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Ordsall Chord
part of the Northern Hub
by Tony Williams

Introduction

On 15th September 1830 the Liverpool and Manchester Railway (L&MR) opened; its terminus until 1844 was Liverpool Road Station. As a goods station it closed in 1975 and later became the Manchester Museum of Science and Industry. In the 1830s and 40s more railways arrived, with their terminal stations on the edges of the built-up central area. Making these through stations would have resulted in lines going through the most expensive central area of Manchester.

During the 1840s Victoria station and connecting lines, together with the Manchester South Junction & Altrincham (MSJ&AR) were built. This was only a partial solution which lasted until the 1980s with separate north and south networks in Manchester; passengers still had to get between Piccadilly and Victoria stations.

British Rail (BR) built the Hazel Grove Chord between the former Midland and London North Western lines which opened in 1986. This allows trains from Sheffield via the Hope Valley line to run through Stockport on the way to Manchester Piccadilly station.

The Windsor Link, a new line, from Windsor Bridge Junction on the former Lancashire and Yorkshire (L&YR) to Ordsall Lane on the former London North Western (LN&WR). It allows trains from Bolton, Preston and the North to run directly to Piccadilly station. The link opened in 1988 and came into full use in 1989.

These links enabled most long distance services to be concentrated on Piccadilly Station. The reduced capacity required at Victoria enabled rebuilding with four through and two bay platforms for main line services.

By the early 1980s there were lines with only or mainly local services. They required increasing levels of subsidy and considerable capital expenditure for renewals. Additionally no real solution for City Centre penetration had been found.

Several studies into light rail alternatives resulted in the original Metrolink six line scheme. Four of those lines; Altrincham, Bury, Rochdale via Oldham, and East Didsbury have opened. Additionally the Airport, Ashton and Eccles lines with some street running are open.

Transpennine services were transferred from Victoria to run via Guide Bridge and Manchester Piccadilly. The subsequent growth in rail travel was not expected. Trains crossing the throat at Manchester Piccadilly now cause congestion; which will be reduced by the Northern Hub scheme.

Piccadilly and Oxford Road Stations

The MSJ&AR line capacity from Piccadilly to Ordsall Lane Junction constrains traffic on many routes.

Piccadilly will have a new island platform 15/16. Platforms 1 to 4 at Oxford Road will be extended and re-aligned. The revised layout of paired platforms will allow a train to arrive, complete its station duties and proceed; a second train having an unrestricted arrival at the other platform. These upgrades will increase capacity to 16 trains per hour per direction including two freight paths. A consistent 30 mph speed across the whole corridor will also be possible.

Live Wires 119, June 2015, has a more detailed description of these proposals.

Ordsall Chord

This will provide a direct connection from Piccadilly & Oxford Road Stations to Victoria Station in Manchester. Built on new and modified structures it will be an electrified line. Trains from the east will be able to reach Manchester Airport, without reversing or crossing the layout at Manchester Piccadilly.

The Castlefield area has been the subject of change since the Romans built their fort.

Subsequent centuries, particularly since the Industrial Revolution, have seen the development of railways, tramways, roads, rivers, canals and pedestrian routes; these sit alongside one another and cross at different levels.

George Stephenson's original railway line and station served their purpose and were in keeping with the time. Many of these original structures have been masked by newer ones built for later requirements.

These development proposals respect the historic character of the immediate and wider area. They also take account the aspiration to regenerate the local area.

The following description is in sections, from Deansgate Station towards Victoria.

Line names

Bolton line uses the former MSJ&AR line from Castlefield to Ordsall Lane then the Windsor Link to Salford Crescent Station and the former L&YR line to Bolton and beyond. [up to Piccadilly]

Chat Moss line uses the former LN&WR line from Victoria to Eccles and beyond including Liverpool. Middlewood Viaduct is alongside Trinity Way, the Inner Ring Road. [up to Victoria]

Salford line uses the former L&YR line between Victoria and Salford Crescent Station. [up to Victoria]

Ordsall Chord is a new line from a junction between Castlefield & Ordsall Lane on the *Bolton line* and another between Ordsall Lane & Salford Central on the *Chat Moss line.* [up to Piccadilly]

Castlefield (MSJ&AR) Viaduct

This section is from just east of Potato Wharf to the bridge over the Irwell. It will be strengthened and also widened (by approximately 2.5 metres) on the south west facing elevation to accommodate additional twin tracks and provide the radius required for the new Chord section and a double junction crossing two lines.

