

Light Rail Engineers Group Meeting Minutes

Meeting held at the National Training Academy for Rail, Unit 5 Heathfield Way,
Kingsheath, Northampton, NN5 7QP
Thursday 21st November 2019

Present:

Lee Joyce (LJ) - SYPTE	Dan Hill (DH) - UKTram
Ian Middlemiss (IM) – Blackpool Trams – Chair	Martin Marshall (MM) – Lucchini Unipart Rail
Chris Connolly (CC) – Lucchini Unipart Rail	Brindusa Mironov (BM) – British Steel
Ian Hale (IH) – London Trams	Ian Ambrose (IA) – Network Rail
Darren Cole (DC) – British Steel	Michael Doughty (MD) – Manchester Metrolink
Cathal Dwane (CD) - Siemens	Graham Thornton (GT) - Manchester Metrolink
Eberechi Weli (EW) – Absolute Risk Tech	Mark Ashmore (MA) - UKTram
Neil Cundy (NC) – Nottingham Trams	Tony Marsden (TM) – Blackpool Trams
Jennifer Walpole (JW) - NTAR	James Burgess (JB) – Manchester Metrolink

Apologies for absence:

Craig O’Brien (COB) - UKTram	Mike Crabtree (MC) - Crich
Colin Kerr (CK) – Edinburgh Trams	James Hammett (JH) - UKTram
Seamus Egan (SE) – Transdev	Steve Firth (SF) – Independent
Dr Ian Coleman (DrIE) – Network Rail	Lorraine George (LG) – UKTram
Tracy Barnett (TB) - Siemens	Lindsey Smith (LS) – British Steel

ITEM	NOTE	ACTION
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- 1. WELCOME TO NATIONAL TRAINING ACADEMY FOR RAIL**
 - 1.1 Prior to the meeting, Jennifer Walpole from the National Training Academy provided the group with a presentation on what the academy has to offer and what they can do for the light rail industry.

- 2. INTRODUCTIONS AND APOLOGIES FOR ABSENCE**
 - 2.1 All attendees introduced themselves around the table and IM advised of apologies received (listed above).

- 3. REVIEW OF LAST MEETING**
 - 3.1 **Review of Previous Meeting Notes**
The notes from the previous meeting were accepted as an accurate reflection of the meeting.

3:2 Review of Previous Meeting Actions

Item 4 – Add forums to the UKTram Members Area on the website – **DH/ARHA**
– **Ongoing, provide update at next meeting**

Item 4 – Provide updates prior to the meeting – **UKTram/LRSSB - Completed**

Item 5 – Circulate draft Rail Break document for feedback - **COB - Ongoing**

Actions from this meeting

Item 4 – Add forums to the UKTram Members Area on the website – **DH/ARHA**
- **Ongoing**

Item 5 – Circulate draft Rail Break document for feedback - **COB - Ongoing**

Item 9 – Circulate Cathal's Yellow Barrier image from West Midlands to the group.

4. UKTRAM UPDATE

4.1 Update on UKTram – DH

UKTram AGM – The AGM took place on Tuesday 24th September. George Lowder was officially voted in as Chairman, as he was previously co-opted by the UKTram Board to stand as Chairman until the next election. Iain Anderson from Colas Rail was reinstated on the Board. Lindsay Murphy from LeMentary Ltd was voted in as a new Board member:

George Lowder – Chairman

The new UKTram Chairman took up the post of Chief Executive of Transport for Edinburgh (TfE) in January 2016, after a first career in the Army. TfE is the parent company of Lothian Buses and Edinburgh Trams. George has led the development of a new strategy, the introduction of a cycle hire scheme and other mobility projects for the Edinburgh City Region. Not least, helping to get the decision to take the tram to Newhaven.

George is Vice President of the Edinburgh Chamber of Commerce, Chairs the Board of two Scottish charities and is a Trustee of a third.

