# CUTTING INTO THE CAPITAL

LONDON & CONTINENTAL RAILWAYS WAS SET UP IN 1994 TO BID FOR THE CHANNEL TUNNEL RAIL LINK PROJECT. **MARK BAYLEY** OF LCR EXPLAINS HOW RISK TRANSFER ON THE PROJECT WAS ADDRESSED.

In March 1994, the UK government issued tenders for the Channel Tunnel Rail Link (CTRL) project, the UK's first high-speed railway from the Channel Tunnel to London. London & Continental Railways Limited (LCR) was formed to bid for the project and assembled among its shareholders a set of skills to finance and project manage the construction of the CTRL and manage Eurostar train services.

**LONDON & CONTINENTAL RAILWAYS SHAREHOLDERS**

**Consultant engineers, project managers**
- Bechtel ▪ Halcrow ▪ Arup ▪ Systra

**Electricity supply**
- London Electricity

**Project finance**
- UBS Warburg

**Transport operators**
- National Express ▪ SNCF ▪ Virgin (until 1998)

LCR won the competition and, in February 1996, signed a concession agreement with the government to develop and construct the CTRL. Bechtel, Arup, Systra and Halcrow formed Rail Link Engineering (RLE), an unincorporated joint venture to act as project manager for the project. Under the arrangements, LCR also acquired:

- Union Railways Limited, which had taken forward the CTRL project from inception;
- Eurostar (UK) Limited (EUKL), the UK arm of the Eurostar service operated jointly with the French and Belgian national railways, SNCF and SNCB; and
- development lands at Stratford and Kings Cross, London, for urban regeneration and property development, and an interest in development land at Ebbsfleet in Kent.

In many ways, the CTRL was structured as a typical project finance initiative (PFI) and public-private partnership (PPP) project: tenderers competed for a concession to design, build, finance and operate (DBFO) a facility being procured by the public sector, and assume risk in doing so. However, the CTRL project differed from what became the conventional model for PFI/PPP projects in three key respects:

- The CTRL was many times larger than typical PFI/PPP projects. About 90% of concluded PFI/PPP deals have a capital value of less than £150m, whereas the total cost of the CTRL is about £5.2bn;
- LCR acquired not just the rights to the project but also the 100-strong team of people in Union Railways, which held a large amount of intellectual capital on the project. Its collective expertise could not have been transferred to LCR solely by means of a data room and due diligence, and was essential in reducing risk because of the project's scale and complexity; and
- LCR acquired a loss-making operating business in EUKL. Some PFI/PPP projects have involved the transfer of operating businesses, but invariably these are profitable and cash-generating. In the case of the CTRL, exposure to revenue risk forced the initial and radical restructuring of the project.

## FAILURE OF LCR'S PLANS FOR A FLOTATION

LCR's original financing plan envisaged that it would raise some £800m of equity through an IPO accompanied by a substantial debt-raising to cover a peak debt requirement of about £3.2bn. The government would also have contributed a grant of £2bn in present value terms[1]. However, the financing plan contained an important assumption that EUKL would reach break-even before LCR's flotation and subsequently generate cashflow for the CTRL project during the construction period.

By August 1997, it became apparent from the due diligence programme for the IPO and debt-raising that LCR's initial forecasts for Eurostar could not be achieved. In fact, Eurostar's trading has since proved to be significantly below all forecasts made in the CTRL competition, including those made by consultants issued by Government to potential bidders, as shown in *Figure 1*.

In January 1998, LCR formally requested the government to provide additional grant support in exchange for a government share in LCR's future profits and cashflow. This package would have cost Government between £1.3bn and £1.4bn. The government rejected this request, but it could not abandon or materially delay the UK's first attempt to build a high-speed railway. It therefore provided breathing space for LCR to achieve a more radical restructuring of the project and the allocation of risks which still met the government's objectives.

