

Statement by the Chairman KCRC, Mr. Michael Tien

**Root Cause Investigation into the Failure and Cracking of
Underframe Equipment Support Brackets on East Rail MLR Trains**

I am pleased to announce that the Board has considered and accepted the Root Cause Investigation Report following the failure on 21st December last year of two support brackets for underframe equipment of an East Rail mid-life refurbished train. During the crack management which followed the incident, more cracks were discovered in the underframe equipment mountings of the same type of train cars. An investigation on the root causes of the cracks was conducted by a team of in-house experts headed by Senior Director, Capital Projects, Mr. K.K. Lee, supported by international specialist consultants, local experts, and the train manufacturer. Their work was reviewed and has been endorsed by the independent panel headed by Ir. Edmund Leung, appointed by the Corporation.

I have always remained confident that passenger safety was not at risk during and after the incident, and the investigation confirms this key finding in the report. The report also confirms that the KCRC staff involved in handling the 21st December incident and their subsequent actions, performed their duties with due diligence and in a professional and competent manner.

There are two main factors, the combination of which contributed to the occurrence of the cracks. Firstly, the investigation found that the force of vertical vibrations was excessive when a train was travelling at a speed of 70-90 kph over some sections of the track. The excessive vertical vibrations

were due to the resonance oscillations of the car body resulting from the train wheel interacting with the minute undulations on the surface of rail track. As a result the stress levels encountered by the support brackets exceeded the original design limits by 100%.

The second factor is attributed to imperfections in the welding of some of the underframe mounting brackets. The train manufacturer is of the opinion that these mounting brackets were fit for the purpose had the design level of the vertical vibration not been exceeded. Independent advice as to the validity of this claim will be sought. .

The report also confirms that KCRC maintenance staff have been following closely the manufacturer's maintenance guidelines, and there is no evidence to show that lack of due diligence to the occurrence of cracks on their part is a contributory factor.

Since it is not practicable to remove the minute undulations along the rail top due to the limitations of the existing maintenance equipment, the Board has approved the work to reinforce and upgrade all underframe equipment mounting brackets, to enhance the suspension systems of the entire fleet of all 348 mid-life refurbished train cars, and to replace the critical sections of rail track that have exacerbated the vertical vibrations. These measures will enable MLR train cars to withstand the measured level of vertical vibrations. All of these works are targetted for completion in 2007.

This has been a very thorough and painstaking investigation, and I am happy to say it has yielded clear results. On behalf of the Board I thank all of the international and local experts including academics, and KCRC staff who have committed themselves to the investigation and reaching a conclusion in the shortest possible time.

In my absence from Hong Kong, the Chief Executive Officer Ir. James Blake will lead the KCRC team in presenting the findings of the report to the media at a technical briefing at 3.45 p.m. today (3 May) in the KCRC City Office. Ir. Edmund Leung will also attend the question and answer session following the briefing.

Kowloon-Canton Railway Corporation

3rd May 2006