Existing viaduct brick structures will be retained and the widened sections will be constructed adjacent to the masonry arches. However, to enable the proposed widening, partial removal of existing parapets will be required.

Widenings will have reinforced concrete foundations to modern standards which support in situ reinforced concrete piers from ground level, with a precast concrete arch and spandrel that will follow the profile of the existing arches.

The front face of the widened sections are to be inclined outwards from the arch typically at 11 degrees to vertical to improve the overall appearance of the structure within the townscape setting.

The cast iron bridge span at Potato Wharf will be replaced with a new flat deck bridge span. At Water Street the 1830s Cast Iron Bridge (Grade II Listed) will be replaced with a bridge consisting of two half through box girders with a filler beam deck.

The widened section of the Castlefield (MSJ&AR) Viaduct structure will also provide for a 700 mm continuous walkway for maintenance purposes.

Water Street Junction and Bridge

The facing and trailing junction points will be north west of Potato Wharf; where the viaduct will be widened on the south west side.

On the north east side of the Castlefield (MSJ&AR) Viaduct, near the end wall of Woollam Place apartments, a short length will be widened to carry the diverging chord line. Extended piers for this require vehicular access to two of the arches to be stopped up. These two commercial units will be demolished.

A 'half through bridge' will carry the curving alignment over Water Street. The north western pier will be located so that the bridge soffit clears (by approximately 0.3 m) the Grade II listed Cattle Ramp (part of the 1830s Viaduct) located adjacent to Water Street. A "Half Through Bridge" is where the main girders span on the outside of the structure. The main girders are connected at deck level only and typically form a 'Box' shape.

Stephenson's Bridge, Girder Bridge, 1830s Viaduct & Zig Zag Viaduct

Between Water Street and the 1830s Viaduct, piers for the Chord will be located in line with the existing structures. The 1830s Viaduct will be strengthened with a technique known as 'saddling'; using cored piles bored through the centre of existing piers into suitably resistant material and placing concrete over the arch. Four spans of the 1830s Viaduct will be crossed. Given the structural interaction between adjacent spans, all spans between Water Street and Stephenson's Bridge will be strengthened. This will be done in such a way as to minimise disruption to the external appearance.

Four arch spans forming part of the Grade II Zig Zag Viaduct will need to be demolished. The remaining Zig Zag Viaduct arches will be strengthened through concrete saddling and a buttress wall added to stabilise the arches following demolition.

Removal of the Grade II Girder Bridge will also be required. This was, in effect, a widening to the original 1830 twin stone arched bridge over the river.

River Irwell Crossing and Trinity Way

A single span Network Arch bridge will carry the Chord over the River Irwell. It will have a span of approximately 90m with a width of approximately 16m. It will stand at a height of approximately 15.5m.

A "Network Arch" is where the support arch is located on the outside of the structure and forms a bowstring shape.

On the northwest bank, the Network Arch will tie into the proposed Trinity Way bridge by means of a new longitudinal filler beam deck bridge. The abutments will be located between the River Irwell towpath and Trinity Way.

Trinity Way Bridge will be a 'half through' structure with a concrete/steel composite deck (consisting of steel beams infilled with concrete), reinforced concrete bridge abutments, bearing shelves and abutment widening. Its span length approximately 110m, width approximately 14.2m and clearance of 5.3m from Trinity Way.

Four piers will provide structural support as it crosses Trinity Way; one on the east side of the carriageway, two within the central reservation and one on the west side of the carriageway. Each pier is 2 metres square, those located along the central reserve of Trinity Way being 35 metres apart. A concrete containment barrier is required on the carriageway facing side of each of the piers in line with highway safety standards.

Middlewood (L&MR) Viaduct

The Ordsall Chord will tie into the existing Middlewood (L&MR) Viaduct where its curvature reverses and decades ago the L&YR goods station line passed underneath at ground level. The cast iron bridge span which carried the Chat Moss line over the L&YR goods station line has been replaced at track level by a precast filler beam concrete slab deck.

