

INFORMED SOURCES e-Preview December 2018

Some old favourites return this month including an update on the spread of zombie franchises and a farewell to the Traffic Management System (TMS) procurement which has kept us diverted for the last nine years.

Steventon Bridge highlights APCO challenge
Explosion of the Zombie franchises.
TMS boondoggle ends with a whimper
Informed Updates

However, we start with the practical implications of the Department for Transport's cunning plan to cut costs by not providing clearances for electrification at bridges and tunnels. Instead, you buy bi-mode trains, which can drop the pantograph and run through tunnels and other height restrictions under diesel power. This would be achieved, quite painlessly, with the use of Automatic Power Change Over (APCO).

Back in November 2017 I revealed that the first opportunity to test this concept would be on the Great Western Main Line at Steventon High Street Bridge west of Didcot. The problem is not the clearance under the bridge itself, where Special Reduced Clearance has been used. However, approaching the bridge from the West, the adjacent Stocks Lane level crossing requires the contact wire to be at maximum height, before reducing to the minimum height for the bridge in about a quarter of a mile.

As the contact wire height falls, the wire is pushing the pantograph head down and for every action there is an equal and opposite reaction, which is not good for either the catenary or the pan'. The steeper the slope of the contact wire, the greater the force. At Steventon the slope imposes a 60 mile/h speed restriction where Class 800s should be running at 125 mile/h.

Here is an ideal application for APCO. Just put down some standard Eurobalises, as already used for the European Train Control System, (ETCS). Then employ the Packet 44 message facility to take passing Class 800 Intercity Express Trains (IET) through the power change-over sequences automatically.

Although the 800 Series APCO has been tested and it works, rather than APCO it will be a case of BOTTOMS at Steventon for the moment. That is Back on The Old Manual System. In the column I provide details of the trackside signage required to take drivers through the manual pantograph and traction changes.

In the down direction the change from electric to diesel mode is made manually at Moreton Cutting east of Didcot. Having passed under Steventon Bridge the reversion to electric traction occurs in a half mile long 'safe pantograph raising area' starting around six miles further on. I make it that the driver has to push the pan' up button in a 5 second window.

Hopefully Network Rail's challenge to the local Council's decision will see the bridge demolished and raised. However, APCO at Steventon suggests that on future electrification schemes procuring bi-modes – more expensive to buy, operate and maintain - to avoid clearance issues is not the easy option claimed. Of course future electrification schemes depend on bringing down costs and any day now the tectonic plates could shift.

TOCs facing financial squeeze

In the April 2018 column I reported on the rising number of 'zombie franchises', train operating companies that were continuing to meet their financial obligations to the Department for Transport, while losing money on their passenger services. While commercially dead, they were drawing down support from their parent companies to remain financially viable.

Statutory report & accounts are invaluable in detecting incipient zombie franchises. In September Abellio East Anglia filed its financials for the year ended 31 March 2018 and it was clear we had a potential Zombie franchise on our hands. Despite underlying revenue growth of 5.3%, a previous year profit before taxation of £19.4 million had turned into a £1.1 million loss.

If the loss was bad news, tucked away on page 30 of the Accounts was the revelation that on 31 January 2018 the franchise had drawn down £30 million of its Parent Company Support (PCS), repayable in two equal instalments in December 2020 and December 2021.

This was followed in August by a further £50 million. Repayment, in two equal instalments, falls due in December 2023 and December 2024. The total PCS facility is set at £271.8 million.

But all is not quite as it seems. Previously franchises had been protected from the impact of exogenous economic forces by the Cap & Collar mechanism. If revenue fell below forecast, the loss was capped in stages, with up to 80% of the lost revenue being covered by DfT. Should revenue beat forecast, however, an increasing share of the gain was 'collared' by the tax payer.