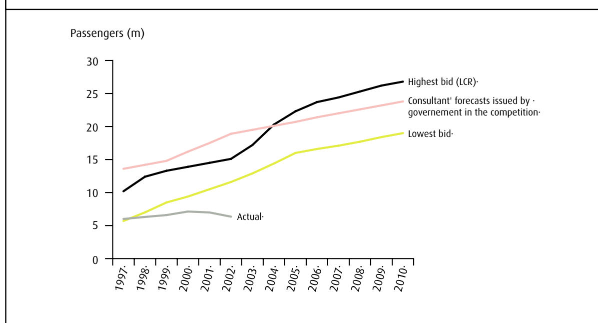
## 1998 RESTRUCTURING – A NEW FINANCING AND RISK TRANSFER STRUCTURE FOR THE CTRL

In response, LCR and UBS Warburg promoted a new structure for the CTRL project, which segregated the risks of Eurostar performance from the risks of CTRL construction and assembled separate risk transfer packages to deal with them.

**EUROSTAR RISK-SHARING.** Eurostar performance risk was shared under a management contract with Inter-Capital and Regional Railways Limited (ICRR), a consortium which included the two train operators who remained shareholders of LCR (National Express and SNCF) and SNCB as the third Eurostar partner. The management contract covers the period to 2010 and was structured around target levels of EUKL's operating cashflow in each year, based on a central case expectation at the time the terms were agreed. ICRR receives a management fee based on EUKL revenue and a 'gain-share' of cashflow above target. Against this, ICRR is obliged to contribute to EUKL a 'pain-share' of cashflow below target. Both the gain- and pain-share amounts were capped but were sufficiently large to incentivise ICRR to maximise performance of the business: the maximum amount risked against EUKL's cashflow performance over the remainder of the contract term is in the region of £130m. Although this is a capped exposure, it is equivalent to the size of a typical PFI/PPP project.

As part of the arrangements for the construction project described below, Railtrack also agreed to pain/gain revenue sharing, which would have resulted in a maximum contribution in pain-share of about £350m in reduced access charges over the same period.

**FIGURE 1**
EUROSTAR PASSENGER FORECASTS.




**THE CTRL WAS SPLIT INTO TWO SECTIONS AND CONSTRUCTION RISK ON THE FIRST SECTION WAS TRANSFERRED TO RAILTRACK.** Railtrack was initially deterred from participating in the CTRL by the size of the project, which would have obliged it to raise up to £1bn in new equity to back the risk and would have impacted unfavourably on its reported profits for some time. Railtrack was also concerned at taking on the full commitment prior to the outcome of its next regulatory review.

To facilitate Railtrack's participation, the CTRL was phased into Sections 1 and 2, as it is currently being built (see *Figure 2)*. Section 1 is from the Channel Tunnel to Fawkham Junction, via Southfleet Junction, in north-west Kent. At Fawkham Junction, Section 1 connects with the existing railway line to Waterloo International station. Section 2 completes the CTRL between Southfleet Junction and London St Pancras via new stations at Ebbsfleet and Stratford.

Both sections continued to be taken forward by Union Railways staff on a phased implementation programme for the whole project. At the time of writing, the Section 1 project is nearing completion later this year, on schedule and on budget, and the Section 2 project, while experiencing cost pressure in the labour market, is on budget and on schedule for completion in early 2007.

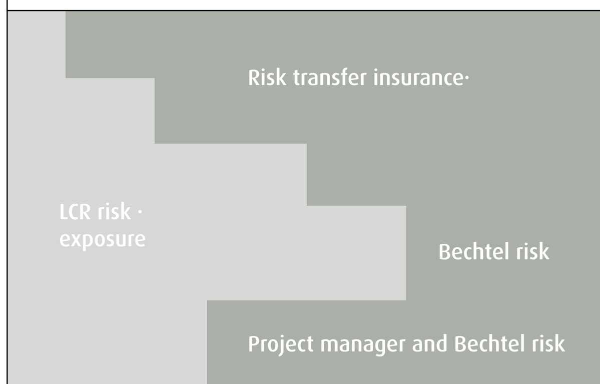
Railtrack appointed a managing director for the Section 1 project and agreed to purchase it following completion at a price based on the out-turn cost. In return, Railtrack would have received access charges from EUKL and Domestic Capacity Charge[2] payments from the government calculated to deliver a return on the basis of a *target* cost of £1,929m. In this way, all construction risk transferred to Railtrack. Railtrack's exposure was, in turn, partly mitigated by pain- and gain-share arrangements in the project management and construction contracts with RLE and the contractors.

