

# **LONDON'S SECRET RAILWAYS MAPPING THE UNDERGROUND'S SECRETS**

**by Dr. Maxwell J. Roberts**

**A report of the LURS meeting at All Souls Club House  
on Tuesday 12 September 2012**

Dr. Roberts prefaced the talk by explaining that he had already given the talk to go with his new book – *Underground Maps Unravelling* – two years ago. The topic tonight, about variations of train maps in the London area, may or may not turn into a book. Also explained was the speaker was not an expert *per se* on this particular area but having collected lots of maps he was simply speaking about what he had seen and collected though the information and collection that he has is not infallible nor complete and he is happy to hear of other maps that are not in his collection.

The topic of the talk, relating to the Underground's 'rivals' was and still is complex: relationships with mainline companies was an unusual mixture of co-operation and conflict. In general it was only the Southern network which did not get on with the Underground – the rest were all forced into marriages of one kind or another.

## **OVERVIEW**

London Underground has never had a monopoly for rail travel within London and only has one-third of rail mileage – many other railways perform similar roles: short journeys from the middle suburbs to centre of London. Travel in London is a diverse mixture of less-famous companies, competing against one another. Out of these many different styles of maps, both their own and integrated maps inevitably turned out very differently.

Timetables, unlike with the Underground, are a good place to start searching when looking for maps and they tend to take the form of fold-out maps. Publicity posters are also a source of information though conversely if you look at old photographs of stations there is a curious absence of maps from the front of stations: LU has traditionally seen the map as an important publicity tool, being more willing to let people take their maps home and this is much less the case with mainline stations. Carriage maps have also been used to a greater or lesser extent and pamphlets have sometimes also shown maps though are challenge to collect as they are often thrown away rather than kept.

In general, when comparing these maps it is apparent that there is much more fragmentation and less focus on a corporate image and 'house' style. Published material is also generally less collectable, less collected and documented, etc., making it difficult to get an overall picture. There was also a problem in that this documentation was not always taken very seriously by the railway companies themselves.

Essentially the documentation can be grouped into four main eras.

## **PRE-GROUPING: EARLY YEARS TO 1923**

These were times when railway companies were mainly individual and competing. Some merged over time while some remained separate. Electrification is a good place to start as it was expensive to build: post-electrification railways were therefore forced to advertise to make their work viable as this investment was extremely expensive. There were several large and complicated networks at the time such as the London Brighton & South Coast railway, the London & South Western Railway, the South Eastern & Chatham Railway and the Great Eastern Railway. As well as this there were a number of medium-sized networks like the Great Northern Railway and the London, Tilbury & Southend Railway. Minor players also persisted, such as Great Western Railway and Great Central Railway, both of whom had very little focus on London.

In essence at this time diagrams and maps were firmly rooted in the traditional mindset without much innovation.

The key change was in 1908 when the underground railways began to market themselves together and introduced through-ticketing, meaning more co-operation than was hitherto required. This was a pivotal event and marked a demarcation between London Underground and the rest of London: if they weren't in this 'club' they would be frozen out and could expect no publicity. At this time it was

seen in the designs of many operators that the London area itself is just a minor component of their business, an example of this being the GER map which shows London as a tiny dot in comparison to the rest of its routes although it did build up a significant commuter service. GNR, too, conveyed other routes, such as London to Scotland, as being more important (and lucrative?). At this point there was some sense of scale simply because with these distances and areas covered it was meaningless to show twisting and turning lines in such detail.

Another railway with mapping developments was the LBSC railway, whose maps showed the overhead electrified network. Noticeable on these early maps was the manner of co-operation, showing all other railways around it, even when they could have been competitors. There were also examples, at this time, of competition being neglected, an example being the London & North West Railway Watford Route, unhelpfully showing the entire Metropolitan Line ending as a stub just north of Baker Street.

The Underground was also inconsistent at freezing out the competition too, with competitors sometimes being there and sometimes not: the first Underground map showed mainline railways in the background but these were all gone by 1911 except for, curiously, the London to Brighton line.

