Towards a Realisable Cohesive and Economic Transport System for Leeds

A Discussion Document

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1. Introduction

The recent pronouncements on railway electrification, particularly TransPennine and Midland Main Line, offer great potential for improvements in local and national communications. The ability to increase services by through cross city electric trains without excessive investment in varied rolling stock will be apparent to even the least experienced railwayman.

The phenomenal success of railway operation in support of the 2012 Olympic Games, the completion of the East London Line, progress on Thameslink, particularly at Blackfriars and London Bridge, and commencement of tunneling for CrossRail have brought new life to the railway construction industry and the momentum must be maintained in the improvements required further north. A busy industry is a prosperous, efficient and cost effective one.

But the devil is in the detail and relies on other agencies having the foresight and ability to optimize the opportunities presented to them. From my long local and professional experience, and through constant further contact with railway engineering colleagues in organizing seminars etc. before and after retirement, I feel the industry partners, particularly Network Rail, are ready and eager to meet the challenge. A major influencing factor also is the ITAs and the ability of them and local civic authorities to appreciate the opportunities and work together with Government, Network Rail, Train Operating Companies and Developers is paramount.

This Report is based on personal thoughts from a lifetime in the Industry and the locality and is freely offered as a pointer to a logical way forward. It is intended to be technically attainable in the shortest possible time and free from political influences although these will inevitably arise. Some of the points may already be covered in existing plans but have been included in the overall scheme of things to provide a complete picture. The emphasis is on attaining value for money through a simple logical approach, making the best use of and improving what exists, grasping the opportunities that arise and, above all, making something happen.

Local non main line railway aspects (ie buses, metro and tramway) are covered in the second half of the report as appropriate to a fully integrated system.

The conclusions drawn are mine but I am indebted to my long-term friend and Institution of Mechanical Engineers colleague Alan Goldfinch for his work on a suggested Leeds-Bradford Airport Link and for electrification thoughts on the York - Harrogate – Leeds Line.

D H Townsley, Whitkirk 4 January 2013

2. Main and Secondary Line Railway Electrification

2.1 The Northern Hub and other rail improvements

The **Northern Hub** is a series of works across Northern England to stimulate economic growth by improving train services. It is a partnership between Network Rail, First TransPennine Express, DB Schenker, Freightliner, Department for Transport, Transport for Greater Manchester and Northern Rail. It is instrumental in facilitating the electrification and enhancement of the North TransPennine route to Huddersfield and Leeds.

The scheme includes a renewed role for Manchester's Victoria station. Services from Leeds would be routed on the more direct line to Manchester Victoria (as was the case prior to 1989), rather than as presently to Manchester Piccadilly which is reaching capacity limits. Fast onward services would be instituted from Manchester Victoria to Liverpool, and (via a new connection known as the Ordsall Chord) from Manchester Victoria to Manchester Piccadilly and Manchester Airport. Additional related track improvements, re-signaling schemes and major electrification projects in the region further add to network capacity and timing improvements.

Network Rail released details of the project in February 2010, estimating the cost at approaching £600 million and the Government on 16 July 2012 confirmed approval for the full scheme. The first trains are expected to run on the new Ordsall Chord in 2016, with the full package of improvements to be in place by 2018. A number of electrification schemes for lines out of Manchester are also underway, or have been approved. The eastern electrified extremities of the Northern Hub will be from Guide Bridge West Junction (out of Piccadilly) and Manchester Victoria East Junction, both to Stalybridge where they make an end on connection with the North TransPennine route to Leeds. Electrification is planned to reach Stalybridge by December 2016 and work is well under way.

With the expensive state of the art electrification trains and other equipment available to Network Rail forward progress is swift and needs to be unbroken to ensure constant employment and an adequate return on the massive investment already incurred. West Yorkshire therefore needs to be clear and precise on its own requirements as add-ons and a ‘wish list’, as it were, long before Stalybridge is reached. These notes are offered as a few thoughts in this direction.

2.2 North TransPennine

Continuing eastwards from the end-on connection at Stalybridge the authorised TransPennine electrification runs through Huddersfield and Dewsbury to connect with the existing electrified lines at Wortley Junction west of Leeds City station and on through the station to Neville Hill Depot. The new wires will then continued from Neville Hill to York via Micklefield and Church Fenton. Also from the junction at Micklefield electrification continues to Selby with a south-bound connection to the East Coast Main Line at Hambleton. The result will be an unbroken electric railway radiating from Leeds to London, Glasgow, Edinburgh, Liverpool, Newcastle etc.by both East and West Coast routes. This also allows full utilisation of ‘standard’ electric trains such as the North West Leeds (Skipton, Ilkley etc.) units through East Leeds to York, and beyond if necessary, with maximum utilisation of rolling stock.

Six miles east of Leeds on the York line past Crossgates is the Thorpe Park Development for which stage-two plans are being considered, the existing stage-one of which already adds to the economy and to the travel requirements of the East Leeds corridor.

The railway could have considerable impact on the success of the development, whilst playing a major part in reducing the traffic congestion of Leeds generally, if only the trains stopped there. But under present thoughts they do not and will not. The electrification of this stretch in conjunction with the Trans Pennine route upgrade is authorised, as is a park and ride station with either extra platforms or, penny-pinchingly, a turn back facility, This proposed park and ride, at Micklefield, 6km east of Thorpe Park by rail, is unfortunately in the wrong place for maximum effect. Granted It is served by the A1M but the potential use from the A1M is low compared to that offered by the M1 if Thorpe Park was the chosen site. Also the value to the Thorpe Park development of an integral station would be enormous There is more than enough space to the east of the development and the advantage in monetary terms of an existing motorway junction, which Micklefield does not have, is considerable. Micklefield is difficult of access from East Leeds and most other areas of medium to high density population whereas Junction 46 on the M1 is convenient to most areas. Such a station would also provide a suitable terminus for a tramway system with an ideal no demolition route via Selby Road, Ring Road, Crossgates Road and York Road, then straight up Eastgate and the Headrow to Leeds Town Hall and beyond. (see section on Local Transport - Trams).

The proposed £100milllion (?) East Leeds Orbital Road from the Outer Ring Road at Red Hall to Thorpe Park, joining the new Manston Lane Link Road, would add a new dimension to this scheme in respect of access to InterCity trains, extra demand for Park and Ride and swift Tramway access to Leeds City Centre from outlying districts to the North East of the city.

With the planned electrification complete the Stalybridge-Leeds-Micklefield sections of line become part of a true spine InterCity route and should be regarded and treated as such. In addition to existing Liverpool – Leeds – Newcastle and associated services there is the possibility of, for example, Harrogate and Bradford to London without reversing at Leeds. (See section on The Harrogate Line).

A basic problem is the double track section from Leeds to Micklefield. At present nine passenger trains per hour travel in each direction on this stretch most of the day plus the occasional freight train. Two Northern services stop at all four stations, one TransPennine service stops at one station and three TransPennine plus one CrossCountry are non-stop. This irregular stopping pattern produces an elastic effect which renders the line almost, if not actually, up to capacity in so far as the number, but not the length, of trains is concerned. Line speed is 90mph. Unfortunately to provide a satisfactory service that people will use regularly and can rely on really requires at least four stopping trains each way per hour. Each additional stopping train could reduce the number of paths for fast trains by two if additional tracks are not provided. Also a park and ride facility from Thorpe Park (or Micklefield) with only two trains per hour is unlikely to endear itself to motorists who want a quick seamless journey. Extra stopping services would impede the fast trains and reduce capacity, not really what the electrification project requires.

The double track viaduct between Leeds station and Marsh Lane would probably but not necessarily be too difficult and costly to widen but serious consideration should be given to restoring the previously existing four tracks from Marsh Lane at least to Crossgates but preferably to the Park and Ride, be it at Thorpe Park or Micklefield. Even if the Park and Ride was at Thorpe Park extension of four tracks to Micklefield would give the added advantage of easier segregation of York and Selby/Hull services at Micklefield Junction and shortened journey times. Serious station rebuilding work would be needed at Garforth and East Garforth but a railway, which was ready for the increased traffic, which will inevitably be induced, over the next twenty years, particularly if the promised High Speed Line HS2 does eventually reach Leeds, would offset this.

