

Public transport in the UK: Horses for Courses

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***** Important: please see the update in the Appendix *****

This is the fourth in a series of 6 short papers. It is more of a challenge to the bankers (as represented by the UKCards Association) than an explanation.

The 3rd version was produced with the advantage of having studied in detail:

The UK Cards Association Contactless Transit Project, November 2015

This 4th version (with new Annex)

This paper, like the 17th January note (Who and What), is primarily about using a UK bank debit or credit card (or perhaps a foreign issued credit card) as 'authority to travel' (CAATT¹) *on the UK heavy rail network*. But, instead of the more general discussion (in the third paper in this series 'Who and What') about using bank payment cards as that 'authority to travel', this document concentrates on the specific 'Model 3' UK Cards method. And, at the end, there is a suggestion about co-ordinating the various parties for the benefit of the passenger.

The UK Cards document indicates that CAATT ('Model 3') is specifically about using bank payment cards in a heavy rail environment of:

Pre-purchased travel

Known fare

Charge to the card account made at the point of purchase

Therefore:

The passenger, or someone else on his or her behalf, will have some form of receipt for payment – but the passenger does not need to carry that receipt

The passenger on heavy rail will *not* have a physical ticket in the well known orange card format or the more recently introduced 2D barcode format

The passenger will present *the bank card* at a station gate

There will be station controller system that will check validity of the passenger's Authority to Travel – if valid, the gate will open

Financial settlement for the ticket purchase will be actioned by the bank or credit card company.

¹ CAATT: Card As Authority To Travel

Importantly, as before, this note is not a recommendation for rolling out Jeremy Acklam's Multipass (a 'charge to account' method for heavy rail journeys, mentioned in the 2nd and 3rd of these papers) all across the rail network – but that method may well, and/or a different 'charge to account' method may well, have a significant place in the constellation of ticketing and journey management methods for passengers on UK heavy rail.

To date there are 3 other papers in this series; this is #4. The others are:

- 1 Public transport in the UK: almost always connected?
- 2 Public transport in the UK: why not "always connected"?
- 3 Public transport in the UK: who is responsible for what? (V2)

This paper picks up the challenge thrown out at the end of the 3rd paper:

Does all of this make the proposed use of bank payment cards rather too complex? It certainly violates the 'Keep it simple, stupid' dictum.

Or is it that we must look to finding and deploying 'Horses for Courses', i.e. use CAATT only for the simple point to point journey such as is made by very many commuters?

That challenge came about because CAATT, as very briefly described to me by a correspondent, indeed appears to work only for those who regularly make the same make point to point journeys – typically commuters to and from a town or city. It is now indeed clear that CAATT is simple – but also it may be very confusing for the passenger, as the passenger carrying just the card will not have any data about the journey purchased. With just the card, we are back into the realm of having a separate counterpart document if the journey is complex. However, I have heard or read somewhere that there may be developed an application that is added to the card, in order to effectively hold a counterpart – but how do you read that? Of course there could be a smartphone App...

As referred to in the first paper in this series, in 2007 Trainline funded a study of the application of state machine methodology to describe the life of a public transport ticket, and thus follow the progress of the customer through the public transport system [1]. The recipients of the output of that project decided not to take the work any further, but it could well be that its time has come, and that it will assist with designing the way in which CAATT can be widely deployed on the UK heavy rail network.

The first two papers in this series introduced the concept of enabling and following the passenger's journey via a 'cloud of data' concept to which the passenger's smart device is '*Almost always connected*'. Immediately after the second of these notes was completed, there was, on 12th January, the government announcement of a programme for all passenger journeys by bus and rail in the UK to be 'smart enabled' by 2022. On the one hand, the 6 year duration of that programme looks to be a very credible timescale. On the other hand, the questions to be asked include: will it work and, if so, will it enable seamless multi-mode journeys? A brief note from a correspondent suggested that a key requisite for enabling effective use of smart media by heavy rail passengers and, beyond that, for seamless *multi-modal* journeys on public transport, is implementation of the underlying assumption of 'Model 3' referred to in the UKCards material, namely using a bank payment Card As Authority To Travel (CAATT). I beg to differ: there are other methods used to grant Authority To Travel.

