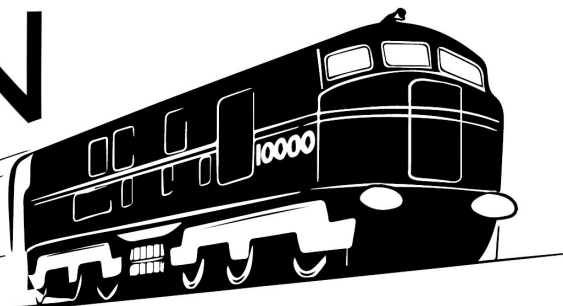


ICON

Issue 5



The Newsletter of the Ivatt Diesel Recreation Society

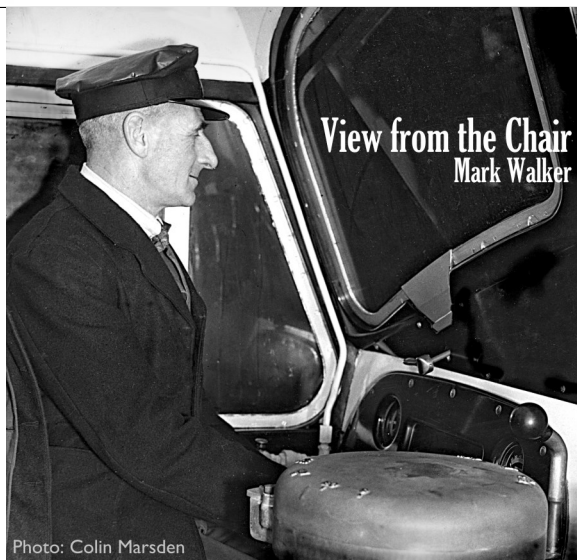


Photo: Colin Marsden

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Welcome to issue 5 of Icon. It seems like only yesterday I was reading issue 4, and wondering how we would top the achievements that we had made. Well we did exactly that – we have made some fantastic progress. As you might expect, not everything we planned worked out, but we also had some unexpected good fortune in other areas.

In this issue you will read about our new workshop. Not quite a loco shed of our own just yet, but a huge turning point and exactly what we need to really get the project moving forward. Also in this issue is the report of our lead engineer's visit to meet representatives from Werkgroep 1501 in Holland. One of my concerns about us using the traction motors already in our EM2 bogies was the lack of spares. Not only did we find three spare motors, but no less than six crates of bogie and brake spares – a really great find. As I write this we are still negotiating the final details of the purchase, but we should have good news for you all soon.

We have also made some really good contacts in the rail industry, who have given us some excellent advice, enabling our engineer to finalise the remaining key decisions about the build process for 10000. Choices like; alternator or generator? How will the brakes work? Should we repair or modify the electrical cubicle? Which traction motors will we use? All these decisions are now made, and written down in a new engineering overview document.

All excellent progress, and there is more to come. One of the frustrating parts of this role is not being able to talk about things until they are finalised, because as we have found out, things don't always work out as we plan. By now I have learned not to predict what will happen next. One thing I can say for sure though is that we will be marking the 72nd anniversary of the first roll out of 10000 on the 6th December with a special event to celebrate moving into our new workshop. You will find more details in this issue, but all members are invited to join us in Warksworth to celebrate this milestone in the project.

Finally, my thanks, as ever, go to Andrew, our hardworking secretary, who quietly gets on with the huge number of tasks that need to be done to keep the wheels moving. Without his patient efforts, we would not be where we are today. Enjoy the newsletter, and I hope to meet you all in December.

As always, if you have any questions or comments, you can contact me at info@lms10000.co.uk

