

Service Implementation

In recent years, we have reported on our planning work in three corridors where service improvements were needed. We are delighted to report that these are now being implemented.

Trying to provide the capacity needed to serve travel-to-work peaks at Sellafield has been a problem for planners and operators of the Cumbrian Coast for years. Our analysis for Cumbria CC, however, highlighted that carrying significant increases in demand from new employment would be physically impossible, without something being done. Many of the apparently-obvious solutions involved diesel multiple-unit (DMU) rolling stock which was simply not available. One of our recommended short-term options (the use of locomotive haulage of longer trains of conventional stock, to serve the Sellafield peaks) began with the timetable change in May.



Class 153 leaves Sellafield

A second issue we highlighted, that of early-morning access from the North, has also been partially addressed, with an earlier train from Carlisle (05:15). We hope that some of the other

problems we raised can successively be addressed in coming years.

Another line deserving service improvement was that between Nottingham and Lincoln, where an hourly service had previously tried to satisfy both local and regional needs. This service is now half-hourly, enabling a faster train to run usually non-stop between Nottingham and Newark, and a slower service to call at all stations on a more regular basis.

Back in Cumbria, a second project there had attempted to provide the case to retain through trains to Manchester, which were under threat from a shortage of DMUs and creeping electrification. Here, the service specification for the new Northern franchise (for which tenders were being submitted as this went to press) included a requirement to operate 8 through trains per day between Barrow and Manchester, thereby providing the economic lifeline to the outside world that Furness stakeholders wanted.



Class 185 on a Manchester service at Ulverston

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Editorial

The implementation of results of three earlier projects, as described on the front page, provides us with real satisfaction that we have been able to provide the case for the cost-effective development of the railway. We are of course grateful to the Department for Transport and their political masters for providing the increased level of financial support that our proposals required.

However, despite the current Government budgetary problems, support for rail transport seems as widespread across the political spectrum after the recent General Election as it was before. The wider value of rail in supporting the economy seems to be understood, whether in "Rail in the North" schemes or for Crossrail in London. Rail traffic volumes continue to march upwards, supported by a slowly-recovering economy and a string of minor service improvements.

Reductions in the level of operating support for the existing railway seem to be being spent on increased output, but Britain is still in an enviable position that the net cost of operational support to the national railway is slightly negative. This is in contrast to some of our competitor countries; the French have recently highlighted a subsidy of €710m per year for long-distance non-TGV services – clearly, they need the help of a consultancy such as ours! So, if you or anyone you know needs help with the commercial or operational planning of their railway, do let us know.

Nigel S Harris

Project News: Local

Station Access Surveys

Although operating comfortable convenient and punctual train services is a key objective of the railway industry, this is of limited use if passengers have difficulty accessing the network in the first place. The London Borough of Southwark therefore commissioned The Railway Consultancy to undertake surveys of passengers at six smaller stations within the borough, to develop an understanding of their travel patterns and to identify any difficulties they had in accessing the station.



Local stations need to be easy to find, and access to them supported by appropriate information, facilities and equipment – there is room for improvement at this station (South Bermondsey)

Difficulties when accessing the station included public realm issues such as uneven pavements, the ability easily to interchange to/from other modes (e.g. the provision of cycle racks or location of bus stops) and physical access arrangements within stations (e.g. too many stairs).

The passenger surveys were supported by independent station access audit surveys which saw Railway Consultancy staff examine access routes to/from the stations. This allowed us to observe factors raised by passengers in the surveys, to undertake an objective review of access issues, and to propose practical access solutions for future implementation.

The surveys were supported by passenger counts (in order to establish sampling rates) and an analysis of each station's fitness-for-purpose within the requirements of the 2010 Equality Act. For this, we were supported by Rail Accessibility Ltd, who developed some physical solutions to provide step-free passengers to access platforms.

The evidence collected through the station access surveys and audits helped form a number of recommendations as to potential schemes to improve accessibility to/from the station for implementation in the short/medium and longer terms (subject to available funding). This will provide a practical basis on which L B Southwark could take forward initiatives with others in the railway industry.

¹ East Dulwich, North Dulwich, Nunhead, South Bermondsey, Sydenham Hill & West Dulwich

Analysis of High-Frequency Operation

S-bahn Munich runs one of the most intensive suburban railway services in the world, with 30 trains per hour through the core tunnel in peak periods. This is achieved through key features including LZB train control, and separate platforms for boarding and alighting at key stations.



Separate platforms for boarding and alighting (as here at Karlsplatz) clearly help maximise train throughput

However, although on-time performance has been rising (reaching almost 96% in 2014), management was aware that there were a large number of small perturbations which were preventing further improvement. In addition, two different methods of train despatch are authorised, and the difference in time taken between these might also be contributing to irregularities in the service, which needs to operate almost like a pipeline.

