

This month, Informed Sources makes an overdue return to the state of the rolling stock market, puts passenger numbers alongside train mileage and ends with some encouraging developments with electrification standards.

Train order hiatus - no end in sight

Service cuts by numbers

Revised electrification standards promise cost reductions

Monday 13 March saw a non-event. Rail Minister Huw Merriman had been due to meet the rolling stock manufacturers and funders. A news story with the heading '20,000 train-building jobs at risk from "dither and delay"' had appeared that morning in the Daily Telegraph, putting the minister on the hook.

Unfortunately, the meetings had been cancelled the previous Friday.

So, instead of civil servants scurrying around on Monday morning, DfT now knows what it faces when updating the ministerial brief for any future encounter. It was hoped to reconvene the meeting after Easter, but the shock effect has gone.

However, the kerfuffle reminded me that Informed Sources' last analysis of the state of the train builders was in August 2018. That was just after Siemens had announced its new plant at Goole to assemble replacement Tube Stock for London Underground, starting with the Piccadilly Line fleet.

As I noted at the time, 'So with five domestic plants, we can expect more pleas of 'Give us an order or the kitten gets it' during the bidding rounds for the South Eastern, East Midlands and Cross Country franchises'. Well, I got one out of three right, with East Midlands ordering 33 5-car Class 810 bi-modes from Hitachi. Subsequently Avanti West Coast has added 13 5-car Class 805 bi-modes plus 10 7-car Class 807 EMUs to Hitachi's order book.

But since then, the market has dried up, except for the High Speed 2 trains contract. This uncertainty has raised memories of another of this column's contribution to the railway lexicon, the '1064 day hiatus' in rolling stock orders between the final British Rail contract and Chiltern procuring the Class 168 Turbostar fleet.

Well, if you thought 1064 days was an hiatus, if you ignore the HS2 fleet, the last 'national network' train order was placed 1233 days ago from when this column appears on the magazine sales racks. It is the massive influx of orders which followed the franchise letting reforms of 2013, combined with delayed deliveries, which until recently has kept the assembly lines busy.

In the column I have tables showing potential future orders and the delivery status of the UK assembly plants.

Dragging in every sniff of an opportunity, the best I can manage is a maximum of 2,000 vehicles coming to market over the next five years. And some of these prospects are pretty thin.

To put this in context, a typical production line at Alstom's Derby plant can turn out five vehicles a week. A small assembly unit, such as CAF at Newport, can produce a two car DMU a week. Hitachi is somewhere in between.

And, of course, the procurement process is lengthy and then the production lines at the manufacturers and their sub-contractors take time to get rolling. Delivering the first unit of a new contract during 2025 would be an achievement.

As for the HS2 fleet, while I was researching this piece the delay to Euston emerged, including the vague five year 'window' for services starting on Phase 1 between Old Oak Common and Birmingham. I have a stab at analysing what this all means for delivery of the HS2 fleet by the Hitachi-Alstom consortium.

Not that the HS2 workload, spread across the two factories at Newton Aycliffe and Derby, plus a new bogie plant at Crewe, will be as significant as you might think. According to Informed Sources, the new HS2 final assembly line at Derby will represent just 20% of the foot-print at the Litchurch Lane factory.

In addition to future demand, I also look at the current situations where, as a senior rolling stock funder remarked recently, as a nation we have too much rolling stock for requirements, therefore 'why would we go and buy more trains'? And this has been reflected in the steady flow of redundant EMUs to the scrap yards or storage.

There is also the diesel dilemma. There are still around 1,500 ex-British Rail DMUs in service, ranging in age from 30-40 years. Various operators are talking about their replacement, but with what and manufactured by whom?

There are three choices for replacement. A new DMU with a low emissions engine, a hybrid DEMU with a battery, which reduces emissions by using less fuel, and a fuel-cell powered multiple unit.

But with a standard EMU now costing over £2 million a vehicle, you wouldn't get much change out of £3 million for a DMU vehicle, let alone a diesel-hybrid. With turmoil in the money market, banks collapsing and interest rates rising, the lease

rental alone for a new two-car DMU could be forty times as much as the battered old Class 150 it replaces.

Train loadings analysed

Social media has been featuring photographs of full-and-standing trains, accompanied by sarcastic jibes at Government, in the vein of 'So no one's using the trains, yeah right!' But what are the overall traffic levels as the Department for Transport imposes more service cuts on train operators in the May timetable, while traffic continues to return?

Service cuts should be reflected in reduced mileage of the train fleets. The Rail Delivery Group statistic reproduced in TIN-Watch, and the basis of the Modern Railways Golden Spanners awards, includes the mileage for each fleet.

To check this theory, my first stage is a table comparing today's fleet miles for each train operator with those pre-Covid. This snapshot confirms that fleet mileages have dropped pretty well across the board.

Next, I have used ORR data of passenger miles and train miles to work out passengers per train. I call the 'loading factor', since it is the overall average for each TOC, across a three month period.