Iain Anderson – Board Member

Iain has over 25 years' experience of scoping, procuring and delivering multidisciplinary schemes across the power, water and transport sectors of the UK construction industry. He is an Incorporated Civil Engineer and Member of the Institution of Civil Engineers whose career has seen him undertaking operational, technical and commercial roles providing him with a breadth of relevant knowledge and experience on which we can draw from.

For the last 10 years, Iain's career has been focused within the rail industry. Initially this was as Rail Director for Barhale Rail and more latterly leading the Tendering and Business Development functions for Colas Rail who are a recognised global leader in High Speed, Heavy Rail, Tram and Light Rail construction & maintenance, having built and maintained schemes across all 5 continents.

Lindsay Murphy – Board Member

Lindsay is a Transport Engineering specialist with over 30 years experience. Lindsay has a proven track record in the delivery of major transport projects including Heavy Rail, Light Rail and Other Guided transport systems from concept to operation.

Lindsay led the maintenance delivery of the expansion of Lines 2 & 3 of Nottingham Express Transit. While working on Manchester Metrolink, and as Head of Engineering at Nottingham Trams, Lindsay developed real hands on experience of building and managing effective maintenance teams and asset management.

LRSSB Update

LRSSB Business Plan Update

LRSSB in conjunction with Atkins, have built a risk model for the industry and Atkins are developing a scope of improvement works for 2020 and beyond.

Through the TAIR development this will become the LRSSB database, comms network, performance management system and investigation tool and will be fully integrated with the industry risk model. This work will be at least partially dependent on additional funding.

There will potentially be opportunities for commercialisation with our European counterparts, in particular, UITP have shown interest particularly from German and Spanish groups.

Other networks/government departments worldwide have expressed interest including from Australia. Israel, France and Ireland.

Park Signalling are currently compiling a DVD to provide information which compares light rail and heavy rail sectors. This will be relatively short (approx. 15/20 mins) but will answer many of the questions which are most frequently asked on the subject.

LRSSB are also looking at the potential of training opportunities to strengthen the skillset of current light rail employees and new entrants to the industry. Several possible courses were mentioned including ROGS Training (to understand the structure of ROGS and how this shapes duty holder responsibilities in the light rail industry), Strategic Safety Training, and the possibility of a Light Rail Diploma.

LRSSB are looking at the potential for delivering this training via the services of training specialists such as AD Little and others as providers. This will require a procurement process.

TAIR

TAIR Database training has now been provided to all networks, with modifications to the system currently being undertaken. Several operators have now started to input data. Liaison is currently underway for outputs, in order to tie in with individual networks.

A safety alert update has now been added to the TAIR database. Further training sessions have been taking place with operators.

RIDDOR reportable incidents, which was raised at the UKTram Board. This will be carried out by a senior member of staff for each network, who is inputting information onto the TAIR database.

Risk Model

LRSSB and Atkins are developing a scope of improvement works for 2020 and beyond. A fortnightly conference call currently takes place with Atkins, to discuss progress.

RM3

Mark Ashmore now sits on the ORR RM3 Board, with rail workshops due to take place in December 2019. However, as they have a heavy rail bias. It is now proposed that light rail workshops will take place with the ORR in late January/early February 2020. Dates to be confirmed with Ian Skinner of the ORR.

Mark Ashmore will send out dates for ORR workshops once available to the relevant people.

Standards Update

The standards database provides revision retention and change history tracking as well as secure access to documents, with the advantage of business resilience due to being hosted on external servers.

Members/interested parties will be able to raise proposals within TAIR from where they will be recorded and centrally administrated via LRSSB. This will provide full auditability, and overview of decision making process associated to proposals.

LRG 1.0, LRG 2.0 and LRG 5.0 documentation has already been useful for Duty Holders providing responses to the ORR Report into the fatality at Saughton tramstop.