Developments beyond Micklefield are outside the scope of this paper but will have added impact.

2.3 The Harrogate Line

The 18 mile Leeds – Harrogate line with its onward continuation to Knaresborough (3miles 64 chains) and York (a further 16 miles) offers large volume commuter traffic but has been plagued for the last forty years by inferior rolling stock, ‘rationalization’ between Knaresborough and York and an infrequent service of two trains per hour between Leeds and Knaresborough and one per hour on the York section.

The recent plans for, firstly, third rail electrification using 39-year-old London Underground trains and, secondly, Tram Trains, are inappropriate and unwise for this line and neither would achieve the desired results but they would have an adverse effect on neighboring services in the area.

With full electrification authorized on the eastern/north eastern Leeds – Micklefield –York chord it makes sense to complete the loop and provide unified commuter services north west of Leeds similar to, and to link in with, those provided in north west Leeds to Bradford, Ilkley and Skipton.

Starting from York there is single line between Poppleton (2Miles 74Chains) and Hammerton (8Miles 61Chains) and between Cattal (10Miles 20Chains) and Knaresborough (16Miles 24Chains), distances being measured from York. This permits an hourly service, with an additional train in between but not precisely on the half-hour, between Knaresborough and York. Between Leeds and Knaresborough, a more frequent service can be run of 2, 3 or 4 trains per hour. The work done recently at Horsforth is intended to facilitate short Leeds-Horsforth workings. Therefore, an hourly ‘circular’ service, with irregular additional workings would be perfectly feasible. With restoration of double track on the two single line sections a regular 15-minute interval ‘clock face’ service would be possible between York and Leeds via Horsforth, which should be the aim of every serious commuter service. As an added bonus some or all of the trains could continue both directions through York as a circular route and then also continue through Leeds on the Leeds/Bradford/Skipton complex and/or the Airport Link if it was built as described in the next section.

The saving in numbers of trains to run all services and the advantages with regard to maintenance would be quite considerable.

2.4 The Airport Link

In January 2006 Alan Goldfinch suggested the following proposals for railways to serve Leeds-Bradford International Airport. They are quoted in full followed by an update to reflect the situation seven years on.

"The Airport Strategic Plan shows basic proposals for railway connections to the Airport from existing railway lines in the area. These notes develop the idea, making specific proposals and identifying related problems.

These proposals are divided into two stages:

Stage 1. Proposes a branch off the existing Leeds-Harrogate line to a new Airport station, whilst
Stage 2. Proposes a continuation of the line to connect with the Ilkley branch

These are treated separately because the former is much simpler and cheaper and would have greater benefit to Leeds, having the largest population concentration and transport centre in West Yorkshire, and the best rail connections from further afield, whereas the latter would require more local consultation but would benefit Bradford, Keighley, Skipton etc.

Stage 1 A single line deviating from the Leeds-Harrogate line approximately a half mile/800metres north of Horsforth station, and climbing in a gentle left-hand curve to a new station close to the Airport Terminal. The line would be around one and a quarter miles /2km long, and no major structural or earth works would be required. However the line would rise from about 125 to 195 metre above OD (sea level) necessitating a gradient of 1 in 27 or 3.7% which in turn would require trap points and a sand drag to protect the existing line from possible (but highly unlikely) runaways. It should be pointed out that this gradient is the same as that between City Thameslink and Blackfriars which is scheduled to carry up to 24 heavily laden 4 to 12 car Cross London trains each hour throughout the day.

Airport Station This should be below natural ground level and as close to, or better below, the public entrance and concourse of the Terminal. Initially a single platform on the terminal side of the railway (270ft/80m long but capable of being doubled in length if required in future) would suffice, and should be provided with assisted access of travelator or escalator plus lift to the concourse level. The station could be roofed over and the area gained used for non-railway purposes, for instance car parking.

Stage 2 This is proposed again as mainly single line but with a section of perhaps 800 metre doubled to act as a passing loop on the level and immediately to the west of the station, alternatively at the station itself if two platforms were provided. After this there are two possible routes to link with the Ilkley branch, one on either side of the Guiseley built up area. Both pose problems, which are given below and can only be solved by detailed site surveys.

Route A. About 1.2km after the Airport station the line would descend in a WSW direction down a natural valley and join the Ilkley branch in a southerly direction immediately north of Esholt junction. The stream in the valley would probably have to be culverted to protect the railway from flooding. Also the route is lined on both sides by housing and the residents would no doubt demand sound baffles or even call for the railway to be enclosed in a sound proofed tunnel. Length, Airport Station to Esholt about 3.6km.

Route B. The line would continue a further 2km in a northwesterly direction, after which it would descend in a curved (20 chain/400m) tunnel to join the Ilkley branch in a southerly direction about 800m north of Guiseley station. Length from the Airport station to the proposed Guiseley north junction about 3miles/4.8km.

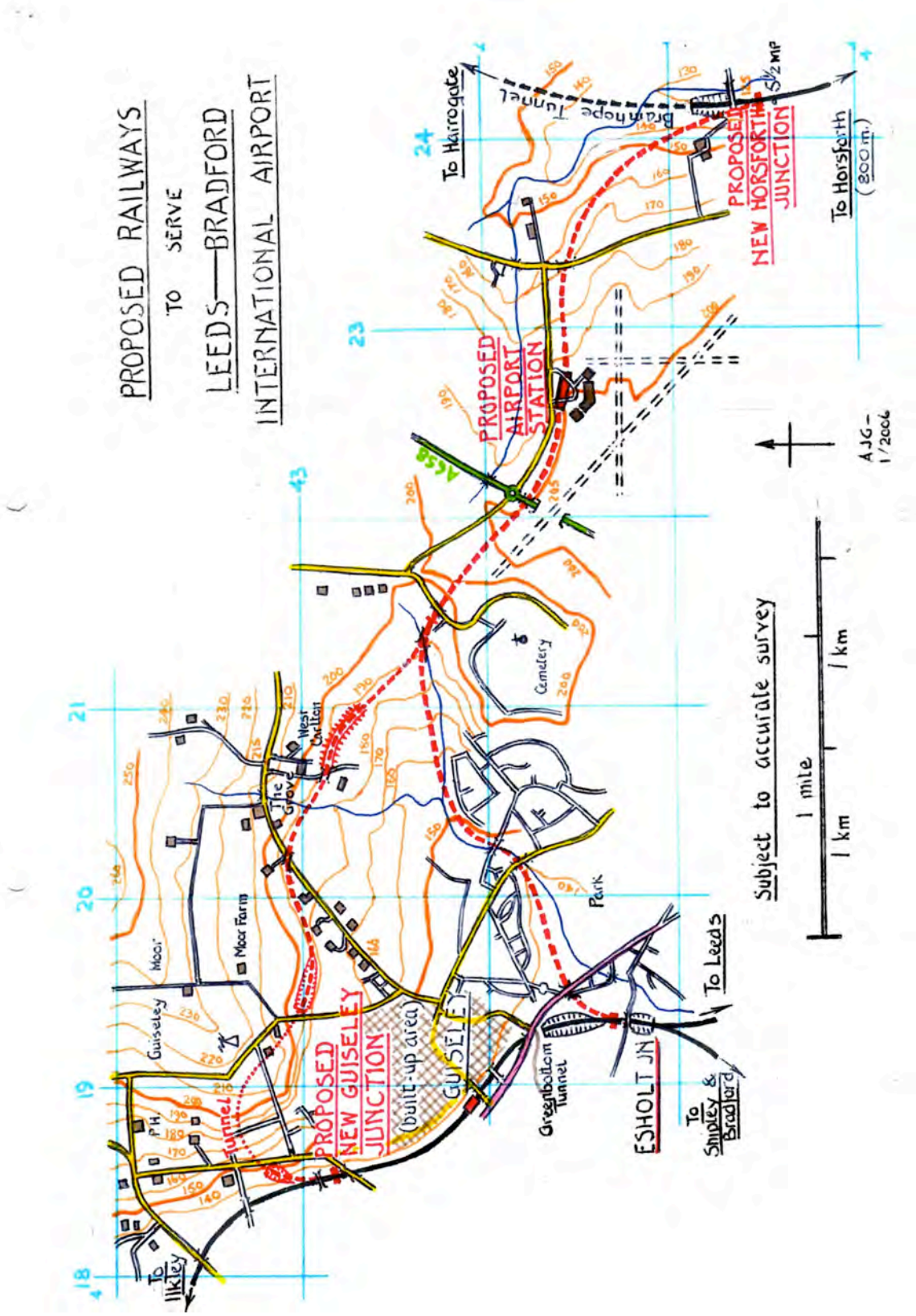
Both routes should be provided with trap points and a sand drag as with stage 1, above.

