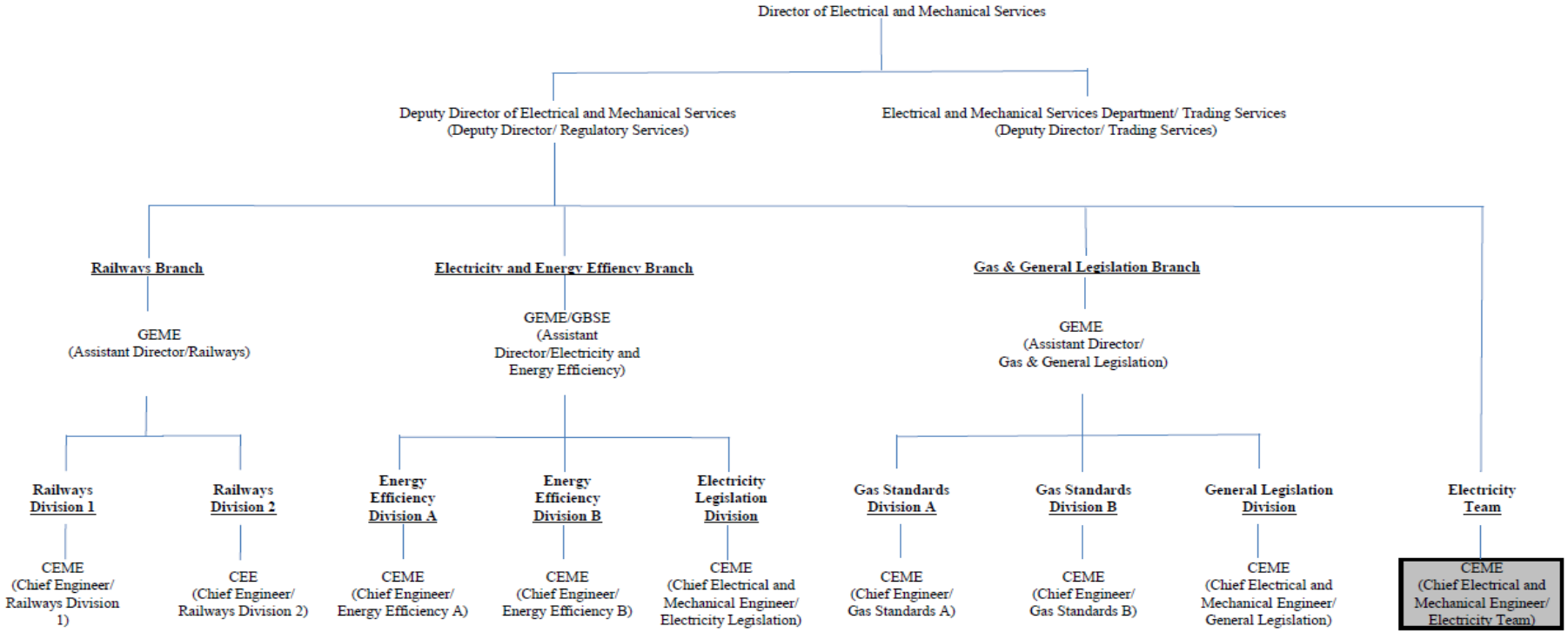
(v) To chair some of the meetings of the inter-departmental Safety and Security Coordinating Committee and Trackside Safety Coordinating Committee and assist in inter-departmental coordination work on matters concerning railway safety and security;

(vi) To attend meetings of the Legislative Council Panel on Transport and its Subcommittee on Matters Relating to Railways; and

(vii) Other duties as required by AD/R.

Annex IV

Existing Organisation of the Electrical and Mechanical Services Department (Regulatory Services)



On attachment to the Environment Bureau

Legend :			
GEME	Government Electrical and Mechanical Engineer	CEE	Chief Electronics Engineer
CEME	Chief Electrical and Mechanical Engineer	GBSE	Government Building Services Engineer
		CBSE	Chief Building Services Engineer

Annex V

Main Duties and Responsibilities of the Existing Chief Engineers in the Regulatory Services of the Electrical and Mechanical Services Department

Major duties / responsibilities of the Chief Engineers in the Regulatory Services of the Electrical and Mechanical Services Department (EMSD) are summarised in the following paragraphs.