At this time there was sporadic innovation with regard to maps: the LBSC railway – from Victoria to London Bridge – had a nice, neat straight line which had absolutely no connection with reality and for 1909 was quite unusual. The LNWR also had huge geographical distortion in order to fit into the space of a carriage panel, further evidence being that the line to Watford seems to be squashed down to fit. Even without looking at the Underground, all the hallmarks of LU maps, simplification and geographical distortion, were present and were to be used by Beck later on.

In general with the pre-grouping era, there were almost certainly plenty of interesting maps around but they are fairly hard to track down. The railways were uncertain of their rivals at this time, being unsure of whether they were beneficial or if they would take customers away. Cartography continued to be very traditional but new innovations were certainly starting to sprout.

## THE BIG FOUR 1923 – 1948

During this time the competing companies were forced together to make ‘the big four’. At this time there were many design innovations and the beginning of a corporate identity for some operators, for example there being a common look between different departments: a resemblance from a timetable booklet to railway carriage being one example. In some cases this preceded LU. However, there was a big disparity and the big four can be summarised as thus.

**Southern** – always had appalling network maps and although they were very good at publicity. It was curious that this good work never fed through to the mapping department. Some of their early work with maps was similar to the LSWR as it was made by same people and so had the same style of traditional cartography but they did produce some nice publicity posters and were ahead of the game with this – A Straight Line Between Two Points and Rapide Ocean Manche, advertising foreign journeys, being two examples of really nice, elegant publicity. There was also evidence of nice artwork with maps on timetables, for example using the general increase in using straight lines, for example from Wimbledon to Holborn Viaduct and London to Brighton. Interestingly, most of these predate Beck.

There were, however, awful, maps. While the publicity department knew about straight lines, the mapping department returned to more muddled arrangements. In later years electrification of the lines from London to Brighton promised straight lines but the maps inside were completely different, and extremely challenging to use, resulting in terrible maps: some not even showing most of the termini which, as anyone who lives in south London knows, is absolutely essential.

A further timetable map of 1937, showed the same sort of thing, demonstrating clearly that the publicity and timetable people from the company are simply not in communication with each other.

**London North Eastern Railway** – partly through the work of George Dow they had a strong corporate identity. The use of the Gill Sans font started to appear during this time.

The LNER has inauspicious beginnings. Late-1920s timetables show lots of red and white. There was plenty of Innovation with George Dow in charge – nice carriage maps, the use of straight lines clearly showing the various components of the LNER. Over time the style settles down, both pre and post-Beck. There is evidence of lots of elegant schematic maps in carriages and this style was

apparently starting to get through on the timetables: the combined LNER map was balanced, had straight lines and even had pictograms showing the various attractions along the way – it emphasised the use of network to get to destinations which were not necessarily London. Maps also showed co-operation with services which had been or were about to be taken over by Northern Line.

**LMS** – muddled and little direction or any sense of corporate identity, this went so far as not being able to agree on which logos to use. At best they were inconsistent: a map produced for the Wembley Empire Exhibition has several versions including, rarely, the circle line as a perfect circle. However, you open up this pack to find a nice map to persuade people to use the LMS. In many ways it is similar to the LNW with a simplified line trajectory but not yet straightened with the designer knowing that you don't need to know every single twist and turn. This map was tucked into back of a publicity folder that you only found out about when you unpacked it.

George Dow also did work for LMS, producing carriage diagrams and the LMS map – for the time it was an excellent, striking design, although no known copies survive. Historic photographs at Wembley Central station, sourced from the LTM website, also proves that this map was used in the wild and is a rare example of a map on the station front to advertise the services on offer.

With two nice maps – what happened next? Whoever produced the 1930 map timetable ignored the previous incarnations completely, the ex-Midland services to Tilbury and North London Line being two bad examples time and time again – designers doing what they wanted, no references to other work, no consistency, etc.

There are integrated maps in existence – Henry Beck famously made one which was elegant but was rejected by LT. The map simply looked too complicated. When studying it closely with a timetable it was also found that there were numerous errors – including lines shown that had seen no passenger trains for decades. South-East London was also poorly mapped. For example, there was no Clapham Common. Does this prove that you can't map south London if you've not brought up there?

