

The Channel Tunnel Rail Link. An MPA seminar held at the Royal College of Pathologists, London on 18 May 2004.

Participants

More than 50 participants attended the seminar and the following organizations were represented:

Arup, BAA Plc, Bachy Soletanche, Bechtel Ltd, Bovis Lend Lease, CMS Cameron McKenna, Cross London Rail Links Ltd, Denton Wilde Sapte, Emtor Rail Ltd, Freshfields Bruckhaus Deringer, Gardiner & Theobald, Henley Management College, Herbert Smith, IBM, Ministry of Defence, Mott MacDonald, MTR Corporation, Network Rail, Rail Link Engineering, Risk Solutions, Scott Wilson Railways, Sir Robert McAlpine Ltd, Strategic Rail Authority, Templeton College, Transport for London, University College London, Union Railways North, Washington Group International, Willis Ltd

The Major Projects Association has maintained a watching brief on the Channel Tunnel Rail Link for over a decade. Presentations and seminars on CTRL have appeared regularly on MPA's programme of events, from the early days of how the CTRL project would be owned and structured, the funding, route options and challenging individual contracts to the more recent past, with the successful construction and commissioning of Section 1.

But there is nothing to match the excitement of a mega project, long in gestation and prickly with political sensitivity, as it nears completion. This is the case of Section 2 of the Channel Tunnel Rail Link. To take a new railway through a densely populated metropolitan area into a station created around and within a protected historic building is no mean task. The project is now into its endgame, with Section 2 and the "new" St Pancras due to open in 2007.

Technically, Section 2 is a massively complex project. The tunnels and bridges, the urban environment and the fact that St Pancras is to be shared between three major lines (the East Coast Main Line, Thameslink and CTRL) have all added to the difficulty. The project has a multitude of interfaces. As Section 2 has followed on directly after the Section 1 project, the lessons learned there are being applied on Section 2. Contract packaging, type of contract, partnering, interface management and health and safety have all benefited from the experience gained on Section 1.

Key features of the Channel Tunnel Rail Link (CTRL)

- The first major new UK railway for nearly a century
- 109km (68 miles) from the Channel Tunnel to London St Pancras, with a link to Waterloo
- Twin track with overhead 25kv AC electrification
- Maximum design speed 300km/h (186mph)
- Largest European loading gauge
- Designed to carry freight as well as passengers

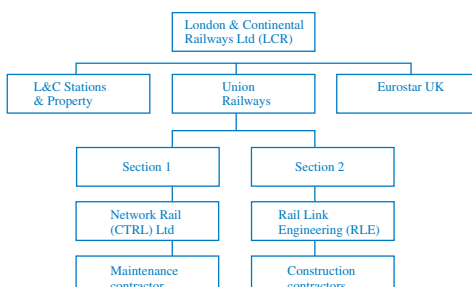
Key points

The single important driver is the alignment of the understanding of the scope of the work and the objectives between the client and the project management organization in a partnership arrangement, as well as being contractually and financially aligned. If the project fails to come in on cost, the client and the project manager will share the pain more or less equally.

Partnering has worked but it is not a soft option. Partners have had to be clear, open and even brutal at times. With the huge sums of money at stake, issues have been confronted honestly, both internally and externally.

Over the 13 years' life of the project, a superb team of the right calibre, with the right motivation and the right direction has been shaped. That is key for a complex project.

Organization of CTRL



Queen Elizabeth II bridge over the Medway



MPA events are confidential, although this summary has been compiled so as not to breach confidentiality. Full proceedings and entry to MPA events are available only to members.

The objectives of CTRL:

- to increase railway capacity between the Channel Tunnel, Kent and London
- to improve international and domestic journey times and
- to stimulate regeneration in the Thames Gateway and inner London.

Section 1

Section 1 runs from the Channel Tunnel to Fawkham Junction (48 miles). Work began in late 1998 and it was opened in September 2003. The out-turn costs were £1.9bn. It was built on time and within budget. It is now run by Network Rail CTRL.

Eurostar journeys now are more reliable and are shorter by 20mins. Punctuality is 92% currently as against 71% previously. Passenger numbers have increased by 20%. Further some rail capacity has been released in Kent.

Section 2

Section 2 runs from Southfleet Junction to St Pancras (24 miles). Work began on it in mid-2001 and it is due for completion in early 2007. The out-turn costs will be £3.3bn. Currently it is over 60% complete.

CTRL

There will be new fast trains, designed for freight and passengers. Once Section 2 is finished journey times will be improved by a further 20mins. There will also be a facility for new high-speed domestic trains from Kent into Stratford and St Pancras.

Strategies

- to align objectives, strategies and organizations
- to understand and recognize risk and place them with the people best able to deal with them
- to work with the right form of contract, namely the NEC
- to adopt a policy of partnering on the project and to develop a strong spirit of teamworking.

Risk management has been effectively systemized, with risks identified, assessed, tracked and eventually closed out.

Innovation has not be pursued for its own sake. Proven technology where it exists has been bought and used.

Change control is crucial to success. The change control system operates at contract level, without that the project would be unlikely to be delivered on budget or on time.

Training has been pushed right down to the front line. The training done on safety is probably the most significant work done on safety, on this project or any other.

Letting small enabling works contracts, for diverting utilities, moving roads and building bridges, has worked well for CTRL both on the tunnelling contracts in Kent and Essex and at St Pancras. They have removed some of the pressure on the schedule and costs from the main contracts.

Most importantly making sure that someone owns an issue, whether it is a risk, a safety issue, a reporting issue or a cost issue, has meant that someone is responsible for the accuracy and the timeliness of the data.

London tunnels and Stratford Station Box

Three tunnels contracts – 35km tunnels of 7.85m diameter, plus numerous cross passages.

6 tunnelling machines were used.

Costs – £247m/m³

Stratford Station Box is the largest station box ever constructed this side of the Atlantic – 1,100m long, 55m wide and a maximum of 25m deep.

Station costs per m³ £111.