Under Assistant Director/Railways ("AD/R")

Chief Engineer/Railways 1 ("CE/R1")

1. CE/R1 assists AD/R in ensuring the safe operation of the existing railway system and in developing policies and strategies with regard to railway safety. He/She oversees the safe operation of existing railway lines (including Kwun Tong Line, Tseung Kwan O Line, Tsuen Wan Line, Airport Express, Tung Chung Line, Disneyland Resort Line and Light Rail), Trams and Peak Tramway. He/She leads the Railways Branch in executing the regulatory functions in accordance with the relevant Ordinances, Regulations and Operating Agreement (i.e. the Mass Transit Railway (MTR) Ordinance (Cap.556), Tramway Ordinance (Cap.107) and Peak Tramway (Safety) Regulations (Cap.265A)). He/She also oversees the safety preventive measures on railway operation by the MTRCL and the safety matters of some of the asset replacement projects and major enhancement work at railway premises. He/She is responsible for maintaining close liaison with the railway operator's management to give guidance and advice on railway safety matters and major modifications of the existing railway lines. He/She also assists in the inter-departmental coordination work with regard to railway safety and security. He/She provides the Transport and Housing Bureau with professional advice and technical support in respect of railway safety matters and attends meetings of the Panel on Transport of the Legislative Council or its Subcommittee on Matters Relating to Railways in respect of safety matters of existing railway system.

Chief Engineer/Railways 2 ("CE/R2")

2. CE/R2 assists AD/R in overseeing safety related matters of existing railway lines and railway projects, and monitoring the safety performance of these railway projects after they commence operation. He/She oversees the safe operation of the existing railway lines (including Island Line, South Island Line, West Rail Line, Ma On Shan Line, East Rail Line and High Speed Rail) in accordance with the MTR Ordinance (Cap.556) and the Automated People Mover at the Hong Kong

International Airport in accordance with the Airport Authority (Automated People Mover) (Safety) Regulation (Cap.483C). He/She also oversees safety related matters of the railway projects (including Tuen Ma Line and North South Line of the Shatin to Central Link). He/She chairs the inter-departmental working group on safety matters of new railway projects and assists in the inter-departmental coordination work with regard to railway safety and security. He/She is responsible for overseeing the interface between the existing railway system and relevant railway projects, its safety inspections, tests and trial-runs, and to oversee their safety performance after they commence operation. He/She also provides the Transport and Housing Bureau with professional advice and technical support in respect of new railway projects and provides the Transport and Housing Bureau and relevant departments with professional advice on the safety related issues of the recommended railway schemes in the Railway Development Strategy 2014. He/She attends meetings of the Legislative Council Panel on Transport and its Subcommittee on Matters Relating to Railways in respect of safety matters of new railway projects.

Under Assistant Director/Electricity and Energy Efficiency ("AD/EE")

Chief Engineer/Energy Efficiency Division A ("CE/EEA")

3. CE/EEA assists AD/EE in providing professional support and advice to the Environmental Bureau (ENB) on the formulation of policies, strategies and initiatives on energy efficiency and conservation and the application of renewable energy. He/She develops the Voluntary and Mandatory Energy Efficiency Labelling Scheme for electrical and gas appliances/equipment, and promote public awareness on the use of energy-efficient appliances. He/She is responsible for the administration and enforcement of the Energy Efficiency (Labelling of Products) Ordinance (Cap.598). He/She promotes the adoption of energy-efficient technologies, renewable energy, energy audits and the best practices in the public and private sectors as well as the application of new and emerging energy efficiency technologies. He/She is also responsible for coordinating with policy bureaux, government departments and private organisations for the promotion of energy programmes promulgated by international/regional/local energy organisations such as Asia-Pacific Economic Cooperation and participating in their activities.

Chief Engineer/Energy Efficiency Division B ("CE/EEB")

4. CE/EEB assists AD/EE in providing professional support and advice to ENB on the formulation of policies, strategies and initiatives on energy efficiency and conservation and the application of renewable energy. He/She promotes the wider use of water-cooled air-conditioning systems in Hong Kong. He/She is responsible for the administration and enforcement of the Buildings Energy Efficiency Ordinance (Cap.610) and District Cooling Services Ordinance (Cap.624). Besides, he/she oversees the implementation of the district cooling system at the Kai Tak Development, and he/she provides support to studies on provision of district cooling systems in new development areas and oversees subsequent implementation works. He/She is also responsible for the regulation of improperly maintained or contaminated fresh water cooling towers under the Public Health and Municipal Services Ordinance (Cap.132).