Another very nice map of the time existed, showing geographical detail and integration by George Phillip, it showed all of London's railways but this information was not generally provided by the rail companies themselves.

**GWR** – is hardly worth a mention. They produced a tri-fold map complete with heavy cloth. Inner London stations have no names, except for London showing just how lacking focus on the area they were. Maps also show most of the country, including Ireland and it tries to show everything, resulting in a really awful map.

Generally, over time co-operation with LU increased with time in terms of maps although integrated publicity, conversely, decreased. On large topographical station posters, for example, all the lines were continuously shown but on card folders, presumably because of a lack of space, railway companies were frozen out - there was even no Waterloo & City Line shown. Once Henry Beck's work was published mainline companies completely vanished from station posters and pocket maps resulting in some true secret railways. To sum up, they were quite forward thinking with publicity but backward in terms of maps: good maps often tended to fall by the wayside.

## **NATIONALISED BUT REGIONALISED PERIOD: 1948+**

Things in general tended to go backwards and forwards during this period and there was not necessarily an exchange of good practice. The maps of the time tended to be very regional. For example, Dow was working at the London Midland region on carriage maps and pamphlets – these included work showing the London Midland suburban, long distance journeys and electrified lines all in diagrammatic style.

David Lawrence was another designer who almost brought Southern Railway into the 20th century which a carriage map that colour-codes terminus stations – in comparison to what went before this must have seemed like a big innovation. Apparently it was made with string and pins. Intriguingly it is said that he suggested to Southern that they might want to produce a personal pocket folder – this went as far as a drawing but was never pursued. It seems that these were the times of thinking of a wider picture rather than just solely on the Southern Region.

His work went into widespread use and even into timetables. This map shows the moral of never signing the copyright over of your map as the company then simply make a mess of it after they get

hold of it – nice neat diagonals were changed to curves and inconsistencies. A lesson to map designers everywhere – don't sign over your copyright!

The Eastern Region seems to have suffered from a certain amount of regression – George Dow had moved on and it seems that the impetus had gone. A post-war map shows much the same as before except for bits that the Underground had taken over. However, one of the big unsolved mysteries of the time is that Beck's name appears. This was completely different to anything that Beck had ever produced and it is hard to imagine him doing it. The likeliest scenario is that his name was added by someone else. The Eastern diagrams faded away at this point – a later George Phillip was produced showing that things had gone completely full circle and were back to, frankly, a mess.

At the same time there were several London Transport integrated maps, such as the Festival of Britain map of the early 1950s which showed Underground lines and some of the south London lines. Inconveniently there was a large infill right over Peckham Rye so you can't see anything if you happened to live there(!). This suggests that the map was really a token gesture not intended to be helpful to Southern Region passengers. From the mid-1950s began a series of maps by B.G. Reid showing London transport systems. This really was true – all railways appearing on the map rather than just those of LU, including roads that buses used. This really was revolutionary and was ten years before integration would really occur in earnest.

Overall during this period as a whole there was little integration and co-operation with not many new ideas. Regional progress depended very much on the individual, for example as Dow moved his ideas went with him.

## **PERMUTATIONS OF INTEGRATIONS – 1960s ONWARDS**

From 1960s onwards people got more interested in integration and an article even appeared in the *Underground News* magazine about the origins of London's integrated maps. As well as there being a public pressure there was also a sense of inward pressure: although not well known Bernard Slatter was massively influential in British Rail mapping. Essentially anything with 'BS' on it was almost certainly down to him. Tim Demuth was also responsible for the first integrated London diagram.

The GLC intervened at the time, pushing for an integrated map: the London Connections(s) map helped but the creation of Network SouthEast makes the London-wide integration short-lived as Network SouthEast was aggressively marketing itself as its own network without giving the Underground centre stage.