Comparisons of Loading Factors pre- and post-Covid tell us pretty much what we would expect. Operators such as Avanti West Coast and TransPennine Express, with high levels of cancellations but people still needing to travel have seen their Loading Factors increase. Conversely, the London commuter TOCs have cut train miles, but ridership has fallen more, resulting in high percentage falls.

From this, we might deduce that, to paraphrase Eric Morecombe's response to Andre Preview's criticism of his piano playing 'we have all the right trains, but not necessarily in all the right places'. We know that post Covid the market for rail travel has changed dramatically and that the railway must pivot to accommodate this change, including getting the right trains on the highest revenue routes.

This brings me to the recent analysis of fares data by the Great British Railways Transition Team. This shows that 'Leisure' travel now generates two thirds of rail passenger revenue.

Apart from getting trains in the right places for the pivot to leisure, they need to be the 'right' trains in terms of passenger accommodation. This ranges from seating layouts - families favour facing pairs rather than 'airline seating', to door location and catering provision.

Certainly, if the GBRTT analysis is correct, re-allocation of some rolling stock to match the market will be needed. This underlines the need for a nationally organised integrated rolling stock cascade when the current political aspiration is for innovative Train Operators to make decisions closer to their communities.

Electrification standards benefit from pragmatism

In recent years, the high cost of electrification has been blamed, in part, on standards - or rather - their interpretation. This followed the publication of a new suite of Group Standards for AC electrification in 2014, part of a radical change which brought UK standards into line with the European Technical Specifications for Interoperability (TSI).

Their publication coincided with authorisation of a series of electrification schemes. A rigid interpretation of these standards subsequently imposed additional costs.

On 4 March this year a completely revised suite of AC electrification standards came into force. These have also had to reflect changes resulting from leaving the European Union. This has seen Technical Specifications for Interoperability (TSI) replaced by National Technical Specification Notices (NTSN) which are the responsibility of the Department for Transport.

Important revisions have been made to the two Railway Group Standards (RGS) - one each for the AC electrification infrastructure and rolling stock. Each now has its own Rail Industry Standard (RIS). The addition of RIS is intended to simplify authorisation.

Obviously there is a lot of technical detail in this article but one example of the benefits is the height of parapets on overbridges on electrified lines. The required standard height introduced with the TSI is 1.8m.

Where an existing bridge parapet was lower, under the previous Issue of the standard it would have required an application for a deviation for retention of the existing height to be authorised. This may seem like a minor detail, but, apart from the cost, raising a parapet adds weight, making the load on the bridge heavier and, potentially requiring strengthening of the structure, further increasing the cost.

Projects can now avoid the need for a deviation application by using a standard risk assessment and applying any resulting mitigations.

Apart from the obvious construction cost savings, the new Standard will also remove the time and cost of obtaining authorisation for deviations. Common sense has triumphed over box ticking.

There are similar benefits from the matching standard for AC rolling stock and I outline the detailed changes. As an example, regular readers will remember the clearance issues concerning people on platforms with helium balloons attached to metalized ribbons, DIY enthusiasts carrying 9 foot long metal curtain rods and basketball players reaching round the cant rail to touch the pantograph.

This was because the Group Standard referred to a British Standard EN. An EN is the British Standard implementation of English language versions of European Standards or Euro-Norms (EN).

This particular version of the EN was more onerous, prescriptive and less well suited to the existing UK railway infrastructure, with its smaller gauge and station platforms which are higher than their European counterparts. The new requirement, which has now become guidance, is based on the latest version of the EN standard, which is better suited to the UK rail environment.

Overall, this suite of standards represents another victory for a common sense approach to safety from the Rail Safety & Standards Board (RSSB). And there is more to come: watch this space.

TIN-Watch

Meanwhile, for followers of my monthly new train reliability statistics in the column, two fleets enter the Table those months. Both are from Stadler – the TfW Rail Class 231 FLIRT DEMUs and the long awaited Mersey Rail Class 777s.

Roger's blog

Surprisingly, it took a long time for the mainstream media to catch up with the failure of one abutment of Nuneham Viaduct, which caused the closure of the line between Didcot Parkway and Oxford on 3 April. About a fortnight later a minister went on site to see what was happening.

Researching what had happened has involved getting up to speed on bridges, the history of Nuneham Viaduct and some new technical terms – hog-back plate girder, anyone? As ever the Informed Sources network helped fill in the detail. There should be a comprehensive update in the June column.

Meanwhile, in the background, the Periodic Review for the next Regulatory Control Period rolls on. At this stage of previous Periodic Reviews I would have been filling Informed Sources with tables and charts.

But this time around the Department for Transport's High Level Output Specification for Control Period 7 (CP7) generated neither heat nor light. The other source material, Network Rail's Strategic Business Plan, will not now be published until after the local elections.

All this reflects the overall sense of drift in railway policy. The acceptance of the Nuneham closure as just one of those things is a case in point. The fact that CP7 will start the other side of the next general election may also have something to do with it.

But, fear not, I have more than enough to write about to fill the column, and keep me out of trouble. Or, if I'm doing my job properly, get me into it.

Roger