Chief Electrical and Mechanical Engineer/Electricity Legislation ("CEME/EL")

5. CEME/EL assists AD/EE in the management and administration of the regulatory functions related to electricity safety. He/She is responsible for the administration and enforcement of the Electricity Ordinance (Cap.406) for ensuring safe electrical installations, safe household electrical products and the safe and reliable supply of electricity. He/She introduces and implements new legislative proposals/legislative amendments and codes of practice/guidance notes for the purpose of improving safety standards of the electrical industry and enhancing electricity safety of the public. He/She assists AD/EE in providing support to the Director of Electrical and Mechanical Services in the Daya Bay Contingency Plan and related technical advice on nuclear power safety. He/She is also responsible for maintaining liaison with outside organisations/government departments for the promotion of electricity safety and new/existing legislation.

Under Assistant Director/Gas and General Legislation ("AD/GGL")

Chief Engineer/Gas Standards A ("CE/GSA")

6. CE/GSA assists AD/GGL in monitoring the performance of Hong Kong and China Gas Co. Ltd. to ensure that its gas production plants and notifiable gas installations are operated to the highest possible standards and that the requirements of the Gas Safety (Gas Supply) Regulations are fully complied with. He/She is responsible for the operation of registration scheme for gas contractors and installers and manages the quality assurance of town gas and cylinder liquefied petroleum gas

(LPG) installation work in all market sectors. He/She manages the investigation, preparation and processing of cases for prosecution under the Gas Safety Ordinance (Cap.51). He/She is also responsible for the processing of complaints from members of the public and representative groups concerned with the safe supply and use of gas. He/She gives expert advice to professional agencies in both public and private sectors on the supply and use of cylinder LPG and town gas premises and coordinates activities associated with the promotion of gas safety. He/She is responsible for developing, introducing and monitoring new training packages for the gas industry in conjunction with training establishments in the private and public sectors.

Chief Engineer/Gas Standards B ("CE/GSB")

7. CE/GSB assists AD/GGL in administering the Gas Safety Ordinance (Cap.51) and subsidiary regulations on behalf of the Gas Authority, the Oil (Conservation and Control) Ordinance (Cap.264) on behalf of the Director of Oil Supplies and implementing the devised comprehensive monitoring regime on the development of refrigerants of low Global Warming Potential (GWP). He/She monitors the performance of gas supply companies to ensure that LPG terminals, gas production plants and notifiable gas installations are operated to the highest standards and that the requirements of the Gas Safety (Gas Supply) Regulations are fully complied with. He/She also assists AD/GGL in advising the Secretary for the Environment on aspects of gas supply on behalf of the Gas Authority. He/She monitors the implementation of the voluntary Code of Practice with the major oil companies and the Hong Kong and China Gas Co. Ltd. on strategic reserve of gas oil and naphtha respectively. He/She also represents the Gas Authority on the Coordinating Committee on Land Use Planning and Control relating to Potentially Hazardous Installations. To ensure gas safety arising from the low GWP refrigerants, he/she also assists AD/GGL in reinforcing the liaison and communication with stakeholders in the air-conditioning and refrigeration trade and relevant government departments, conducting surveillance inspections, and rolling out education and publicity activities to the trade and public.

Chief Electrical and Mechanical Engineer/General Legislation ("CEME/GL")

8. CEME/GL assists AD/GGL in administering the Lifts and Escalators Ordinance (Cap.618), the Aerial Ropeways (Safety) Ordinance (Cap.211), the Amusement Rides (Safety) Ordinance (Cap.449) and the Builders' Lifts and Tower Working Platforms (Safety) Ordinance (Cap.470). He/She oversees the enforcement of the legislation in respect of the safety of lifts and escalators, aerial

ropeways, amusement rides, builders' lifts and tower working platforms, and other general mechanical installations and to ensure that proper actions are taken in respect of non-compliance and against offenders. He/She is also responsible for the introduction and implementation of new legislative proposal/legislative amendment and codes of practice/guidance notes for the purpose of improving safety standards and enhancing public safety. He/She administers the registration schemes and the staff management and financial control of a professional team for the development of a regulatory regime for the vehicle maintenance trade. He/She maintains liaison with organisations and government departments for the promotion of safety and new/existing legislation related to mechanics.