Standards Published to Date

- LRG 1.0 Tramway Principles and Guidance
- LRG 2.0 Non-Motorised Crossings
- LRG 3.0 Management of Electro Magnetic Compatibility (EMC) Guidance
- LRG 5.0 Tramway Audible Warning Acoustic Test Guidance

Standards Currently Under Review

- LRG 4.0 Signing and Marking of Tramways and Highway Interface Guidance
- LRG 6.0 Fatigue Management Guidance
- LRG 7.0 Trap and Drag Prevention Guidance
- LRG 8.0 Vulnerable Persons Guidance
- LRG 9.0 Selection and Recruitment Guidance
- LRG 10.0 Loading for Light Rail Bridges Guidance
- LRG 11.0 Medical Standards
- LRG 12.0 Statutory Reporting of Incidents
- LRG 13.0 Underrun Protection
- LRG 14.0 On-Street/Off-Street Principles
- LRG 15.0 Stray Current Management
- LRG 16.0 Managing the Wheel-Rail Interface Guidance
- LRG 17.0 Determination of Tramway Wheel and Rail Profiles to Minimise Derailment.

5. LREG – WORKING GROUPS

IM read out the following working groups update on behalf of COB.

Rail Breaks

- Working Group Chair – Lee Joyce (SYPTE)
- Group Members – John Weaver, Mike Doughty, John Hemsall and Stephen Lewis
- Concluded 1st and 2nd meetings which established over 30 actions
- The group has recently attended Thermit’s seminar on the 26th September to further understand the process.
- The group is now working with Neil Harvey of Thermit and Chris McKeown from Pandrol who are both very keen to assist us in our work on improving the aluminathermic weld process.
- First draft of Rail Break procedure is complete and ready for review.
- 1st draft of data capture sheet is complete and has been reviewed by the group

The intention is to have Break procedure published through LRSSB by the end of the calendar year.

OLE terminology & Competency

- Working Group Chair – Craig O’Brien (UKTram Engineering Manager)
- Group Members – Des Coulson, Danny Davis and Mike Crabtree
- All volunteers have been confirmed but no meeting has yet been arranged
- Des Coulson has provided all the previous information
- All systems will need to review and comment/add additional items (with drawings and description) to enable an assessment of the terminology used and a document to be produced
- Once the relevant information has been collated, can then form the working rroup and make the discussion on terminology for each component based on these results to formulate the document.

Under Run Protection

- Working Group Chair – Colin Kerr (Edinburg Tram)
- Group Members – Suggested – Dave Skirrow (formerly Manchester Metrolink) Glin Stanford (Sheffield Supertram) Marek Szejewski (Nottingham Trams) Tracy Barnett (Siemens – Edinburgh)
- 1st meeting concluded
- Relevant information has been passed onto the systems for independent reviews and is currently underway on a number of them
- Formula for underrun requirements provided by Colin Kerr and agreed with members
- All systems to review all crossing and platforms and input information into the spreadsheet provided by Colin Kerr
- Contact made with a supplier for the Underrun and Edinburgh has placed an order
- Once all information gathering has been complete by the various systems, a guidance and standard document will be drafted and submitted to LRSSB.

Apprenticeships

- **Tramway Construction Operative (TCO)** – This is the first ever Tramway construction apprenticeship available in the UK. It is intended that this will bridge the skills gap and provide apprentices with progressive opportunities.
- 1st meeting concluded with attendance from Nottingham, Docklands, Sheffield and a member of the EAL
- Follow up meeting took place with Manchester Keolis-Amey
- Follow up meeting took place in Edinburgh with Siemens and NTAR
- Siemens to provide evidence of the strategy for delivery of training as possible template
- Members to provide COB with current training processes and systems (LREG)
- NTAR offered to host the next LREG (today's meeting) at the Northampton facility to update on progress
- NTAR to find out if the Apprenticeship Levy can be applied to current staff in terms of upskilling
- 2nd working group meeting is yet to be arranged and is likely to follow the next LREG
- The plan is to establish a new Light Rail apprenticeship similar to the recently launched construction one
- Also to establish a comprehensive training program for existing and new staff for each organisation

S&C

- 1st meeting concluded between Manchester, Sheffield & Voestalpine
- Voestalpine S&C gauges and documentation reviewed
- First draft of S&C proposal complete and sent for review to the above
- Acquired all Network standards for S&C maintenance and inspection
- Awaiting meeting with NR to discuss the above

6. ORR/RAIB/USAN'S

- 6.1** ORR – No updates
RAIB/USAN – Please find a copy of the report attached to the minutes.

