

INFORMED SOURCES e-Preview November 2016

Franchising, electrification, signalling and traction & rolling stock – all with the odd bit of controversy – means there should be something for most readers in this month's Informed Sources. And there's an appeal to readers for some safety-related data.

ICWC franchisee to operate HS2 Phase 1 services?

Another blow to electrification affordability

ARS+ contender struggling

Section 54 blocks market forces

As I expect you all know by now I have intentionally left coverage of High Speed 2 to other writers in the magazine. But I make an exception to this rule when HS2 impinges on today's railway – as is the case with the replacement Intercity West Coast (ICWC) franchise.

In the February column I argued that the franchise should include responsibility for planning and running those long distance services on the West Coast Main Line which would use HS2 for part of their journey. The glitzy 360km/h captive fleet could be run by a separate operator.

Since then, the glitz has been put on hold. For the initial services starting in 2026, HS2 now says 'the train fleet is now anticipated to be a single procurement of a single fleet of classic compatible trains'.

Just after I spotted this change of policy I also noticed something that hadn't happened. The call for Expressions of Interest (Eoi) in bidding for the replacement ICWC franchise, scheduled for June, has not been issued

It's easy to see why. Preoccupied with the details of the route and tendering its construction, how the railway will be operated in ten years' time is not top of the HS2 management's 'to-do' list. But until the Department for Transport's franchising team know the services proposed for 2026, it is nigh impossible to write an Invitation to Tender (ITT) for the replacement ICWC franchise due to take over in April 2018.

So the missing Eoi suggests that DfT has paused procurement while it tries to make sense of HS2 services. And the proposal in the February column could be on the agenda, especially given the change in rolling stock policy

All that's needed is to make the replacement franchisee also the shadow operator for HS2 Phase 1 services. I say 'all', but it will involve a major rewrite of the ITT.

Bringing HS2 Phase 1 services into the franchise would transfer responsibility for planning and then implementing an integrated HS2/WCML timetable to an experienced commercial train operator. It could also bring in experience of procuring and funding new trains.

There also needs to be a carrot to incentivize performance through the eight years of construction disruption before HS2 opens. What better carrot than the prospect of becoming the first operator of HS2 services?

Mindless regulation threatens electrification

In 1956, British Railway's Chief Electrical Engineer Mr S.B Warder made a bold and far sighted decision. The pre-war Weir committee had recommended 1,500 Volt direct current electrification as the future standard. But with the French pioneering high voltage alternating current electrification for the re-equipment of their war-torn network, BR decided to follow suite for the electrification schemes proposed in the 1955 Modernisation Plan.

But high voltage had a particular drawback for a network built to a smaller loading gauge than continental railways. Electricity has an insatiable desire to return to earth, and the higher the voltage the greater the ability to arc to the nearest earthed object.

To calculate clearances for the 25kV OHL BR took the International Union of Railways standard of 320mm as its starting point and soon discovered that raising bridges to provide this clearance would be prohibitively expensive. Reducing the voltage to 6.25kV where raising a bridge was unaffordable caused the early problems with ac electric trains.

In a series of tests, in conjunction with Her Majesty's Chief Inspector Officer of Railway's, Brigadier C A Langley, Stanley Warder investigated the possibility of reducing clearances. The final test in Crewe tunnel confirmed that with a 50mm air gap 25kV would not flash over, even when subjected to the full blast from a steam locomotive chimney.

As a result, in August 1962, new reduced standards, were authorised, permitting clearances of 200mm at particularly difficult locations. This cut the cost of clearance works on the London-Liverpool/Manchester project by around 7%,

Two decades later, on the East Coast Main Line electrification, 200mm had become the new 'Normal' minimum clearance with a 'Reduced' minimum of 150mm. Railtrack's revised electrification Group Standard published in 2001 increased the 'Normal' minimum to 270mm while retaining the BR clearances as 'Reduced' and 'Special Reduced'.

Today

Three decades on and clearances are causing major problems. On 21 September this year the Scottish Parliament's Rural Economy & Connectivity Committee took evidence from the ScotRail Alliance. Ahead of the hearing ORR provided the Committee with its latest review of the Scots' electrification projects and one of the main reasons for schemes running late and over budget was the late identification of the scope necessary 'to achieve a safe and sustainable railway through compliance with legal obligations and European standards'.

By now I hope you can see the reason for my historical introduction. For 'compliance scope' read 'electrification clearances'. ORR claims that this scope is important 'as it affects the ability to run a safe and sustainable railway'.

As you might imagine, the relevant European Technical Specifications for Interoperability (TSI) have something to say about electrification clearances. Until 2015 the UK had a National exemption from the relevant European Energy (ENE) TSI.

