All Party Parliamentary
Light Rail Group
House of Commons
London SW1A 0AA
Light Rail & Trams, Affordable & Sustainable Transport

"The past we inherit, the future we build ourselves"

"TramTrain does it Greener and Cheaper on lightly used railway lines and in the streets"

Chairman: Greg Mulholland MP

Wednesday, 27th January 2016

Speakers:

Christian Wolmar, Journalist, writer and broadcaster specialising in transport, Former Mayor of London candidate, Sustainable public transport

David Mowatt MP, Warrington South (Conservative)

Christophe Chassagnette, Chief Operating Officer, Colas Rail Asia

The **Chairman** welcomed the audience to the meeting and introduced the speakers. He announced the first APPLRG fact-finding trip of this Parliament which will be to Kassel on 9th May. There are a couple of places available and support is looked for, enquiries to Jim Harkins.

Christian Wolmar
The talk was accompanied by a PowerPoint presentation, which can be found at

http://www.applrguk.co.uk/media/files/LR-Applrg-Trams-The-Real-Story-Christian-Wolmar-27-Jan-2016pdf

Christian Wolmar said he would try and put trams in an historical context and asked why in this country we were "so bad at trams".
There had been a lack of transport policy over the last one hundred years. He quoted a publication from a series called "Perspectives" entitled "Are trams socialist?" which looks at transport policy over the last 150 years. It highlights our blind spot in relation to collective, as opposed to individual, means of transport.

Christian Wolmar contrasted a picture of a first generation tram with a modern congested street. From the 1920s Ministry of transport policy was entirely geared to road building and accommodating the car.
The car was seen as the future. He contrasted an early picture of a virtually empty arterial road with a 1950s one of gridlock on the Exeter bypass.

These meetings are by invitation only, where MPs, Stakeholders etc., within the Light Rail industry and invited members of the Public will have a chance to discuss debate and raise questions concerning Light Rail.

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In the 1960s the Buchanan Report proposed building urban motorways to accommodate cars.

One of the victims of these policies was the tram, which finally disappeared (except for Blackpool) in the 1950s and 60s. Trams were the working class way of getting around town, cheaper than the railways and going to where people lived, more effective than buses and often municipally run.

Trams were excluded from, for example, the West End of London because of their working class associations.

Trams were seen as getting in the way of cars and that is what largely killed them off although there were other issues such as the fact that most tram fleets were old and needed replacing.

A lot of European cities kept at least the core of their tram networks. We, however, wiped out both the tram and the trolleybus.

By the 1970s and 80s we began to realise that the solution is not car-driven although we never quite accommodated this. We got a new generation of trams from 1982 with Manchester, Sheffield, Nottingham, Croydon, Birmingham and Edinburgh as well as the Tyne and Wear Metro and DLR.
These systems are not perfect; Manchester and Nottingham are probably the best. They are all built to accommodate what is possible, so there is quite a lot of use of existing rail lines, which is not always ideal, there is little integration with other modes and, indeed, competition with buses due to legislation, and trams do not always get priority over other traffic, but they are still largely successful.

John Prescott recognised this and promised 25 tram schemes by 2010 but we only got extensions in Manchester and Nottingham and the Edinburgh tram. The argument was that they were expensive and not enough people would use them.

There was no understanding that in practically every respect trams are transformational. They are cheaper to operate than buses, they take people out of cars in a way that buses never do – according to the Urban Transport Group about 20% of people using trams at peak times used to use cars and at weekends the number can go up to about 50%. Trams attract investment – what city that has a tram system does not put it on the front page of their annual report?

They can deal with flows of around 20,000 people an hour and from around 2,500 people an hour they become cheaper to operate.

Manchester now has the biggest system but Nottingham has the best planned scheme because they have to some extent managed to accommodate it within the bus network and they have built lots of park-and-ride. They have partly funded it with the workplace parking levy – why has nobody else done that?

Why are Sadiq and Zac not talking about that in London? So we do have some examples of successful and popular tram systems but not enough.