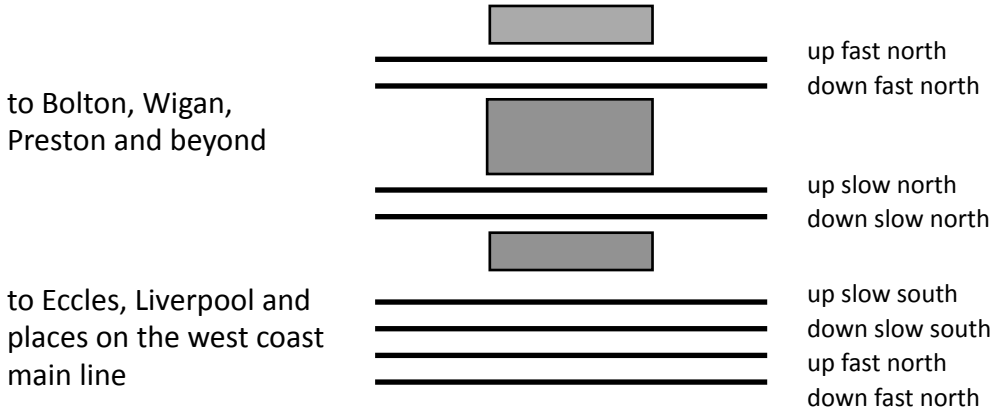
In the Ordsall Lane Junction direction, four of the disused 'fast lines' arches will be removed to enable the tie in.

On the northwestern side a steel framed cantilevered walkway will be provided. Further on towards Salford Central Station the existing masonry arches will widened with in situ reinforced concrete piers at ground level and precast concrete arches and spandrels at track level. Between the Middlewood and L&YR viaducts west of Salford Central, for two arch spans, there will be a mass concrete infill. This widening will allow the *Chat Moss line* to be relocated through the station.

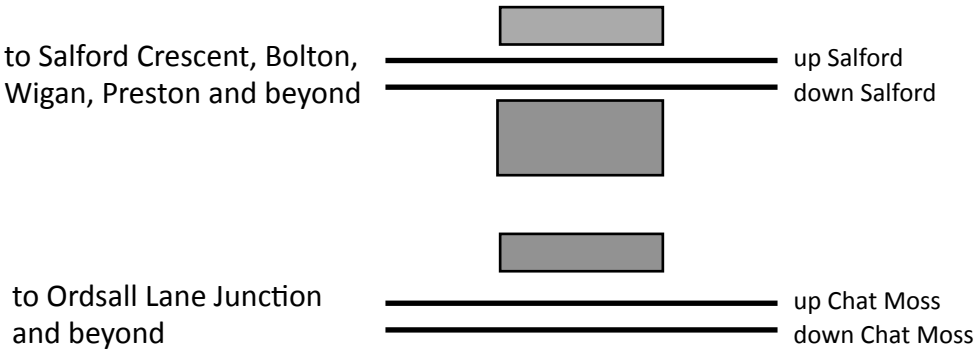
Salford Station Layout 1930s

Deal Street miniature lever S.B. controlled both north and south lines to Victoria and Exchange Stations respectively. Victoria West Junction miniature lever S.B. controlled the junction and west end of Victoria Station. All of these are to the east, which is in ⇨ direction.

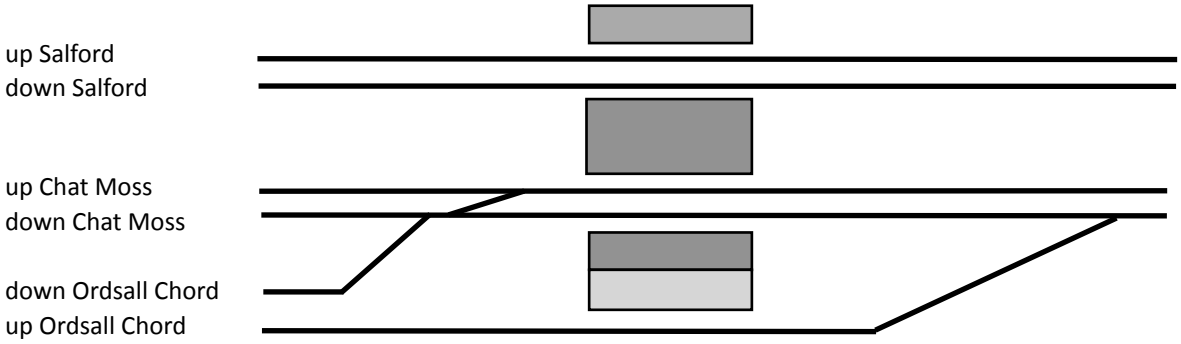
The north lines were those built by the L&YR and the south lines built by the L&NWR.



Salford Central Layout 2013



Salford Central Layout with Ordsall Chord



Here the Chat Moss lines have been relocated and use platforms which were on the 1930s slow north lines.