Traction and Rolling Stock. All lines should be electrified, including about 5.5 miles of double track to Wortley Junction, using the 25kV overhead line system. The additional electrical demand should be within the Leeds area power supply arrangements but this should be confirmed with Network Rail. Trains should be shared with the existing pool of Electric Multiple Units of classes 321, 322 and 333 already operating in the area although additional units may have to be obtained from elsewhere.

Service. At least two, and preferably four, trains per hour should run between Leeds and the Airport calling at Burley Park, Headingley and Horsforth. If Stage 2 is built, two trains per hour should continue to Shipley and Bradford Forster Square. On the other hand, the existing Leeds-Harrogate service could run non-stop between Leeds and Horsforth (but still call at the latter). This would, incidentally, benefit local rail travellers.

A J GOLDFINCH January 2006

Alan Goldfinch's sketch of his proposal appears on the next page in its original 2006 version.



Very little has changed in the intervening years since this proposal was put forward except that on 9 December 2012 British Airways reintroduced flights from Leeds-Bradford to Heathrow, a decision applauded by Harrogate Chamber of Trade & Commerce and one which underlines the value of an Airport Rail Link from both Leeds and Harrogate in addition to Bradford.

The turn back presently being provided at Horsforth for additional peak hour trains to Leeds could be lengthened to form a loop which, via a suitable crossover, trains from Harrogate could enter and reverse to provide a through service to Bradford via the Airport by continuing up the link which diverges as on the sketch to serve the airport. Trains could travel from Leeds direct to the airport and return to Leeds or go on to Bradford via Guiseley and Baildon. There would appear to be no objections to 25kV wiring throughout, provided there is sufficient headroom in Bramhope Tunnel.

The Derby built 'Electrostar' Electric Multiple Unit is a 100mph dual voltage capability train designed to go anywhere on the mainland British electrified network. Since 1999 1,750 vehicles have been supplied in 3,4 and 5-car formations capable of running together in multiple up to 12 vehicles in a train. Working on services in and radiating from London, a further 170 are currently building with an option for 256 more on the table. Under presently perceived Government plans some of these could be cascaded to the TransPennine and other routes once the Thameslink and London CrossRail rolling stock requirements have been crystalized. This is a four-car set at Harrow & Wealdstone on a cross city service to South Croydon.

2.5 Midland Main Line

Additional to improved services on the North TransPennine Manchester–Leeds railway line as a result of proposed and authorised electrification, there is the approval to electrify the Midland Main Line (MML) between Bedford and Sheffield but ostensibly not on to Leeds.

This 'not on to Leeds statement' is true taken in isolation but it does not give the full picture nor illustrate the potential. The Midland Main Line is already electrified at 25KVac between Bedford and London St Pancras with an additional arm to an end on junction at Farringdon on to the 650Vdc network south of the Thames. Therefore through running of dual voltage trains from Sheffield to most of Southern England and to the Continent is potentially possible subject to line capacity. Current MML diesel trains are maintained at Leeds Neville Hill depot.

The statement 'not on to Leeds' is based on the assumption that the two arms north of Sheffield, one to Doncaster and the other to South Kirkby Junction on the Doncaster – Leeds line, are not part of the electrification. True in part if one looks at the MML announcement in isolation.

But. Whilst these two arms appear to be in limbo, and the Department for Transport (DfT) has not specified their electrification in the core scheme, the Network Rail output specification for the work calls for the obtaining of separate costs for potential additional options to the core scheme and the said two sections are included in these options.

It is therefore then necessary for the industry (Network Rail and the Train Operating Companies) to decide whether it is worth erecting wires. It is very likely that DfT will call on the bidder for the next MML franchise to run electric trains between Sheffield and London but will leave procuring that fleet to the bidders as in the early days of franchising.

There are a number of possible options. To quote just three:

1. The TOC leases the trains and maintains them at Neville Hill as at present in which case Sheffield – South Kirkby will need wiring
2. Reach a deal with a train manufacturer to build and maintain. This might mean a new depot close to Sheffield in which case no need to wire beyond Sheffield.
3. Purchase more examples of the recently ordered Hitachi InterCity Express Train and maintain them at their proposed new East Coast Main Line depot at Doncaster. Wires needed to Doncaster unless the trains are Bi-mode.

Or any combination thereof, or just say wire the two links for wider network benefits, for example, freight or what a future CrossCountry franchise may need.

In any event lobbying for the wires should be directed at Network Rail, Train Operating Companies and PTAs/ITAs. The last should be thinking about how an integrated electric railway could improve links between the points of the Sheffield-Leeds-Doncaster-York quadrangle and how utilisation of a standard high quality train throughout the region could drastically reduce the need for spare units and different maintenance policies whilst at the same time increasing ridership by providing a seamless fast and comfortable service.

3. Local Transport

Quote 1:

"*I feel the time has come when the City Council must formulate their policy for the next 20 years. In my opinion we shall have trams for many years. The ultimate set up will probably be 200 to 250 modern trams and 600 buses compared with about 400 trams and 400 buses as at present."*
" We hear criticisms of Leeds trams but if the critics could ride in a modern silent tram instead of one that is twenty five years old they would quickly change their minds"

Alderman Donald Cowling – Deputy Chairman of Leeds City Council Transport Committee writing in 'The Yorkshire Post' **26 July 1950**

Quote 2:

'Up to 25 new rapid transit lines in major cities and conurbations, more than doubling light rail use'

John Prescott's 10 Year Transport Plan **2000**

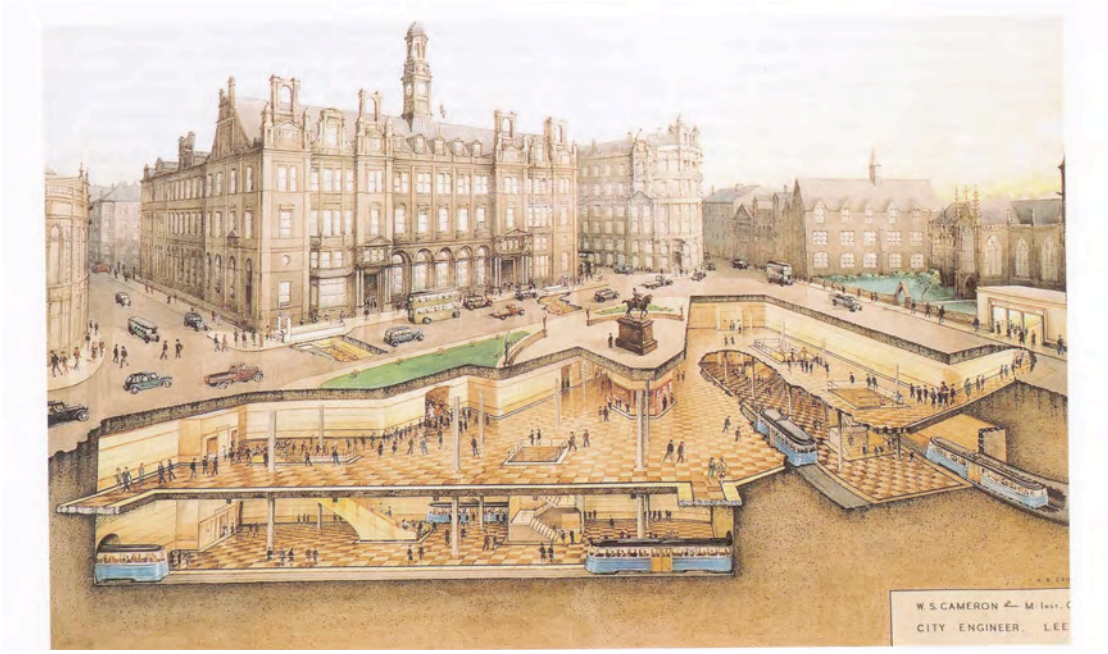
Sixty-two wasted years. Leeds cannot suffer the same hiatus again.

