

INFORMED SOURCES e-Preview April 2021

First, I should explain the early arrival of this month's e-Preview in your mail box. Since November 2005 – yes, it's been going that long – e-Preview has been sent out on the Monday of the week in which Modern Railways was published. But thanks to a new printing schedule, for the last couple of months subscribers to the magazine have received their copies in the post before e-Preview arrived! Which is why you are reading this on Friday, rather than the coming Monday.

Anyway, the April column analyses new data on rolling stock costs. I also try to get some sort of a handle on the industry's passenger ridership and revenue during the pandemic plus the prospects for recovery. Finally, I investigate the boring, but vital, part of electrification – making installation of overhead line support masts quicker and cheaper.

New rolling stock fleets increase costs.

Pandemic – timetable for recovery.

Electrification – time to sweat the small stuff.

A combination of cheap trains, cheap money and incentives for franchise bidders to invest resulted in a second wave of post privatisation orders, totalling around 3000 vehicles. These have been entering service over the last five years. But while they were 'cheap', cheapness is relative.

In many cases the trains being replaced were dirt cheap. And with many ex-BR vehicles now going for scrap, operators are discovering that the cheap new trains bought with cheap money are costing much more than their existing fleets that had been written down over the last quarter century to keep them earning into their old age.

A recent Office of Rail & Road publications highlighted this issue. It includes some specific examples which I analyse, including the chance to work out the actual cost to the operator of the Intercity Express Programme.

This is something I tried to estimate from various Parliamentary statements on IEP when the contracts were signed. A check-back shows that I was out by around 20%, which was not bad given the paucity and fragmented nature of the data.

From that I move on to DfT's latest Report & Accounts. Going through such documents is a bit like panning for gold. It may be tedious, but every now and then you find a nugget.

In this case it's the cost of the Variation Orders compensating Hitachi for the impact of the late completion of the Great Western Electrification Programme. It's easy to slip into the old city joke 'a billion here and a billion there and soon you're talking serious money'. But while we are talking only millions, I reckon the compensation would have been enough to wire the Oxford-Bedford section of East West Rail.

Pandemic – when can rail revival start?

A morning spent going through the Government's 'Roadmap out of lockdown' produced little encouragement for the passenger railway. Much space is given to work on easing restrictions on international travel, but any easing of the clamp-down on other than essential domestic travel is noticeable by its absence. Up to 17 May – at the earliest – the requirement is to continue working from home where you can and minimise travel.

After that the advice will be to continue working from home up to the start of Step 4 in June. This suggests that, in terms of business and leisure travel by rail, nothing much will change before then. DfT has banned rail travel promotions before 26 June.

But the big unknown is what social distancing measures will still be in force by then? Before Step 4, the Government is due to complete a review of social distancing measures. This review will 'help inform decisions on the timing and circumstances under which rules on 1metre+ (distancing), face masks and other measures may be lifted.'

Should 1 metre + continue to apply to trains from June, recovery will be much harder. Currently train services are at about 75% of pre-Covid levels. However, when social distancing is taken into account passenger capacity being provided is roughly 40% of the pre-Covid timetable.

My personal concern is that even if just masks are still required for travellers under Step 4 requirements, then there could be reluctance to travel in a train with all seats available.

That brings us to the cost of Covid. Fare revenue in the last 'normal' year was roundly £10bn. This is handy as it equates to £1bn a year lost revenue for every 10% drop in ridership.

I've produced various tables examining ridership, revenue and support payments to the train operators. The recovery in ridership during the Summer of 2020 gives an idea of what we could expect from June. Revenue grew to around 35% of 'normal' by August, reflected in the falling support payments. But then it started to drift down.

However, since the start of 2021 revenue is back to 10% of 'normal'. The government is budgeting £2.1 billion to cover support payments to train operators for the first three months of the new financial year.

From finance I move on to a detailed examination of ridership using data from various sources. A central issue is the extent to which season ticket holders have been travelling.

Moving on to what happens when rail travel can be promoted again, the train operators will be treading a fine line between revenue and capacity. Marketing will have to bring a progressive increase in travel. If it is too successful, lockdown-conditioned passengers could be deterred by full-and-standing overcrowding.

But before then, will the Treasury support the aggressive pricing policies needed to get the market growing? Institutionally the Treasury is resistant to reducing fares in a downturn because they don't believe that it will bring in as much, or even more, revenue as the promotions lose.

Different sectors will require different fares policies. Much is being made of 'part-time' season tickets for London & Southeast commuting. But commuting is a distress purchase – people don't want to lash out thousands on season tickets just to get to work. And now the Pandemic has shown that many office workers can do their job perfectly well from home.

Long Distance services look like the most straight forward sector to manage. Compulsory advanced booking on intercity services both controls overcrowding if 1m+ social distancing continues and enables trains to be priced individually – budget airline style – to maximise revenue and seat occupation.

But it is the £3.4bn a year earned by off-peak travel which offers the biggest opportunity to recover lost income. A good start would be a high profile automatic extension of all railcards by a year.

As an initial 'welcome back' boost, for a limited period all tickets bought after 9.30 or 10.00 could be subject to a 30% discount, with Railcards giving a 50% saving. This would probably give the Treasury conniptions..

