INFORMED SOURCES e-Preview March 2017

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Another varied column, and slightly longer than usual, this month. Topics include franchising, new rolling stock and electrification.

West Coast Partnership prospectus issued
HS2 train procurement starts
HS2 train procurement - manufacturers stake their claims
Captain Deltic's Traction & Rolling Stock Round up
ECML electrification – managing for the long term

On 19 January the Department for Transport published its 30 page prospectus for the West Coast Partnership (WCP) which will combine running the replacement current Intercity West Coast (ICWC) franchise with the development and introduction of High Speed 2 services. WCP will take over existing intercity services on the West Coast Main Line from April 2019 while also acting as 'shadow operator' for HS2. From 2026, WCP will run the integrated HS2/ICWC services for a period of three to five years, with an option to extend.

By far the most demanding of these roles will be 'shadow operator' while HS2 is being built. A central task will be creating an integrated timetable, combining HS2 with ICWC services reconfigured to exploit capacity released by HS2

WPC will also be responsible for the detailed mobilisation and commissioning plan for the operation of HS2 services, including staffing, working with HS2 to test infrastructure and trains and preparing for the service launch.

Finally, from 2026, WCP will run the integrated business.
This is going to be a complex service to launch and DfT, realistically, anticipates the need for some fast tweaking if it becomes apparent that services can be improved once live passengers are being carried

Buying new trains for HS2
On 20 January, Transport Secretary Chris Grayling announced the start of procurement of the fleet of 'Classic Compatible' Very High Speed Trains (VHST) for High Speed 2. HS2 expects to award the contract for up to 60 VHST at the end of 2019. The contract also includes maintenance of the fleet for an initial term of 12 years. The quoted value of £2.75 billion covers the cost of the trains plus maintenance.

Following shortlisting the formal invitations to tender will be issued in 2018. The contract award will be announced at the end of 2019.

UK content.
Those of you who read last month's piece on my visit to William Cook can guess what's coming next. How will the specialist UK suppliers benefit from these new trains?

Well, the good news is that, according to HS2, potential bidders 'are also expected to be required to make clear how their proposal will add value to the UK economy including the creation of employment opportunities, investment in workforce education and the development of long term technical skills and capability in designing, manufacturing, maintaining and refurbishing High Speed trains'.

More on this in the next section.

HS2 train procurement – commercial hostilities begin

As soon as the start of procurement was announced several of the potential suppliers of the HS2 VHST fleet issued statements welcoming the news

Siemens was ready to go, announcing their Bid Director and Head of Maintenance, the latter's credentials including those Golden Spanner stickers beneath the cab windows of the Class 185 DMUs. Interestingly, focused on the need for the industry to work together to provide the trained staff required to deliver the project.

In contrast Alstom boasted of the widest range of high speed trains in the world, 'combining high tech features with extraordinary passenger experience'. Well the catering on TGV is extraordinarily poor in my experience.

There was also a plug for company's new UK industrial facility and training centre at Widnes. As with Siemens, the opportunity to step up the commitment to UK jobs, skills and training was featured.

Bombardier highlighted its experience in the international high speed rail market was together 'with our proven and extensive UK design, manufacture, test, service introduction and maintenance expertise'.

Hitachi, on the other hand decided to get their retaliation in first. The company's statement claimed that 'where its UK-based competitors tend to focus on slower, less technologically complex regional and metro-style trains, Hitachi's expertise in high speed in Japan, Italy and now the UK is viewed as a major competitive advantage'.

As you may imagine, I have a lot of fun deconstructing this claim.

But, to be serious, dissing the competition, which has collectively supplied more high speed trains to more countries than you, does seem an odd commercial strategy. Especially when the technical lead behind your claimed Italian expertise was one of those backwards competitors.

Made in Britain
Continuing my campaign to boost the UK manufactured high-value content of imported new trains, I fired off this question to the four manufacturers. 'Will your bid for the new trains for HS2 include commitments to increase the proportion of UK manufacture of those high value systems and components which are currently imported with trains your company is supplying to the UK market. Any details of such proposed technology/manufacture transfer would be helpful'.