The lighter shaded box represents the new platform extension which covers the former site of the up Chat Moss line. In the station area, the up Ordsal Chord is on the previous down Chat Moss alignment.

New Prince's Bridge

Prince's Bridge crosses the River Irwell. On the Salford side it continued as Hampson Street. This closed as a through road enabling Trinity Way, part of the inner relief road, to be built. To pass under railway bridges, this part is significantly lower than the former level of Hampson Street. Pedestrian and cycle use is not encourage by the resulting combination of steps and ramp here.

The existing bridge is to be removed to enable the construction of the Network Arch. A new footbridge at the same location as the current structure is proposed. There are various design constraints for its replacement; to allow navigational clearance beneath, to prevent unauthorised access to and vandal damage of railway assets, proximity of Stephenson's Bridge.

A design with a simple 'haunched' beam and cantilever walkways off each side of the beam will be used. This deck will give the footbridge a very slender profile. The bridge will incorporate concrete cantilevers cut into the existing Prince's Bridge abutments, retained to provide a memory of the former structure, minimising the span (and hence depth) of the beam. The balustrades will have handrails at appropriate height for cyclists and pedestrians, with a wire-infill detail.

There will be an uninterrupted panorama of views of the Grade-I listed Stephenson's Bridge; tracking round from Manchester, across the river crossing and into Salford to enable a unique appreciation of the qualities of the existing bridge.

The bridge deck and the adjacent approaches to the bridge can be arranged such that the levels naturally integrate with the pavement levels on Water Street and Trinity Way; no independent ramps or stepped areas being required, improving access and the quality of the public realm.

Replacement Utilities Bridge

Utilities used the existing Prince's Bridge. These were a combination of cable routes and some large pipes. This services corridor has been replaced.

To avoid an isolated and highly unattractive 'pipe bridge'; the new utilities bridge is a separate structure alongside and mimicking the Castlefield Road Bridge. This is a comparatively recent structure, supporting the inner relief road, to the south of the railway viaducts.

Local Rail and Metrolink News

by Andrew Macfarlane

Railtours

After a break of a year, the Railway Touring Company is again planning to run steam via Altrincham on the "North Wales Coast Express" on Sundays 21st August and 4th September. The train will start from Crewe diesel-hauled and run to Manchester Piccadilly with the steam locomotive on the rear. It will then reverse and the steam loco will haul the train via Stockport, Altrincham, Northwich and Chester to Holyhead and back. The train picks up at Altrincham (1120 approx) and Chester (1200 approx). Haulage will be either by no. 45690 Leander, a Jubilee class 4-6-0 built for the LMSR in 1936 or no. 46115 Scots Guardsman, a Royal Scot class 4-6-0 built in Glasgow in 1927. Full details can be found on the Railway Touring Company website at www.railwaytouring.net or by phone to 01553 661500.

Retro Railtours are running "The Retro Canterbury Belle" on Saturday 9th July. The class 68-hauled train starts from Leeds and picks up at Huddersfield, Stalybridge, Reddish South, Stockport (0715 approx), Crewe (0800 approx) and Stafford (0830 approx). The train calls at Clapham Junction and then Canterbury (probably East) for a three and a quarter hour stopover. Fares are £79 standard class, £119 first class and £199 Premier Dining. Those alighting at Clapham Junction pay £10 less. Details are on the Retro Railtours website at www.retrorailtours.co.uk or by phone to 0161-330-9055.

Memorial

A new World War One Memorial between platforms 10 and 11 at **Manchester Piccadilly** was unveiled on Wednesday 4th May. The memorial commemorates men from the London & North Western Railway London Road goods depot who died in the war and replaces a memorial which was lost in the 1960s.

Stockport

Station Road, in front of the main entrance to **Stockport** station, closed as a through road as from 9th January. A hotel is being built immediately outside the station. A Stockport Station Masterplan was unveiled on 31st January. This envisages a new footbridge across the south end of the station with a possible tram train station on the Edgeley side. The existing station subway would become a public subway with no access to the platforms. This year's **Stockport Rail Show** is due to take place on Sunday 31st July. A 20mph speed restriction approaching Northenden Junction from the Stockport direction is due to an embankment slip, which is currently being worked on. Part of the roof of the steps leading down to the Manchester-bound platform at **Heaton Chapel** collapsed onto the steps without warning at around 13:20 on Monday 4th April. Luckily the steps were closed off at the time or the outcome could have been very serious. More information including dramatic pictures can be found at: www.friendsofheatonchapelstation.co.uk/content/station-roof-collapses.