Incentives such as these depend on an agile, entrepreneurial railway management willing to back hunches in a nervous new world. Whether an industry in confrontational transition from a broken franchising system to state-controlled Direct Award Agreements will have that ability is debatable.

Electrification – cost-cutting overlooked

One of the goals in the industry's Rail Technical Strategy is 'Cheaper and less disruptive electrification'. However, first of the 'stepping stones for the next five years' is 'Standards and design for discontinuous electrification are adopted, including automated traction switching'.

This is typical of such calls for innovation funding which routinely overlook the boringly obvious priority which is to make installation of the overhead line equipment cheaper and faster. And the faster you can do it, the less disruption caused plus lower costs.

This was the policy with British Rail's rolling programme in the 1980s, with self-contained works trains for installing concrete mast foundations or a Self Contained Piling Vehicle which drove a pile and then erected the mast.

When the Great Western Electrification Project (GWEP) was authorised Network Rail had the opportunity to introduce a 21st Century approach to mechanised electrification installation. In one regard it had no choice – many of the working practices acceptable in the 1980s were now considered downright dangerous.

As well as being more safety conscious, the 21st Century railway was much busier. These and other factors resulted in the High Output Production System (HOPs), a fancy name for a factory train. It also came at a fancy price – £40m at today's prices.

But as we now know, for various reasons explained in the column, HOPS didn't work as advertised and now sits idle.

MML success

Five years on and the Bedford to Kettering/Corby extension of the Midland Main Line electrification has been completed, on time and, apparently, without any drama. But also without using factory trains.

A major factor in this success was that contractor SPL Powerlines was awarded a design and install contract. This meant that while the scheme used Network Rail's 'Master Series' OLE – which eliminates many of the downsides of the Series 1 system employed on GWEP, SPL was also responsible for design of the foundations. These represent 40% of the cost of the OLE itself and about a third of the total cost.

In the column I describe the resulting benefits in terms of cost reduction and standardisation. A key factor was a simple innovation which allowed a standard piled foundation to be used for 93% of the masts on the scheme. It was variations in pile diameter and miscalculations of the depth which helped nullify the expected benefits from HOPS.

Developments such as these are why I jibbed at the choice of the electrification stepping stones in the RTS. Any research funding needs to be focused on cutting the cost of the repetitive task of installing foundations, erecting masts and putting up the electric knitting. After all, the 11,000 single track km of electrification in the Traction Decarbonisation Network Study (TDNS) is likely to require close to a quarter of a million masts and foundations.

I complete this item by considering the relative merits of the various works trains available versus Road Rail Vehicles

(RRV) fitted with specialist attachments. In addition to HOPS, private contractors have their own rail-mounted electrification trains.

However, for the moment, Special Purpose RRVs appear to have usurped 'works trains' on the relatively small-scale electrification schemes which have followed GWEP. They provide flexibility, can do the same job and don't require paths between the depot and the work-site.

But, a rolling project of electrification will have to be less a series of projects around the network and more a production line working its way along two or three routes at once. The curse of GWEP was that the HOPS modules were apparently running hither and yon between unfinished sections. On the other hand, each module was running under its own power at 60 mile/h where RRV are generally limited to 25mile/h from the nearest access point.

Let us hope that the final version of the TDNS includes a true rolling programme, prioritised on a combination of emissions reduction and wiring productivity. To encourage investment in plant, Network Rail needs to award long-term – say 10 year minimum, framework contracts based on the overall programme, rather than a series of projects. Installation teams will need to work continuously, which means design and planning being one route ahead as the programme rolls out.

New Train TIN-watch

I'm afraid that there is no space available for analysis this month. However, Greater Anglia's Alstom (née Bombardier) Class 720 enter to the table, with reliability close to that of their long-established sister design, the Class 710.

Roger's blog

Well, here I am, all jabbed up and nowhere to go until June under the current plans for lockdown. The reopening of the footbridge at our local station has extended the range of our permitted walks, and allows me to see the occasional train.

Zoom and Teams continue to provide a window on the world and my special thanks to the Scottish Branch of the IMechE Railway Division for finding me a place at their decarbonisation meeting in February. Despite being 400 miles or so away, and all of us in our homes, there was the warm 'railway family' atmosphere that has always been a feature of these institution meetings. Thanks again chaps.

This coming Monday there is a webinar on 'Rebuilding the rail network post-Covid' and at the end of the month there's the update on progress with the Water-Trak adhesion improvement system.

At the end of April I am looking forward to the Railway Industry Association's annual Innovation Spectacular. Otherwise next month looks pretty quiet at the moment – although, as always, publication of the Williams Review, now co-authored by Transport Secretary Grant Shapps, is said to be imminent. How any launch will be handled is interesting.

Back in the day DfT would have had a general media launch with Minister, followed by a more detailed session for the specialist press. DfT briefings for the specialist press have been a thing of the past for several years now. I suspect a front row packed with veteran editors who can remember what was said the last time, and the time before that, was considered too intimidating.

But it was fun asking simple questions to which we already knew the answer, but knew that they couldn't answer and that they knew that we knew. It was also fun to watch Rail Minister Roger Freeman's face when I used to get out my diary and ask whether the number of days since the last rolling stock order now counted as an hiatus.

Happy days. But time now to start pulling material together for the items already scheduled for next month's column – while waiting for Williams-Shapps to materialise, of course.

Roger