

# Service Specification

The Cumbrian Coast line provides a key link between Carlisle and Barrow, via intermediate centres such as Workington, Whitehaven and Sellafield. However, poor infrastructure and a less-than-hourly frequency make for an unattractive service which nevertheless gets overcrowded during peak periods. Cumbria CC was faced with a likely significant increase in demand from new employment in the Sellafield area (for which existing capacity would clearly be physically insufficient), and a rail franchise about to be renewed and therefore with a specification being worked on by the Department of Transport. After competitive tender, the Railway Consultancy was awarded a contract to provide proper data (against which decisions about the future of the line could be made) and a reasoned case for improvement.

We surveyed passengers on a number of trains on the line during November 2013, as well as undertaking on-train counts. As well as a range of minor improvements inevitably desired, there were many responses wanting the filling-in of key gaps in the weekday service, as well as restitution of Sunday service. However, we have rarely come across such hardship caused by a lack of rail services, with consequences including loss of earnings from the inability to work on Sundays, the need to have additional days off work if going away for a weekend, and replacement taxi fares costing up to £70.

Starting from an analysis of the different needs along the line (serving town centres for employment and shopping activities, and providing connections at Carlisle and Barrow), we therefore developed a regular-interval timetable specification, to be supplemented by extra trains in peak periods to carry the expected workers traffic

to/from Sellafield. However, service proposals also need to take into account affordability, which is a key issue on a line with relatively few services, and as many as 14 manually-operated signalboxes. Our proposals for longer hours of operation were therefore tempered by knowledge of operating costs and government Value for Money considerations. Nevertheless, we were able to recommend the addition of some Sunday services along the entire length of the route, albeit contained within an 8-hour period which coincides with one signalbox shift. Our report was used as the basis for Cumbria CC's approach to the Department for Transport for greater support for the line. We look forward with interest to see what the franchise specification includes – and what bidders subsequently propose!



*The Cumbrian Coast line at Foxfield*

This work, in independently assessing appropriate levels of service for inclusion in franchise specifications, was then extended to cover the Furness line, between Barrow and Lancaster.

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## Editorial

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After a slight lull during the recent recession, and problems with franchising in Britain, the last 12 months have been “full on”. Franchising has recommenced, and we are pleased to have been on the winning side for both Serco’s bid to operate the Scottish sleepers, and Go-Via’s bid for the massive Thameslink, Southern & Great Northern franchise. Of course, one of the disadvantages of being a consultant is that you can’t say anything about bids until after the winner has been declared, so all we can say is that we have been contributing to a number of other franchise and concession bids, both in Britain and abroad.

We have also been involved in service specification for other clients, in what is becoming a testing time, as finances bite. Significant operating cost increases are being seen across Britain, as demand exceeds the capacity of various network elements. Trains are being lengthened from 8 to 10 to 12 cars in the South, whilst at the other extreme, single-car units are being unable to cope with demand on rural routes. Unfortunately, railway economics with the latter often means that increasing train lengths may still not lead to a reduction in the subsidy required, even though some costs (e.g. signalling and train driving) remain the same. However, we believe that it is unacceptable for passengers to be unable to board trains if the next service is an hour or more later. We also do not believe that service frequencies of less than hourly are appropriate across

most of Britain, given population densities and the competitive environment. But getting those principles implemented when there is a shortage of funds will be difficult for the Department for Transport.

A shortage of money is not the only problem affecting Britain’s railways: a shortage of diesel-powered trains is now becoming acute. Our recent analysis shows that the country is about 24 trainsets short of what is needed, and this shortfall has been a major contributor to the lack of progress made in service development by some of our clients. With demand continuing to increase at c.3% p.a., the problem is getting worse very quickly. Electrification cannot come too soon – not only for the lines directly affected, but also for others, for whom diesel trains can be displaced.

All this activity is good not only for us, but for the railway and economy more generally. Although we have some reservations about the official figures, there is no doubt that current rail demand is at a historically-high level. Even better, the proportion of British people using the train at least annually has risen from about 45% to c. 55%, which gives the railway a sounder political base. Forthcoming improvements such as the Galashiels reopening and Crossrail will continue to stimulate demand, and we shall be doing our best to support our customers in providing for and delivering that demand.

*Nigel S Harris*

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## Other Activities

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### Training

As well as taking university courses on railway planning issues at the Universities of Newcastle & Birmingham (in the UK) and Sydney (Australia) (on all of which courses industry delegates are welcome), Railway Consultancy staff also provide training directly for clients. Over the years, we have led courses for civil servants, consultants and train operators’ staff. In all circumstances, material can be delivered to new or junior staff needing an introduction to key principles, or to more established employees (such as driver managers) looking for an increased breadth of knowledge as part of their professional career development. We have also organised study tours for delegations of foreign railway officials – including those RZhD staff supporting the Sochi Winter Olympics. Have you any staff who would benefit from our expertise?