We could really be much more ambitious and it could be transformational in terms of air quality and the environment and we have to look abroad. Zurich is a good example. It very nearly went down a completely different path. It is not a densely populated city – Paul Mees's " A Very Public Solution" a book about transport in suburbia, pointed out that it was not to do with population density but with politics. In the 1950s the transport planners wanted a system based on urban motorways and underground railways and to get rid of the trams. Being Switzerland, the proposal went to a referendum and was thrown out in 1962 and again in 1973. Instead the trams were retained and prioritised over cars.

So there may be a different culture here but it can change in the way that the Cycle Superhighway is changing the culture of cycling in London.

If we had built one or two of the trams that Ken Livingstone proposed, like Camden Town to Elephant and Castle, it might have had the same effect. We can still dream about that. The point is that even Zurich, which perhaps does not seem the ideal place for trams, ends up with 15 tram routes, 100 miles of track and enormous public support for more of the same.

The public transport share of all journeys is about 60% and another 20% cycle or walk and the city has not ended up as a typical car-dominated city. A coordinated policy like this can work.

Christian Wolmar concluded by saying that one major topic that the public were interested in during his London mayoral campaign was clean air. It is going to be the big issue of the next ten or twenty years.

Something that trams can do is shift traffic away from cars and improve air quality.

The **Chairman** thanked the speaker. He suggested that a Group visit to the Nottingham system would be useful. He asked Christian Wolmar why he thought we were so bad in the UK at making political decision about new tram systems and what we needed to do to change that.

Christian Wolmar replied that the answer was that both the Department for Transport and the Treasury had a very limited view of the externalities.

The Treasury does not consider the wider benefits of schemes. His view was that the DfT had never understood anything beyond the narrow economics of schemes and never understood the limitations of car use. We now have a really good opportunity to show the economic and environmental success of tram schemes.

The clean air issue is not going away and measures will have to be taken to reduce car use in central London and trams are clearly a way forward.

The **Chairman** invited questions and comments from the floor.

Chris Bell (Chairman Conservative Transport Group) asked if, given that economic commentators attribute much of London's success to its transport system, other cities should be pressing for similar integrated systems and if trams might be an more economical way of achieving that than tube systems.

Rob Williams (journalist) suggested that the reason why France was so far ahead of the UK in tram provision was the existence of a specific tax, the Versement Transport, to fund public transport.

Andy Dixon (WSP/Parsons Brinckerhof) observed that one of the major costs in building a tramway is utility diversion, which adds virtually no benefit to the tramway itself. It is technically unnecessary to remove most utilities yet legislation and practice dictates virtual deep-mining of the area before the tramway can be installed.
It can be anything up to a quarter of the cost of the project. It is up to Parliament to create a mechanism which prevents statutory utilities having the right to demand removal of their plant and then, if there is a problem, for the Treasury to have a fund which can be called upon. So utilities are largely left where they are but if there is a problem there is no risk to the utility companies.

This would make a big difference to the viability of tramway projects.

Christian Wolmar responded that the problem is that there is a bias against long-term investment. So bus based systems are chosen because of their initial low cost without any understanding of the transformational nature of trams.

There are many routes where buses are inadequate, such as Oxford Road in Manchester – perfect for a tram route. He agreed on utilities – you may need occasionally to stop the tram service but then you will have got it for a much lower price in the first place.

He did not understand why the industry has not done more to lobby on this matter.

On the question of funding, Manchester has somehow managed to find the money, despite losing the referendum on the congestion charge. That is the example to follow and with the workplace levy, with devolution, etc we ought to be able to progress.

Bernard Gambrill (freelance consultant) felt that new tramways should not end in large sports facilities or shopping centres because this distorts the local economy and may harm small local businesses.

Tim Kendell (UKTram) said that when he left DfT a year ago there were about 2.5 people working on trams as against 250-300 on main line rail and up to a 1000 on roads, not much chance for trams with that type of representation. Did Christian Wolmar think that devolution, with LEPs and ITAs and PTEs taking a lead, is the only way forward.