As you will read in the column a lot of cards are being kept close to corporate chests, although Siemens is by far the most positive. But we do need to differentiate between a UK assembly plant, like Derby or Newton Aycliffe, and the origin of the high value systems and components that go into and under the bodyshells.

While politicians love an assembly plant, long term it is a hostage to fortune and a potential rod for their own backs when demand dips, as it will in the next decade. Even the most optimistic forecast of annual domestic demand over the next 30 years is barely enough to keep the UK's existing assembly plants in business.

Meanwhile if Alstom or Siemens win NTfL, they will probably be expected to commit to UK assembly. CAF is already talking of setting up some sort of UK presence.

Thus, when the current feast ends, there will be even more firms than last time threatening government with 'give us a contract or we shoot the kitten'. Which is why I believe the new focus should be on securing UK manufacture of systems and components, which can be exported.

(No kittens, metaphorical or otherwise, were traumatised in the writing of this item)

Captain Deltic's Traction & Rolling Stock Round up

Full-fat IEP
As reported in last month's column, the Department for Transport has at last accepted Sir Isaac Newton's argument that a 500 tonne Class 800 bi-mode with the three engines each rated at 750hp would lose 15 minutes to IC125 timings on the Great Western Main Line. As a result, serious discussions began with Hitachi about running the Class 800's MTU engines at their full commercial 940hp rating.

According to Informed Sources, agreement in principle for the full-rating was reached on January 19. This will give a five car Class 800 a similar power to weight ratio as a 2+8 IC125

Since IEP's underfloor mounted engines are currently de-rated in the interests of reliability and availability, expect some hard-nosed negotiations over compensation for this 'variation order'. Not only will the engines be working harder, they will be running longer mileages than foreseen. Kerching!

Class 230 fire
On 1 February Vivarail released the full report of the company's internal investigation into the genset fire during main line testing of the prototype Class 230. According to the Report the fire was caused by a leak from a connection in one of the high pressure fuel pipes. More of a spray than a leak, with the fuel at 4,400 lbs per square inch

Recent attention to the genset which caught fire had included the high pressure fuel lines being disturbed. According to the report, 'the procedure that was used to refit the fuel pipes did not follow the Ford workshop manual's advice not to reuse the pipes'.

While the root cause has been determined, the fire exposed a number of design weaknesses, requiring improvements to the vehicle and genset. Detailed report next month.

Fight! Fight!
Bombardier is mounting a High Court challenge to MerseyTravel's award of its new train contract to Stadler. Confirming the news a MerseyTravel spokesman expressed confidence that the challenge could be defended 'robustly'.

With m'learned friends on the scene, even Informed Sources are keeping schtum. Alleged irregularities in the procurement process, particularly the risk assessment of the respective bids, have been suggested as the cause of the challenge.

TLC for ECML's sustainable OHLE
As is now generally acknowledged, the poor reputation for reliability of the East Coast Main Line electrification was in large part down to neglect. Only in the past decade has the British Rail Mk3a and Mk3b Overhead Line Equipment received the maintenance required for reliable operation.

It is 40 years since the Great Northern electrification to Hitchin was completed and 25 years for the main line scheme. In that time much has changed on the ECML and even more intensive operation is on its way. As a result the OHLE is also part of the programme of enhancements and upgrades which are creating the 21st century high-capacity ECML.

In this mini feature I describe the work done to fix minor weaknesses in the BR equipment which were causing the high failure rates. For example the vulnerability of the aluminium/steel catenary cable (AWAC) to short circuits. If the flashover melts one of the two steel strands almost half the strength is lost.

Under the current renewals programme, and remember that the oldest catenary has been in use for up to 40 years, AWAC is being replaced by copper-tin cables, where a flashover causes less damage. But with 2,000 wire runs on the London North Eastern route AWAC is going to be in service for many years to come.

Hence the work to reduce the impact of flashovers by ensuring
that the power supply protection system is optimised to detect the full range of potential faults and trip as quickly as possible. Despite being an ageing asset, the AWAC failure rate has dropped significantly as a result.