The third paper in this series (Public transport in the UK: who is responsible for what?) was the result of being told a very very minimal explanation of the CAATT concept. It concluded that, as currently known:

CAATT is initially targeted at use by regular travellers who are season ticket holders.

CAATT should be able to usefully embrace a category of passenger that SEFT was expected to cover by adding a 'flexible season ticket' method to the choices available to the season ticket holder (typically of course the commuter by rail).

And that new concept:

CAATT will need a station controller system holding ticket details and controlling ticket gates so that they only let through passengers with valid tickets.

CAATT appears to be still 'in development'.

We need to understand if and how CAATT *on its own* will:

cope with multi-leg journeys,

allow for the passenger who makes just a 'one-off' journey (many of us do that, although we may make the same journey several times),

enable seamless multi-modal travel,

allow the passenger and the service operator's staff to see anything about the journey purchased (**including the price, seat reservations, connections, wheelchair assist...**);

implement break of journey access in and out of the station.

And we need to understand the consequences of CAATT apparently putting all of its users in the hands of the bankers.

But:

Marry CAATT with the concepts introduced in the first 3 of this series of papers (particularly being 'almost always connected' to a data cloud) – then there might be a win-win situation for passenger and service operator alike.

To make further progress we must look for full release of the UKCards material as the start of a partnership between bankers, the operators of public transport, the public sector, and the developers and suppliers of secure methodology.

And we must ask how this concept contributes to moving towards seamless multi-modal travel by public transport.

The author's suggestion is that ITSO, not any individual player in the game, should be the overarching organisation to move the various parties along in harness.

Finally:

The 'horses for courses' in the title of this paper are the operators of the various forms of public transport.

The 'courses' are the routes (road, rail, tram, etc) along which people travel.

Annex: Update 7th February 2016

Further study of the UK Cards material has resulted in the preparation of this Annex as a follow up to the 3rd paper in this series: Who and What. The conclusion there is that the simple use of CAATT across the UK heavy rail network (i.e. using a bank payment card as both the 'payment for travel' instrument and the token that gets you through the station gates – the 'Card as Authority To Travel' token) is fraught with difficulties.

On the current UK heavy rail network with its franchise agreements (and sometimes also services operated by contractors), the author believes that CAATT would require passengers to join up as Members of the scheme – which is what SEFT tried to do, but the SEFT scheme did not create any online ticket verification method. The author has heard that passengers who purchased a SEFT ticket online but were unable to collect it at their local open station (because the equipment at the station could not deliver it) were sometimes surcharged when they reached their destination, a process that, as well as being unfair, takes too much time when you have to be at your place of work ASAP.

(The author of this paper nearly had a similar problem only a few days before writing this: trying to collect a ticket at a rail station Ticket on Departure machine, he instead got a message that 'no data is found' – but the station that the author was intent on using is gated, so the result of not being able to collect the ticket may have been either paying for a new ticket or not travelling. Fortunately, at the time there was an operating ticket office at the station, and it was not busy, so the data record was quickly found by a ticket sales agent, and the ticket was issued.)

So it seems that nationwide CAATT would need a national online database of EMV payment cards that are registered with the CAATT scheme, a method for reporting lost and stolen cards, and a high speed authentication methodology to compare the card just presented with the national database. Definitely not the nationwide easy travel method envisaged – but CAATT may have its place, particularly so if a metropolitan area outside London creates a multi-operator multi-modal ticketing scheme that is underwritten by the public sector. Northern Powerhouse, perhaps?

[1] Customer Media Ticket Clipping/Validation in UK Rail – proposal for discussion, V1-2, January 2008 (pdf version), Trainline (available from the author).

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