YOUR DONATIONS HAVE SIGNIFICANCE

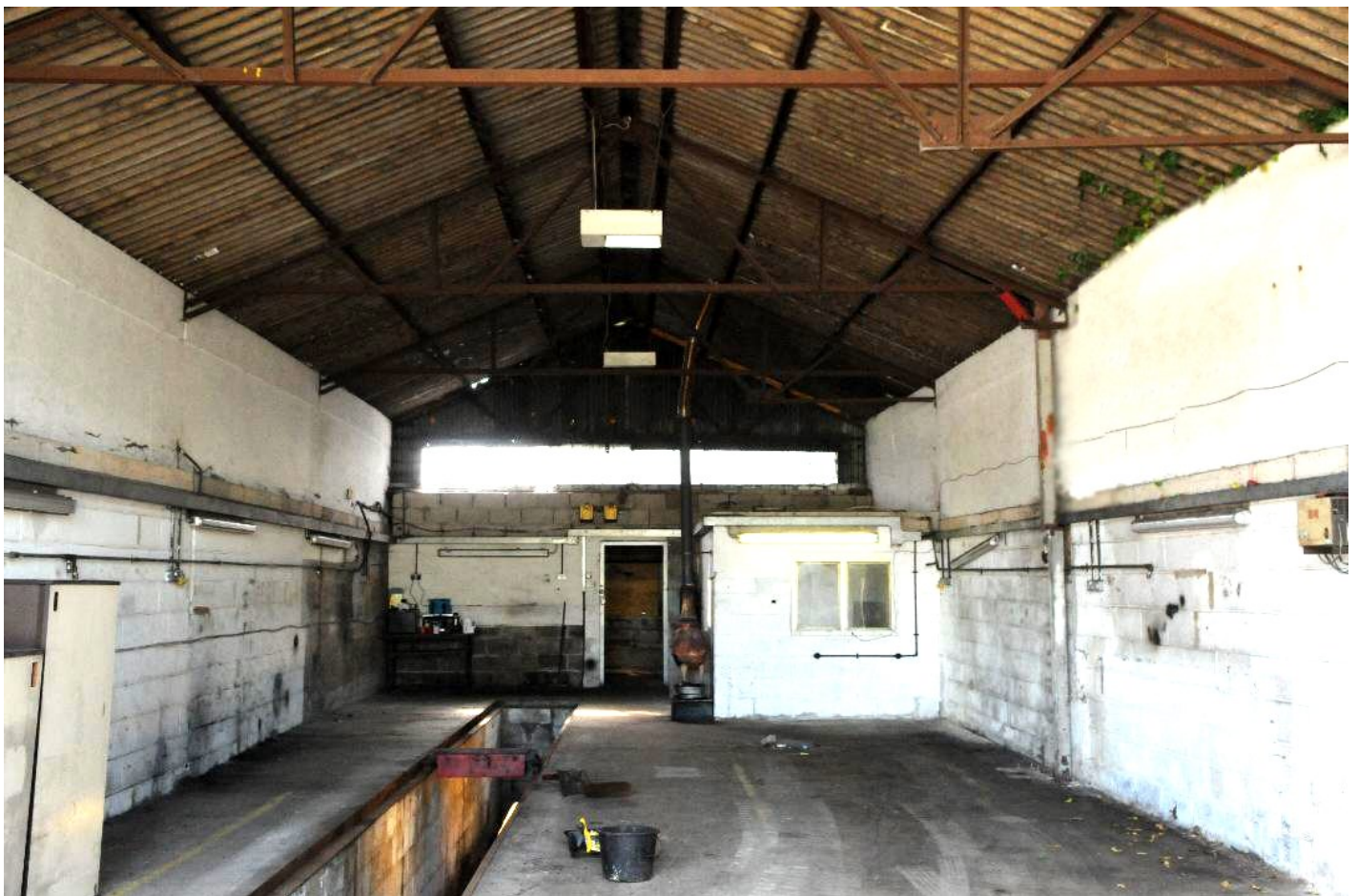
Andrew Hoseason

Do you believe in miracles? As a volunteer who helped lay track on the Welsh Highland Railway I'd be inclined to reply yes. Progress detailed in this newsletter may also convince you that railway miracles exist!

In the last newsletter we shared our need to obtain a workshop of our own. Without one the project cannot move forward. In June a chance conversation made us aware of a workshop that was available the following week. I'm sure you can imagine the enthusiasm with which the trustees received this news.

What is more, the regular monthly donations made by members will cover the cost of the rent, utilities and insurance too. What a result!

Each one of us who contribute monthly deserve a pat on the back and a word of appreciation. Well done! Your money makes a difference. To put it bluntly, without a workshop we cannot move forward and achieve our aim.



Projects such as LMS10000 can allocate money faster than it can be raised. It's a fact of life. So we mustn't think for a moment that we are comfortably off.

Spending money on a very necessary workshop will make good use of much of our regular income. But we need to raise many thousands of pounds to complete the loco. So if you have not already done so, and are able to, please consider setting up a monthly standing order to the Society account 30-94-77 50405860. The more we raise, the faster 10000 is completed... and the more benefits you will receive. Everyone will win!

OUR WORKSHOP

The trustees are happy to announce that a contract has been signed with WyvernRail PLC to enable us to make use of a workshop at the Wirksworth station site of the Ecclesbourne Valley Railway. For an initial 3 year period.