John Dayton (Conservative Transport Group) asked why buses were less effective than trams at getting people out of their cars.

Christian Wolmar responded that all transport investment tends to distort the existing local economy. We all love transport improvements and the subsequent economic regeneration. The East London line is an example. But then what happens? House prices go up, rents go up, smaller businesses are squeezed out and only rich people can afford to live there and use the transport system that has been created.
How can we find a way around that dilemma?

Some of the LEPs seem to be very car-oriented but some might be attracted by trams and the PTEs are in favour of them. The situation at DfT dates back to the formation of the Ministry of Transport in the 1920s when there was a roads section and an "all the rest" section, a result of RAC and AA lobbying.

Buses are seen as some sort of socialist anachronism and as rather uncomfortable and smelly and subject to traffic congestion.
We have not in the UK developed a concept of bus rapid transit, only a few guided buses which were very expensive for what they delivered. Trams are much more comfortable.
The middle classes will use trams but not buses and we just have to accept that. If you cannot get the middle classes to use your collective transport then it will not work.

The **Chairman** thanked Christian Wolmar and introduced the second speaker.

David Mowatt
He said he had come to speak about the Northern Powerhouse and that transport infrastructure was an important part. There is a degree of cynicism about this but he was taking it at face value. The country has become increasingly London focused, George Osborne as a Cheshire MP recognises this and the project is an attempt to rebalance things. IPPR, (Institute for Public Policy Research) did a study a few years ago which looked at transport spending per head in the UK – about £1500 per capita in London, £100 per capita in the Northwest and£60 per capita in the Northeast.
A big chunk of the London spend is Crossrail but nevertheless a huge difference. The Barnett formula determines how the government spends money in different parts of the UK and there is one part of the UK where the spend is more per head than Scotland and that is London.

The evaluation of schemes by the Department for Transport is also too London-orientated. Successive governments have not made a good job of making sure that the North gets its fair share

The Northern Powerhouse is an attempt to take away some of the polarisation of our country, so what in particular is it trying to fix? One aspect is the whole rail infrastructure which is currently geared towards travel to and from London, while travel, say, from East to West is more difficult. Hence the concept of HS3, linking Hull to Liverpool.
The current long journey times between Northern cities is one of the reasons why those cities underperform compared with similar cities in other parts of Europe. One way of fixing this is moving decision-making away from Whitehall through the City Deals. It is hard to argue against the principle that decisions should be taken as near as possible to the people affected by those decisions and it is good that we are doing this although there is still a long way to go.

The North is sometimes talked of as if it were some far away place of which we know little but there are 15 million people in the belt from Liverpool to Hull about the same population as Benelux and the fact that we have been unable to optimise its economic potential over the last twenty years is something we all ought to be disturbed about.

As far as trams are concerned the area that has made the most progress is Manchester with the extensions to Metrolink.
The relative economics of issue trams and buses is something which needs looking at further.

The essence of the Northern Powerhouse is how we make the 15 million population become more economically effective.

The **Chairman** thanked the speaker and invited further questions and comments from the floor.

Christian Wolmar asked if it was the case that provincial towns do less well in relation to London than provincial towns in other countries in relation to their capitals

David Mowatt said that he thought that was the case and that London dominates this country to a greater extent than other countries are dominated by their capitals.
For example, the Oil and Gas Authority is based, logically, in Aberdeen but it has to have an office in London as well. It is also very unusual for a PLC not to have an office in London. The Northern Powerhouse is an attempt to remedy that.

Jim Harkins commented on the big difference in transport spending per head between Northern Cities and London.

David Mowatt agreed but said that there was much more long-distance commuting into London which had to be supported. Even so it seems that transport schemes in London, such as Crossrail, get the nod, whereas schemes in other parts of the country have to work much harder for approval.

Dave Halliday said that we should be putting more tramways on reserved track rather than in the street. He also advocated the use of TramTrains to provided better services on existing railway routes without increasing congestion at central stations

Susan Perriam (KTN) said that one of the big problems was getting local authorities to cooperate with their neighbours on cross-boundary transport.