Covers came in various guises and the 1965, 1966 and 1970's diagrams were, for the first time, a riot of colour. They were also the first to show Greater London mainline railways in absence of the Underground which looks slightly disturbing. It shows nicely the very different styles of railways across the capital – for example the Bakerloo at that time was a north-west, south-east railway with two branches. When there are clearly defined trunk routes without too many branches it becomes fairly easy to market them in this way. With other operators there is a trunk line to a terminus but then endless branching so as to capture as much suburban traffic as possible, resulting in very bushy maps and being hard to colour code in any meaningful way. As an example, the LSWR didn't even bother to differentiate the Windsor lines from the main line. In essence these maps were very colourful but very complicated with a lot happening in them.

From 1966 the problem of this over-colouring was 'solved' by producing the maps instead in monochrome – these really are not for fainthearted with multiple patterns differentiating the lines. This, almost unbelievably, soldiered on in various guises, one example being the Southern Railway timetable which had a bi-colour map. It is suspected that Bernard Slatter hated this map and so in 1972 two new diagrammed maps were published, one for the Southern Region and one everywhere else. They are certainly still complicated and hard work but definitely less threatening than previous versions, with an attempt made to show the different services to the different termini and showing the Underground linking the termini together. There were also attempts at handy symbols – circles, open circles, etc. attempting to act as a code for different frequencies. This map therefore shows that most south London trains were every half hour, the open circles showing a less frequent service and urging the passenger not just to expect to turn up.

The northern version of the map was less integrated but also less formidable. Each company had their own terminus and were certainly more separate with no massive complexity until East London.

This was to be just a temporary measure as integrated maps followed though still with a varied design, one beginning with a black hole in central London not showing how you could traverse the capital. Symbols for different levels of service were still extant and variations in the orientation of the map also appeared, changing from landscape to portrait. In 1977 the map stabilised and the Underground represented in colour with a select few stations. This itself is an interesting map – blue letters appear all over the map which must have made living there depressing as they represent service restrictions. Over the course of time more and more blue splurges appeared. Examples include a little-used line from Blackfriars through south east London with coding suggesting that there was ‘No Saturday afternoon or Sunday service’ making it feel very much like an unwanted railway only aimed at commuters.

Even at this time, however, standards were not universal and sometimes didn’t match other designs: some pamphlets followed accepted styles some didn’t – the North London Line was a continual offender and was completely different and wacky bearing little resemblance to the network map.

From the 1980s the GLC was determined to get better integration in transport, not least with fares. Once this occurred it was logical to make combined maps. Because of this London Connection maps were re-established, one published in 1982 was clearly revived from the early 1970s in order to head off pressure to include non-LU lines on its map. This was not a bad attempt, clearly showing all of the services though all of the British Rail lines were shown in rather indistinct pink and completely undifferentiated. It attempted to show how the Underground was connected to the network, just not how to use the rest of the network.

From 1985, seemingly worldwide, metros turned orange, with this bilious orange appearing on the London Connections map as well as the Underground map. An ungainly design by Cooper Thirkell derived from 1982 but it featured thick lines which simply made it harder to fit everything in, resulting in poorly configured interchanges. The map went through various revisions but it seemed that every time the designers tried to fix something they made more problems for themselves.

This takes us to Bernard Slatter again, who in 1989 produced the Network SouthEast version of the London Connections map which continued for long time. It showed the Underground lines in black and white with the Network SouthEast lines in different colours, dictated by service pattern. It shows quite neatly the Thameslink services as well as the services from Victoria, Charing Cross and Cannon Street separately. Even with this effort being put in there was still no standard corporate image with various bits of dissenting publicity not matching original map. Southern was marketed as Fast (it wasn’t – it was better to get the District Line from Wimbledon to Blackfriars), Frequent (it wasn’t, there were often less than two trains per hour) and Easy (you can make your own mind up). London Regional Transport then went their own separate way and the result of which there were two competing all-London railway maps: one from London Regional Transport and one from Slatter’s design for Network South East. Unfortunately with privatisation, the Slatter map lost a lot of functionality because it began to colour-code by operating company rather than route. The Thameslink route was still differentiated but the differentiation between Charing Cross and Cannon Street was lost. All of these changes led to a big damage to usability.

Overall the period can be summed up as having a variable design, several turf wars, the railways becoming political battles in a way that they hadn’t before and there were still obvious inconsistencies between and within organisations.