Thirty-seven years after Alderman Cowling's comments and twenty years after the last remnants of the old Leeds tramway system had been abandoned the Council noted in 1987 'a Sense of Urgency' and in 1988 WYPTE submitted plans for a tramway in the East Leeds Corridor styled 'MetroLine'.

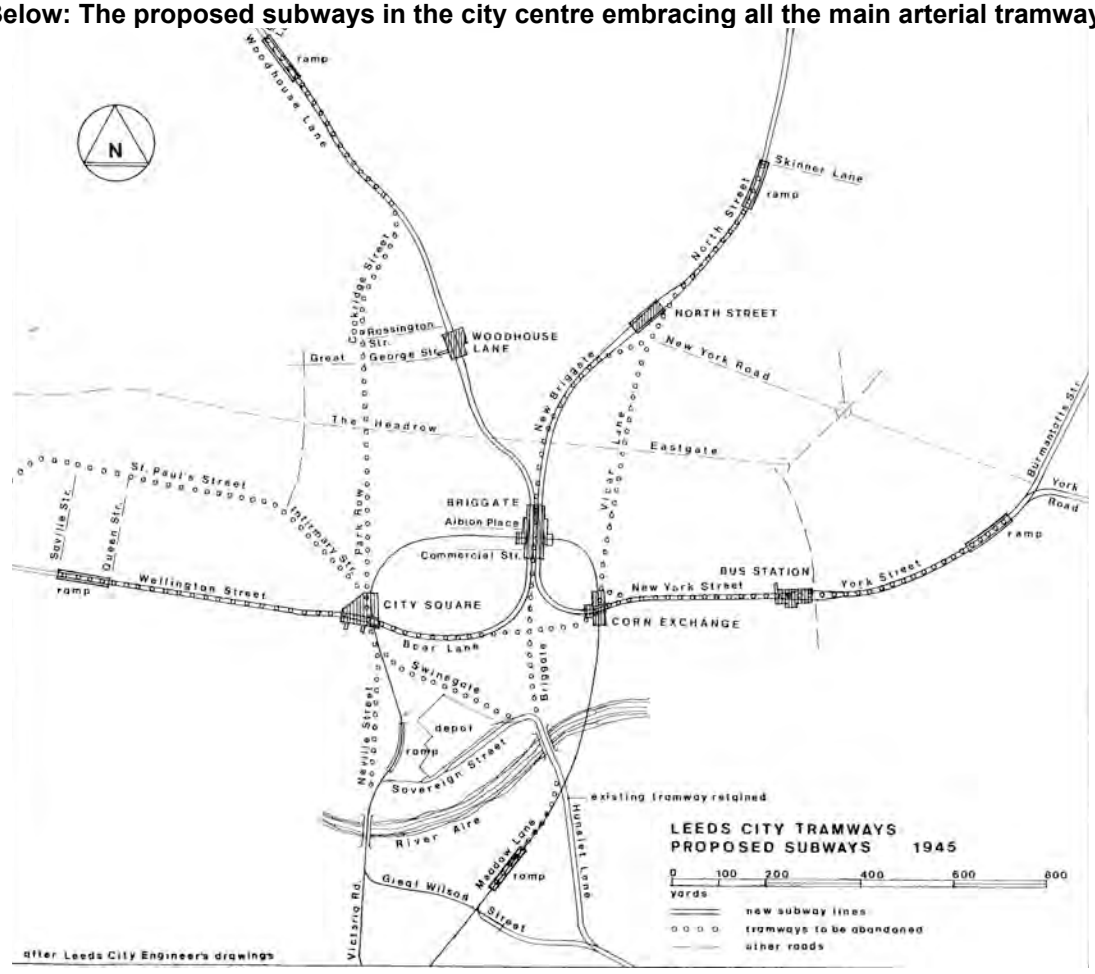
Instead of MetroLine the East Leeds Corridor eventually received a guided bus-way, an ugly, un-necessarily complicated and costly alternative to well planned conventional bus lanes and in no way comparable to MetroLine. This predominately York Road based scheme was brought into service in August 2001

For interest and further thought the next page reproduces sketches from July 1945 courtesy of Dr. Jim Soper. These are from a scheme drawn up by the City Engineers Department under Colonel W S Cameron immediately after the war following rejection of a Trolley Bus scheme. Costings were carried out using a figure of £750,000 per mile based on London Underground Tube construction. The Transport Department worked on estimates for land purchase, rolling stock, stations and promotional activities. The City Engineer worked on the detailed tube costings.

Despite recently voiced derogatory comments the scheme was well and thoroughly thought out and was approved by the Transport Committee on 17 September 1945 and passed to the Reconstruction Committee for implementation. The General Election of July 1945 and the subsequent Council Elections in November brought a change of Administration at both levels of Government and the scheme faded into oblivion.



Above: An artist's impression of the proposed station in City Square published in 1949
Below: The proposed subways in the city centre embracing all the main arterial tramways



3.1 New Generation Transport NGT

The general infrastructure of this appears to be based on the York Road guided bus scheme but, in addition, with overhead wires entailing enormous cost with no perceivable advantage. It is a flawed concept using old technology and taking no cognisance of lessons learned during the years of its gestation. The route plans supporting it are excellent, as one would expect from a world class Consultancy and presumably in line with their contracted remit. The conventional bus lanes are fine but the fully segregated (trough guided?) sections are obtrusive and appear to restrict normal traffic flow to the extent of creating bottlenecks, increasing congestion and obstructing existing services and other road users.

Although acclaimed by some, the York Road guide-way is of very little, if any, value. Of the two bus operators who originally participated as partners in the scheme one pulled out three years ago. Out of 15 regular scheduled service buses that use the longest length of York Road every hour only six use the guide-way whilst the other nine, plus numerous school buses, coaches and taxis, do not. All these categories of public passenger vehicles use the conventional bus lanes to good effect where they are provided. The claim that guide-ways prevent unauthorised users accessing them whilst bus lanes do not is not borne out in practice on the main arterial routes. The result is much effort, concrete and public money gone to waste. It is however accepted that since installing cameras last year Leeds City Council has collected more than £2m from motorists illegally driving in bus lanes in the city centre. This however is a totally different matter in that motorists or tradesmen will take a chance on short cuts in the city either if they are new to the city and do not know where to go or, more likely, if the place they want is tantalizingly just off or past the restricted area where they want to unload and they think no-one is looking.

After being courted by operators over the last few years ftr (future?) and other bendy buses are now firmly out of favour throughout the country and the Leeds and York examples have been transferred to work out their time on a route with relatively long straight sections and very few sharp bends and congested junctions. High initial cost, very high maintenance costs, need for double manning in some cases and increasing numbers of accidents with cyclists all play a part in their unpopularity. Informed sources suggest that further purchases of these vehicles are unlikely. Yet NGT is at least a two unit articulated bendy vehicle and even three units have been suggested at one time or another.

One of the basic requirements of a Park and Ride connecting vehicle appears to have been totally ignored in the NGT scheme. If a motorist is to park his car on the perimeter of a city he will only board a PSV if that vehicle leaves without a long wait and gives him/her a quick run to his/her destination. In this respect a Light Rail Vehicle is best but a bus can be better than nothing. The York Park and Ride services are very successful because they are dedicated vehicles running in most cases with limited stops from the Car Parks to selected points in or near to the City Centre. With NGT every vehicle stops on request which is bad enough when you are rushing to work but intolerable when you try to return and the 'bus is full of people only going short distances. If the originating terminus is at Holt Park and the 'bus can already be carrying a fair load when arriving at the car park this would be another deterrent. This could be alleviated if there were dedicated limited stop Car Park buses in between the 'stoppers' but the overhead wire collection makes this difficult.

In practice the NGT scheme would produce nothing that could not be achieved by conventional double decker buses in well-maintained condition, on good roads, and to a specification at least compatible with that of Yorkshire Coastliner and Harrogate and District (Transdev) vehicles. Bendy buses, diesel or trolley, increase congestion because of their 80% increase in length with no increase in payload and a diesel bendy bus is roughly twice the cost of the double decker. The trolley bus is dearer still, partly on account of the smaller production volume. Mainly used in former Russian and Eurasian states the penalties in this country of using small isolated fleets with regard to spares and operating costs should not be under estimated. There are none currently in Britain and relatively few in Western Europe.