Following the collapse of the Intercity West Coast franchise procurement, DfT took a fresh look at protecting franchise bidders against the revenue risks inherent in committing to long term ridership and revenue forecasts for an industry dependent on the state of the economy. Two indices have been used to replace Cap & Collar, Gross Domestic Product (GDP) and Central London Employment (CLE).

However, when CLE numbers are fed into the formulae in the franchise agreement they have started to come up with revenue share payments to DfT which are not covered by revenue growth on the real railway. In other words Abellio is having to pay DfT a share of non-existent revenue. But DfT is enforcing the payment mechanism - hence the loss.

Abellio claims that rail franchises let after East Anglia do not have the same arrangement in their franchise agreements. Oh yes they do. Let six months after Greater Anglia, South Western Railway has same CLE section in its franchise agreement.

First said this in its latest interim statement.

'There is uncertainty regarding the outcomes of this mechanism (CLE) over the remaining franchise term, which has the potential to significantly impact the profitability of the franchise. We are reviewing the effectiveness of this mechanism and whether it is functioning as originally intended by both parties'.

I can't see a cash-strapped DfT going back on a mechanism two widely-experienced train operating groups signed up to.

Northern

While not a zombie, Northern is also struggling, following the late delivery of infrastructure enhancements. In the column I compare the franchise's subsidy profile and the actual payments to date. The expected fall in subsidy in the second year of the franchise has become a slight increase.

Clearly, in addition to the immediate loss of revenue, the growth of ridership and revenue on which the falling subsidy profile was predicated will not now start until later in the franchise and from a lower base. This will shift the subsidy profile to the right. Another headache for DfT.

Against this background, why is DfT continuing with its current procurement of three franchises, two distinctly dodgy and one loaded with known unknowns? Announcing the Williams Review DfT said that awarding the replacement Cross Country franchise in 2019 could 'impact on the Review's conclusions'. As a result Arriva will retain the franchise, 'with options beyond this to be considered in due course'.

However, other on-going franchise competitions 'are continuing as planned'. These are Southeastern, East Midlands and the West Coast Partnership which will combine running Intercity West Coast with the introduction and initial operation of High Speed 2 services.

Why bin only Cross Country when Southeastern has already had to be rebid and East Midlands has more uncertainty than Heisenberg could have imagined? And not only that, even Transport Secretary Chris Grayling has declared that franchising has reached the end of the road.

But, DfT having spent £21.7 million on consultants supporting procurement of these three franchises, and with 'only' another £6.3 million to finish the job, you can see that 'press on regardless', might be the Department's reaction.

TMS – end in sight

For the last nine years Informed Sources has been following Network Rail's original Traffic Management System (TMS) procurement project. The cost has risen, commissioning is now three years late and the specification has been de-scoped to about as basic as you can get and still call it Traffic Management. But the end is in sight.

When Control Period 5 finishes on 31 March 2019 funding for the two 1st Deployment TM projects, at Cardiff and Romford, will end. This should leave the South Wales Control Centre at Cardiff with an operational 'Isolated' TM capability. Isolated is the version of TM which, having identified the need for changes to the timetable, they are passed to the signaller by the Train Running Controller to be implemented manually.

Cardiff is the lead 1st Deployment installation with implementation at Romford Rail Operating Centre (ROC) following. According to a Network Rail presentation as recently as 12 months ago, Romford had been due to get Integrated TM, the next level up, by the end of 2018.

Since then, Romford TM has been de-scoped and the most that can be expected - before the money runs out in March - is the provision of Isolated TM at Upminster Integrated Electronic Control Centre (IECC).

However, it seems likely that consolidation of signalling for the Anglia Route at the ROC has been deferred. If signalling of c2c is to remain at Upminster IECC it seems illogical to put in Isolated screens at when you could upgrade to IECC Scaleable and put in Resonate's Luminare full house Integrated TM. Liverpool Street IECC is a more immediate candidate for Luminare.