## **PRIVATISATION AND FRAGMENTATION – 1990s ONWARDS**

The railways from the 1990s onwards were broken up into numerous, frequently changing franchises which were not always changed elegantly. This led to competing pressures with regards to maps, TfL wanting better integration but competing, opposing operators wanted their own marketing to be highlighted. This led to lots of dubious attempts at integrated maps.

The Bernard Slatter design continued: zones were heavily colour-coded, and London Underground lines were finally properly coloured. All operators, of course, wanted their branding colour which led to an ungainly three lines of colour through South London. Almost unbelievably this map worked amazingly well despite its garish colour scheme: it is still usable, showing its durability and robustness.

TfL zonal maps were a competing design – they came up with various initiatives to tame south London, known as the Overground Network. An attempt was made to show termini, colour-coding it

in a meaningful way as well as only showing lines with a good enough service – anything with less than four trains per hour was greyed out. While this was good in theory it often wasn't in practice – Denmark Hill had four trains at uneven intervals while Lewisham supposedly had six trains per hour on a Sunday but these often ran within two to three minutes of each other leaving a 22-minute gap. This showed that frequency by itself was not altogether helpful, echoing an argument of not putting National Rail lines on map until they do proper services with good timetables!

A 'High Frequency Services' map was also published which also leads to debate – is four trains per hour high frequency? What happens if a train is cancelled leaving a twenty-five minute gap? This method led to inelegant maps with thick versus thin lines which were often found to be hard for the customer to understand. It is said, however, that a good map can't fix bad network.

Fully integrated ticketing maps such as those using Oyster cards, when compared with the Slatter method of putting everything together works less well. Boris Johnson intervened around two years ago which killed off the Slatter map – he didn't want two separate maps of London showing the same thing. However, the replacement is not an improvement: dashed lines across south London don't help understanding and services being grouped by operating company defy any form of logic. So, coming to the present day a good integrated map is still a long way off.

An effect of privatisation has been that, essentially, anyone can have a go at making a map (and they do!):

- A Docklands Light Railway connections shows literally everything but London Underground.
- Greater Anglia have a reasonably sensible map designed by FWT.
- c2c on the London to Tilbury and Southend line has extremely thick lines with apparent bite marks for stations. They are helped, however, by having a relatively simple network.
- Chiltern is straightforward with London at the bottom, being remarkable only in that the lines seem to rise up and fall down again.
- The First Capital Connect diagram is very dense as they have a lot of network to fit in within a relatively small space.
- London Midland barely qualifies as London is such a small part of it.
- London Overground is not the happiest map in the world but showing the Watford Junction section in full.
- First Great Western also has a tiny London area though the entire map has a thoroughly poor and nasty design.
- SouthEastern also makes little sense – pink becomes green at a certain point for little apparent reason.
- British Rail South Central Division seems to have an allergy to diagonals having big vertical lines through the middle along with bends. It is far too over-differentiated at the expense of simplicity.
- South West trains has strong diagonals on it, from north-east to south-west.
- Old friends area also still around: the Bernard Slatter design from the early 1980s is still alive and well and continues to be updated by London South East which possibly makes it the longest-ever serving map in Britain.

To summarise the privatised period, branding certainly dominates to detriment of usability and because of computers anyone can now have a go at a map. This results in a huge variability in design standards. TfL continue to land grab at present and get a bigger foot in the door – perhaps better integrated maps will be a result though whether this will achieve better designs is somewhat debatable.

In summary a lot of maps have been lost forever: a lot has changed since privatisation and unless someone is archiving the old ones they might well disappear. On the whole, while it is painful to make mistakes it is less painful to learn from other people's mistakes and some of these rogue gallery maps might at least make people more careful in the future.

There are an impressive variety of maps – sometimes innovation improves usability, sometimes not, though it must be noted that the records are very much incomplete – is better record keeping needed when compared to London Underground which seems to have a much more complete history. A good all-London integrated map is still awaited and a final thought is that bad maps will continue to be made until they are taken out of the hands of marketing departments!

**Michael Woodside**