

INFORMED SOURCES e-Preview June 2015

I'm afraid there's yet more on Network Rail's Traffic Management System farrago in this month's column. But I also report on level crossings ancient and modern. And for metal bashers there are some photos of rusty bits of Tube trains and the shiny bits used to replace them so that they can run on past their 50th birthday.

TMS Procurement – going round in circles  
Signalling Programme Director resigns  
User Worked Crossings to be re-evaluated  
Corrosion adds to Bakerloo fleet life extension cost.  
MCB-OD - inappropriate for the main line?

Last month, I reported that Network Rail had told the three contractors bidding for the accelerated roll out of the Traffic Management System (TMS) across its network that the procurement exercise had been 'curtailed'.

But now it appears, that some 'specific, targeted' deployments of TMS 'for tactical reasons' will still go ahead in Control Period 5 after all. One of these is the Thameslink 'core' through which, in the peaks, 24 trains an hour will have to travel.

Obviously, it's going to be hard to get the three bidders jumping up and down over the Thameslink core on its own. So NR is dangling 'options' cobbled together from one of the Packages in the aborted tendering.

However, second time around, NR wants the bidders to cost each option on the 'cheapest delivery method'. Not only that, the full house 'Integrated TMS', as described in earlier columns must have 'value engineered functionality' and 'pared down requirements'.

Along with experienced signalling chums I am not sure why you would need what NR calls 'Interfaced TMS via ARS' for a two track section which will be running the European Traffic Management System (ETCS) Level 2 with an Automatic Train Operation (ATO) overlay. All the ATO has to do is book each train in as it arrives and drive it through the tunnel to an energy efficient speed profile, regulating as necessary.

At the heart of this shambles is the delusion that Plan/Re-plan can transform PPM. But with this 'pared down' TMS signallers will simply be given helpful tips on regulation via a Signallers Advisory Display (SAD). And with Thameslink trains in the peak running block and block approaching the central core, trying to enter routes manually in the event of minor perturbation would be a one-armed paper-hanger job.

That's why ARS was invented. But the Digital Railway obsessives think that, somehow, Plan/Re-Plan makes ARS obsolete, whereas the latest version, Enhanced ARS, is even more capable with new facilities to help hard-pressed signallers cope.

My suspicion is that what we are seeing is the TMS team within Infrastructure Projects desperately trying to keep a failing project afloat and Thameslink is the nearest life-raft. Now that NR is part of government it comes within the orbit of the National Audit Office (NAO) I intend to draw the attention of the NAO and the new Chairman of the Commons Public Accounts Committee to the whole TMS saga.

Signalling – changes at the top

In an internal announcement on 16 April Network Rail revealed that Infrastructure Projects Signalling Programme Director, Mark Southwell 'has decided to leave in the summer'. Since joining from WS Atkins in October 2011 Mr Southwell, has been responsible for the signalling renewal delivery teams across the network, the development of the ETCS and TMS programmes and the completion of the Fixed Telecommunication Network and GSM(R) project.

Pending the appointment of a permanent successor, recently appointed Engineering Director Jon Shaw will take over responsibility for signalling on a temporary basis. He doesn't join NR until June 1.

As readers will know from recent columns, Mr Southwell's departure comes at a critical time for NR's signalling activities. In its Network Rail Monitor covering the first two quarters of the new Control Period (CP5), the Office of Road and Rail (ORR) noted that the signalling programme was 'significantly behind schedule'. It added that NR was not only unlikely to recover the shortfall by the end of 2014-15, but was forecast to commission only half the planned volume of renewals.

Stepping into this maelstrom, Jon Shaw at least has a signalling background. Before joining Bombardier in 2010 he was Global Vice President - Engineering/Head of Engineering (Asia Pacific) for Ansaldo STS. His early career included three years as a lead design engineer with what was then Westinghouse Rail Systems.

According to NR the hand-over period will help Mr Shaw 'settle into IP and Network Rail and understand some of the key engineering challenges' before taking over the Engineering Director Role 'later in the year'. Talk about a baptism of fire.

Stiffer requirements for User Worked Crossings

User worked crossings come in three flavours: with a telephone so you can ask the signaller whether it is safe to cross; with miniature warning lights; or 'passive'. Passive means it is down to the Mk1 human eyeball to check for on-coming trains.