7. SYSTEM UPDATE

IM reminded the group to forward their system updates to LG two weeks before the meeting so that they can be shared within the group prior to the meeting.

Croydon – IH

Incidents

No major incidents

Sandilands

This month saw the third anniversary of the tragic Sandilands incident. Unfortunately, the announcement from the CPS that no criminal prosecution was to be made of the driver, ToL or

TfL a few days earlier caused some tensions in the services that day; staff have been warned to walk away from any trouble.

Works continue in implementing improvements in response to the Sandilands incident with considerable focus currently on the implementation of the Positive Prevention of Overspeed System which is now being live tested and with fitment underway on all trams and infrastructure.

Projects

A quieter period for projects after the August shutdown but good progress still being made in the Blackhorse Lane bridge rebuilding and opening still expected in December as promised. The other major project during this period has been continued replacement of the fibre optic network and communications infrastructure which has now completed the majority of its work to programme. There have been a couple of issues which are being addressed around operator interfaces and a solution still has to be found on how to interface the substation RTUs successfully as the designed solution has failed to work. The last major activity (before recoveries) is the move of the control room and systems over to the new power supplies which could be exciting.

Maintenance

A new increased structure for the maintenance teams has been proposed, following the fatigue studies and this is now going through approvals within TfL.

A current concern is the track brakes on the Stadlers as a couple have now gone out of alignment, apparently due to striking something while out running. This would take considerable force but inspections by the infrastructure team have found no evidence of any strikes. The cause is therefore unknown and concern has been raised due to the potential increased risk of derailment.

Following complaints from drivers last year, we continue to investigate ways to improve the cooling in the cabs in the CR4000 fleet, this is proving difficult due to space constraints. Two prototype units have been procured and are currently running as a trial due to end in early February, although the noise generated by the fans have caused driver complaints. The suppliers are investigating ways to reduce the noise.

Biggest fleet activity currently is establishing the CR4000 obsolescence plan and its alignment into the asset renewals strategy for the next 5-7 years. This has been complicated due to the news that plans have been instigated for replacing this fleet but with the timescales still not confirmed.

Blackpool – IM

Extension

The extension to Blackpool North Train Station has been put back for some time. The track is laid and connected to the main line but there is still an issue at the Wilko end with no real end date

Maintenance

We have a number of Knorr Bremse brake calliper that have seized. Lucchini Unipart Rail Ltd have shown an interest in repairing the callipers. We have sent them a faulty calliper and a faulty hydraulic unit and they are in the process of stripping them down.

We have had 3 sets of tram batteries fail and have not been able to get replacements from the manufacture, HBL. We are in discussion with Hoppecke to source as replacement as no local companies have been able to assist.

On Tuesday 12 Nov 19 we had 2 pieces of damaged overhead due to high winds. The first was 3 broken pole arm brackets, the second being a broken section insulator span. These faults resulted in two trams having damaged pantographs. The overhead team were able to repair the overhead faults in 3.5 hours then the rescue of the 2 damaged trams could begin.

Lost Mileage

Period 6 (18/08/19 – 14/09/19) saw a loss of 636km which equates to 0.74% of overall journeys. The main problem was a collision with a cyclist.

Manchester Metrolink – GT

Trafford Park Line – Work continues on the latest extension to the network with most of the line approaching substantial completion. Overhead line and TMS work at Pomona junction was completed over the weekend of 7th and 8th of September. Testing and commissioning of the line both static and dynamic has started. The first trams have started testing on the route.

Changes to the Asset Management System – As part of the development of our Agility system the rollout of Agility mobile has commenced using safety as the starting point with tours and inspections automatically generated to individuals devices. The next full department to transfer will be electrical which will also be tablet based and give the staff the ability to complete maintenance documentation and raise “Helpdesk” notifications.