**FIGURE 2**
CHANNEL TUNNEL RAIL LINK SECTIONS.

Railtrack had an option to undertake the Section 2 project on a similar basis, which in the meantime would continue to be taken forward by Union Railways staff under LCR's control.

**FINANCING SUPPORT.** In view of the risk transferred to private sector participants in both EUKL and Section 1 of CTRL, the government was prepared to provide a package of guarantees to support the restructuring. First, it agreed to guarantee the access charges that EUKL would pay to Railtrack for the completed Sections of the CTRL so that, apart from agreed levels of revenue-sharing, Railtrack would not be exposed further to the business and credit risk in EUKL. Second, the government agreed to guarantee £3.75bn of debt issued by LCR and, in February 1999, LCR proceeded to raise £2.65bn in issues of

**FIGURE 3**
THE COST OVERRUN PROTECTION PROGRAMME.




government-guaranteed bonds, with the remaining £1.1bn allocated to a subsequent financing of the Section 2 project.

The restructuring substantially improved the economics of the CTRL project by lowering LCR's cost of capital. Before the restructuring, LCR would have had to pay a high cost of capital of about 15% per annum and, to enable LCR to support this cost of financing its activities, the the government would have had to contribute the £1.3bn to £1.4bn of extra subsidy sought by LCR.

LCR's cost of capital following the restructuring was a blend of the cost of the government-guaranteed debt (4.8% per annum) and the rate of return which LCR would have had to pay in access charges to Railtrack for Section 1 and, if Railtrack exercised its option, Section 2. If the arrangements with Railtrack had remained in place and it had exercised its Section 2 option, LCR's cost of capital would have fallen from 15% to around 8.9% per annum. As a result, the amount of support required from the government fell to a central case estimate of £140m and, in the downside, £360m in present value terms. This support was provided through a liquidity facility which the government agreed to make available to LCR to fund EUKL's payment of access charges over the medium term.

Although the government support for the CTRL project increased and it became the principal stakeholder in LCR's economics, the 1998 restructuring achieved (at the time) complete risk transfer for Section 1, as well as significant risk transfer for EUK1. All that remained was for Railtrack to exercise its Section 2 option and take construction risk on the remainder of the link.

## 2001 RESTRUCTURING – RAILTRACK SURRENDERS ITS OPTION OVER SECTION 2

In 2000, Railtrack put forward revised proposals for exercising its option and taking forward Section 2. These proposals were not acceptable to LCR or to the government. They would have increased the cost of taking forward Section 2 by some £560m in present value terms and diminished the amount of risk transfer to Railtrack.

**A COST OVERRUN PROTECTION PROGRAMME TRANSFERRED CONSTRUCTION RISK ON THE SECTION 2 PROJECT.** Instead, LCR put together a financing and risk transfer package for Section 2, with a cost overrun protection programme developed and arranged by Bechtel. The programme covers the first £600m of cost overruns arising from the design, engineering, project management and construction of Section 2 above the target cost of these activities. This was equivalent to a 95% confidence level of cost overrun on the project. Risk was shared with Bechtel and under an insurance programme placed by Bechtel with a group of leading insurers.

