

# TECHNICAL/ECONOMIC TOOLS TO ENHANCE MAINTENANCE MANAGEMENT

## RAIL MANAGEMENT MODEL

A Rail Management Model (RMM) for Hong Kong's MTR Corporation was developed incorporating the findings from several field and laboratory studies and extensive analyses (including finite element analysis, wheel/rail contact stresses and vehicle/track dynamics) to improve the wheel-rail interaction characteristics.

- RMM is a powerful simulation and general planning management tool;
- RMM determines and recommends on a track section by section basis the most cost effective rail maintenance and replacement strategies;
- RMM quantifies the economic consequences of deviation from the optimum procedures.



## RAIL GRINDER SCHEDULER

The Rail Grinder Scheduler (RAGS) was developed for Hong Kong's MTR Corporation to complement the Rail Management Model.

- RAGS utilises the information provided by the RMM to generate a grinding priority rating depending on the conditions (for example, severity of corrugation, track possession time, curve types in a particular section of track etc.,).
- RAGS determines an optimum grinding schedule which effectively achieves the desired rail maintenance and replacement strategies for the entire MTR system.



## TRACK DESIGN AND MAINTENANCE MODULE

The Track Design and Maintenance Module (TDMM) was developed for the Australasian Railway Systems.

- TDMM is a flexible technical and costing tool aiding the design of cost-effective new railway track structures;
- TDMM can be applied by any railway system to assist in the selection of the most economical and technically acceptable sleeper spacing, sleeper type and ballast depth for specific conditions;
- TDMM also assesses the effects of changes in operating conditions on existing railway track.