Metrolink Capacity Improvement Program (MCIP) – Project plan has now been developed with the main works beginning in early 2020.

MCIP Trams – 27 new M5000 Flexity Swift vehicles for network capacity - The vehicles are in production however due to a manufacturing issue it is expected the first will now arrive in July 2020.

Vehicle availability has been stretched due to three major issues:

The first being the identification of fractures in the roof frame “rafts” which carry the roof mounted equipment. Parts are now on hand to start a program of repair with the last “stopped” vehicle being repaired currently. There are a number of service vehicles to attend to next which have much more minor fractures.

The second being loss of axle end earth return conductivity. A number of vehicles (4) were identified with loss of earth return connections. Due to the possibility of bearing damage KAM have researched and implemented a monitoring system using I-buttons which are a monitoring device which can be downloaded. The main purpose is to check for heat and vibration thus ensuring any bearings which may be affected by the lack of a suitable earth path are monitored closely.

The third and possibly most challenging issue has been road traffic collisions (RTC). An improvement in both the incidence and repair of RTC vehicles has seen the queue reduce to one major repair remaining. Such is the success of the contractor agreement that there is a now a program of repair for minor damage that whilst cosmetic in nature, does not affect perception of the fleet.

Remaining T68 vehicles – Changes to the disposal plan will see one vehicle remain in storage into 2020, the other three will depart by the end of January 2020.

Sandilands – A joint steering and working group has been set up to action all recommendations applicable to Metrolink. Visits to Milton Keynes and Croydon and a project supporting UKTram have, or are, taking place.

Network Rail – IA

Over 1million passengers carried by end of first year of service and additional park and ride facilities are being provided at Parkgate and Rotherham Central to meet demand.

Project won project team of the year award at the Global Light Rail Awards in October and were also highly commended as project of the year.

The non detection problem with the VIS loops on the NR section is still under investigation.

The problem of the excessive tripping at the Ickles substation has been significantly reduced following work on one of the the rectifiers. A recent more severe incident is believed to have been caused by ice build up on the wires raising the question of whether running a sweeper tram to clear them before start of the service should be introduced.

The project to recontrol Woodburn junction signal box to York ROC is now underway and while this will not change the current procedures at Tinsley for tram train operation, it will have a yet to be agreed disruptive impact on the service for period in late 2020/early 2021.

Work on the learning platform is proceeding well and sufficient data should be loaded in the next few weeks to be able to demonstrate the system to UKTram members.

The heavy rain and subsequent floods have resulted in all services through Rotherham Central being suspended since Friday 8th November. As a result, the service was diverted to Meadowhall for the duration. Damage included bridge scouring, washed out ballast and lineside equipment washed away. South Yorkshire and the East Midlands was the worst affected part of the network although other areas also saw disruption and damage, A major exercise to restore services was launched. At the time of writing, Rotherham Central had not reopened and all services were still being diverted.

Other News

Putting Passengers First

Following the completion in September of phase one, where 14 new routes across five regions, and Network Services were established, phase two sees further devolution of teams into the regions, Network Services and the Chief Financial Officer directorate. This includes the transfer from STE of the Operations, Principles and Standards team under Paul Ashton to Network Services.

Light Rail/Tram Train Support

Also created as part of Network Services is the non technical part of the new Light Rail support team with Simon Coulthard seconded to head it up while the posts are confirmed and filled. The Technical Authority part of the team is still being defined but will in the first instance be headed up by Ian Ambrose.

High Performing Railway

Network Rail is rolling out a Performance Improvement Management System (PIMS) as part of an initiative from the RDG to ensure the industry delivers a high performing railway.

Isle of Man – IB

Steam Railway

Operations are suspended for November but will restart in December with Santa trains.

Track re-railing the single line railway in three locations will be done this winter.

Winter maintenance of selected items of rolling stock is now in hand, with some in-service in December.

Work is proceeding with loco rebuilds and new boiler construction, in UK and IoM but there have been minor delays.

Coach and wagon rebuilds again in both UK and IoM continue, with limiting factors being door furniture.