Trolleybuses cannot overtake one another in regular service unless two separate sets of wires with a switch are provided or the vehicles are equipped with off-wire capability. Even with the latter they would need to stop to re-wire or have specially arranged run in facilities but these would not be in the right place at the right time. An un-necessary self-imposed complication. Remote driver operated trolley raising and lowering equipment has been tried but is failure prone. Much is made in NGT publicity literature of the 'sparks effect' explaining "*When you install these overhead cables you install a sense of permanency, some sense of a reliable and unchanging system that's in place with clarity about where they run from and to. The overhead cables just add a sense of a big city feel to the place, it's something you can't quite quantify but it works."* Really?? Not a very convincing argument.

This statement, and most other debatable 'plus points' in the NGT literature appear to be based on a series of website offerings by an extreme pro-trolleybus affinity group whilst the technical aspects of what one gets for ones money are clouded in vague statements and artists impressions. £250million is a high price to pay for a very dubious comfort feeling that comes even more readily with a tramway or conventional electric train.

The business case submitted in March claims that the journey time from the city centre (Cookridge Street) to Holt Park will be 27 minutes 51 seconds on the trolleybus, later adjusted to 29 minutes 52 seconds. Metro's online journey planner shows that the number 1 bus is currently scheduled to make the journey from Infirmary Street to Holt Park in 31 minutes. So, depending on which of the NGT figures you use, the saving is approximately either 3 minutes or 1 minute. It is suggested the trolleybuses will have conductors. Thereby replicating the ftr StreetCar procedure.

Metro's journey planner site shows that the number 1 bus makes 30 stops between City Square and Holt Park. NGT's business case shows that the trolleybus will make 17.

It seems any time saving realized can easily be explained by the fewer stops, and the presence of conductors which begs the question why submit the city to the enormous expense and inconvenience which is involved to produce precisely nothing.

The following published questions and answers taken directly from the official minutes of an All Party Parliamentary Light Rail Group fact-finding mission to Budapest in January 2012, designed to inform about trolleybuses, which was *supported and organized by trolleybus equipment manufacturer Vossloh* are illuminating.

"UK Question - Do you get a better modal shift to public transport with trolleybuses than with motorbuses?
Budapest Answer - We find that passengers tend not to notice the difference between trolley and motorbuses.

UK Question - The proposed Leeds trolleybus system is designed to emulate light rail. Would you consider use of a higher spec trolleybus?

Budapest Answer - Doubtful if we would install any new trolleybus routes. We would look towards the future availability of electric buses."

From this we can conclude
1. Trolleybuses do not lead to increased use of public transport.
2. Budapest would like to replace its trolleybuses with battery-powered buses.
3. Budapest would already have replaced its trolleybuses with diesel buses had it been able to afford to.

The reference to battery-powered buses in the Budapest answers is interesting. The Government's Green Bus Fund has already provided over £46 million to support the purchase of 542 "electric" buses in various parts of the country and more are in the pipeline. Most of these are 'Hybrids' combining diesel and battery power and 22 of these are running on route 7 in Leeds. More interestingly however is that the total also contains a number of 'pure' electric buses built locally by Optare and running in Coventry, Warrington, Epsom and Heathrow and also successfully trialled in other places. These are all single deck at present with a battery range of 80 miles before re-charge, which takes 20 minutes at terminus or layover point. A double deck variant will augment the range and work is well advanced on rapid wireless recharging which can be effected on route at normal stops without causing any delay. Under a Quality Bus Partnership these buses and charging stations could be provided by the bus operator at the operators expense without the expense and risk imposed on the City by NGT or by the proposed Quality Bus Contracts which last have been discarded by all major transport authorities other than West Yorkshire which is still pursuing this costly, risky and ill conceived ideological dream against opposition from the major bus operators on whom they rely for service.

The NGT promoters' claims that the scheme will result in a projected increase in the annual GDP of Leeds of £176million, creation of 4,250 jobs and a substantial reduction in the City's carbon footprint are difficult to believe. At best these figures are nebulous and at worst economical with the truth. Five years on from its conception and at least six years estimated before completion the timescales are ridiculous for the solution of a problem that exists now. Surely it cries out for some highway improvements and a small injection of new up to date off the shelf buses to give benefit now without dipping into and wasting the DfT funding which would better be transferred to a sensible light rail scheme on the right route as allowed for in the Early Day Motion submitted to Parliament on 4 July. Motorists will leave their cars for a fast frequent tramway service into the city centre or for a train to other destinations but they will not do so for a bus, diesel or trolley, which then stops every few yards to pick up the locals or serve the local hospital. There is no such thing as a fit all solution as hinted at by NGT.

Sigurd Grava's much sought after book "Urban Transportation Systems" published in America by McGraw Hill in 2002 contains a detailed and down to earth chapter on trolleybuses and concludes:

"Trolleybuses continue to operate, but their future as a general transit mode is not particularly bright. They do have a role in special situations, but the global trends are still negative. Nobody like the overhead wires (except the copper manufacturers), and the problems of urban air quality are being attacked through means other than hoped-for massive switch of motorists to non-polluting transit. If and when hybrid buses reach a competitive stake in the market, which appears to be quite likely in the near future, the trolleybus may reach the status of cable cars – remaining in use in some places with special characteristics, but otherwise just being remembered with affection."

The glossy Metro leaflet delivered to 45,000 households states: **"modern trolleybuses are an increasingly common sight in European and North American cities."** Thereby trying to convey that Leeds is on the crest of a trolleybus wave that's sweeping Europe and North America**.**

Metro has been misled. **There have been no new trolleybus systems in North America for years**. Edmonton scrapped its trolleybus system in 2009 in order to reduce the city's expected $35 million deficit and Vancouver is the one remaining Canadian trolley bus system. The United States has five remaining systems out of an original fifty. To put things into perspective the number of Hybrid and electric buses already in operation in Britain equals the total number of trolleybuses in the whole of the United States and is twice the total number of trolleybuses still operational in Germany, France, Holland and Belgium put together. In these countries any purchases of new trolleybuses in the last twenty years have only been to replace life expired units for systems where the overhead infrastructure was already in place and still serviceable. Switzerland, Italy and Greece remain modest users of trolleybuses with about 1300 units in total. New extensions are planned in Pescara and Lecce but again the practice is to restrict new purchases to vehicles for existing infrastructure.

On BBC Look North 15 January 2013 the head of the trolleybus project for West Yorkshire public transport provider Metro, said the scheme was not a "congestion buster". and continued: "It's hard at this stage to say whether congestion will be higher or lower as a result of the scheme".

On that basis together with the marginal theoretical journey time improvement coupled with the massive disruption during construction and after there is absolutely no justification for the plan to go ahead in its present advertised form. Existing bus routes will be drastically affected as will pedestrian and other vehicular activities and the tax payer will have spent £250million to get a massive reduction in quality of life.

So what is the answer? Metro says that the money is not transferrable to any other scheme and will be lost if trolleybuses are not introduced. Even that is better than spending it to finish up after tremendous inconvenience worse off than when you started. **But if metro's statement is, in fact, the true position there may be a solution.**

A trolley bus is an electric bus collecting current from overhead wires. Technology is now advanced enough for the electric bus to dispense with the overhead wires and to replace them with unobtrusive recharging pads at selected points. The desired removal of exhaust gas pollution is maintained and the bus is free to vary its route within the range of its batteries and does not affect any other bus and the service can be augmented by diesel or hybrid vehicles at any time that supply or demand changes. The terms of the Transport and Works Act under which approval was given may have called for a fixed installation e.g rails or wires. The charging pads could be interpreted to be a 'fixed installation'.

