

INFORMED SOURCES e-Preview April 2020

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EMERGENCY NOTICE

An update about the impact of coronavirus has been posted on the Modern Railways website - see <https://bit.ly/2wrj7Zf>

At present distribution of the April issue is expected to be largely unaffected and it should be on sale this Thursday through the usual channels. Further updates will be provided if necessary. Contingency plans are being worked on in case distribution of the magazine through normal channels does not prove feasible. This information will be available via the Modern Railways website, Twitter and Facebook pages.

The three 4th Friday Club events due to take place before the summer have been rescheduled for the autumn - these are the 'Rail in Wales and the West' conference in Bristol, the 'Rail in the North' conference in York and the 'Railway Industry Innovation Awards' in London. Full details are in the update on the website.

The Modern Railways RVE expo in Derby on Thursday 5 November is currently due to take place as planned, but further updates will be provided if this changes.

Modern Railways is grateful to our readers, advertisers, event sponsors, exhibitors and delegates for their continued support at this challenging time.

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Traffic Management procurement - common sense at last

Automatic Route Setting - key to successful TM

Bombardier's new MCB-OD contender

Those weren't the days

In May 2019 Network Rail published an OJEU Notice seeking expressions of interest from 'partners' to provide Traffic Management (TM) systems for two schemes. One was the East Coast Main Line resignalling, the other the Trans-Pennine Route Upgrade (TRU).

These were zero-value Framework Contracts, which would be called off as the schemes progressed. Lot 1 covered 'anywhere within the geographic scope of Network Rail's Eastern Region, including the Trans-Pennine route. Lot 2 applied to the geographic scope of the London North Western North Route, including Trans-Pennine. Estimated values were Lot 1 £108m and Lot 2 £72m.

This TM procurement comes under the East Coast Digital Programme (ECDP) which is primarily responsible for the provision of ETCS between King's Cross and Peterborough. A Programme Integration Partner is also being selected.

TM procurement is not part of the ECML South re-signalling, but is being managed by ECDP on behalf of the NR Routes and their Rail Operating Centres (ROC).

One thing the trial of Resonate's Luminare TM on Great Western demonstrated is that for TM to be effective it needs to be treated as an upgrade to an existing control system, rather than a bolt-on goodie. Thus a key consideration for ECDP in choosing the TM Partner was the control system installed at the ROCs concerned, namely Manchester (Siemens WESTCAD), Derby (WESTCAD) and York (WESTCAD and Resonate IECC Scalable).

Note that the TMP contracts are 'empty frameworks' to be populated with contracts as the business case can be made. As we know from Great Western, it is not easy to link TM to performance improvements which can be monetised.

TM was promoted initially for its ability to predict and manage major disruption across the network. Great Western's experience with Luminare has shown that while the use of off-line plan and re-plan during disruption is valuable, the real benefit of an Integrated Traffic Management system lies in the ability it gives signallers to implement the many small interventions which turn good performance into excellent.

Sub-threshold delays - under 3 minutes - have long been a major concern to operators as the railway has become busier. TM could be the key to reducing them. Less glamorous than preventing an incident at Newcastle disrupting services at reading hours later, but providing a 24/7 benefit.

Taking a user-centred approach to TM, the ECDP made the logical decision to award both TM Partnership contracts to Siemens who had control equipment in the key ROCs. According to Informed Sources there were some vigorous protests from the other bidders, but no one mounted a formal challenge.

Although Siemens has yet to demonstrate a working TM system on the UK Network, as reported in the January Informed Sources the group is developing its own TM upgrade known as Dynamic Conflict Resolution (DCR). The pilot application, covering selected WESTCAD work stations at Derby Rail Operating Centre (ROC) should see trials starting later this year.

Now it is up to the ROCs to develop incremental improvements to their WESTCAD control systems with Siemens. To go ahead these will have to make a 'robust' business case.

But as the two Resonate contracts for Great Western and Anglia show, TM supplied as an enhancement to an existing control system, rather than a new 'multi-million computer'. is not costly and might even be affordable from Operating Expenditure. The corollary of the new approach is that Siemens and Resonate can now look forward to negotiating further deals to roll out TM for control centres with WESTCAD and IECC Scalable respectively.

TM needs a clever servant

Rather like buses, you wait months for Network Rail and Resonate to agree a long-term contract for the Great Western Main line's Luminare Integrated Traffic Management system and then two contracts are announced simultaneously. As reported in Infrastructure News last month, the Derby based company has been awarded 10-year contracts, together worth £50 million, covering licensing of the Luminare software, maintenance and support, plus provision for future enhancements, at both Didcot and Liverpool Street control centres.

Given the time taken to reach mutually agreeable terms for a new type of contract for the existing GW installation, a second Luminare contract covering the control area of the Liverpool Street Integrated Electronic Control Centre (IECC) came as a surprise. It must also have surprised those bidding for the East Coast TM Partner (TMP), since Lot 1 covers 'a framework for TMS anywhere within the geographic scope of Network Rail's Eastern Region' and the Liverpool Street contract had not gone out to tender.