The Railway Consultancy was therefore invited to apply its analytical approach to this problem, identifying and quantifying a range of sub-threshold delays through a programme of detailed operational surveys. Although despatch was seen to be initiated quickly, a higher-than-expected number of passenger door forcing incidents were observed, reflecting the lack of staff actually located directly on the platform. These findings have challenged management to consider changes in the despatch process.

Surveys at Ostbahnhof (at the Eastern end of the core section) also highlighted the importance of train service regulation at converging junctions, leading to further suggestions for improvements to despatch and timetabling processes. We were also able to make some recommendations for the design of future rolling stock.

Benchmarking

Since the inception of the CoMET group 20 years ago in 1995, the Railway Consultancy has been supporting the Railway & Transport Strategy Centre (RTSC) at Imperial College, in its metro and railway benchmarking programmes. As well as CoMET (which compares large metro railways), groups have subsequently been set up to improve the performance of smaller metros (Nova) and suburban railways (ISBeRG). At a high level, the groups apply a balanced scorecard approach across a range of KPIs, but their real benefit comes from their more detailed work, either through larger “case studies” or smaller “clearing-house studies” on topics of mutual interest to members. These enable practical solutions to be shared amongst the group, and have led to some significant improvements in areas such as:

- increases in revenues;
- reductions in operating costs;
- more effective expenditure in capital programmes;
- improvements in train service performance; and
- greater clarity of communications to politicians and users.

It has also been possible to share clearer visions of the problems facing many systems – for instance, the key role of fares and funding in enabling asset maintenance to support railways into the future.

The Railway Consultancy has been used to provide technical input to a number of studies on operational matters, for instance in minimising station stop times, turnround times at the ends of lines, and energy, and in managing station staffing, and railway systems during periods of reduced infrastructure availability. We have also been able to share experiences from our projects around the world with the railways involved in the benchmarking groups, to the mutual benefit of both.

For further information on Imperial’s benchmarking activities see <http://cometandnova.org/> and <http://www.isberg-web.org/>



MTR participates heavily in the benchmarking groups, with its Hong Kong, London & Melbourne (pictured) operations all represented.

Project News: International

Route Strategy

Network Rail faces huge challenges in specifying and delivering major upgrades to the British national railway network whilst simultaneously trying to manage the operation of unprecedented number of trains. Nowhere is this more true than on the Great Western route, where current projects include electrification and the associated new (IEP) rolling stock and service patterns associated with it. In order to ensure that the future more frequent train services run smoothly, a range of infrastructure interventions are expected to be required. But where? And what types of project?

Although ideas for a wide range of schemes (such as grade separation) had already been generated in-house, Network Rail commissioned the Railway Consultancy to undertake an independent review of what was proposed, taking into account stakeholders' objectives and best practice train service planning. Starting from expected changes in land-use and passenger demand, and considering the most cost-effective ways of fitting railway demand into the capacity available, we analysed the different route sections between Paddington and Oxford/Swindon. In some instances, we were able to challenge assumptions and provide alternative

suggestions for achieving strategic objectives. In other places, we were able to endorse developing thinking as being logically-sound and prudent in terms of expenditure. Specific recommendations were made on such issues as the number and layout of running tracks (including loops) and the location of grade separations.



Didcot, with its junctions, is an area where further infrastructure investment is expected, potentially involving grade separation. An FGW HST for London calls, before completion of current electrification works.

New Colleague



We are pleased to welcome Rory Maxwell as a Senior Associate. Rory has almost two decades of experience in the railway industry, spanning benchmarking, customer service, operations, rolling stock, maintenance, project management and, most recently, bidding and commercial strategy. This work has included deploying emerging technologies into the railway industry, including early online ticket sales, smart card systems, CBTC and using Big Data applications to enhance maintenance procedures and customer care.

Publications

We have continued to write up our work so that it can be shared with others, and this included a conference paper presented in Istanbul on "A European Comparison of Station Stops", which highlighted the similarities and differences in some of the countries in which we have worked.

Whilst apologising for the delay, three books are expected to appear in the next 6-9 months. "Designing and Maintaining the Urban Railway" has just gone to the printers. There will also be an updated version of the Wheel:Rail Interface Handbook, and a smaller volume provisionally entitled "Introduction to Railway Operational Planning". This book, partly using material translated from Norwegian by our colleague Hans, is designed to provide practical guidance to those involved in timetabling and crew planning on an everyday basis. All will be available through www.anharris.co.uk.

The Railway Consultancy provides services across areas such as demand forecasting, operational planning, strategy and business development; for more details see our website www.railwayconsultancy.com

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