In July 2013, the driver of a Volvo estate car did just that as he opened the gates at the Jetty Avenue UWC in Woodbridge, Suffolk. A curve in the line meant that an approaching train was not visible while he was opening the gates. It came into view only after the driver had begun to return to his car.

Add in the long bonnet on Volvo Estates and the driver could not see the approaching train until the front of the car was on the crossing. In the resulting low speed collision the car driver suffered minor injuries.

In its subsequent investigation, the Rail Accident Investigation Branch found that the instructions for car drivers using Jetty Lane and similar UWCs are inadequate. Network Rail's method for ensuring that vehicle drivers have an adequate view of approaching trains is also incompatible with the characteristics of the type of car involved in the accident.

As a result of recommendations in the Accident Report NR has begun reassessing sighting of approaching trains at its 1060 passive UWC. For each UWC NR is required to verify that from the normal driving position of their vehicle, drivers have sufficient sighting of approaching trains when the front of their vehicle is stopped a safe distance clear of the line.

Network Rail has accepted the RAIB recommendations. A new guidance document on assessment of UWC is being written by the National Level Crossing team and all UWC should have been reassessed by March 28 2016.

Bakerloo fleet highlights corrosion costs.

As anyone who has restored a classic car knows, once you start cutting into a corroded sill, wheel arch or floor pan, the rust you discover is always much, much, worse than you expected or feared. That this also applies to old trains has just been discovered by London Underground 1972 Tube Stock in service on the Bakerloo Line.

Replacement of the 36 seven car trains of 72TS is currently scheduled to start in 2025-26 – implying a minimum service life of over 50 years. There was a refurbishment programme in 1995, but when it became clear that the fleet was likely run beyond its nominal 40 year life a condition study was carried by LU.

Published in 2013 it concluded that repairs would be needed within the next four years if the fleet were to remain in service. Given the uncertainty over condition, funding was authorised initially to cover repairs on three trains.

Once LU had a reasonable idea of the lurking issues, it could design the necessary repairs. A production line would then be set up to carry out the work on the rest of the fleet.

Naturally during repairs to the first train in the trial batch it became apparent that the overall condition of the bodywork and underframe was worse than originally concluded. LU's engineers took the prudent view that the rest were likely to be just as bad, if not even worse, and are budgeting accordingly

Under what is called the 'Bakerloo Line Life Extension (72TS weld repairs) project', the aim is to complete repairs to seven trains by July 2016. By then a dedicated production line, with its own building, will have been set up at Acton Works to repair the rest of the fleet.

In the column there are some before and after photos or rusty areas and their replacement parts. There are also details of what the work costs which, as with classic cars, is a lot more than you feared.

Overall the forecast cost of repairing the whole fleet at the TMU is £45 million plus £1.5 million in repairs at Stonebridge Park depot. This gives a cost per vehicle of just under £185,000.

But, apart from enabling the Bakerloo fleet to remain in service, the project will also reduce what are known as 'mitigation activities'. These are additional procedures currently required on depot to allow Continued Safe Operation. Repaired vehicles will leave Acton with both asset condition and safety improved but also requiring less attention.

MCB-OD - limitations exposed

Just as the British Rail Research Railbus, designed for lightly-used rural lines, became the Pacer handling busy commuter services, so the Manually Controlled Barrier with Obstacle Detection (MCB-OD) has been promoted from lightly-used lines like Ely to Norwich to the East Coast Main Line.

While the MCB-OD has had its problems, largely centred on the uniquely British addition of a low level laser obstacle detector to the radar detector which seemed to be good enough elsewhere in Europe, feedback from readers on the two Modular Signalling pilot schemes tailed off some time ago. The crossings on the GN-GE Joint Line Strategic Freight Route upgrade appear to have been relatively painless.

My 'Pacer' parallel emerged when it was decided to replace six manned crossings on the East Coast Main Line (ECML) north of Doncaster with the new technology.

Skipping lightly over the installation issues, which saw the first pair commissioned a week late, all six have been open since early May. But, 'open' only because an attendant pushes a 'crossing clear' control button after the gates have auto lowered.

That's not the real problem either. Heading south, about a mile before the first of the six crossings, is the Heck Ground frame serving the siding for the Plasmor concrete block factory. To get into the siding a freight train runs along the up line, then reverses in.

