

LegCo Transport Panel
Subcommittee on Matters relating to Railways

Project Update of West Rail

The purpose of this paper is to update members about the progress of West Rail being constructed and commissioned by the Kowloon-Canton Railway Corporation planned to open for revenue operation in the autumn of 2003.

Project overview

2. West Rail is a domestic mass transportation facility between West Kowloon with Tuen Mun. The 30.5 km route links the five districts of Sham Shui Po, Tsuen Wan, Kwai Tsing, Yuen Long and Tuen Mun with stations strategically placed in each district. The new railway will interchange with the modified Light Rail at Yuen Long, Tin Shui Wai, Siu Hong and Tuen Mun and the MTRCL at Mei Foo and Nam Cheong to form part of an integrated network.

3. At system opening in the autumn of 2003, it is anticipated that West Rail will serve about 300,000 passengers a day. This patronage is forecast to grow to about 500,000 a day by 2011.

4. Key features of the West Rail system include-

Journey time	30 minutes
Daily operational hours	19
Initial service provision	20 seven-car trains operating at three minute intervals at peak and between five to eight minute intervals at non-peak times
Ultimate capacity	33 nine-car trains operating at 104 second intervals at peak carrying up to 100,000 passengers per peak hour in one direction
Train capacity	The capacity of each car is 335 passengers
Number of stations	9
Maintenance centre area	32.5 hectares
Construction start	October 1998
Target opening date	Autumn 2003

Progress to date generally

5. At 30 June 2003, overall completion was 98% and it is targeted to commence revenue services in autumn this year.

6. Design, construction, installation and testing and commissioning of the civil engineering works and the railway systems works are substantially complete. The primary focus in the remaining period to opening relates to rectification of defects, completion of integrated testing, full trial running, satisfactory completion of joint emergency exercises and completion of Hong Kong Railway Inspectorate inspections leading to certification to commence revenue operation.

Civil works infrastructure

7. The 30.5km of track, viaducts and tunnels are complete as are ancillary buildings for ventilation and traction power. The West Rail Headquarters building is complete and occupied by the operating division. Depot infrastructure and the maintenance centre are substantially complete and being utilized by the operations teams. The nine stations are in the final stages of defects correction and are being progressively taken over by the operations teams, particularly in the “back of house” areas essential for trial operations. Facilities within stations such as access gates, ticketing machines, information displays, platform screen doors, lifts and escalators are being commissioned and operated to develop reliability and ensure safety.

8. First round inspections for fire services, buildings department and the railway inspectorate are complete. Rectification of defects is progressing well and all inspections will be completed by September 2003.

Railway systems

9. All railway systems have been installed and are undergoing stringent testing under operating conditions. All train consists have been delivered and commissioned and are now being used in trial operations.

The commissioning process

10. The commissioning process comprises off-site tests, known as factory acceptance tests, and on-site tests. The on-site testing comprises partial acceptance tests (PAT's), systems acceptance tests (SAT's), tests on completion (TOC's) and trial operations. Each set of tests is designed as a progressive regime starting with individual parts or components and building up to individual systems and then to integrated systems working in harmony. Quality control processes mean that tests must be passed at each stage, validating that specified requirements are met, before progress is allowed to the next stage.

11. West Rail has carried out over 4,700 PAT functional tests comprising 3,810 on civil works and 890 on railway systems works and 1,419 SAT's on combined civil and railway systems works, a key feature of which is that these tests can be carried out remotely from the Operational Control Centre. TOC's comprising 72 tests to confirm individual performance and integrated compatibility were all successfully completed by 18 June 2003.

12. The final phase, trial operations, commenced on 17 June 2003.

Trial operations

13. The trial operations phase objective is to gradually increase the frequency of trains running on the mainline. This will facilitate the identification of hidden faults in the systems and allow prompt rectification, allow railway operators and maintenance staff to build up their competence, allow operating rules and procedures to be fine tuned to suit actual conditions and demonstrate towards the end of the trial operations period, that the railway is capable of providing a safe, efficient and reliable service to passengers.

14. During the first three weeks of trial operations a total of 249 hours of train operations were successfully achieved, 151 hours during the first two weeks increasing to 98 hours for the third week. No trial operations were planned for Sundays, as track access was needed to allow contractors to carry out testing and remedial works along the track. From a planned start using four trains an hour, train frequency has been progressively increased to 12 trains an hour throughout the day. This would be equivalent to normal

days off-peak service. On selected days, up to 20 trains have been put into trial service.

15. Up to 8 July 2003, 692 drills and exercises were successfully conducted at stations, on trains, in the Operations Control Centre and in the maintenance depot.