The way forward in this case would be to keep the NGT scheme as it is in its basic form and return to the Consultants and the DfT to say that in view of the advances in technology since the project started in 2006 the principle of electric buses is to be retained but without the overhead wires, thereby cheapening the cost and enabling the introduction of services to be accelerated by up to two years. At the same time and in the face of existing fierce opposition an opportunity will be taken to reduce or replace the sections of fixed guided busway more to the level of the Kirkstall Road scheme. This would enable existing bus services to use the improved infrastructure to the advantage of all and thereby contribute to some measure of reduced congestion. Over time the number of emission free buses would inevitably increase and be added without alteration to the infrastructure. Properly presented it would be difficult to imagine how the Secretary of State could not look favourably on such a scheme. An added bonus would be retention of the moneys saved to be used for a future LRT scheme. A further bonus would be for an operator to provide the buses and charging equipment as part of a Quality Partnership. Ideology apart this would be to the greater benefit of the citizens of Leeds avoiding the trap of going down into the bottomless financial pit of Quality Bus Contracts, a fate which Sheffield has narrowly avoided by changing its mind at the last minute.

It is most likely that fully self contained electric buses will be available for service before NGT and without the erection of overhead wires which will inevitably be rendered obsolete almost as soon as they appear. They would have the attraction of being able to support home industry, which is a more tangible economy boost than the unproven optimistic figures suggested by the promoters of NGT. Additionally Milton Keynes Council with a consortia of bus operator Arriva, manufacturer Wrightbus and five other companies has signed a five-year deal for new wirelessly-charged electric buses due to begin operating between Wolverton and Bletchley in summer 2013. It claims each bus will cost between £12,000 and £15,000 less to run per year.

With a passenger capacity in excess of 50 per vehicle, this trio of Optare Versa EV's, now in service with Travel De Courcey in Coventry, is the largest battery-powered electric buses currently on Britain's roads. Optare buses are manufactured at its modern state of the art assembly plant at Sherburn-in-Elmet in Yorkshire. A full size electric double decker is destined to shortly join the Versa and its smaller electric sister Solo.

Are there wider lessons to be learned from all this? Well, yes. There's nothing wrong with changing your mind. If a Good Idea doesn't produce results, it's okay to take stock and redeploy. And that's something you can do with buses, even bespoke buses like the ftr StreetCars. And be wary of grand projects that carry long-term financial commitment. With 'ftr' in York and Leeds, First and the local authorities involved have been able to back away after five years without getting their fingers badly burned. Whatever infrastructure was put in place can be used by other types of bus and, as First is showing, the buses themselves can be used elsewhere. If First has been guilty of anything in the unfolding story of the 'ftr' it is of raising expectations. So let's see how the vehicles perform in their new role on route 72 this winter. We no longer expect miracles from the StreetCar.

3.2 Buses

With regard to buses generally there is little wrong with the structure of the West Yorkshire network. Top management changes in the large operators mean they are raising their game and this should show benefits in public relations and perceptions. Tweaking of timetables to match levels of congestion are needed in some areas and some attention to positioning of bus stops to avoid bunching would help. Changing of drivers at city centre stops that serve more than one route also adds to disruption to other traffic and services. The electronic signs at bus stops are based on timetable entries and 'real time' displays would avoid the frustration and anger caused by your bus 'dropping off' due to being late and then suddenly arriving at the stop after you have walked off to make alternative arrangements. Passengers generally would rather have a longer journey time than buses, which are habitually late.

Bus Rapid Transit (BRT) (diesel or trolley) is a false economy and is not a cheap alternative to LRT. Experience with guided buses has not been good. Quality of ride is poor. The basic nature of the guidance system, with no adequate system of springing or damping, results in yawing of the vehicle, which becomes unpleasant at speeds in excess of 20mph.

There are more opportunities available now for easing the transport difficulties than have been possible for some time. What is needed is a more pragmatic approach.

3.3 LRT Light Rapid Transit (trams)

Why does Leeds need a Light Rapid Transit System in addition to a co-ordinated bus and rail network?

A train of modern vehicles running on seamless steel rails is the quickest, safest, quietest and most economic means yet developed for land transportation of large numbers of people. Experience has also shown that in the right circumstances motorists will use a park and ride facility feeding rail vehicles, either tram or train, when they will often not do so in the case of buses being offered.

Any such scheme should address the following questions:

- Is it serving appropriate corridors?
- How does it penetrate the central core?
- How does it integrate with buses?
- How does it integrate with trains?
- Is the alignment too restrictive?
- Is the track layout appropriate?
- Have the correct type of vehicles been specified?
- Is the PTE the best promoting body?
- Is the routeing politically or strategically motivated?

In the case of Leeds the congestion really starts outside the M621 – M1 – A1M- A6120 - A6110 ring around the city and most of these people want to go within 300 yards of the Leeds 'Loop' road. It therefore makes sense to dilute this traffic volume at its point of entry into the City.

This further suggests the optimum Park and Ride as being in the Thorpe Park / Brown Moor / Swillington Common area at the MI/A63 junction which would catch traffic from North East, East, South and South West of the city. There is then an uninterrupted, wide, demolition free route for over four miles to Quarry Hill and the City Centre Loop, which has already had most of the utility services diverted to make way for the now dated guided bus scheme.

Thorpe Park to Leeds City Centre suggests itself as an easily realisable cost effective high speed tramway from a catchment point with great park and ride and local development potential for which the major cost could come out of the trolley bus funding. Couple this tramway and park and ride facility with a railway station at Thorpe Park (not Micklefield) and the combined effect on relieving traffic congestion would be enormous. Thorpe Park, at Junction 46 on the M1 with existing and expandable access to the M1, is not only an already committed growth area in itself but is the one place most ideally situated to absorb traffic heading into Leeds from most other areas of high population.

The first of Blackpool's new Bombardier Flexity 2 trams shortly after delivery in April 2012. 16 trams total cost £33 million. Length 32.23metres. Passenger capacity 220. Maximum speed 70km/h. Dublin increased the length of their trams to 43metres with a corresponding increase in capacity as ridership grew. There are many variations to this theme.

Published Official Government figures for tramway construction in the UK put the cost per mile at 2010/2011 prices for construction at an average of £20.3million with Croydon at £14.9 and Nottingham at £23.6. Based on the worst case scenario the six miles from Thorpe Park to Eastgate would come out at, say, 6 x 24 = £144million plus £36million for twelve five section low floor trams at no more than £3 million each which still leaves room for manoeuvre within the £250million of 12miles of dubious NGT with far greater benefit to Leeds as a whole.

In addition to providing "congestion busting" benefit initially the experience gained would be invaluable in planning bite-sized extensions along carefully selected corridors.

Whilst the then Government's decision to axe SuperTram in 2006 was blatantly political the approach was flawed and made the scheme an easy target for rejection. With three lines under consideration it was too ambitious for a pilot scheme. The routes were tortuous paying more attention to serving local council wards, thereby slowing down the service, than tackling the main problem of congestion caused by cars coming from the outer perimeter. The local population would have been better served if the tramway attracted car owners to the out of town car parks, which the Thorpe Park scheme would, thereby reducing congestion for local buses and local traffic generally. The NGT scheme follows the other two routes and the Headingley stretch was always going to present a problem. In addition Leeds asked for a special car which was expensive, there was added expense in some aspects of the depot location and there was over specification that added to the bidders costings.

People are bound to ask how it is that in the last twenty years Croydon, Birmingham, Sheffield and Nottingham have all in turn commissioned light rail schemes and three of these have expanded and are now buying their second generation of trams. Manchester started with 26 two-car trams in 1992 and now has a fleet of 94, many of which run as four-car tandem units. Blackpool changed from being a Heritage system to buying a fleet of 16 modern five-section trams in 2012. With an expenditure of £100million the new trams attracted over 1.4 million passengers in the first four months of operation.

There has to be a way forward, a change of approach, because the present situation is unsatisfactory and not helped in any practical sense by NGT. In 2006 Birmingham made the claim that not extending their Midland Metro tram system could cost the West Midlands £200million a year and lose 40,000 jobs. Over the top, maybe, but they got the 1.4km extension through the city centre from Snow Hill to New Street and now announce that it will have the potential to create 14,500 jobs and add £513million to the regions economy. One can be sceptical but compare this with the potential benefits of the Thorpe Park suggestion.

3.4 Tram Trains

Like Trolleybuses, Tram Trains have crept into the transport vocabulary in recent years as a panacea, a purveyor of universal remedy to cure all transport problems. The term, synonymous with Rail Buses, has no value in West Yorkshire, least of all with regard to little used lines and the airport link.