James Kennedy (Abellio) asked if private finance was the best model for developing light rail systems.

David Mowatt replied that he was not sufficiently qualified to comment on on-street versus off-street for tramways, but the recent Manchester extensions were probably completed more speedily because much of it was not on roads.

There is a tendency outside London for people to "sub-optimise" across boundaries. But it is better in, say, Warrington to have decisions taken in Manchester than in London. Too much emphasis is put on local authority boundaries rather than on economics.

A prosperous Manchester and Liverpool will be good for Warrington

On financing, government money is constrained so we have to look at private finance but there have been problems with PFI, as with the recent delay to the Hinckley Point power station. It must be a tactical decision with each case decided on its merits.

The **Chairman** introduced the final speaker, Christophe Chassagnette Chief Operating Officer, Colas Rail Asia and also thanked Colas Rail for their support for APPLRG.

Christophe Chassagnette
The talk was accompanied by a PowerPoint presentation which can be found at http://www.applrguk.co.uk/media/files/LR-Applrg-Tramway-the-future-of-Mobility-presentationpdf

Christophe Chassagnette introduced himself with a brief personal history [presentation slide 4] followed by and introduction to Colas Rail [slide 5], which works in countries all over the world, about 40% of their turnover being in the UK.

There are numerous choices of public transport modes for cities [slide 7] – bus rapid transit, articulated bus, tramway, light rail, mass rapid transit and monorail, a big spectrum. Selection of what is best for the city is based on several criteria: capacity –how many passengers are to be moved; quality of service; and cost – capital and long term operating costs.

He presented a chart showing the capital cost of the various modes against capacity [slide 10]. Tramway and BRT were at the cheaper end of the spectrum. He presented another chart showing average cost per kilometre [slide 11]. At €20 million per kilometre, tramways came out as most cost effective for cities of 100,000 inhabitants, though there are many factors which can bring that cost up or down.

Trams were expensive but one of the best systems for medium-sized cities. The various benefits of tramways were shown [slide 12].

What can be done to bring costs down? Three innovations which can help: pre-cast track bed; pre-assembled track panels; the green track solution.

All are designed to reduce the time and thus the of installation as well as the subsequent maintenance cost.

Pre-cast track bed [slides 15-16] increases installation rate, minimises interfaces with other modes, such as cars and cycles on shared roads and limits traffic impact at junction areas and line interruption during track renewals. It is a slab, already fitted with rails in the factory and delivered to site. It can be used in 24 to 48 hours. Colas have used this system in Paris on T3 and for track renewal in Croydon at the junction of George Street and Wellesley Road.

The system is being used more and more to minimise the time that the roadway is out of use.

A system of 10-20 metre long pre-assembled track panels installed by gantry allows an increase in track installation rate and facilitates installation on streets with limited access [slide 17]. This system has been used in Grenoble.

With the Green Track Solution [slides 18-20] not only is the tramway "green" as in environmentally friendly but literally green with lawns at track level. It is a recent innovation which drastically reduces construction materials. Usual construction methods involve embedding track in a concrete slab which requires complicated drainage systems.

In this system the track is embedded in topsoil with grass on top. There is no waterproof layer so rainwater soaks through. The lawn requires occasional cutting but not watering. Because there is much less concrete involved it is cheaper. Colas used this system in Angers.

There are other ways of reducing costs of tramways.

Firstly by standardisation and uniform design across a number of cities [slides 23-25]. For example by choosing rolling stock, components and equipment from a standard range; by using off-the-shelf information systems from existing bus systems; and by using much simpler designs for landscaping.

It requires strong political will to bring all stakeholders together to achieve standardisation. Examples are the expensive tubular overhead masts used on Paris T3 compared with the H-beams used on T7, not so nice aesthetically but cheaper by a factor of two or three times; specially designed platform shelters on T3 compared with standard shelters at Besançon. Joint procurement of tram vehicles can give economy of scale and is possible when the timetable for projects is similar.