I also describe a fascinating piece of forensic engineering tracking down a fatigue failure which suddenly appeared in insulated sections after

years of satisfactory use. This occurred at the clamp which joins the contact wire at one end and the neutral section at the other.

Solving the mystery involved using a borescope, a flexible fibre optic probe used to look inside jet engines, and high speed photography. I won't spoil the solution, but it does make the point that the OHLE is a dynamic system.

Looking ahead
Access for renewals is disruptive operationally, and thus expensive. To close the ECML for a weekend possession with access to all lines costs £500,000 to £1 million.

Access costs determine the OHLE renewal rate. As a result, the newer Mk3b equipment now has to achieve at least a 40 year service life. Meanwhile, the ECML is becoming busier. Hence the focus on improving the AWAC based catenary.

Reducing the cost of renewal itself is equally important. Since 2015 ECML has been using an Overhead Condition Renewal unit which was acquired for OHLE renewals under the West Coast Route Modernisation. This is being modified so that the existing catenary can be recovered and the new wires paid out under tension.

As ever, the head span construction on three and four-track sections represents a challenge, since wiring trains, so far, can't handle threading the catenary wire through the transverse supporting cables. The first portal structures replacing head spans have already been piloted.

Whether a campaign change to portals at key locations will be affordable under the restricted funding likely to be available in Control Period 6 is unclear. However, London North Eastern Route is actively investigating ways to fund more renewals in CP6.

Roger's blog.

Well, I really enjoyed being a guest at the Golden Whistles, which set a new attendance record. The after-lunch presentation was a penetrating analysis by my old chum Michael Holden of the state of our industry – with a strong political flavour as you might expect, given his experience. We're running it as the guest editorial in this month's magazine.

For my trip to the Rail Delivery Group's conference in Birmingham I finally travelled the Chiltern way. Sadly, the timing of the conference precluded any loco hauled Mk3 action. Instead it was a Class 168 DMU both ways.

My journeys provided a number of insights, including the easiest Wi-Fi to set up I've tried so far. And on the return journey it recognised me and carried on as before.

I wasn't entirely sure about a 1hr 45min 'intercity' journey in a Turbostar. But I have to say that the Clubman ambiance and seat comfort was entirely appropriate and knocks spots off IEP Standard Class.

Overall, if you live to the west of London, Chiltern Mainline is a convenient and civilised way to get to Birmingham. But I was still disappointed not to cop a Mk 3 train.

At Birmingham the conference was all very anodyne, at a time when the industry is being bombarded by criticism from all directions. That week had seen a scathing report on franchising from the Transport Select Committee and RDG was also on the defensive over ticketing. But none of this appeared to intrude on the conference.

For me, the highlight came when the subject turned to the complexity of ticketing. All very worthy until my old chum Nigel Harris put up his hand for a question and described buying his ticket that morning at Stamford. He was quoted £70. 'Isn't it cheaper if I split at Leicester' he asked? At which the ticket clerk broke into a beaming smile and replied 'I'm glad you asked me that, Sir, because I'm not allowed to tell you. That'll be £40'.

As someone who likes asking questions at conferences to which the answer is an embarrassed 'dunno' or career suicide, that was a cracker.

This week I've got a session with Network Rail Chief Executive Mark Carne on the growing devolution of power to his Routes. We've both worked for large conglomerates and I'm particularly interested in how Mark sees the organisational dynamics developing.

Next week it is the Annual George Bradshaw Address given by Chris Burchell in his new role as Chairman of the Rail Delivery Group. This is billed as an opportunity to debate the future of the rail sector. Hmm.

Mid-March sees a busy week in terms of escaping from the office. The Waterfront Partnership has a conference on ERTMS and ETCS. Waterfront event usually combine expert speakers with lively contributions from the delegates. The next evening Virgin are organising another of their media dinners – this time the focus will be on the West Coast.

And, as ever, I am trying to set up a number of visits for rolling stock and signalling developments. Meanwhile, the first consultation documents from the ORR's Periodic Review 2018 covering incentives and funding demand my analysis. You have been warned!

Roger