

New Circumstances

Last year's newsletter was written as the first phase of Corona virus mobility restrictions was coming to an end. Little did we suspect that this year's would be written during yet another wave (we hope the last one). Rail demand during one period last year was only at 5% of normal levels, but at present appears to be over 50%, especially in the leisure market. We look forward to the continuation of that recovery.

However, in addition, the rail industry has finally received the Williams-Shapps review, which will alter the entire structure of the industry. New organisation "GB Railways" should provide the governing mind missing for most of the previous 25 years, as well as absorbing Network Rail and other companies.

Our analysis of the report mirrors that of other commentators: the base facts are undeniable and the aspirations (e.g. more trains on time) rather of the 'motherhood and apple pie' variety (don't we all want that?). But some of the logic of achieving the objectives doesn't seem to follow (e.g. the simplification of operations is not necessarily improved if there are still concessions and open-access operators). Because we spend considerable time attempting to find out the cause of rail delays, to enable continuous service improvement, we also reject the criticism of effort spent in delay attribution. On the other hand, our own experience here at Crystal Palace would encourage the merger of Network Rail and train

operator's management actions in terms of station repairs.

So it is difficult to tell how either Covid or the review will play out in practice, not least because the details matter as much as the overall trend. We also hope that the transition team will be able to make some decisions about minor matters (e.g. eliminating fares anomalies) soon, in order to avoid a hiatus preventing the railway improving its offering during 2021 and 2022. Nevertheless, we remain optimistic that the need to provide a low-carbon public transport service will encourage both customers and government to make the railway a success, regaining its 2019 traffic levels in the near future. We look forward to continuing to support those needs – especially as an easing of travel restrictions enables us to meet clients and undertake site visits more readily.

We really hope that November's Climate Change conference in Glasgow will provide real impetus to the low-carbon public-transport-based future that many desire, rather than the return-to-the-car situation which the Corona virus has led us into. Encouragement is needed for this behavioural change. In particular, we look for specific schemes which have already been conceived to be announced for development and implementation. Examples of this include in network electrification, where our freight planning (see page 3) has highlighted small low-cost schemes with huge paybacks.

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East of Cambridge

The Railway Consultancy is often asked to provide railway-specific advice within wider transport planning projects. One such was a wide-ranging study carried out by WYG (now Tetrattech), addressing transport problems to the East of Cambridge. Three issues are of particular concern:

- (a) Congestion on the only major road into the city (the A1303);
- (b) Significant residential development, around the airport and potentially also at Six Mile Bottom;
- (c) The currently-poor service offer provided by the railway (the focus of RCL input).

With the recent exception of new Stadler bi-mode trains, the Cambridge – Ipswich railway has received little attention. Between Cambridge and Chippenham Jc (East of Newmarket) the line is single-track, curvaceous and slow-speed, with only one passing loop. An hourly service is provided, calling at all stations to Ipswich in the peak, but with some stops omitted off-peak. However, since the Beeching era of closures, the first station on leaving Cambridge has been at Dullingham, a rural site beyond the city-dependent area. This has become increasingly unsatisfactory over recent decades, as the Cambridge area has enjoyed huge economic growth – without the transport infrastructure to support all of it. Whilst the bus-way project to the North West is well-known, rail services from other directions have struggled to cope, and are now subject to Department of Transport monitoring for peak crowding. To the East, though, the railway simply isn't contributing much at all.



Re-opening potential? Class 755 passes Six Mile Bottom

We were tasked with considering rail improvements in

the short-, medium- and longer-term. We therefore analysed the potential for rail service increases, within the constraints of the single line – but these would be of limited value without local stations to provide commuting possibilities. We then undertook some preliminary demand forecasts for a small station at Six Mile Bottom, whilst working with Tetrattech colleagues to derive data from the Cambridge Strategic Regional Model to inform the possibilities of a much larger investment in a more significant station at the airport. We investigated train service options to support a “Cambridge East” station site, which could perform a similar function as the existing Cambridge North and the forthcoming Cambridge South stations.