The programme was highly innovative and unprecedented in scale. It exceeded previous programmes in the insurance market for cost overrun risk insurance by an order of magnitude. The key to the structure was that Bechtel and RLE absorbed a substantial part of the first layers of cost overrun above the target cost where cost overruns, if they are going to materialise, are most likely to do so. The insurers knew that the project managers and LCR would suffer a significant degree of pain before the insurers became liable to contribute to overruns under the programme. Both the project client and the project managers would therefore be highly incentivised to minimise the insurers' exposure. An illustrative diagram of the programme is shown in *Figure 3*.

Combined with the risk-sharing arrangements with RLE and contractors referred to above, LCR expects to reduce by about 60% to 65% its exposure to overruns on the Section 2 project in the areas of cost covered by the programme.

**FINANCING OF SECTION 2.** Once the cost overrun protection programme was in place, the government consented to the issue by LCR of the remaining £1.1bn of government-guaranteed bonds allocated for Section 2 providing 50-year financing for LCR at a rate of 5.1% per annum.

The proceeds of Railtrack's purchase of Section 1, amounting to some £1.6bn, also formed an essential component of LCR's financing plan for Section 2. It was therefore in all parties' interests to facilitate the financing of this purchase in return for Railtrack's agreement to continue assisting the Section 2 project and act as its eventual operator.

Railtrack intended to finance the purchase by securitising the Government-guaranteed access charges paid by EUKL and the Domestic Capacity Charge payments paid by Government. However, the access charge payments are vulnerable to reduction during any prolonged closure of the CTRL.

This would have detracted from their principal attraction as, in essence, a UK Government credit and prevented Railtrack raising the required amount in a securitisation. LCR, Railtrack and the Government therefore agreed to a set of arrangements that agreed to address the risk of extended closure differently. EUKL and the Government would pay sufficient access charges to service the debt raised to finance the purchase of Section 1, and Railtrack would compensate the parties if, as a result of this commitment, they ever paid any more than was actually owed.

The new arrangements for Section 2, including the cost overrun protection programme, achieved a saving for LCR of some £300m in present value terms, compared with the original arrangements over which Railtrack was granted an option. Following the 2001 restructuring, LCR's cost of capital fell to around 6.6% per annum (taking into account the premia payable under the programme).

## 2002 RESTRUCTURING – RAILTRACK RELINQUISHES ITS INTERESTS IN SECTION 1

In October 2001, Railtrack plc entered Railway Administration and LCR began negotiations to purchase Railtrack's interests in Section 1. Ultimately, a price was agreed of £375m which reflected the following:

- the expected out-turn cost of Section 1, which was then 80% complete in cost terms;

## 'GOVERNMENT GUARANTEES WERE PROVIDED BECAUSE IT WAS POSSIBLE TO STRUCTURE 'FRONT-LINE' RISK TRANSFER IN AREAS WHERE RISKS ARE MOST LIKELY TO MATERIALISE'

- the impact of revenue sharing, which would have reduced EUKL's access charge payments to Railtrack for Section 1;
- the refinancing that Railtrack could have achieved through a securitisation of access charges; and
- the fees Railtrack would have earned as operator of the CTRL (valued at £80m).

Although Railtrack exited the CTRL project at the conclusion of the sale in October 2002, the price which LCR paid reflected, to a significant extent, the outcome of risks that Railtrack had assumed in its participation in the project – particularly in relation to revenue sharing with EUKL and the expected out-turn cost of Section 1. It was similar in effect to closing out a swap position with a termination payment. For its part, LCR is able to step into Railtrack's shoes in the de-risking arrangements for securitising Section 1 access charges, but will be able to retain all residual cashflow after debt service and so achieve significant further savings over the 2001 restructuring.

Following the securitisation of Section 1 access charges, the project will be financed with an estimated cost of capital of about 5.2% per annum, while still achieving a significant measure of risk transfer[3]. LCR will also be predominantly funded with long-term debt that matches repayment to the long-term cashflows of the project.