Bookshop

The **Ian Allan bookshop** on Piccadilly Station Approach is sadly to close on 30th June after the landlord decided to increase the rent. It was apparently not possible to find alternative premises in Manchester city centre at an affordable price.

Franchise changes

Warrington Central and **Birchwood** stations transferred from First TransPennine Express to Northern as from 1st April. Also Northern now operates the Manchester Airport to Blackpool North service and all trains to Barrow-in-Furness and Windermere. Northern has a new freephone number for Customer Services: 0800 200 6060, available 24 hours a day. There is also a new Northern website at www.northernrailway.co.uk

Wayfarer & GM Rail Ranger

The popular **Wayfarer** ticket did not increase in price with the general rail fare increase on 2nd January and is still £12 for adults, £6 for anyone aged 60 or over and £23 for groups of up to 2 adults and up to 2 children. Wayfarer tickets can be purchased from booking offices and Paypoint outlets and from the conductor if boarding at an unstaffed station or at a station where the ticket office is closed. The **GM Rail Ranger** ticket increased in price from 2nd January to £5.40 for adults and £2.70 for children (aged 5 to 15). There is a new Metrolink ticketing App, which enables you to buy a full range of Metrolink tickets and thus avoid the queues at ticket machines (if you are unfortunate enough to have to pay!). Further information can be found at:www.metrolink.co.uk/pages/news.aspx?newsID=241.

Freight

On freight, the Immingham to Fiddler's Ferry Power Station coal trains, which had been running via Altrincham, ended abruptly before Christmas. Scottish & Southern Energy then announced that 3 of the 4 generating units at Fiddler's Ferry would probably be closing as from 1st April 2016. In the event that did not happen and the power station will be staying open for at least another year until 31st March 2017 at least and probably beyond then. Route learning with a light engine has continued for the new Knowsley (Kirkby) to Wilton (Teesside) domestic refuse flow operated by DB Cargo, as they are now called. There are two paths a day each way for the trains, which will be routed via Wigan Wallgate, Warrington Bank Quay, the Hartford curve, Northwich, Altrincham, Stockport, Denton Junction, Ashton Moss North Junction, the Brewery curve, Rochdale and the Calder Valley route. Freight traffic through Altrincham has increased considerably with around 15 freight trains currently running in any 24-hour period. This will increase still further with the start of the Knowsley to Wilton traffic.

Metrolink

Turning to Metrolink, Metrolink fares have been held at 2014 levels for 2016. As from 21st March the Manchester Airport Metrolink service has started at 3am from Firswood to the Airport for the benefit of those working at the Airport and starting work from 4am onwards. There is to be another 8-week complete blockade at St Peter's Square from Sunday 26th June to Sunday 28th August (inclusive). The Eccles line will also be closed for engineering work during this period. Tram services will resume through St Peter's Square (and calling there) as from Monday 29th August and **the Altrincham to Bury through service will be restored as from that date.** Also the Manchester Airport to Cornbrook service will be extended through to Deansgate-Castlefield as from 29th August. The Passenger Information Displays (PIDs) on the Metrolink platforms at Timperley, Navigation Road and Altrincham will hopefully be brought into use at some stage in 2016 (they were installed in August 2009!).

The Altrincham Electric Railway Preservation Society

The group for the Manchester South Junction & Altrincham Railway and your local railway society. Members receive Live Wires, free admission to the Winter Lecture Series and the opportunity to take part in Society activities. Annual membership is £13.00 renewals take place on 1st April. Life membership is £130.00. New members are welcome.

Live Wires is produced in full colour but printed in black and white due to the high cost of colour printing. For more information; including If you would like to receive a full colour electronic copy of Live Wires as a pdf; please contact Roger Morris, Membership Secretary.

AERPS Web Site is at www.altrinchamelectric.org.uk. Our Home page has a brief introduction to the Society and update alerts. Other pages are Coaches, Excursions, Lectures, Membership, MSJ&AR (the line and its history), Photo Gallery (pictures of the line).

GDPR

The general data protection regulation (GDPR) is a new EU law that came into effect on 25 May 2018; it replaced the former Data Protection Act.

To ensure compliance with this; Committee Member details, the out of date Lectures Series 2016-2017 information and some other items have been removed from this web version.