

# Works Planning and Possession Management



## Background

The planning and management of engineering possessions is a complex activity with significant risks. Work needs to be planned weeks or even years in advance and carried out to avoid interruption of train movements and furthermore if engineering works are not completed further possessions may incur additional cost

## The Challenge

A key requirement of modern railway operational analysis is the ability to analyse and assess possession management to ensure the successful completion of planned engineering projects whilst reducing levels of both planned and unplanned disruption to train services. Like many railways Network Rail faces numerous challenges when planning and managing possessions including:

- ▶ ensuring applicable safety systems and processes involved in the planning of work-flows and possessions
- ▶ the need to increasingly move towards a 24-hour a day, 365 days a year operation, whilst simultaneously maintaining the infrastructure throughout the year to ensure the safety and reliability of the network
- ▶ the possible need to plan and agree engineering projects with the train and freight-operating bodies many months in and sometimes years in advance of any possession
- ▶ works may form parts of bigger and more complex programs of work so if one part of a project plan changes, it could affect other stages of development
- ▶ potential demands on maintenance and engineering staff with work needing to be carried out at all times of day and night.
- ▶ include non-disruptive possession for the redevelopment of major stations such as St Pancras, King's Cross and Reading, and also for major infrastructure works such as Hitchin Flyover and Blackfriars Bridge. Our particular expertise includes:
  - ▶ engineering train performance and root cause analysis for late arrivals and improvement measures
  - ▶ logistical assessment for problematic possessions to ensure lessons learnt incorporated in future possessions
  - ▶ supplier assessment to document performance of suppliers and ensure their robust management;
  - ▶ works planning assessment to ensure appropriate time is planned for works with sufficient contingency time;
  - ▶ protection assessment to correctly calculate the time taken for the establishment and removal of protection on different routes.

## How We Can Help

Network Rail has a strong experience in the area of possession management and analysis. Recent successes in possession management in the UK



## Reading Station Redevelopment

Reading station has recently been completely re-developed including an additional 5 platforms which were designed, developed and installed in one of the biggest stations outside London. This scheme was part of an £850 million project which was developed under budget and around a year earlier than originally planned.

Reading station rebuild and re-signalling scheme was undertaken primarily at nights and weekends with some discreet major possessions to minimise delay and run the majority of train services.

The project planning required possessions to be locked down with detailed timings over a year before work commenced and as well as discussion and liaison with train operators, customers, local authorities and road users for major civil engineering works.

## Limited time for possession work requires production techniques for renewal works

Our high output fleet of track and ballast renewal trains are utilised during mid-week and weekend possessions to ensure that the minimum disruption to train services is enacted. This has meant the development of single line working, as an operating technique, supplemented by staff warning systems to establish the safety of our staff, whilst running passenger and freight services. Once work is complete, lines are handed back for operation at up to 80mph to minimise delay to customers and follow up work is usually planned for subsequent night(s), so that normal speeds can be applied in the quickest time.

## Planning maintenance works

Our maintenance teams now plan around two years in advance of disruptive works to ensure that heavy

maintenance and critical assets can be planned at times that fit with the requirements of our train and freight operators. The timetable is 'locked down' around thirty weeks from the start of any work taking place to ensure that minimal changes are made to the timetable that the public can reference as well as the business requirements of Network Rail's train and freight customers.

## Lateral thinking - delivery of switch and crossing components

Our renewal work has been re-focussed over the last five years with particular emphasis on switch and crossing delivery. This has resulted in components being delivered in a 'factory finished' state on tilting rail wagons. Not only does this improve quality of the components and right first time when tested, it has decreased engineering time from over 50 to around 9 hours for the same volume of work.