However, according to Informed Sources, the strike-in point for the crossings, where an approaching train is detected, is before the ground frame. In effect, the crossing gets the message that a train is approaching and starts the automatic closing sequence, only for the train to disappear, leaving motorists wondering where the train has got to.

Talking to chums with MCB-OD experience at Railtex, they couldn't understand why this was a problem. There are sidings near MCB-OD crossings on the Mod-Sig schemes where the procedure is for the signaller to revert to manual.

But the same chums were also agreed that MCB-OD is not really suitable for a high speed, intensively worked route like the ECML. Nor for safety reasons, I should add, but because of the EBF (Enhanced Buggeration Factor).

Of course the solution is to put in some bridges and close the crossings. Actually, NR is doing a great job in getting rid of crossings and you have to hope that the 'Doncaster six' are high on the national priority list. But why, in the meantime, put in a relatively dumb automated crossing on a main line which is the antithesis of the type of route for which MCB-OD was designed.

ECML revival

In addition to Informed Sources, the June Modern Railways also includes the first part of an article based on my interview with Network Rail's London North Eastern & East Midlands Route Managing Director Phil Verster. It describes how performance has improved through the introduction of Lean manufacturing techniques.

This is timely because Phil has just moved on to become Managing Director of the new Network Rail/ScotRail Alliance, where he will be rolling out a similar programme.

## Roger's Blog

Holding the April Fourth Friday Club meeting at the National Railway Museum in York was an inspired move. It made it easier for more readers from the North to attend and we were able to add an after-lunch tour of Network Rail's new Training Centre. Activities include training around 280 signallers this year on mechanical equipment. Followers of @modern\_railways on Twitter may have seen the photo of me emulating my great grandfather on the lever frame.

Railtex has just passed. Having urged readers not to be put off by the scowl and come up and say 'hello', I got me first greetings on the train from Euston! At the exhibition there were more chats, although one reader complained that I appeared to be smiling, a case of 'The wrong kind of facial expression'.

I made the mistake of arranging some meetings in advance of the visit. This tied me down and wasted time zig-zagging across the hall. So in future I will revert to methodically going up and down the aisles and taking pot-luck. Meantime apologies if I missed your stand.

That said, there was plenty of new technical kit to be seen and gossip to be shared. Outsiders moan about the lack of innovation in the railway industry. I think they mean things like hover trains: relevant innovation was all around at Railtex.

This coming week, being half term, I've got two visits planned. Tomorrow it's off to Marylebone to see the up-graded Integrated Electronic Control Centre. This will be interesting because it was the first IECC I visited when it opened in 1991. I'm looking forward to seeing what DeltaRail's state-of-the-art IECC Scalable has to offer. And, of course, there is scope for further upgrades to add Traffic Management capabilities

Then on Wednesday I will be up bright and early for a visit to the Park, aka Wimbledon Depot, for a briefing on progress with the conversion of the Class 455 fleet to AC traction. No doubt I'll also find an EE507 traction motor with which to share a nostalgic moment.

Next week, there's a briefing on the Alliance Rail proposals for a high-speed London-Edinburgh open access service under the GNER brand name. Could be interesting because DfT is claiming that this could wreck the business case for IEP.

As ever, June starts with the Railfreight Group conference and concludes with the Stagecoach reception followed by our Fourth Friday Club meeting. This also incorporates the Modern Railways Railway Industry Innovation Awards - the longest running awards in the business.

That's not quite all for June. On the last day of the month I'm booked into one of the Railway Industry Association's innovation workshops. This is long overdue and I'm looking forward to seeing how the high level aspiration, of which I am distinctly sceptical, translate into practical action.

Meanwhile, after the phoney war in the run up to the election, look out for Network Rail to go critical. As I've been saying for sometime, Control Period 5 is about to implode with renewals and enhancements behind schedule and over budget.

At Railtex I heard NR's current 'CP5 delivery plan update' (Informed Sources May 2015) described as the 'affordability review' for the first time. I've been expecting DfT to go kinetic around July with the completion of the update, but it looks like it could be sooner.

But we mustn't forget that underneath what Rail Regulator Tom Winsor used to call all this 'froth & bubble', the real railway keeps on delivering. I had flawless runs to and from Railtex using Great Northern, Victoria Line and Virgin West Coast. Absolutely seamless and my sincere thanks to all involved. One of those days that confirm the supremacy of steel wheel on steel rail

Roger