

# **“Railway Inspectorate in Hong Kong in 2010”**

## **Dr. K. M. LEUNG**

### **Summary**

*Railways are an important feature of life in Hong Kong, with a lion’s share of the franchised public transport market. The safety of railways is crucial. The Railways Branch (RB) of the Electrical and Mechanical Services Department (EMSD) in the Hong Kong Special Administrative Region Government has been the railway safety regulator in Hong Kong since 2008.*

*The RB ensures the safe operation of Hong Kong’s railways, and helps to shape a sustainable future for our railway development. This paper gives an overview of the role and functions of RB, and highlights some of the unique challenges it faces in regulating railway safety in a densely populated metropolis with a relatively short rail track.*

### **Regulating Railway Safety in Hong Kong**

Like Hong Kong’s railway development which started as early as the last years of the Qing Dynasty and saw many phases of growth and progress, the regulation of railway safety in Hong Kong has also undergone considerable change (Figure 1 shows a steam locomotive). We would focus on the more recent developments.



(Figure 1)

When the first metro railway system came into operation in the late 1970s, the Hong Kong Government reached an agreement with the UK Government for the UK Railway Inspectorate to perform inspectorate duties and provide advice with regard to safety in the development and operation of our railways, at the time, namely the metro railway operated by the MTR Corporation Ltd. (MTRCL), and the other railway line linking urban Kowloon through the New Territories with Lo Wu, operated by the Kowloon-Canton Railway Corporation (KCRC).

As the local railway network continued to expand in the 1980s (Figure 2 shows a KCR electrification programme rolling stock), the Hong Kong Government proposed in 1989 to establish a local inspectorate to gradually take over the duties performed by the UK Railway Inspectorate. The Hong Kong Railway Inspectorate (HKRI), was subsequently established in December 1990.



(Figure 2)

It was decided at the time that for the HKRI to be seen and accepted as an independent regulatory body, it should have a separate office while the Transport Branch would be responsible for its house-keeping matters. The UK’s involvement with Hong Kong’s railways was gradually reduced to an advisory support role only. The support role was totally withdrawn in mid-1998.

## **Establishment of Railways Branch in EMSD**

In light of advancements in railway technology and the increasing complexity in railway operation, the Hong Kong SAR Government commissioned a consultancy study in 2007 with a view to strengthening the technical and professional support rendered to the HKRI in order to continuously ensure the safe operation of the railways. The study recommended that the HKRI be integrated into EMSD, as most of the engineers in the HKRI were actually seconded from EMSD given the relatively high relevance of E&M engineering to railway engineering systems such as signaling, rolling stock, power supply and fire services.

The new arrangement would provide EMSD with the flexibility to deploy and develop relevant expertise for the purpose of overseeing railway safety. The year 2007 was also significant in that MTRCL was granted a 50-year service concession of KCRC's existing railway network, thereby merging the railway operations of the two railway corporations under the MTRCL management.

This means that integrating HKRI into EMSD would have the added advantage of putting the regulatory control of all railways, including the railway systems operated by the MTRCL, the automated people mover in the Hong Kong International Airport operated by the Airport Authority as well as the traditional Tramways and Peak Tram, already regulated by EMSD, under a single jurisdiction. The recommendation led to the establishment of the Railways Branch within EMSD in February 2008 to take over the regulatory functions of railway safety.

## **Railways Branch Role and Functions**

In brief, the role of our Railways Branch is to oversee the safe operation of all the railways mentioned above under a regulatory framework made up of various ordinances and regulations, including the Mass Transit Railway Ordinance and Regulations, the Tramway Ordinance, the Peak Tramway Ordinance and (Safety) Regulations, and the Airport Authority (Automated People Mover) (Safety) Regulation.

## **Comparison with Overseas Railway Regulatory Bodies**

Compared with railway regulatory bodies elsewhere in the world, the Railways Branch

in Hong Kong has a role similar to that of the Office of Rail Regulator (ORR) of the UK and the Independent Transport Safety and Reliability Regulator (ITSRR) of Australia.

Similar to practices in the UK and Australia, we manage our railways by ensuring that safety risks are duly controlled by the railway project proponent and operator, which is MTRCL. The MTRCL must establish and implement a safety management system subject to independent audit every three years. Its railway project team is required to minimise risks, whereas its railway operator must contain any residual risks by proper operation procedures. The railway regulatory framework developed in Europe is well established and it serves as a good reference for us in Hong Kong.

Unlike our European counterparts however, the Railways Branch in Hong Kong is not a licensing or accrediting authority for railway operation in the commercial sense. We only give approval for commissioning the new railway assets in order that the railway or railway premises are safe and sound for operation.

The existing role of the Railways Branch is delegated from the Secretary for Transport and Housing of the Hong Kong SAR Government to monitor the safe operation of MTR railway system. As a result, we also differ from the ORR and ITSRR in that we do not play the role of economic regulator. It is important to note that we are a railway safety regulator only, while the occupational safety and health of the staff or contractors of our railway operators are also outside our jurisdiction.

### **Railway Accident Investigation**

Another aspect of railway safety is accident investigation, where Hong Kong has practices different from some of our overseas counterparts. Both the Rail Accident Investigation Branch (RAIB) of the UK and the Office of Transport Safety Investigations (OTSI) of Australia are independent from their respective regulatory bodies. Their independent status in the railway framework reflects perhaps a more mature arrangement under the UK and Australian systems.

In Hong Kong, the Railways Branch plays both the regulatory and accident investigation role, so we actually carry out accident investigation work. In the long term, there may be a case for establishing an independent railway accident investigation body in Hong Kong separate from the regulatory body, similar to the RAIB or OTSI.



An issue arising from the small size of our railway network is the difficulty in benchmarking with overseas countries. Benchmarking is a useful tool for railway operators to compare their performance in service reliability and safety against their overseas counterparts, on the basis of quantitative common indicators. The problem for Hong Kong is that if the benchmarking is based on the nominal rail track length of a typical EU state country, the projections and extrapolations when applied to Hong Kong, which has a much shorter rail track length, would distort and skew the data results to an unrealistic level.

Our solution is to work pro-actively with the railway operators, closely monitor their safety performance, and recommend improvement measures promptly. At the same time, we also recognise that benchmarking still has its value notwithstanding the aforesaid limitations in direct comparison. We conducted a trial study in 2010 to benchmark one of the rail operators in Hong Kong, using three Common Safety Indicators (CSI) and two Common Safety Targets (CST) from the European Railway Agency, namely derailment, collision, SPAD (Signal Passed At Danger), risk to passengers and risk to employees. The results were examined and communicated with the operator, taking into account the unique situation in Hong Kong, and improvement measures identified.

### **Summing Up**

A safety regulator's ultimate aim is "zero incident". At the same time, we are also aware of the community's expectations of a very high level of service reliability. We shall continue to work with railway operators in Hong Kong to help them achieve this dual goal.