

A wide range of topical subjects in this month's column, covers performance, the costs of freight following the Rail Mail withdrawal and a retrospective look at the issue of ride comfort.

Train performance – SGBR's big challenge

Mail Rail withdrawal highlights road v rail costs

Who cares about ride comfort?

Technical developments in signalling and communications mean that 21st Century signallers and controllers have had an unprecedented range of tools with which to run the railway. But as a recent Network Rail presentation showed, right time (RT) performance has effectively plateaued for the last decade.

At the start of Control Period 5 (CP5) in April 2014, RT arrivals were at 64.8%. By the start of CP6 in April 2019 they were effectively back where they started at a high of 65.4%. As traffic has returned after the pandemic, RT arrivals have continued to flat-line with performance currently hovering around 67.5%.

This recent history highlights a record of marginal movements over the long term, despite improving tools at hand. And it's not just better control facilities. Over the past three Control Periods (2009 to 2024) Network Rail has cut its infrastructure-related Service Affecting Failures by roughly a third.

So, RT performance has failed to improve significantly despite better tools and more reliable infrastructure, which tells us that, in the absence of structural changes, more of the same in terms of performance improvement activities will continue to bring only minor gains over the medium to long term.

This, of course, is not what the new Labour Transport Secretary Louise Haigh wants to hear. As she told Parliament recently 'Great British Railways will be created to deliver a unified system that focuses on reliable, affordable, high-quality, and efficient services; along with ensuring safety and accessibility'.

Note that reliability heads her list of desiderata. And she wants, and the railway needs, to see early improvement.

Responsible for this officially-expected early improvement, is the triumvirate heading the new Shadow Great British Railways (SGBR). They are tasked with 'taking a whole-system approach to decision-making and driving improvement'.

Network Rail Chief Executive Andrew Haines argues that the problem with performance is not due to ownership, but the complexity resulting from privatisation – a variation on this column's mantra 'structure not ownership'.

Next metric up from RT in performance analysis is station stops within 3 minutes of right time (T+3). On a recent day Southeastern's 1700 trains made over 15000 station stops, with 91.5% within (T+3). For reference RT performance that day was 73.1% against the target for the current reporting period 70.7%.

Sub-threshold

But is T+3 accurate enough for today's busy railway? When another member of the SGBR triumvirate – DOHL Chief Executive Robin Gisby, was Director of Network Operations in 2013 he wrote an article for Modern Railways on this very subject ('Network Rail's timetabling and train performance challenge' : Modern Railways June 2013).

Central to Mr Gisby's article was the importance of what are known as 'sub-threshold' delays. When a train is delayed by 3 min or more, TRUST asks for the cause to be captured through the Delay Attribution process. All delays for all trains which can be attributed to a particular incident or event are captured.

However, delays below 3 minutes - sub-threshold delays - are normally not attributed. As a rule of thumb the number of delay minutes above and below the threshold is similar.

Even 10 years ago Mr Gisby was arguing that the point had been reached where recording only delays of 3 min or more meant that the TRUST results were insufficiently 'granular' to support the detailed level at which performance was being managed. 'PPM is increasingly all about these sub threshold delays' he argued.

And when I spoke to Robin Gisby in his new leadership role within SGBR, and made the point that SGBR will be judged on improving performance, the importance of getting to grips with sub-threshold delay minutes was the first thing he mentioned.

In the column I have the official delay minutes data for last year, broken down by cause. And they make interesting reading.

These are broken down into the primary delay minutes due to the initial incident reported by TRUST. A failed train, for example. However, this disruption then cascades through the system, as the trains held up behind trigger their own TRUST incidents. These are the reactionary delays.

With the new Transport Secretary's mantra of 'move fast and fix things', much will be expected of the SGBR team. I would guess that, in political terms, they have, at best, 12 months to show that SGBR is making a difference.

And, making a difference to performance is one area where SGBR does not need to wait for legislation. But, as the tables show, improving performance will not depend on solving a single problem: operations is 'whole-railway' activity.

## Action

But what can the three SGBR leaders, the third being Alex Hynes, DfT's Director General, Rail Services, do to improve timekeeping? In the column I consider some examples.

I see one major benefit of making performance the focus for SGBR. Every aspect of railway operation is involved. For example, in 2023-24 650,000 delay minutes were attributed to trains late off depot.

A national performance drive would emphasise that the ultimate aim of GBR is an integrated railway. And despite the many GBR doubters and nay-sayers, it is eminently doable with the present Shadow structure. Andrew Haines already controls infrastructure operations, Robin Gisby will have increasing responsibility for passenger operations through whatever DOHL will be called, Alex Hynes will be responsible for the remaining contracted TOCs.

## Making sense of Mail Rail withdrawal

Royal Mail's surprise announcement that it was withdrawing its fleet of Class 325 'Mail Rail' electric multiple units operated by DB Cargo (Modern Railways August p18) was attributed, in part, to the rising price of Electric Current for Traction (EC4T). Yet only a year before, when opening its new Midlands Super Hub at Daventry, Royal Mail had eulogised the advantages of its trains.

According to that earlier press release, with a four-car Class 325 'taking 16 Royal mail trucks off the road every day', Mail Rail was contributing to Royal Mail's campaign to reduce carbon emissions to zero by 2040. Following the subsequent withdrawal announcement, DB Cargo reckoned that the switch to road would require an additional 10,000 HGV movements a year.