The situation is complicated by the East-West Rail project. Whilst the first stage of this (Oxford – Bedford) should open in 2025, and consultation on the Bedford – Cambridge section is underway, what happens East of Cambridge is at an earlier stage of planning, and is also not within the direct purview of the East-West Rail Company charged with delivering the earlier phases. The extension of inter-urban services across Cambridge (to provide through trains between East Anglia, Milton Keynes and Oxford) is almost universally-supported, but has implications for infrastructure which will need to serve both local and longer-distance traffics (potentially including freight). An upgrade to the line between Cambridge and Newmarket will be needed – but perhaps a new, higher-speed and more direct alignment might be preferable to attempts to improve the current line with its level crossings?

A change of Mayor in the recent elections further confuses matters, as the incoming Mayor does not share the views of his predecessor regarding the potential for a Cambridge metro, which might have been the basis of a more comprehensive public transport solution.

However, what does become clear from this type of work is that any rail schemes beyond minor local works require the (political and financial) support of regional authorities, Network Rail and the Department of Transport. Linking together local aspirations with a wider national prioritisation of rail improvements is difficult. Whilst, through our contacts, we have made sure that this possibility is known to the relevant planning bodies, this ‘step-change’ in funding requirement is a challenge for local authorities everywhere, and will be a challenge for GB Railways if it is successfully and cost-effectively to deliver the sorts of rail improvements desired around the country.

Freight Arranger

We have reported previously on our work in trying to develop new rail freight services in Britain. Our Innovate UK part-funded “F3” project is now being rolled over into a commercial development phase.

There are many alleged reasons why freight traffic is not on the railways, and it is only when actually trying to progress projects that one uncovers the critical ones.

Broadly-speaking, the British network is comprised of gauge-cleared mainline routes which are busy, and quieter secondary routes which are neither – and potentially closed overnight for maintenance. This (poor) choice leads to sub-optimal timings and reduces the efficiency of operations, although the speed of loading/ unloading at some terminals also leaves a lot to be desired. Failing to address these contributes to cost pressures which can make the rail offer unattractive.

At present, the railway is benefiting from an increased focus on environmental performance (although few shippers are willing to pay extra for this!), road congestion and an increasingly-acute shortage of truck drivers. This is encouraging for new rail customers.

However, as well as it not being possible to carry the largest boxes within the normal British loading gauge, there is also a general shortage of rail wagons. We have therefore been working with a private investor to provide funding for a new design of wagon which has been developed on Freight Arranger’s behalf.

We believe that greater efficiency of rail freight operations can attract more traffics – but that greater

efficiency does not have to be longer trains run at low frequency: shorter trains can address smaller market segments and achieve quicker turnrounds (hence providing better asset utilisation). Even here, though, a key constraint that one hears little about is that of difficulties in getting information to enable aggregation. Relatively-few locations send out hundreds of tonnes of anything every day and, even when they do, it is normally to a wide range of destinations which cannot be served by a single train. Getting details of those flows is key to ensure a reasonable train loading – even if a trucking company only needs a single load to start off.

Nevertheless, we are at an advanced stage of discussion with several new-to-rail customers, and hope to make public both those contracts and details of the wagons in the coming months.



Something else to be aware of: despite the original aim of being standardised, containers come in all shapes and sizes, which doesn’t help wagon design or use



West Coast Wayfinding Update

Having worked with the First Trenitalia bid team to develop a range of strategies to improve station access and car parking, RCL provided further support to the delivery of wayfinding improvements. We undertook station surveys baselining the quality of wayfinding and signage that had accumulated over several decades. After reviewing this baseline against the newly published Network Rail Wayfinding Guide, recommendations were provided to Avanti West Coast for the enhancement of wayfinding and signage at stations. The project is now in the planning phase for delivery.

Systems Integration Database Design

A key business issue affecting large railway companies is how they should organise themselves. One aspect is whether management should be centralised (potentially leading to standardisation and economies of scale) or decentralised (enabling local knowledge and solutions). Historically, Britain's railways have fluctuated between these two models. This has also occurred during the shorter 25-year history of Railtrack/Network Rail.

At present, given the enormous amount of interest in the railway, and the sheer number of schemes being pursued simultaneously, there is a trend towards project management from Network Rail's regions. This enables a closer alignment with customers and stakeholders, whilst fitting with political desires to 'level up' the economy with regional investment. However, as the railway is a system, this can lead to problems where projects have overlapping scopes or dependencies.