We began to seek a site for a workshop five years ago and it has been a long process, with the importance of having a shed increasing as the time approaches to start building the loco, rather than simply collecting the necessary pieces in the jigsaw, which has been the case to date. Sheds and workshops are not easily available on heritage railway sites, or elsewhere. Certainly not within an affordable budget.



At this point we should set out our stall and explain what we do and do not want a workshop for. It must be emphasised that we *do not* want a building to put a complete locomotive in and indeed this workshop is not suitable to do so. Instead, what we *do* need is:

- * A site over which we have control over when and how we work
- * A roof over our heads when working on our equipment
- * A centralised site at which all our equipment can be kept
- * A place to which our members and supporters can come to inspect progress, similar to the A1/P2 shed in Darlington.

We are now at the stage at which these requirements cannot be put off till the future. Luckily, the Wirksworth site provides all of those requirements.



A report of our visit to the workshop in July 2019 Michael Prince & Tony Ellershaw

In July trustees visited the Ecclesbourne Valley Railway at Wirksworth to view the building that has become vacant. We met Commercial Manager Leigh Gratton, and Managing Director Mick Evans.

The railway are very positive about us coming to the EVR and would like us as an attraction as well as paying tenants.

Current donation rates can meet this cost, plus utilities, but fundraising must continue to buy parts, pay for the restoration of parts and construction and certification of the locomotive.



It is well positioned for public visibility, which would be beneficial for publicity purposes. On entering the station yard the building is on raised ground to the left. The site is owned by Network Rail, let to Wyvern Rail and previously sublet to a car maintenance business. It is constructed of corrugated metal. We will paint the exterior of the building in a dark green colour similar to the current colour on the side.

The workshop is of half-height breeze block with outer cladding and windows (hidden) along one wall. The roof is asbestos and sound. It is 18m long and 6.7m wide. There is an office in one corner, approximately 3m wide.

It has 110, 240 and 415v supply wired throughout. The compressed air is piped along both sides of the building. It includes a pit which runs almost the full length. Over the inspection pit the roofing frame has been raised slightly by about 4-6 inches, possibly to allow improved access over the pit.

The workshop has a log burner for heat, a compressor and fire extinguishers. There is lighting in all parts including inside the pit. There is a secure metal gate at the entrance. There is little crime or vandalism in the area, and the building is as secure as any other factory unit. Local residents are helpful with surveillance and there is an alarm in the building which is monitored. A shielded padlock protects the main door, which would require an angle grinder to overcome. The windows are covered by bars and mesh.

There is additional storage area with wooden shelving situated at the rear of the main building. This storage area would add around 3m to the length of the workshop if the separating wall was removed. It has one window with metal bars added for security and the building has a full width window running along the rear above the lean to extension roof height, also with metal bars for security. This area is 1.5m or so above the roadway. Although we do not intend to bring the complete locomotive to the workshop at some point the chassis will be stripped and moved inside. 58022 is 19.3m long so there is sufficient space to house the chassis and complete the modifications to allow it to be mounted on the EM2 bogies.

To accommodate the chassis, the wall between the main building and the rear storage area will need to be removed. Since the rear storage area has a lower roof than the rest of the building it would seem sensible to modify the end of the shed to the same height as the rest of the building.

At the rear there is a clear space of around 5m behind the storage area. It would be possible to construct an additional temporary structure on that site, large enough to accommodate both power units. WyvernRail are agreeable to us making such alterations, as are Network Rail.

Outside, an area of concrete hard standing runs down the length of the building. This area at the side would be suitable for an extension or separate building along the whole length of the workshop, which could house a visitor centre and additional storage space. Such a visitor centre is highly likely to attract grant funding.

Regarding the front of the workshop, there are two large doors and a pedestrian access door. The main doors are 3.7m in height. The front gravel area is partly shared with an adjoining property who has an agreement directly with Network Rail.

From the front doors the ground drops 1.5m within 15m. WyvernRail have discussed the access with the company that they use to transport locomotives to and from their site. They confirmed that it would be challenging but entirely possible to bring low loaders up to the doors of the workshop.