So it's RIP TMS, hello TM. According to Informed Sources new Network Rail Chief Executive Andrew Haines believes that TM should be the priority for Digital Railway. Next month I'll report on a leading signalling contractor which is entering the TM fray.

INFORMED UPDATES

Mk 3 ride – more on dampers

Well, last month's analysis of Mk 3 coach ride really caught readers' attention, with e-mails flowing in from informed sources. An important addition to the jigsaw puzzle was a report of the initial trials of replacement dampers using the New Measurement Train at the Old Dalby test track.

A set of brand-new Pegasus dampers was fitted and the vehicle instrumented. According to my Informed Source, test running showed that the Pegasus dampers matched the existing Woodhead damper performance up to 75 mile/h. Above that speed ride quality tailed off markedly.

Later, another engineering chum with a calibrated Mk 1 human posterior ride meter carried out a back-to-back comparison in an IC125 set fitted with both Pegasus and the alternative SV dampers. He reports that the SV units gave 'a significant improvement'. However, ride comfort is subjective.

Readers who might like to apply their own subjectivity to the issue should note that the LNER set with the EMT power cars is fitted with SV dampers.

Class 800 – EMC mods

Confronted with the Class 800 Electro Magnetic Compatibility (EMC) issues, analysed last month, Network Rail has insisted that to obtain Type Acceptance the EM emission levels have to be halved. That will still be significantly higher than the other new fleets entering service, but is tolerable.

However the fix won't be cheap, quick, or even easy. According to Informed Sources the solution is to add the reactance that is missing from the Class 800 transformers. As explained last month this will involve fitting a choke (coils of copper wire on an iron core) between the transformer and the traction converter under each Driving Pantograph Transformer cars.

This raises a number of issues. Assuming space can be found in the under-frame area, and that strong enough mounting points are available, the next question is weight. I would expect a choke to weigh between one and two tonnes.

Meanwhile, Network Rail has ordered 270 Isolating Surge Protection Units (ISPU) to cover the known weakness in the Solid-State Interlocking (SSI) signalling on the ECML. These should be ready for fitting to start in January

New Train TIN-Watch

Well, at least the latest Period saw all but one of the new fleets improve its Mile per Technical Incident Moving Annual Average (MTIN MAA). The exception was Great Western Railway's Hitachi Class 802 bi-modes, but as they are still being delivered, there will be ups and downs.

Given that the Class 800 units acquired under the Intercity Express Programme have now been in service for a year, and the e Thameslink Siemens Desiro Class 700 EMUs even longer, the overall glacial reliability growth across the new fleets remains a puzzle – although my working theory is that it is associated with this being the first generation of software enabled rolling stock..

Also puzzling is the current failure of the Transport for London Class 710 Bombardier Aventra EMUs for the Gospel Oak-Barking line to enter service. The similar Class 345 Aventras have been in service for some months, so what is different about the 710s?

Roger's Blog

Last week started with some heavy spread-sheet action as I worked out the winners for this Friday's Modern Railways Golden Spanners awards. After that it was time to turn the conservatory into a trophy factory, with the gold and bronze spanners to be sprayed, Velcro attached to the spanners and trophy bases and the plaques applied.

Why Velcro? Well, the original concept was that if a winning depot found itself short of a combination spanner on the shop floor, they could whip one off a trophy and carry on.

Of course, it isn't like that in the real world. I remember an amazing tool-dispensing carousel at Hitachi's Ashford Depot which made the wall mounted 'shadow' tool boards of my youth look quaint.

Last week was the latest Virgin railway trade press dinner. Run under the Chatham House rule they have proved to be a valuable two-way exchange. Topics included Virgin's removal of Friday evening peak restrictions at Euston which has not only been a success but has also increased revenue slightly.

Next week it is the latest Waterfront annual Rolling stock forum. These get better each year with expert speakers and timely topics. Plenty to discuss in the networking sessions with 399 days to do to the Accessibility Regulations deadline.

Roger