There are horses for courses and the Tram Train concept works tolerably well in some mainland European applications. By their very nature of operation the Nottingham, Manchester, Birmingham and Croydon trams are technically 'Tram Trains' in that they run in part on existing 'heavy rail' (ex BR) tracks and in part on streets and reservations.

But, and there is always a but, they do not exhibit the only fundamental attribute for the name 'Tram Train' and this is a feature that Nottingham had in mind at the planning stage but no amount of ingenuity could bring it to fruition. That was the ability to have a fully legally compliant, mobility impaired friendly, vehicle which could trundle round the city centre as a tram and then have shared running on the same tracks with main line trains once out of the city. The shared running had to be abandoned for a number of reasons .

No one has so far reconciled the demand for a low floor tram with the stepping distances imposed by HSE and mandatory Railway Group Standards, and structural integrity (crashworthy-ness) and signalling compatibility difficulties have been brushed aside.

To require a Tram Train at all you must have a tramway to run it on. This Leeds does not have – yet. Secondly there must be a lightly used 'heavy rail' section to link the tramway to. This is difficult to achieve in Leeds because most Network Rail lines are running full up to or near to capacity and injection of the odd Tram Train would reduce that line capacity by possibly two paths, thereby being a hindrance rather than a help. The Sheffield-Rotherham Tram Train trial scheduled for 2015 is fair enough as it will connect with SupertTram at Meadowhall and the short stretch of Network Rail line through Rotherham Central to Parkgate is partly a disused freight line and partly the Meadowhall – Rotherham Central – Parkgate line used by very few local services. No long distance trains to trip up. According to Vossloh, the 37m-long wheelchair-accessible tram-trains will have a seating capacity for 94 people. The price is said to be £4.5million each whereas a standard 42 metre long two car electric multiple unit carrying 154 seated passengers would cost just over £2.0million.

Curriculum Vitae

DONALD H TOWNSLEY

Date of birth	22 April 1933
Nationality	British
Profession	Chartered Mechanical Engineer, Chartered Manager
Specialisation	Railway rolling stock design, engineering, manufacture and operation

KEY QUALIFICATIONS

Over 55 years' experience of engineering design, development, manufacture and operation of locomotives, rolling stock and special vehicles for main line, light rail, mine and factory railways world-wide.
Authorised signatory for Certificates of Conformity in Vehicle design and Rail Vehicle Maintenance under the Rail track (now Network Rail) Vehicle Acceptance process.

EDUCATION AND PROFESSIONAL STATUS

Educated Templenewsam Halton Primary School, Leeds Central High School and Leeds College of Technology (now Leeds Metropolitan University).

Chartered Engineer, Member of the Institution of Mechanical Engineers

Member of the Chartered Management Institute

EXPERIENCE RECORD

1989-present MOTT MACDONALD GROUP (Retired 2006) (see below for prior to 1989)

1989-present Principal Rolling Stock Consultant – Railways and Transport Systems Division

Engaged to advise on railway rolling stock design, specification and procurement and on general aspects of railway operation.

Responsible for design and prototype development of London Underground Ltd 'slim line' ticket gate to improve passenger throughput.

Produced procurement specification for retrofit of sliding doors to Docklands Light Railway rolling stock, to cope with increased utilisation and future developments and was engaged as Engineer to oversee factory conversion and commissioning of rebuilt vehicles.

Carried out the role of 'The Engineer' on the procurement of the fleet of class 325 electric multiple unit trains for Royal Mail. This included the drawing up of performance specifications, formulation and evaluation of tenders and negotiation of the contract, supervising the design scrutiny and overseeing construction and commissioning of the trains, including the type testing of components, through to the expiry of warranty. On behalf of Mott MacDonald gained with colleagues the Royal Mail First Class Supplier award three years running.

Evaluated tenders for equipment in connection with Mozambique Railway rehabilitation, and undertook on behalf of the Overseas Development Administration an on-site asset evaluation of all locomotives, rolling stock and workshop equipment owned and operated by Tanzania Railways Corporation. This resulted in a refurbishment programme of selected passenger vehicles and shunting locomotives.

Managed the procurement of a fleet of new trains for the London Tilbury Southend (LTS Rail) franchise, now c2c, which involved replacing the existing rolling stock. Prepared tender documentation, assessed prequalification submissions, evaluated tenders and produced all technical and contractual documentation for the procurement contract for the new Class 357 (Electrostar) trains. Followed this with similar briefs for South Eastern Trains (Class375) and Thameslink Rail Ltd.

Engaged by the Spanish government from 2001 to 2003 to advise the Secretary of State for Development on policy and act as Team Leader in the evaluation of tenders covering procurement of high speed (350 km/h.) trains and variable gauge power cars for a new High Speed international line. This involved working part time in the clients Ministry office in Madrid, and similarly in Mott MacDonald's Croydon head office, and included providing answers to questions in Parliament.

Worked with, and on behalf of, a large number of passenger train operating franchise bidders in formulating rolling stock strategies prior to bid submissions in the run up to and execution of the Privatisation of British Rail.

Joint originator of the Conceptual Specifications for Tilting Trains for West Coast Main Line and InterCity Cross-Country services commissioned by the Office of Passenger Rail Franchising (OPRAF).

Joint author of the successful franchise bid for the London Tilbury and Southend route and similarly for South Eastern Trains.

Undertook assessments of maintenance facilities and evaluations of rolling stock condition relating to the privatisation sale of the British passenger rolling stock companies (ROSCOs) on behalf of a potential purchaser.

Evaluated tenders for the rebuilding of ex British Rail diesel electric locomotives for one of Britain's first `open access' freight operating companies.

Watching brief on light rail (tramway) and trolley bus/guided busway systems proposed within the UK. Practical involvement with Birmingham, Croydon, Manchester and Nottingham light rail systems and similar activity in Budapest, Dublin, Oporto and Taiwan

1988-1994 Freelance Consultant

Carried out procurement study and review of UK rolling stock manufacturing capacity for major UK client.

Contracted by West Yorkshire Passenger Transport Executive to advise on safety aspects involving the use of slam doors on interim rolling stock for the Leeds – Bradford - Skipton electrification scheme.

Undertook market survey of rolling stock procurement and potential opportunities for major European manufacturers. Involved in retrofit transmission exercise on British Rail `Pacer' Fleet.

Drew up specifications and supervised manufacture and commissioning of battery locomotive and works train for Docklands Light Railway. Advised on procurement of narrow gauge locomotives for cotton and sugar plantations in Mozambique, Fiji, and Zimbabwe and for other industrial applications.

Contracted by London Underground Ltd to advise on specifications for battery/line and diesel works locomotives and permanent way equipment and to investigate the possible use of then surplus British Rail Class 20 locomotives, amongst others, on the surface lines of LUL.

1949-1988 HUNSLET (HOLDINGS) PLC (Formerly Hunslet Engine Company)

1986-1988 General Sales Manager

Directly responsible to Managing Director and covering activities of Parent Company and recently acquired subsidiary for diesel, battery and trolley locomotives, transmissions, rapid transit cars, components and bogies.

Responsibility ranged from initial survey of client's requirements through preparation of tender and sales specification together with procurement specifications for sub-contracted equipment.

1966-1986 Sales Manager

Responsibility world-wide and reporting directly to Managing Director. Covered all contract stages for locomotives, gearboxes, transmissions, flame proofing and exhaust gas conditioning equipment, including underground locomotives for National Coal Board. Building up of cost estimates for major contracts. Clients included British Rail, London Underground Limited, Channel Tunnel Group, British Steel, Tyne and Wear Metro and most home and overseas railway companies and industrial locomotive users. Overseas business travel during this period and later covered over 60 countries worldwide.

Major contracts surveyed and negotiated included over 70 locomotives for construction of the Channel Tunnel, 35 for Kenya Railways, 85 for British Steel Corporation, others for Sugar Estates in South Africa, Mozambique, Fiji, St Kitts, Trinidad and numerous general requirements. Undertook regular liaison tours to Hunslet's associate company in South Africa, including visits to major customers.

Continued involvement in the design and manufacture and contract matters relating to locomotives and other rolling stock for operations above and below ground including the handling of hazardous cargo.