### Supporting Excellence in the Railway Industry



For the second year, Richard Talbot has been on the judging panel for the prestigious Customer Service Excellence award at the Rail Business Awards. His role was to review a number of submissions from across the industry, demonstrating provision of customer service going beyond the ordinary. Our wide ranging experience in the rail sector, including the first-hand delivery of rail operations and station management, provides us with the level of insight needed to judge this award.

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### High-Speed 2

In the early days of discussion of the proposed High-Speed line from London to the North of England (HS2), we turned down work for clients who took an “extremist” view. However, more recently, we have been part of a professional team working for Stoke City Council, examining the technical and economic potential for a serious variant of the published proposals.

Stoke CC’s goal has been to link location on HS2 with wider local economic development and regeneration around a new, high-speed station. Our work to support this has included preliminary route identification, the estimation of demand, and the testing of operational feasibility.



*Considerable land exists in the existing railway corridor, enabling construction and giving development potential: this is immediately adjacent to the line*

Although site surveys demonstrated that a corridor adjacent to the existing London - Manchester railway line was still available through most of the Greater Stoke area, this needed to be joined to the agreed first phase of HS2, as well as to other elements of the rail network. Excel-based route planning tools developed by the Consultancy demonstrated the feasibility of a link near Stone, but the height differential of the Stoke area and Cheshire plain became apparent during the surveys. Eventually, a route was found which was generally satisfactory, and this was passed to other colleagues in the team, to undertake more detailed route engineering planning, and an environmental assessment.

Demand planning work has included the development of our own forecasts, to supplement those expected from existing models. It is obviously important to understand changes in demand, in order to determine revenues, time savings and other economic benefits.



*The current order: A Virgin Pendolino enters Stoke*

However, it became clear during planning that the ‘new Stoke’ around the planned station would not be like ‘old Stoke’ – for instance, in terms of the trip rates of local people. Work is ongoing with HS2, Network Rail and the Department for Transport to come to a common view about likely demand levels.

Operationally, it is also of course important to ensure that both high-speed passenger and other (passenger and freight) services can operate without undue impedance. On dedicated lines, this is relatively easy to achieve, but where high-speed trains continue their journeys on the existing network, speed differentials can have a significant impact on capacity, and detailed timetabling work has been undertaken, in order to determine what additional infrastructure might be needed, and where.



*Infrastructure costs are spread, but timetabling made more difficult, if high-speed services have to share tracks with local trains such as this all-stations service to Manchester*

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### More in Norway

We were delighted to be retained as advisors to NSB (Norwegian Railways) on a multi-year contract covering “Performance Improvement and International Benchmarking”. NSB has made considerable strides in recent years in improving its service performance but, like other operators, has had to cope with the positive problem of increasing demand.

On networks with busy urban sections (such as Oslo S – Skøyen) the good management of station stops is crucial if line capacity is to be maintained. Our work over the past few years has helped NSB to quantify and subsequently manage delays in a number of areas which have generally fallen “below the radar” of many train operators. This work has been of sufficient interest to the wider railway community that an academic paper based on this project was recently published in the “Journal of Rail Transport Planning and Management”<sup>1</sup>.

The six delay types analysed related to:

- o the positioning of train stopping along the platform;
- o the positioning of conductors within the train;
- o despatch delays;
- o excessive customer service;
- o the forcing of doors by passengers; and
- o knock-on delays.

Only the last of these has been extensively investigated before, and generally through simulation, not through structured observation and statistical analysis.

The comment about excessive customer service also warrants some explanation: during peak periods, it is rarely optimal for trainloads of passengers to be delayed awaiting ‘late runners’.



*Good customer service – or an impediment to right-time operation?*

We are now continuing our analysis to see if other types of delays can be quantified: as the old saying goes, “you can’t manage what you don’t measure.”

Harris, N G, Mjøsund, C S & Haugland H (2014) “Improving Rail Performance in Norway”, JRTPM vol. 3 pp. 172-180.

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### Publications

We have been busy this year, both in undertaking genuine operational research to improve the understanding of how railways work, and in publishing material explaining this.

Following research carried out for London Underground last year, a paper on “The Impact of Urban Rail Boarding and Alighting Factors” was presented at the TRB Annual Meeting, in Washington DC, USA in February, whilst another on “The Impact of Differing Door Widths on Passenger Movement Rates” was given at the COMPRAIL conference in Rome in June.

Many years ago (1992, in fact!) members of the Consultancy co-edited “Planning Passenger Railways”, a handbook of the main principles which has sadly been out of print for a number of years. We are therefore delighted to announce that, under the editorship of Piers Connor, a partial replacement for this, “Designing and Maintaining the Urban Railway”, should be published later this year. This will cover broadly the same material but with (as the title suggests) a bias towards urban operation.

An updated version of the Wheel:Rail Interface Handbook, sponsored by Network Rail and edited by colleagues at the University of Birmingham, is also due out shortly. Get your copies of these from [www.anharris.co.uk](http://www.anharris.co.uk)

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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](http://www.railwayconsultancy.com)

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