When a contract is placed without having been through the EU Procurement process, the prudent customer issues a 'Voluntary ex-ante' OJEU Notice to justify letting a contract without competition. In the case of Liverpool Street, the rationale was 'the unique characteristics/technical capabilities of Luminare to integrate with existing IECC Scalable system in Anglia'. It added: 'No reasonable alternative or substitute exists. Luminare, is uniquely suited to meeting the contract objectives'.

A crucial argument was that the aim was to 'secure enhanced functionality in the IECC Scalable system through the installation of supplementary software'.

Central to Luminare's success, where other TM projects have faltered, is a decades-old system which has been largely overlooked in previous TM procurement exercises. Traffic Management software can do an increasing range of clever things. However, to implement its outputs it needs to interface with the real railway.

When British Rail Research was developing the IECC concept, a key feature was Automatic Route Setting (ARS). The aim was to reduce the workload on the signallers at their work stations by running the timetable - setting routes and regulating trains - automatically. As I was told on a recent visit to Didcot Signalling Centre, under normal conditions, the Great Western main Line is an 'ARS railway'.

However, there has been a tendency to understate the capability of ARS amid the excitement of procuring TM. ARS is much more than an electronic version of the London Underground's Dell Programme Machines with the timetable encoded as holes punched in a roll of plastic sheet.

While running the timetable ARS take account of late running trains and prioritises route setting at conflict points to minimise aggregate train delay. In complex areas it can also re-route trains where it is permitted to do so. There are also facilities to invoke contingency plans, rescheduling services in the event of infrastructure unavailability.

With IECC Scalable, Resonate's Enhanced ARS (E-ARS, pronounced ears) runs the day's timetable which is downloaded the previous night by Network Rail. As an aside, both Luminare and Hitachi's Tranista TM at Three Bridges are proving invaluable at de-conflicting these downloads which regularly contain plans which are undeliverable.

When Luminare is used to re-plan a service, the changes are downloaded to the Scalable timetable planner (TTP), which E-ARS then implements. As I was told during a Luminare demonstration at Didcot, 'the TM can throw the new plan at the ARS which can correct any minor issues'.

To judge from correspondence with signallers, for Resonate and Siemens the application of some Keizen - continuous improvement - to E-ARS and DRS should be the order of the day.

Looking at level crossings

Think 'Bombardier' in the UK and the immediate association is with rolling stock. The European multi-national is also a major player in the global signalling industry, yet, for complex historical reasons, which I explain in this month's column, Bombardier does not have the same presence in the UK signalling market.

I must confess that with the distractions of ETCS and Traffic Management, I had lost visibility of Bombardier's signalling activities. That was until last September when the Group's Rail Control Systems (RCS) business invited me to see the Company's latest product to be installed on the UK network - the EBI Gate 2000 MCB-OD level crossing system.

Four life-expired Automatic Half-Barrier (AHB) level crossings between Shaftholme junction and Knottingley have been replaced with Manually Controlled Barriers with Obstacle Detection (MCB-OD.) Commissioned from April 2018 the first crossings ran in shadow mode for six months before entering service. The route carries a steady stream of freight traffic, in particular fuel for the Yorkshire power stations.

First stop on my visit was Selby Road crossing on the busy A19 road. Inside the compound, the crossing equipment has its own hut, while the crossing's relay interlocking has been retained in its original brick building.

Modular construction means that, if the space is available, the new crossing control equipment can be installed in racks in existing equipment rooms. On the Ferriby-Gilberdyke resignalling scheme, which also included nine EBI Gate 2000 crossings, seven locations already had huts to accommodate the new signalling and telecommunications equipment. The remaining two were deployed in existing relay rooms.

From Selby Road the next stop was Norton Signal Box which controls one of the four MCB-OD crossings, plus two CCTV monitored crossings and the adjacent MCB. The signaller controls the EBI Gate crossing through a 7 inch touch screen installed in the push button panel. On the Ferriby-Gilberdyke resignalling scheme, with its new interlocking, the level crossings are controlled from the WestCad workstation at York ROC.

You might think that a new level crossing was an odd choice of kit to choose when bringing me up to speed on RCS current activities. However Network Rail's long term level crossing strategy includes rolling out automatic full barrier crossings with obstacle detection.

There are around 400 AHB crossings on the network: in the current Control Period (2019-2024), Network Rail's signalling work-bank includes over 200 upgrades. With a standard, proven, product, Bombardier reckons there are between 60-100 potential opportunities.

Meanwhile Bombardier's Plymouth factory continues to manufacture a range of products for both the domestic market and export. The factory has also begun manufacturing that ubiquitous ETCS component, the track mounted balise - supplementing the output of the Group's Swedish plant.

In the UK RCS is also upgrading Network Rail's Rail Innovation & Development Centre (RIDIC) - the former British Rail Old Dalby test track - with ETCS Level 2. Other ETCS related contracts include supplying the EBI Cab on-train equipment for Crossrail's Class 345 Aventra fleet and equipping South Western Railway's new Aventras. Retro-fitting existing Electrostar trains is also under way.