These projects included:

- site survey and supply of internal locomotives for BNFL Sellafield;

- design responsibility for a new range of flameproof locomotives for underground coal mines;
- repair and rebuilding of steam-driven rack locomotives and supply of new diesel driven locomotives and fail-safe passenger car bogies for the Snowdon Mountain Railway;
- 35 automatic electric trains for use underground on the Post Office Railway;
- promoted and implemented the concept of rack and pinion electric locomotives on steep gradients (16% grade) for materials access and spoil removal at the Shakespeare Cliff site of TML/Eurotunnel Channel Tunnel project;
- concept design and supply of 40 diesel rack locomotives for use by British Coal at their Selby Coalfield;
- compilation of specifications and evaluation of proposals for diesel driven rack locomotives for coal mining use in Sumatra, Indonesia.

Organised and presented a two-day seminar in Beijing on the use, operation and transfer of technology of underground rack locomotives to the Chinese Ministry of Coal. Since 1980, actively involved in discussions and proposals with consultants, potential operators and contractors regarding the transport of nuclear waste both on the surface and underground.

Initiated the first private operation on British Rail of Class 20 locomotives for weed killing trains system-wide.

1965-1966

Executive position as Spares Manager in re-organisation of Spares Department and progress and control of spares orders and stock levels.

1964

Six month secondment to works Production Department to initiate adoption of critical path analysis and flow control methods.

1961-1964 Sales Engineer

Covering sales world-wide of industrial, mining, tunnelling and main line shunting locomotives from initial survey to final contract.

1959-1961 Project Engineer

Responsible to Managing Director for design construction and commissioning of specialist track maintenance machinery for British Railways North Eastern Region.

1957-1959 Leading Design Draughtsman

In charge of team designing and detailing flameproof underground locomotives for National Coal Board, Ministry of Defence, Nigerian Coal Corporation, ICI and others.

1955-1957 Royal Electrical and Mechanical Engineers

Military Service as Draughtsman finally as Chief Draughtsman of REME Base Workshop covering classified modifications of Armoured Fighting Vehicles and mechanical handling appliances.

1953-1955 Design Draughtsman

Engaged on all aspects of locomotive design for British Railways, Iraqi, New Zealand, Thailand and other Railways, also for steelworks, extractive industries and sugar, palm oil, cotton plantations and petro-chemical plants world-wide.

1949-1953 Apprentice

Five year apprenticeship in heavy and medium engineering covering planning, gear cutting, general machining, fitting, welding, steam and diesel locomotive assembly and commissioning.

LANGUAGE CAPABILITY

English : Mother tongue Reading and written knowledge of technical Spanish.

MARITAL STATUS

Married with two grown up sons.

COMMITTEES AND ORGANISATIONS

Honorary Alderman, Leeds City Council
Former Councillor, Leeds City Council, with various Shadow Chairmanships including Passenger Transport and Planning.
Chairman, Leeds East Conservative Association
Past Chairman and current Committee Member, Institution of Mechanical Engineers Railway Division -North Eastern Centre.
President, Leeds Model Railway Society.
Vice President, Friends of Leeds City Museums
Former Governor Halton Middle School Leeds
Former Governor,(to 2010), Temple Moor High School Science College, Leeds
Member Leeds Civic Trust
Member East Leeds Historical and Archaeology Society
Member Festiniog Railway Heritage Group
Past President Whitkirk Probus Club

PUBLICATIONS

Two books on railway related subjects and over two hundred articles in Railway and Professional magazines over a period of thirty years.
Three papers on Train Procurement to The Institution of Mechanical Engineers

Update May 2012

ALAN J GOLDFINCH

Date of birth	8 November 1932
Nationality	British
Profession	Chartered Mechanical Engineer, Chartered Manager
Specialisation	Railway electrification, engineering, manufacture and operation

KEY QUALIFICATIONS

Over 50 years' experience of engineering design, development, manufacture electrification and operation of railways.
Former Chief Mechanical and Electrical Engineer British Railways Eastern Region

EDUCATION AND PROFESSIONAL STATUS

Educated: Wanstead County High School, Essex.
Leiston County Grammar School, East Suffolk
University of Cambridge, Mechanical Sciences Tripos, 1st Class Hons. MA
University of London, BSc (Engineering) with Electrical Power, 2nd Class Hons.

Chartered Engineer, Fellow, Institution of Mechanical Engineers
Fellow, Institution of Mechanical Engineers

EXPERIENCE RECORD

1950 Engineering Student with Davy United, Sheffield (manufacturers of heavy steel making machinery, including rolling mills and hydraulic presses

1953 to 1989 BRITISH RAILWAYS BOARD

1953 Mechanical/Electrical Pupil (Graduate), Derby Locomotive Works and Motive Power Depot

1955 National Service, Royal Engineers, Longmoor and Bicester

1957 Technical Officer/Senior Technical Officer London Midland Region Electrification Office, Derby. Steam and electricity generation and distribution plant development, Derby Locomotive and Carriage & Wagon Works, Crewe Works, Stonebridge Park Power Station etc.

1959 Technical Assistant 25kV (25 thousand volt) London Midland Region West Coast Main Line electrification power supplies design for Manchester/Liverpool/Euston project, including electrical load calculations, electrical protection, remote supervisory control equipment.

Various detailed improvements to existing DC electrified lines.

Detailed installation planning of Overhead Line Equipment (OHLE) Manchester/Liverpool/Euston.

1966 Assistant Engineer (Electrification Projects). Forward planning for new electrification Weaver Junction to Gretna (extension to Glasgow), London Moorgate and St Pancras to Bedford, conversion of Manchester Oxford Road/Altrincham from DC to AC system.

Leading detailed overhead line system design team for Weaver Junction/Gretna project.

1969 Diesel Locomotive Engineer. Monitoring performance and developing improvements to designated types of locomotive (Classes 08, 20/40/50, 24/25/44/45/46/47)

1971 Divisional Maintenance Engineer, Nottingham. Management of staff, depots and other facilities for maintaining locomotives, coaching stock including diesel multiple unit trains, wagons, machinery and plant within the Division

1976 London Midland Region Traction Engineer, Derby. Responsible through a technical team for the performance of all locomotives, electric and diesel, and diesel multiple units throughout the British Rail system.

1978 Traction Maintenance Engineer, British Railways Board, Marylebone Responsible through a technical team for the performance of all locomotives, electric and diesel, and diesel multiple units allocated to the Region.

1980 Suburban Engineer British Railways Board Providing the newly formed Provincial and London & South East Business Directors with electric and diesel multiple trains appropriate to the needs of their customers.
Overseeing the development and design of new vehicles, and ensuring that construction of them by the manufacturers was of acceptable quality and to programme and within agreed expenditure.

1982 Chief Mechanical and Electrical Engineer British Railways Board Eastern Region, York, Overall management of Mechanical and Electric Engineering functions within the Region from London to the Borders
Responsible to The Regional General Manager for the satisfactory availability of all rail and road vehicles, plant, machinery and all fixed electrification equipment throughout the Region.

1987 Mechanical and Electrification Engineer, Electrification, Plant& Machinery, BRB London and Doncaster.
Concept, design, operating and maintenance standards for all such equipment throughout the system, with special emphasis in safety and close liaison with HM Railway Inspectorate. Managing a technical team intended to hold the national level of expertise in the relevant engineering technology.
Managing all new electrification projects and major alterations to existing systems. Liasing with engineers of other administrations working in similar fields of activity.

LANGUAGE CAPABILITY
English : Mother tongue
Married with four children and five grandchildren
Lives Upper Poppleton, York.

COMMITTEES AND ORGANISATIONS

Chairman Technical Committee Institution of Mechanical Engineers Railway Division
Chairman Prizes and Awards Committee Institution of Mechanical Engineers Railway Division
Board Member Institution of Mechanical Engineers Railway Division
Committee Member, Institution of Mechanical Engineers Railway Division -North Eastern Centre.
Member of Power Board, Institution of Electrical Engineers
Member of Wiring Regulations Committee, Institution of Electrical Engineers
Member of P2 (Electric Traction Committee), Institution of Electrical Engineers
Member Poppleton Probus Club

AJG/2012