Puzzled? We all were. So I fired up another spread sheet.

First I had to decide on a parameter for the comparison between transport of mail by road and rail. Since both modes are carrying the same thing - 'York' roll cages, I decided on the 'roll cage km'. Having determined Network Rails current EC4T charges and I had to work out the cost of fuel for road haulage.

Normalised in terms of energy/fuel cost per 'roll cage km' my calculations show that the train is still marginally cheaper than the lorry - even with a double deck trailer.

Of course, in addition to EC4T, all train operators pay a Variable Usage Charge (VUC) for track access. This notionally reflects the wear and tear caused by a vehicle.

I have applied these charges to a Class 325 and compare them with the road tax paid by a lorry. The comparison gives an idea of what rail is up against in a competitive market with road.

Then there are CO2 emissions, seen as rail's big advantage in the competition with road. Much lip-service is paid to the emissions benefits of modal shift, but carbon has yet to appear in the bottom line. My calculations show that the Class 325 has indeed a quite significant advantage over the lorry.

## Heavy freight

All this rail-versus-road analysis, plus Network Rail's parallel announcement of a six month moratorium of VUC for new freight flows, prompted me to extend the spread sheet to include freight traffic and, specifically, the head-to-head battle in the maritime container market.

In the column I calculate the VUC and energy costs for a fully loaded 26 wagon container train making a notional 250 mile trip. Once again, normalised per container, the train's VUC is greater than the lorry's Vehicle Excise Duty.

But with a Class 66 diesel locomotive on the front, the fuel cost per container is about the same by road or rail. However, at the average EC4T charge over the previous year, electric traction is considerably more expensive.

All the energy cost comparisons in the column come with a larger margin of error than I usually try to apply. And, of course, there are many more factors in the cost of transporting a container in a very competitive market.

However, I believe this analysis provides a feel for the challenges rail freight will face in achieving growth through modal-shift. And at time when none of the Freight Operating Companies is doing much more than breaking even.

## Specifying ride comfort

Given the ride issues with new Hitachi and CAF rolling stock still being reported by readers, the recent arrival of a report by GEC-Alstom Metro-Cammell Limited on the Mark 4 coach ride development was timely. Although dating from 1991, it remains topical, not just because of the on-going complaints, but because LNER's new CAF rolling stock will replace the remaining IC225 trains with their Mk4 coaches. Comparisons will be made!

And since the Report provides the opportunity to compare the ride specifications for the BR Mk 4 Coach and DfT's Intercity Express Programme (IEP) I thought a look back might be instructive.

British Rail's business specification for IC225 was pragmatic. Mk 4 coach ride at 225km/h and 6° cant deficiency to be comparable with the then current IC125 at 200km/h and 4.25° cant deficiency. Based on measurements taken on Mk 3 coaches the resulting ride specification for the Mk4 coach occupied three sides of A4 paper.

In the column I compare this with the section on ride in the DfT's Train Technical Specification (TTS) for the IEP. This takes up barely a page.

DfT relied on ENV 1229 - a European pre-standard for passenger ride comfort evaluation published in 1999 - quoted in the IEP TTS. As you might expect, ENV 1229 itself is a long document packed full of equations and covers more than just average ride levels.

Interestingly, when it came to ride comfort during 'discrete events', such as curves, the 1999 standard drew on the British Rail Research tests described in my March 2024 column and in which I participated. The revised version of ENV1229 published in 2009 still drew on the results from me and my fellow human ride test dummies!

For the Mk 4 coach, British Rail specified the Average journey ride comfort in terms of the average acceleration experienced by passengers. This equated to 'Very Comfortable' in the Euro-standard. Similarly, in the IEP TTS, the measured average ride also equates to 'Very comfortable'.

Given the demanding specification, the Mk 4 was pushing bogie design and dynamics to the limits of conventional technology. And in the column I describe some of the modifications and testing required to meet the specification.

However, by the final test in March 1991 ride was exceeding expectations and was within specification. As I would find on 26 September that year as I enjoyed the silky-smooth ride in a Mk4 coach at 140 mile/h on my way from London to Edinburgh in 3hr 29min.

Reliving the Mk4 ride saga, which I covered at the time, prompted me to make a Freedom of Information request to DfT asking whether ride tests were carried on IEP before the trains were accepted. And, if so, what were the results? I've just had a response asking for a further 20 working days extension while they work out how much they are prepared to reveal.

## Roger's Blog

At the end of August Network Rail held the latest up-date meeting with Chief Executive Andrew Haines for the railway press. Andrew's focus was on performance, which sparked this month's lead item.

With him was Chief Network Operator Helen Hamlin, who is very much a hands-on Operator. She provided some fascinating insights into a topic which is occupying me at the moment - shutting down the railway in the event of trespass. This is an area of policy which is going to have to be reviewed and addressed as the industry gets back to an integrated network.

Meanwhile, the next event will be the publication of the latest ORR report on passenger rail use, covering the three months April-June this year. Trainline's preliminary results for the first six months of their financial year show ticket sales rising and my focus when the ORR data are published will be on revenue.

So fingers crossed that the recovery has started.

Roger