However, when the relevant Network Rail standard (GL/RT1210) was reissued in April 2015 the requirements of the ENE TSI came into force under the UK's interoperability legislation raising the normal minimum clearance to 370mm which is being applied retrospectively to on-going schemes.

This is how ScotRail Alliance Chief Executive Phil Verster explained what happened next to the September 21 hearing. 'Network Rail attempted to keep costs down by saying that the new specification is really high and asking whether it could risk assess things in order to get a derogation and therefore not to have to comply. Last year, when all the shenanigans started and the cost issues became really clear, it became obvious to the ScotRail Alliance and to me that if we did not comply with the standards the ORR would not sign off the line to go live: if we had continued to debate the matter, we would have got late into the programme and built the railway only for the ORR to say that we could not run anything on it'.

Trapped in a three way bind between the Economic and Safety regulators and Transport Scotland, in March this year Phil instructed the EGIP Project team 'Stop the debate and move to the new standard. The railway will have hundreds of years of life into the future, so fix this now'.

And it's not just tunnels and bridges. The distance between any live part of the OHLE or pantograph and any place a person might stand has also been increased from 2.75m to 3.5m (11ft. Having received a policy statement from ORR I'll return to this requirement in a future column.

Risk

So how have we come to the situation where, after more than 50 years since those tests in Crewe, with the progressive reduction in clearances making electrification within our smaller loading gauge affordable, we are now back, not just to the clearances in UIC606 but another 50cm on top?

Why did not Network Rail see it coming and gain derogations to continue with the clearances in GL/RT1210 on the grounds that electrification has an excellent safety record and we don't have the air-space of mainland European Railways? One Informed Source suggested that Network Rail could not mount a challenge because the records justifying historic clearances had disappeared in the sell-off of the British Rail engineering offices under privatisation.

What makes me genuinely angry about this ludicrous situation is that after the struggle to get electrification back on the agenda, and many readers signed up to my petition on the Number 10 website, the pass has been sold.

And that includes ALARP (As Low As Reasonably Practical) seemingly going out of the window. Interestingly, when I started a Twitter debate over the cost of the new clearances, I came under fire on the grounds that I was arguing for the UK to be 'less safe' than Europe, just to make electrification more affordable.

But this assumes that the Government will authorise electrification at any price. Which they won't. And funding for the next Control Period is getting ever tighter.

I would risk a modest bet on Swansea not getting electric trains in Control Period 6 (2019-2024). And given slightly better odds make it a double with Trans-Pennine electrification.

Meanwhile, I would be grateful if any reader can provide a reference for a passenger on a platform being electrocuted by contact or flashover with 25kV ac OHLE or a pantograph.

Automatic Route Setting update

In the beginning British Rail Research (BRR) developed an Automatic Route Setting (ARS) system which, in 1984, was installed at new Three Bridges signalling centre, controlling two areas.

Signalling chums report that it worked, sort of, but fell out of use as the computer hardware became obsolete. But five years later, ARS had become an essential feature of the Integrated Electronic Control Centre (IECC).

Fast forward to June 2008 when Network Rail issued standard NR/L3/SIG/10120 containing the system requirements for ARS. Known colloquially as ARS+ this specification included a number of enhancements to the original, by then supplied exclusively by Delta Rail.

To break this monopoly, in 2009 Network Rail commissioned signalling training simulator specialists TRE (now part of Hitachi) and GE Transportation Systems (GETS) to develop a competitive product meeting NR/L3/SIG/10120.

In March 2015, TRE announced that TREsa (TRE Signaller's Assistant as it was known) had full product acceptance. Delta Rail's Enhanced ARS (EARS) had received Network Rail approval in October 2013 following Trials at York IECC. The message from Network Rail was that TREsa and EARS offered similar capabilities.

So ended ARS wars? Well so I thought, until I came across an internal Network Rail review from earlier this year of Signaller's Assistant - Route Setting (SA-RS), Network Rail's name for TREsa. This painted a very different picture.

Watford Panel at Rugby was the trial site for SA-RS ahead of an eventual West Coast roll-out with the Stoke and Glasgow Rail Operating Centres (ROC) joining Rugby. SA-RS was installed at Rugby in 2010 and since then has been in and out of use due to various issues.

According to Network Rail, the trial certification was signed off in 2013, however, a number of derogations from the specification, were made against the signed trial certification 'To date (April 2016) these have not been addressed by subsequent software releases'.

Despite this stuttering start, NR went ahead with installing SA-RS at seven other ROCs and signalling centres on both GETS (MCS) and Siemens (WESTCAD) workstations. I provide an update on the state of play at each location.