We suffered an in-service reliability incident with a diesel loco, which is currently awaiting engineering investigation.

Procurement of a service-exchange engine for our Shunter loco over the winter period is in-hand.

Manx Electric Railway

Passenger operations are suspended for the winter season, but OHL and P/way engineering work will require some tram use over the winter.

Track relaying both lines at two areas will be done over winter.

Renewal of Belle Vue substation and rewiring of 3km of OHL over this winter.

Winter maintenance of the rolling stock is now in hand.

Cladding of the main workshops is about to commence, creating issues over winter for maintenance work and vehicle movements to clear working space.

Work is still ongoing with bogie and motor refurbishments in both IoM and UK.

Horse Trams

Operations are suspended for the winter season.

The new Tram Shed construction continues and occupation is expected to commence after the New Year.

The temporary Tram Shed is expected to stay in place until the start of next season.

Snaefell Mountain

Passenger operations are suspended for the winter season, but P/way engineering work will require trams in service (including use of stock by others).

Track relay and maintenance work is in hand on the mountain, but access to the summit on one of the lines needs to be maintained at all times.

Winter maintenance of the rolling stock is now in hand.

Construction of the steelwork for the rebuild trams is progressing.

The in-house design of tram cladding and interior detailing is continuing.

System specification and procurement of propulsion, auxiliary and control system and controls is proceeding.

Nottingham - NC

Currently planning civils for 2020. 220metres of track replacement, which result in closing one of the busiest bus junctions.

Trams – Alstom currently have completed the 4th vehicle on a bogie overhaul.

Tranction faults across majority of vehicles.

Nottingham Council are currently building a temporary Christmas village in the city centre with an ice rink. Parts of the structure have been built too high, which is very close to the OLE. Nottingham Trams have liaised with HSE who have issued prohibited notice. The main cause is that the contractors haven't stuck to the original plans or risk assessments that were submitted for approval.

SYLTE

11 months later and vehicles 2 & 4 are back.

Lost tram train for a week due to the severe weather experienced, causing severe flooding across the network. This resulted in no service to Meadowhall.

Finished rail replacement in late August.

Recently experienced a failure on Overhead on Network Rail's side. Awaiting for more updates/communication to resolve the issue.

The driver who hit the tram train on its first official day of operation, was charged a £250 fine and received 3 points on his license.

Lucchini Unipart Rail – MM

Manchester - redeveloped resilient wheel. Trials hopefully begin in March 2020

West Midlands Metro – Gearbox condition assessment. Looking at a gearbox overhaul. Things are progressing well.

Blackpool – Broke callipers. Developed a system to overhaul the callipers.

Absolute Risk Technology – EW

Absolute Risk Technology Ltd was established in 2009 and offers specialist Systems Engineering and System Assurance services to major hazard industry sectors.

They provide customers with a range of consulting and advisory services, and deep technical expertise across multiple projects. Their integrated offerings cover full asset management services and engineering, procurement and construction capability.

ART have also worked on the Light Rail system in Canada. They have recently produced a Frakus System for West Midlands Metro. This can be used on phones, tablets etc. They have struggled with their data, no consistent set of data. They are also part of the Asset Management working group with Midland Metro Limited.

8. ANY OTHER BUSINESS

IH asked what does everyone have in place for proceed and stop on rail junctions, as they keep experiencing timeouts. GT advised that in Manchester they have a cluster system.

MA informed the group that there are a number of standards that are soon to be reviewed and raised that some of these might require extra resources during the review process.

CD raised that they had had a near miss on the points machine and wanted to know if anyone could provide them with any information regarding the yellow barrier that has been installed outside Birmingham New Street Station. DH raised that he will share the image with members of the group to see if they can provide any more information.

Action: DH to circulate CD's photograph for more information regarding a yellow barrier installed outside of Birmingham New Street station.

9. FUTURE MEETING DATES

6th & 7th February – Lucchini Unipart Rail – Trafford Park, Manchester

14th & 15th May – Nottingham

17th & 18th September – Manchester

19th & 20th November - Blackpool