Under Deputy Secretary for the Environment and Deputy Director/ Regulatory Services

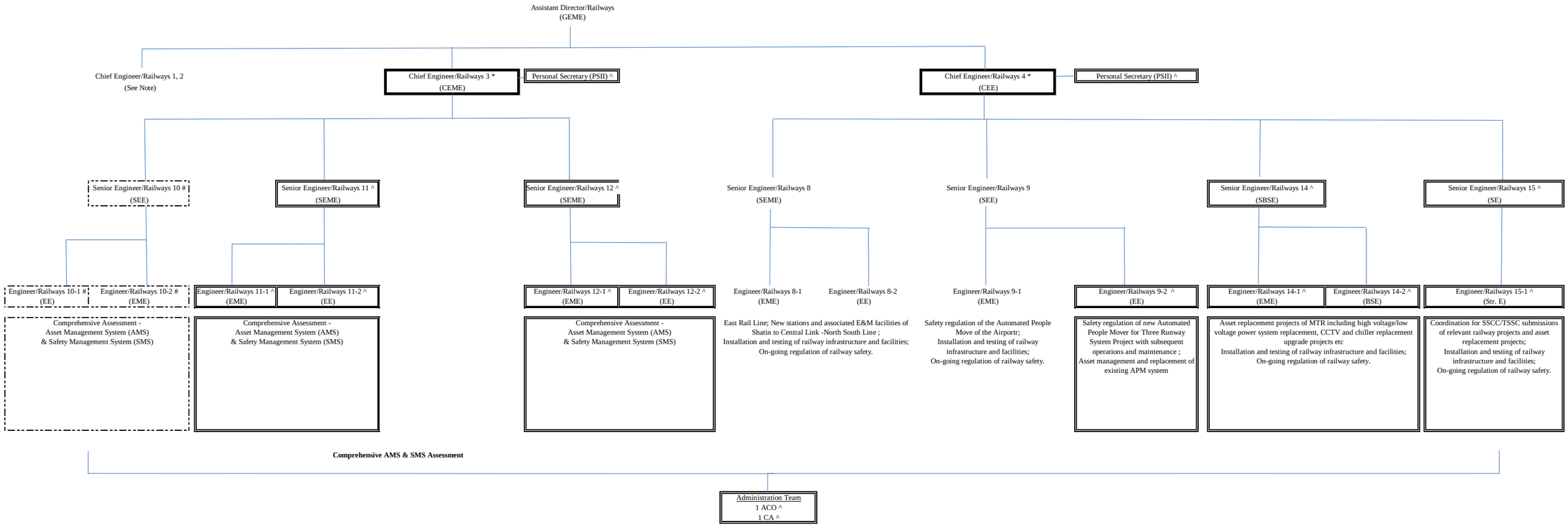
Chief Electrical and Mechanical Engineer/Electricity Team ("CEME/ET")

9. CEME/ET is part of EMSD's establishment and is attached to the Environment Bureau. He/She assists Deputy Secretary for the Environment (DS(E)) and Deputy Director/ Regulatory Services (DD/RS) in providing professional advice and proposals for implementation of the initiatives and measures of the Scheme of Control Agreements (SCAs) with the power companies, review of the SCAs and matters related to energy policy and electricity industry, formulation of future fuel mix for electricity generation, and review of development of the electricity market and related regulatory framework in Hong Kong. He/She directs the operation and management of the Electricity Team for monitoring the power companies' performance under the SCAs, especially in the Auditing Review, Tariff Review and Development Plan Review, and provides professional advice on the regulation of the power companies under the SCAs. He/She is responsible for attending meetings of the Legislative Council and the Energy Advisory Committee to help explain the Government's objectives and proposals and meetings with the power companies on their electricity-related matters under the SCAs. He/She is also responsible for managing consultancy studies related to development of the electricity market and regulatory regime, monitoring of power companies, and assessment of power companies' development plans.

Annex VI

(refer to the attached file)

Annex VI - Proposed Organisation of Railways Branch, EMSD



Legend :

- framed and marked by *: Directorate grade permanent posts to be required from 2019/20 under this paper
- framed and marked by ^: Non-directorate grade permanent posts to be created in 2019/20
- framed and marked by #: Existing 3-years time limited posts (created from July 2018 to March 2021)

Note :

