

Round Again for SSL Resignalling

By Piers Connor

“CLUCK, CLUCK....”

Yes, you *can* hear the sound of chickens coming home to roost. Within a couple of days of the publication of the January 2014 edition of Underground News containing my assessment of the ever deteriorating state of the of the Sub Surface Lines (SSL) resignalling project, it was announced that Bombardier’s contract with London Underground (LU) had been terminated. In what is equally a hugely damaging climb-down for Bombardier, a serious indictment of London Underground’s choice of signalling supplier and a lamentable absence of diligent project management, TfL announced on New Year’s Eve that LU had decided to terminate Bombardier’s contract and to retender the work. Rumours of Bombardier being dropped had been circulating for weeks and thus it came to pass.

New Year’s Eve is an odd day for a company like London Underground to make a big announcement other than, say, the award of a CBE to their Capital Programmes Director, David Waboso, in the New Year’s Honours List but TfL was obviously hoping to bury the bad news during the holiday period. Ironic perhaps, that the press announcement of Mr Waboso’s award was issued at the same time as the announcement of the collapse of one of his major contracts. Notwithstanding the award, the news they wanted to bury is the latest episode in an apparently never-ending story of hope, despair, pubic-spirited incompetence, poor engineering and bad project management. For me, this sorry tale began 14 years ago in Singapore.

DUMPED

In the late 1990s, I was based in Singapore, working for Adtranz, the company that, amongst other things, ran the former Midland Railway carriage works at Derby and which had a diverse signalling organisation based in Sweden (formerly Ericsson), Pittsburgh USA (formerly Westinghouse Inc.) and Plymouth (formerly ML Engineering). They had also recently opened a design office in Bangkok and it was the manager of that office who rang me with a strange story. He told me that the Adtranz proposal team for the London Underground PPP offer to Metronet had dropped their in-house signalling company in favour of Westinghouse Rail Systems Ltd. He was both outraged and despairing. He couldn’t understand why we would dump our own technology in favour of a rival system.

Well, it wasn’t difficult to see why. At that time, Westinghouse had lately been part of a fourth consortium called “NewMetro”, who were preparing to bid for a PPP contract but they, undoubtedly with considerable foresight, decided to withdraw before they offered a full proposal¹. As a result, Westinghouse, who had a long history of supplying London Underground with signalling equipment, were let loose. The leader of the Adtranz bid team, Keith Rands, seeing an opportunity, asked Westinghouse if they would join their Metronet consortium bid and, when he got a yes, he dumped the Adtranz signalling company (who were unknown and untried on LU) and proposed the Westinghouse “Distance to Go-Radio” (DTG-R) signalling instead. The hope was that it would be a winning strategy. It was both a logical and astute move and, in the bid story, it was the right decision, since it was soon accepted by Metronet and LU for the Victoria Line and the SSL. Before the PPP deal was done, in the Spring of 2001, Bombardier took over Adtranz, including the Derby carriage works and the various Adtranz signalling technologies.

REALISM

When the Westinghouse SSL resignalling contract was finally signed as part of the Metronet PPP offer in February 2003, it was valued at £755million. This is £1.1billion in today’s money but it included several sections of SSL track circuit immunisation works in preparation for the

¹ NewMetro, comprising Taylor Woodrow, Siemens, Innisfree, Gibb, Mott MacDonald and Westinghouse, was bidding for BCV only (the Bakerloo, Central, Victoria and Waterloo & City lines). When Taylor Woodrow left, after a fruitless search for a replacement civil contractor, it was decided to break up the group. *Construction News: 9 December 1999.*

introduction of S Stock. If I knock off £100million for this work, it leaves a nice round £1billion or £5million per mile. Not cheap but realistic - bearing in mind the big risk profile presented to any contractor thinking of signing up to work for LU.

When I used to work in business development at around the time of the start of this story, we used to reckon signalling would cost (in today's money) £1.5million per track mile on a new metro, including the equipment for a control centre. We would double this price for a resignalling project because of the need for interfacing with the existing railway, only getting access at night and over weekends, the difficult work sites and the lack of space for new equipment, and we would add a risk pot for the inevitable political and operational interference.

In a presentation he gave to the March 2012 MetroRail conference, Mr. Waboso quotes a price of £3-4million per mile for resignalling, broadly in line with my estimate. So, on this basis, the 200 plus track miles of the SSL should cost £6-800million. What is strange is that he made this statement after letting the Bombardier contract at £354million. More hope here than pragmatism, perhaps but, on 2nd January, the Official Journal of the European Union (OJEU) notice for the new tender was issued, with a guide price of £450-600million – more pragmatic but still more hopeful than wise.