16. Trial operations will continue throughout the summer and in time, a full weekday timetable will be introduced with the frequency of trains building up to 20 per hour per direction in the peak hours. The aim is to achieve a sustained period of consistent punctuality and service reliability as a prelude to the start of revenue operations this autumn.

Construction safety

17. Overall safety performance remains very good with an achieved incidence rate¹ of 31 versus a West Rail target of 60. The industry norm in Hong Kong is 114.

Public Transport Interchanges and other Entrusted Works

18. Construction of public transport interchanges at Nam Cheong, Tsuen Wan, Kam Sheung Road, Yuen Long, Long Ping, Tin Shui Wai, Siu Hong and Tuen Mun is advancing to meet the dates for commissioning and opening agreed with the Transport Department. These facilities will be ready for railway opening.

19. Essential connecting roads and pedestrian facilities for all stations will be completed in tandem with the railway commissioning. The Corporation had also committed to providing a number of pai laus for village communities located along the alignment. Some of these have been built and a number will be completed after railway commissioning. The Corporation remains committed to completing these and is including outstanding works in a new contract where works are expected to be completed by the summer of 2004.

¹ The incidence rate is expressed as the number of accidents per year per 1000 workers.

Environmental Matters

20. Liaison is ongoing with the Environmental Protection Department of Government to ensure compliance with the West Rail environmental permit (EP). Noise measurements have been taken and the initial results submitted to EPD demonstrate compliance. The first phase of the wetland re-creation work, including parcels of land near Chi Ho Road in Kam Tin, has been completed and is now undergoing the establishment period to attract wild life. The second phase, including parcels of land north of Kam Sheung Road Station, along the Main Drainage Channel and Tai Lam Tunnel North Portal is also progressing towards completion. Permanent marsh and terrestrial habitat construction has been substantially completed.

21. In addition to compliance with the EP, the Corporation must comply with statutory noise requirements. Complaints about night time noise from residents of Sun Yuen Long Centre, adjacent to Yuen Long station, have been received. Research including noise measurements undertaken by the Corporation's acoustic specialist has determined that additional noise was caused by the rail condition and over night running was suspended between Yuen Long and Long Ping from 27 June 2003. Work to grind and polish the rail has been successful in reducing the noise levels from the wheel to rail interface to below statutory limits. Nevertheless, a longer-term problem has been identified and additional noise mitigation measures will be required. These are being designed and will be put into place for railway opening. Other complaints received from residents at Long Ping, Tin Shui Wai and Tuen Mun are being dealt with on a case-by-case basis.

Transport Division Restructuring

Generally

22. To coincide with the commissioning of West Rail and the expansion of the Corporation's railway network, the Managing Board has approved a plan to restructure and combine all its transport divisions into a single business unit. This will enable the Corporation to manage changing operational requirements more flexibly than at present and reduce costs.

23. The new division will be led by a Senior Director, responsible for transport strategy, supported by a Director responsible for front line

operations activities. The restructuring is being implemented in phases from May 2003 until West Rail commences operations at which time the re-organisation will take full effect.

Recruitment and Training

24. Major progress has been made in both recruitment and training in the past few months. About 96% of the staff required for operations is in place, with the remaining 4% to be recruited by the end of July 2003. About 2,000 staff for the future Transport Division have been deployed for the operation and maintenance of West Rail.

25. About 85% of the training programme planned for the commissioning of West Rail is complete. All operations and engineering staff have gone through the necessary classroom training and are undertaking on-the-job training through participation in the trial operations that commenced on 17 June 2003. Refresher training has commenced recently and will continue to be conducted regularly for the operating railway.

Park-and-Ride

26. Car parking spaces will be available to be operated as a park and ride facility at the west side of Kam Sheung Road station. There will also be adequate parking spaces near Tsuen Wan West, Tin Shui Wai and Tuen Mun Stations, where a potential demand for park-and-ride may exist.

Public relations

27. The Corporation plans to launch a series of publicity and public education activities, starting from middle of this year, to familiarise the general public, and in particular, potential passengers with the features of the new railway and the service it will provide. This will be done through exhibitions, briefings, talks, community programmes, visits and station open days. The Corporation is including time in its plans to allow some charity events to take place, before opening if possible.

Conclusion

28. Trial operations continue to proceed providing operations staff with hands-on experience. Faults are being identified allowing solutions to be developed and implemented promptly. Overall system reliability is increasing. Statutory re-inspections for outstanding and rectified works are being arranged before the end of trial operations to ensure safety and reliability of train services. Maximum effort continues to be made to ensure that the project will be fully ready for revenue operations to commence in the autumn.

Kowloon-Canton Railway Corporation
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