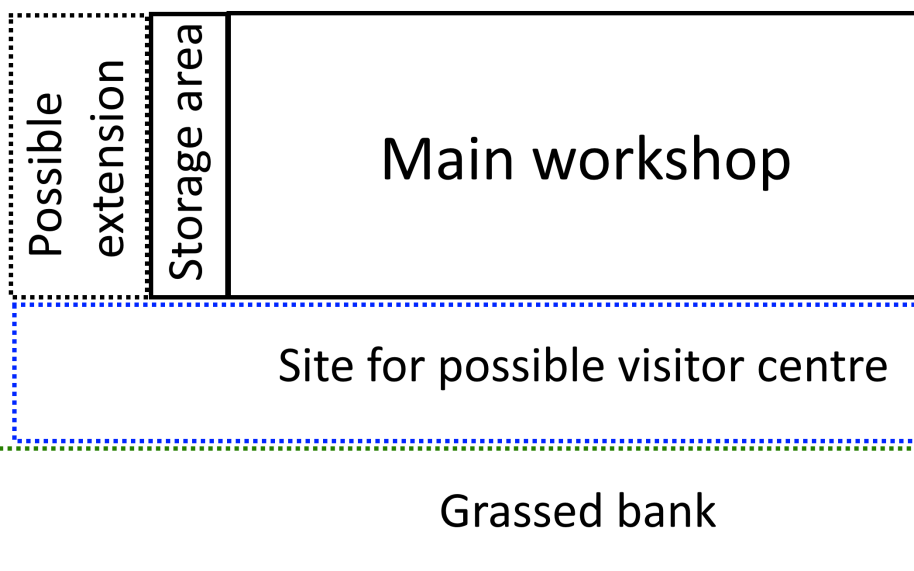
WyvernRail and the EVR have been very welcoming and helpful, and we look forward to working with them. This building has its limitations, but is adequate for our current needs. It enables us to move forward confidently and affordably.



The storage area on the back of the workshop



The site of a possible visitor centre

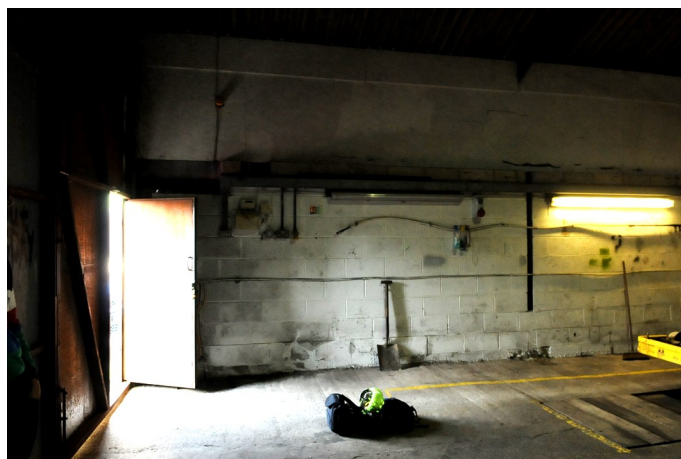


The workshop's opening ceremony and Member's Day

Our initial 3 year lease began on 6th September. For a couple of months we are unlikely to move our equipment to the workshop since we intend to thoroughly clean, paint and update the security arrangements. If this is something you would like to be involved in please get in touch via info@LMS10000.co.uk or call 07551621685.

We will have an opening ceremony on 6th December. Our President Stan Fletcher hopes to attend and cut a ceremonial ribbon. We will be inviting our friends and contacts within the railway industry to this event. We have also arranged a trip along the line in railcar IRIS for invited guests. Tickets for spare seats are free to members, but are first come first served, so if you would like one, please email us at info@lms10000.co.uk. We would like to thank Wyvernrail for arranging this for us.

An Open Day for members and donors will be held once the weather is warmer. All members and appeal donors will be invited to attend by post. As yet, a date for this event has not been arranged.



The building shown in the background of one of the BBC's Railway Roundabout programmes of the 50s.

Sponsoring the workshop

Although members' regular monthly donations cover the costs of the workshop this clearly leaves us with less spare money with which to purchase parts or pay for restoration of equipment.

If you would like to offer a regular donation dedicated toward the running of the workshop, in addition to your monthly membership donation, please feel free to set up a standing with the reference WORKSHOP. The Society's account is 30-94-77 50405860 - Ivatt Diesel Re-creation Society.