Recovered memories spark worrying analysis

While I registered for this year's George Bradshaw Lecture, once it was announced that the speaker would be former Transport Secretary Patrick McLoughlin, I didn't think it worth the trip up to London. When I got the text of his presentation I knew I had made the right decision - and saved myself starting a verbal punch up.

They say of the 1960s that if you remember them you weren't there. To judge by his presentation, when it comes to the 1980s, Mr McLoughlin, may remember them, but must have been in a parallel universe.

Apparently, he sometimes compares his time as a junior minister in the Department for Transport in the late 80s to his time there in the 2010s. To quote Mr M 'In the 1980s I saw a railway in the doldrums, run by bureaucrats not entrepreneurs, dirty and unsafe, and declining in the nation's esteem'.

Yet when Mr McLoughlin became a minister in 1989, British Rail had just enjoyed six years of uninterrupted growth, with passenger miles reaching the highest level since 1952.

What about 'managers struggling against the odds with minimal, unsustainable, investment'? Well, how about route modernisation and electrification of the East Coast Main Line?. How perverse for a true-blue Tory to miss an opportunity to celebrate the fact that more route miles of electrification were commissioned during the blessed Hilda Margaret's reign than any other administration before or since?

In the column I rant on about all the other developments he missed in his time a Rail Minister, but I'll spare you that. However with my blood well and truly up, I thought it might be apposite to up-date my comparison of BR's cost to the Government with today's railway.

So I started a spread-sheet comparing 1989-90 with the latest figures for 2018-19. Why not 1988-89 to give a 30 year interval? Simply because British Rail repaid borrowing to the Government in 1988-89, to the tune of £340 million at 2018-19 prices. I thought it a trifle unsporting to take advantage of that quirk.

As the Office of Rail & Road's data shows, today's railway costs the tax-payer roughly four times as much as Bob Reid's business-led British Rail in its pomp. But, of course, this doesn't allow for the fact that today's railway is much busier.

So in the column I allow for these and other factors, such as revenue growth and fleet size. The results of this analysis surprised me and I think they may surprise you too.

TIN Watch

Two new arrivals from Greater Anglia in the new trains reliability table this month. A pair of Stadler Class 745/0 Intercity EMUs enter mid table; meanwhile the Class 755/3 three-car bi-modes now appear in their own right.

For this month's 'Benchmark of embarrassment' I have chosen the least reliable Class 150 fleet. Entirely coincidentally it marks the dividing line between 'disappointing for a new train' and 'truly awful'.

Similarly, Greater Western's Castle Class 'Pocket Rocket' IC125s delineate the stage in development where the 15,000 Miles per Technical Incident (MTIN), which rule-of-thumb suggests is the point at which fleet reliability is no longer a major factor in operating performance, is in sight.

Finally, six of the top 10 places in the Table are held by Hitachi fleets. Which is not say that all is sweetness and light.

While concentrating on getting the trains into service, Hitachi appears to have lost focus on the fact that it was going to have to maintain the two Intercity Express Programme fleets for the next 27½ years.

One result is that daily service is revealing that some routine maintenance activities are taking up to twice as long as anticipated - 'more trains than usual needing repair at the same time' in LNER social media speak. This is being reflected in cancellations and short formations.

As with Great Western, LNER services are also being affected by the combination of fleets imposed by DfT under the IEP contract. While Class 800 bi-modes can substitute for Class 801 electrics, depending on the duty, an electric may not be able to step up for a bi-mode. This is compounded by the mix of five and nine car formations in both traction flavours. In common with Great Western, five vice nine or five vice ten has been all too common, wrecking seat allocations and causing chronic overcrowding. And that is before you introduce IC225 sets.

Roger's Blog

Not much to report, and even less to look ahead to, this month.

I did get to the IMechE Railway Division Lunch at the start of the month. As always an enjoyable event, where even a quick trip to the Gents takes ages because of the chums you stop to talk to on the way there and back.

However trouble was already looming. I was the guest of an Italian company and our host could not attend because his firm had already banned flights because of COVID-19. As I am in the heightened-risk age group I self-isolated from business meetings after that - and they were all cancelled anyway.

No shortage of things to write about in next month's column though.

Meanwhile, this will be the last Informed Sources to be published under James Abbott's editorship of Modern Railways. James took over the editorial seat in January 1983, which makes him the youngest editor, now the oldest editor and also the longest serving editor.

I can't thank him enough for his support, for putting up with the tendency of Informed Sources to run over my page allowance and his meticulous checking which has saved me from embarrassment on numerous occasions.

In James' place, we welcome Philip Sherratt, promoted from Assistant Editor. Fortunately, his checking abilities are equally acute!

Finally, a word of appreciation for all those working in the daily railway who are keeping 'the job' running for essential journeys and freight. At times of crisis, I'm always impressed by, and thankful for, the way our industry just gets on with it. And that includes the backroom teams who, as I write this, have just created a new emergency timetable in a matter of days.

Keep safe.

Roger