### THE POSITIVE LEGACY OF RAILTRACK'S INVOLVEMENT

While the risk transfer arrangements with Railtrack have been closed out, it is important to note a key contribution which Railtrack nonetheless made to the CTRL project in relation to construction interfaces, and which now forms an important component of the way the CTRL is currently structured.

The CTRL has been described as a 'greenfield project' but in fact has significant interfaces with Railtrack infrastructure along its route and particularly at Ashford, Stratford and St Pancras. At these interfaces, railway construction *"can't go over it, can't go under it, has got to go through it"*. In scale, work on domestic rail infrastructure required for the CTRL is a significant project in its own right, at a total cost of some £400m. In addition, the CTRL project is providing some £150m of new infrastructure for the domestic network.

Despite the contractual arrangements with Railtrack governing how work on its infrastructure would be approved and carried out, it initially proved difficult in practice to make these arrangements work. During the 1997 and 1998 development period, this was regarded as one of the most significant threats to cost and programme for the CTRL. After becoming involved in the Section 1 project in 1998, Railtrack and Union Railways instituted new arrangements to handle work required for the CTRL on Railtrack infrastructure. These arrangements were subsequently formalised into a 'Compliance Review Group Agreement' for Sections 1 and 2 which continues to work effectively despite Railtrack's exit from CTRL. Railtrack's economic interest in the CTRL project, albeit temporary, had the effect of structuring into the project a substantial degree of risk mitigation.

### IMPLICATIONS OF THE CTRL FOR RISK TRANSFER IN FUTURE RAIL PROJECTS

There is currently much debate on how future enhancements to the rail network might be structured using DBFO and design, build, finance and transfer (DBFT) models and special purpose vehicles (SPVs). The CTRL experience contains several features which are relevant to the way risk transfer arrangements for these enhancements might be structured.

Segregating construction and revenue risks, and implementing the project in phases, have brought significant benefits to the CTRL. The transfer with the construction project of an operating business dependent on significant revenue growth to achieve profitability proved to be a risk too far (as it has been for some light rail projects). In future rail projects, segregating these risks and addressing them separately, as with the CTRL, may well lead to a more successful outcome.

One of the most dramatic effects of the restructuring was a reduction in the cost of financing the project from a cost of capital of about 15% per annum to around 5.2%, as a result of the government guarantees provided for LCR's debt. This was accompanied by a change in approach from full risk transfer to the private sector to specific risk sharing around target costs and central case projections. This type of risk transfer could be called 'front-line risk transfer'– that is, risk transfer in areas where risks are most likely to materialise and where the battle against cost-overruns is most likely to be fought. While risk-sharing in these arrangements is capped, the amount placed at risk by the private sector in the CTRL project is nevertheless typical of the amounts placed at risk in the larger, conventional PFI projects and provides significant incentive to the participants to ensure that their expertise is fully committed to the project. The participants should be no less incentivised to act efficiently, manage cost and handle risk than they are elsewhere under the PFI/PPP programme, and just as incentivised to innovate and provide creative workarounds and solutions to project issues.

### SHARING THE RISKS

The CTRL project has been through a series of restructurings. However, an advantageous structure has emerged for financing the project and sharing risk. Government guarantees have enabled the project to be financed at a very low cost of capital, with long-term debt suited to the project's long-term cashflows. The guarantees were provided because it was possible to structure 'front-line' risk transfer in areas where risks are most likely to materialise. Some aspects of the risk-sharing arrangements are highly innovative and unprecedented in scale. Principal elements of the risk transfer arrangements are relevant to other large rail projects.

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***Notes***

*[1]Discounted to January 1997 at a rate of 6% per annum (real) and expressed in January 1997 prices. Unless otherwise stated as being expressed on this basis, all other references to present values are discounted at 6% per annum to the time of the events described*

*[2]Payments in respect of 40% of track capacity on the CTRL to be made available for domestic train services*

*[3]This takes into account the net payment to Railtrack of £295m (after sale of the operator arrangements to Network Rail) for its interests in Section 1 and the premia for the Cost Overrun Protection Programme*