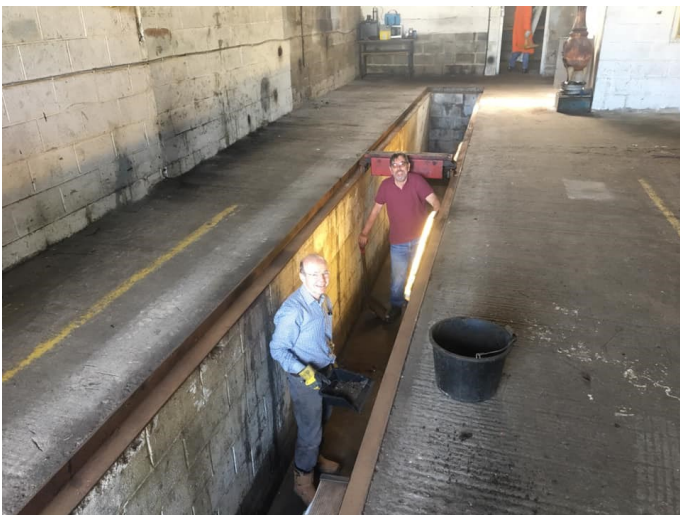
The workshop, moving forward - Mark Walker

Since I got involved with IDRS, about 18 months ago, we have made some great strides forward, but possibly none more so than September 6th, when I signed the lease on our very own storage workshop. Now we can finally put everything together in one place, under cover, and start some actual construction work. This isn't a loco shed – its not quite big enough, and its not rail connected, but it is just what we need for the next phase of the project to get started.

The whole building will be thoroughly cleaned and painted ready for a members event on 6th December, when our group President Stan Fletcher will be joining us to formally open the building. The Ecclesbourne Valley Railway have also kindly agreed to let us have a private run up and down the line in their fantastic railcar, Iris, which is almost as old as 10000. All members are invited to the opening event, and will be eligible for a free ticket for trip with Iris, although there are only 50 seats, so if you want one, let us know, as when they are gone they are gone.

Now the hard work starts. A week after signing the lease, on 13th September, we held our first working day on the shed. There is much to do before we can properly start work in the shed. There is a lot of undergrowth to clear, and among other things a fridge and a large stack of bus tyres was found under the foliage, left by a previous tenant. Inside, the shed needs a proper clean before painting can start. The floors will be pressure washed and the pit cleaned out and painted. New fire extinguishers have been purchased, and a variety of first aid, fire safety and health and safety signage is ready to install. We also now have a scaffold tower to allow us to reach all the corners of the building. Most importantly of all, as any preservationist will I'm sure agree, one of our members Gavin Slattery has donated a kettle, which is certain to be put to good use. At the time of writing we have nothing to sit on to drink our tea, but one thing at a time.

Huge thanks are due to Mike Evans and Leigh Gratton at the Ecclesbourne Valley Railway, who have made us very welcome and been very helpful in getting everything ready for us to move in. Keep an eye out for the next newsletter, when we will have pictures of the finished shed for you to enjoy!



The first working party on 13th September showing (top) cleaning the inspection pit and the first filled skip, (bottom) the rear area before clearing of vegetation and tyres.

ENGINEERING OVERVIEW

Paul Etherington and Mark Walker

1. INTRODUCTION

From the very start of the project, there were many questions to be answered about the finished locomotive. We knew the plan was to make it look and sound like the original, but what traction motors would it have? Would it be dual braked? What kind of train heating would it be able to provide? I'm glad to say that the majority of these questions, and others, have now been answered. A huge amount of work has been done to establish what parts are available, what is financially viable, and most importantly, what will work together, and be reliable. We have also been very fortunate to make some great contacts in the rail industry recently, who have verified much of our design and given us the necessary guidance to make the right choices where there were several options.

All this information has been collated into an Engineering Overview document, which will be available as a separate document soon, but in the meantime, the following sections give an overview of the key components of the build, and what modifications will be made to these components.



Photo: 58008 during dismantling at Eastleigh. Carl Watson

Chassis

The Class 58 chassis will be modified to provide a greater degree of structural strength, but also increase its weight. The primary modification is the inclusion of cross stretchers to accept the EM2 type bogie pivots. The chassis height will be higher than it was on 10000, as the class 58 chassis height will be maintained. The cab structure will be a fabricated frame, directly welded to the chassis from the nose bulkhead to the engine room bulkhead. The cab and bulkheads provide support to the body structure between them, much as in the original loco. The stability of the loco will be improved from the original, as the 16SVT power unit will be lower to the rail height, because the engine will sit between the chassis longitudinal beams rather than above them, as in Ivatt's original design.

Bogies and traction motors

The EM2 bogies owned by the group have been stored outdoors for a number of years and will require a complete overhaul. The bogies and traction motors will be completely stripped and assessed before being

shot blasted and painted. Although no fractures have been found or are expected, both bogies will also undergo crack detection during the cleaning and painting process. Appropriate cosmetic alterations will be made to ensure the bogies are a close visual match to the originals.