This record is hardly stellar, which is not unexpected with new computer-based equipment. But it might have given a prudent engineer or manager pause for thought. You might think that before ordering more SA-RS systems there might have been a consolidation period while all the problems were resolved and a reliable baseline software specification decided on, implemented and shown to work as advertised.

You might think, that since SA-RS was developed to provide competition in the ARS market, a comparative trial with EARS ported onto an MCS or WESTCAD workstation might have been a good idea, if only to introduce the spur of competition for future procurement. Well, a rational person might.

But instead Network Rail already has a list of further SA-RS areas, some with commissioning dates. It has rushed ahead acquiring more installations despite, according to the review, SA-RS being subject to some non-compliances and derogations from missing functionality specified in 10120.

New software – Release 0.40 – is due to correct these deficiencies. But, get this, I understand that it will be available only on new hardware and deployments. That's right, the last I heard it was not going to be a retrospective modification to existing SA-RS installations. Yet this is not a software 'upgrade' since it merely fixes derogations and non-compliances.

Talk to Network Rail Chief Executive Mark Carne about declining PPM, and he'll soon say 'That's why we need Traffic Management. But following the TMS procurement debacle, network-wide roll-out has been deferred. Improving performance is now down to getting the maximum efficiency out of the ROCs and Signalling Centres and for that we will be relying on ARS for the foreseeable future.

Section 54 guarantees over 5000 vehicles

Under Section 54 of the Railways Act the Department for Transport can require the continued leasing of rolling stock for a specified period after the franchise which acquired it has expired. For some time now, Government policy has been that Section 54 support should no longer be necessary in a competitive market. However, figures released by DfT in response to a Parliamentary written question show that 5,273 vehicles are currently covered by Section 54 agreements.

I've got a Table listing all these fleets in this month's column plus a breakdown by owner. Obviously, the state is going to protect its interests when procuring trains. The two Intercity Express Programme (IEP) fleets plus Thameslink account for 2,000 of the vehicles with Section 54 protection.

There are also some big fleets among the private owners including Virgin's Pendolinos and South West Trains' Siemens Desiro electric multiple units ordered in 2001 under the slam-door Mk1 stock mandatory replacement programme. The largest ROSCO owned fleet is 792 Class 377 Bombardier Electrostars.

With new franchises being encouraged to acquire new trains, this Table may calm down some of the more ambitious fleet replacement scenarios.

Peace breaks out

Having got everyone excited at the prospect of a legal tussle over Abellio's award of the contract for new trains for the East Anglia franchise to Bombardier, Siemens bottled it. Abellio tells me, 'the parties have agreed to confidentially conclude their dispute. Siemens and Abellio are now looking to the future with a strong and positive relationship'. Big hugs.

Roger's blog

Since the last e-Preview I've had my get-to-know-you meeting with the Rail Minister Paul Maynard. I arrived with two or three topical subjects in mind and we were able to have serious discussions exploring these issues beyond the basics of his brief.

So, a well-informed, thinking Minister able to respond in detail on topics without prior notice. As I left, the press officer told me that he reads the trade press. This confirmed reports that having read the latest Modern Railways he then quizzes his officials, to their discomfort.

My default mode when it comes to politicians is a degree of scepticism, but like his boss Transport Secretary Chris Grayling, Paul seems to have a genuine engagement with our industry. It will be interesting to see whether the promise of a follow-up meeting in the New Year transpires. Usually, one meeting with me is enough. And, sorry, the discussion was so engrossing I forgot to ask him for his favourite diesel loco.

This week ends with the Railway Industry Association's AGM, providing the opportunity to get a good impression of the mood of the supply chain. November starts with one of the year's most enjoyable meetings. As an honorary Vice President of Rail Future I get to join the judging panel for the annual awards. For someone who spends too much time writing about high level policy in these difficult times, it is a refreshing change to help celebrate the successes at the grass roots.

Time permitting I might try to wangle a pass to the Rail Research UK annual conference next week. Then the week after that there is the Waterfront Conference on Rolling Stock

At the end of the month I'm indulging in a factory visit. After my latest piece on the Rail Supply Group, William Cook have invited me to Leeds to see what they make and the discuss opportunities and challenges in their export markets.

Then on 25 November it is the Golden Spanner Awards for rolling stock reliability (<http://www.4thfriday.co.uk/golden-spanners/>) There will be the usual spanners in each of the categories – ex BR EMU and DMU, new generation EMU and DMU and Intercity. And no prizes for guessing which fleets will be competing for my wild card Golden Spanner this year.

So, now it's off to the local motor factors to order the Spanners while waiting for the Period 7 report so that I can work out who has won.

Roger