What was apparently forgotten for the Bombardier contract was the cost of installing new power supplies for the resignalling. It is also not clear what was included for the track alterations planned for the SSL as part of the upgrade. Looking further at costs, if you take into account the £95million Westinghouse was paid to drop the original contract, the £85million reported to have been paid to Bombardier “for work done” under the second contract and the four years of time, costs and lost passenger benefits wasted after the collapse of Metronet while LU, with typical public sector high-mindedness, fiddled about trying to find a cheaper contractor, it is likely that it would have been more cost effective to stay with Westinghouse.

NEXT?

So, who will LU get to take over the job? This is, according to a source close to LU, a poisoned chalice from which no one will drink swiftly. If you are a contractor looking at this job, you will know there are only two realistic names: Seltrac (Thales) S40, as already installed on the Jubilee Line and partly installed on the Northern², or Westinghouse (now part of Siemens) DTG-R, as installed on the Victoria Line. Even LU wouldn't dare to try a completely new system now, would they?

The simplest option is obviously Seltrac, since their people are already on site doing the Northern Line, they have been through the not inconsiderable pain of learning how to deal with LU and their complex standards, their operating rules and their engineering processes and how LU's rolling stock behaves. They will have to deal with the S Stock interfaces³ and with Network Rail (NR) but at least they have a head start. For all these reasons they could offer a reasonable price. Their only two downsides are the centralised architecture of their system, which can cause some widespread shutdowns⁴, and the communication wires they have to lay between the rails. These do not last well when attacked by a P-way shovel and people trip over them.

As for Westinghouse (Siemens), they have a good system. It's quick to install, it has a de-centralised architecture making faults easier to assimilate and correct, it's working well on the Victoria Line and Westinghouse know LU and the SSL territory - they were involved in the immunisation of track circuits on the Metropolitan and District lines. Their downside is that they have to interface with Seltrac on the Jubilee as well as with NR and, some would say, another disadvantage is that they still use track circuits. So, track circuits or wiggly wires? You pays your money and you take your choice.

² By the time this appears in print, the Northern should be in ATO mode as far south as Oval via both Bank and Charing Cross.

³ They will already know something about the electrical footprint of the S Stock because they have to be aware of the electro-magnetic interference profile and its immunisation requirements.

⁴ To be fair, the system has settled down and such instances are now rare.

One other factor is that now Westinghouse has been taken over by Siemens, will their new masters dump DTG-R and insist on offering their own SIMIS train control system? They might do the former but I doubt they will do the latter on this job. For any other contenders, there's not much hope. If I was in their shoes, I would surmise that LU has already approached Thales privately to see how quickly they could mobilise for SSL and to see if they could get anywhere close to the now impossible 2018 completion date.

TIME IS TIGHT

The official timescales are, quite frankly, unrealistic. The OJEU notice says the new contract will start in June this year (!) and must be completed by December 2018, but it normally takes two years to go through the contract negotiation process before the start of a project of this size. In our case, this would be January 2016. They might do it earlier if Thales was given a variation under their existing contract structure but then someone might scream "foul" under EU regulations.

Under the original PPP contract, the intended date for the completion of the SSL resignalling was 2014. This had slipped by two years when Metronet collapsed in July 2007 and lost another couple of years after that. It is currently officially still at 2018. The Bombardier contract envisaged two years design and testing work followed by five years of installation and commissioning. My own take on it was that 7 years was more realistic for installation and this was included for in the original project plan for the PPP bid back in 2001.

Now, the OJEU notice expects a "new" contractor to do 300kms of resignalling, including design, in 54 months. This is just not realistic. The current Northern Line resignalling project has a 7-year programme covering 80 track miles of railway, and this is a "run on" project with all the learning work being done on the Jubilee line. By any reasonable calculation, 4½ years for 200 miles is, put nicely, heroic. If I were a betting man, I would put money on a 2021 completion date. I'm sure LU, being a responsible organisation, will have told the DfT this.

Finally, my favourite headline on this story is from the Boriswatch blog, "SSL Resignalling Contract Canned – Manure/Fan Interface Enabled" (<http://www.boriswatch.co.uk/2013/12/31/>).