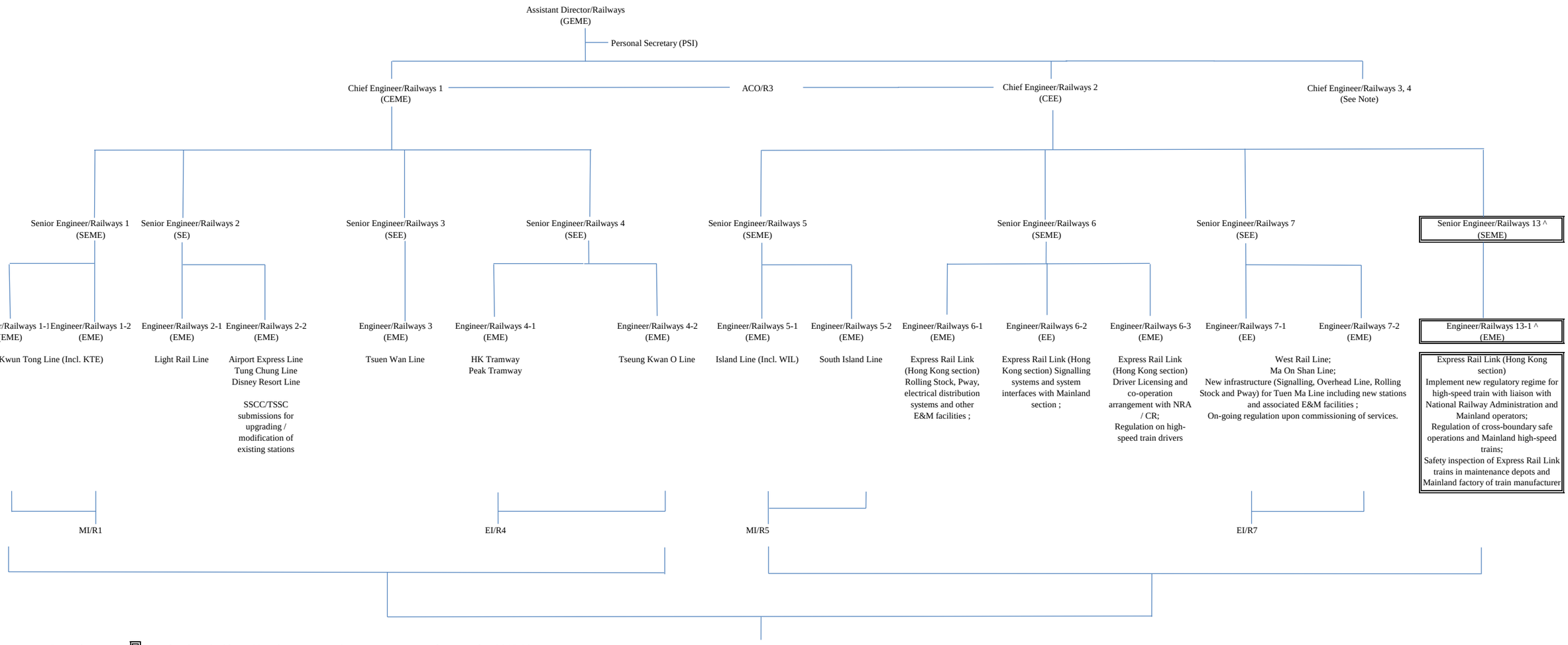
Organization Chart of Railways Divisions 1 to 2 are in Page 2

The description under each team is the main responsibilities of the team

Each team will provide professional support to other teams in their respective area of expertise

GEME	Government Electrical and Mechanical Engineer	BSE	Building Services Engineer
CEE	Chief Electronics Engineer	EE	Electronics Engineer
CEME	Chief Electrical and Mechanical Engineer	Str.E	Structural Engineer
SE	Senior Engineer	EME	Electrical and Mechanical Engineer
SBSE	Senior Building Services Engineer	PSII	Personal Secretary II
SEE	Senior Electronics Engineer	ACO	Assistant Clerical Officer
SEME	Senior Electrical and Mechanical Engineer	CA	Clerical Assistant

Annex VI - Proposed Organisation of Railways Branch, EMSD



Legend : framed and marked by ^: Non-directorate grade permanent posts to be created in 2019/20

Note :
Organization Chart of Railways Division 3 to 4 are in Page 1
The description under each team is the main responsibilities of the team

Each team will provide professional support to other teams in their respective area of expertise

GEME	Government Electrical and Mechanical Engineer		
CEME	Chief Electrical and Mechanical Engineer		
CEE	Chief Electronics Engineer		
SEE	Senior Electronics Engineer	EI	Electrical Inspector
SEME	Senior Electrical and Mechanical Engineer	MI	Mechanical Inspector
SE	Senior Engineer	PSI	Personal Secretary I
EE	Electronics Engineer	ACO	Assistant Clerical Officer
EME	Electrical and Mechanical Engineer	CA	Clerical Assistant