This has been done with the Brest - Dijon joint procurement, where the vehicles differ only in colour but unit cost was much lower.

Maintenance costs can be brought down by improving the capability of the operators [slide 26] by pooling maintenance facilities and expertise, with maintenance depots becoming 'centres of expertise' in a certain field, giving synergy for maintenance and repair strategies and processes; by the pooling of stocks of spare parts; by shared ownership between operators of heavy maintenance equipment; and generally by a greater sharing of expertise within the sector.

Another major capital cost results from utility diversion.

This varies from project to project but on average in France represents about 10% of the total investment cost and can be much more depending on what is found in the ground. We can avoid some of these costs by reducing the amount of excavation, not going too deep and using a lighter weight track-bed with pre-cast concrete strips under each rail as in the Green Track Solution, or an embedded track solution, such as precast track bed or the Q-Track System.

By not going too deep, many utilities can be left where they are [slides 27-28].

In conclusion there is no question that a tramway system is green, user-friendly, a fantastic urban developer. It is the optimum solution: cost effective although not that cheap. Ways to drive that cost down include: optimisation of constructability to reduce construction time; reducing construction depth to minimise utility diversions; adopting low maintenance track systems; and standardising design and maintenance to achieve economies of scale.

The **Chairman** thanked the speaker and said that we needed to ask how we could bring these innovations and cost-cutting measures to the attention of decision makers in the UK. He then called for questions from the floor.

To a question about the grass track Christophe Chassagnette replied that this was the city's decision to improve the aesthetics of the environment

Referring to the slide on comparative costs of different modes, **Bernard Gambrill** asked if the cost of moving utilities was included.
Christophe Chassagnette replied that the figures had come from elsewhere but that he thought utility removal would have been included. Utilities could prove a problem for other modes. The current project in Kuala Lumpur for an elevated light railway was two years behind because of a serious underestimate of the amount of utilities that needed moving for the piling for the viaduct supports and this had serious cost implications. 10% of total tramway cost was an average for utility diversion but in some cases it could be much more.

Edward Greenhaugh (GER Consultants) thought that we should be looking at low cost construction packages for tramway systems. He queried spending huge sums on intercity transport such as HS2 when local connections which made up a substantial proportion of most journeys in terms of time were underfunded.

Christophe Chassagnette was of the opinion that we needed both high speed rail and local tramways

Jim Harkins pointed out that there was a problem with dog fouling on grassed track in France.

Christophe Chassagnette said with a smile, he did not have an answer.
It was a widespread problem in France not just on grassed tram track. It was a matter of public education.

Rev. Charles Cotton?, referring to Christian Wolmar's comments on Zurich, said that Basel had also contemplated putting their tramways in tunnel but had changed their minds just to be different to Zurich, a decision much to the benefit of the travelling public.
Many cities in /Germany, however, did build tram tunnels with varying degrees of success. What are the views on tram tunnels?

Christian Wolmar said tunnels were very expensive. He was also against the building of road tunnels under cities to free streets from traffic. Much better to encourage public transport and reduce car traffic that way.
Car travel in cities was extremely inefficient economically. It is not pleasant to travel in trams in tunnel, they are much better on the surface.

Jim Harkins commented that Kassel had considered tram tunnels under the centre, but, after visiting Duisburg where street tramways had been moved to tunnels boosting commuting but causing a significant drop in retail footfall, they opted to retain surface operation and subsequently adopted the TramTrain concept.
The result has been a big rise in retail footfall in the centre of Kassel. There has been a general move away from putting trams in tunnels because it has been realised that trams bring lifeblood back into city centres.

Christophe Chassagnette agreed and said that one of the big benefits of trams was accessibility. No going up and down stairs, just step on to the tram and step off.

The **Chairman** thanked the speakers again and the audience for supporting APPLRG. He reminded them that the next meetings were on 24 February and 23 March.

The meeting closed at 16:00.

Jim Harkins Secretariat,
Mike Willsher, LRTA