Network Rail recognised this inter-project problem and set up a Systems Integration section in 2018 to address these issues. It became clear to them that there were many locations around the country where programmes of work, and individual projects (large and small) overlapped: examples include the TransPennine Route Upgrade (TRU), Northern Powerhouse rail and HS2 all affecting the East Coast Main Line between York and Newcastle. The TRU programme had already begun to investigate inter-programme linkages, and how these might either lead to a duplication of effort or save money, depending upon how the linkages were managed.



Leeds: New train, new platform: potential project inter-dependencies

The NRSI department is not in a position to instruct particular projects as to what to do. Nevertheless, it can perform an invaluable process in identifying potential overlaps, ensuring that the relevant project managers liaise with each other, and suggesting solutions. However, it can only do that if it has a repository of appropriate information. Aware that big-scale IT projects can be difficult to manage, NR SI therefore conceived the idea of a relatively-simple database which should at least highlight many of the potential project overlaps. However, they were short of time and needed some external assistance.

This was a task which required logical thinking, detailed rail operational knowledge and a deep understanding of how the railway works as a system. These are all strengths of the Railway Consultancy, which was therefore asked to help specify the system to enable internal NR staff to implement it. As well as developing the list of summary project information which would be needed, we noted that there were different types of interactions: precursor projects, dependent projects and simultaneous projects; these require different types of intervention. There are also conceptually-different ways in which projects overlap: by geography, resource discipline (e.g. track), train types affected etc., and all of these can provide constraints on the development of the railway. We worked through case-studies for several schemes using dependency diagrams, unfortunately finding that some current schemes in the North of England were dependent upon the completion of projects at earlier stages of progress!

The logic we developed has formed the basis for a Power BI tool designed by NR staff. Where base datasets were not available, we drafted them, enabling NR managers quickly to get started on the systems integration task of real projects, using pre-prepared drop-down boxes. The database is already up and running, providing a useful tool for NR project management, and we have recently been invited to undertake a post-implementation check, to ensure that it does what was intended.

Planning Issues in Israel

The population of Israel has grown significantly over the last 50 years, but well-known issues of traffic congestion and environmental concerns have led to an unprecedented amount of expenditure on railway schemes. During 2020, the Israeli Government announced detailed plans for a three-line metro system to serve Tel Aviv, a city of over 4 million.

One of the disadvantages of developing a railway network *after* that of the areas it will serve is that properties already exist. Some of these will need to be purchased. However, many more will be less-directly affected and, in a democracy, this requires good planning and stakeholder management.

The railway sector in Israel is relatively under-developed, and a degree of independence is helpful in assessing delicate issues. Given our existing contacts in Israel, during the last 12 months we have provided unbiased external advice relating to 7 different locations within the city, including for both businesses and residents' groups. Almost all participants understood the generic need for the metro. However, philosophically, they all had the same question: why has this particular route (which affects my property) been chosen?

In some cases, the answer was clear to us as railway planning professionals. In other cases, there was no obvious answer, and we were able to suggest alternatives which had fewer disbenefits (and, in one case, a lower cost). That raises a similar issue that has

arisen in Britain regarding HS2: an inability to explain rail planning choices to the public, either directly, or through the media.



Do railway planning authorities really explain their detailed decisions & which properties need to be taken?

The importance of this is that there are those in society who immediately attribute the outcomes of these decisions in a negative manner. In a couple of the cases in Tel Aviv, these conspiracy theorists may well have been correct, as it did indeed seem possible that detailed route choices had been made to favour local authorities or developers with links to the Government. In other cases, it appeared that a lack of knowledge of the principles of systems engineering or generalised cost had led to sub-optimal choices being made.

However, whatever the situation, we all need to ensure that we explain the overall rationale for, and specific choices within, rail schemes. If we do not, we will not be able to deliver the low-carbon public transport systems required.

Consultancy Contacts

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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Publications

Still available from www.anharris.co.uk: "Designing and Maintaining the Urban Railway" and "An Introduction to Railway Operational Planning". An up-dated version of "Wheel: Rail Interface" is (still!) in preparation.