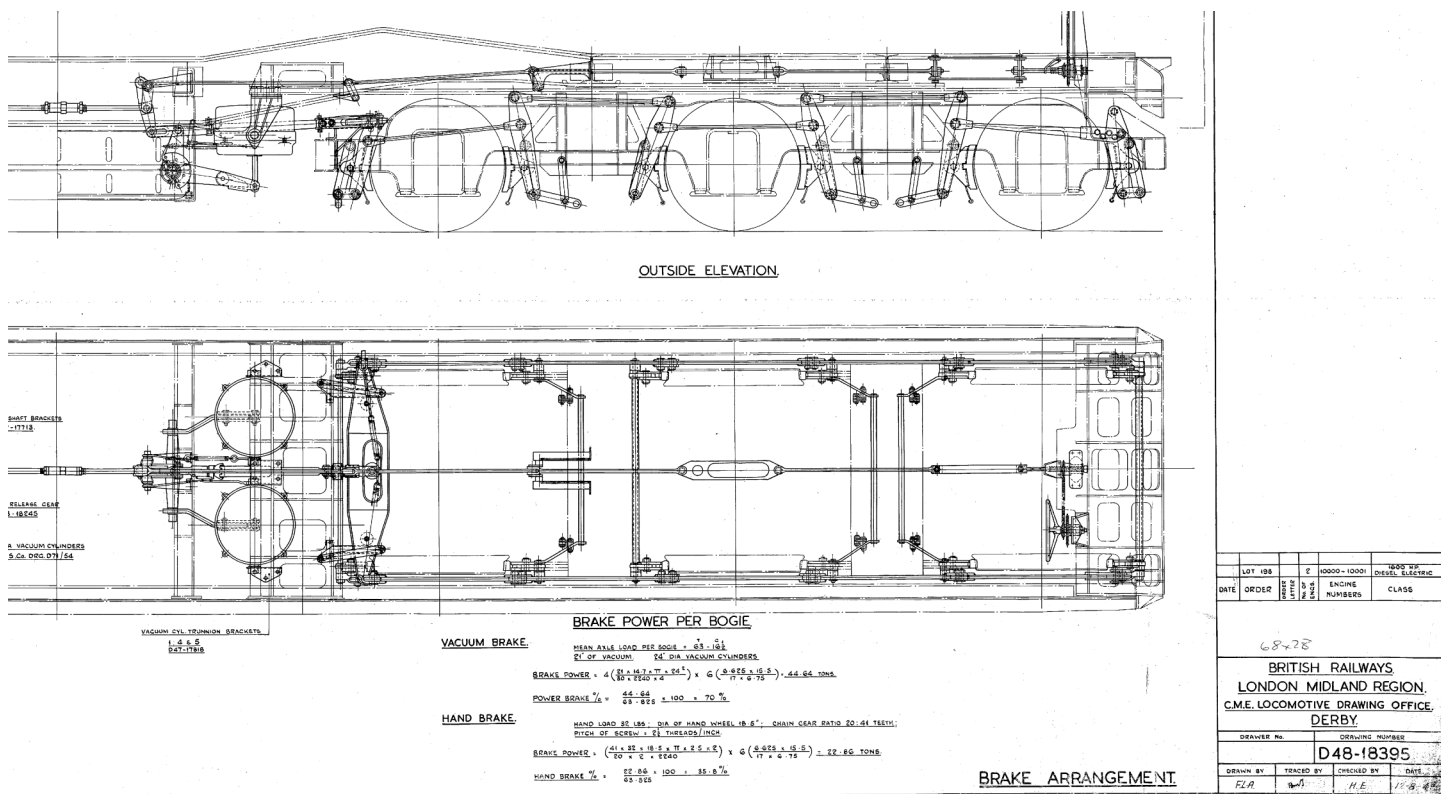
Our original proposal was to re-engineer the bogies with EE538 motors, as used in Class 37. However to fit these to the EM2 wheelsets was a complex and expensive option. The bogies are currently fitted with Metropolitan Vickers MV146 motors, which are similar in design to the EE 519/1B traction motors originally fitted to 10000 but more powerful. It was found that these motors would be suitable and can be connected to the Brush electrical package that we plan to use without difficulty. We have been very fortunate in locating three spare MV146 motors in Holland, which provides us with the necessary resilience against future motor issues. The use of these motors removes the need to re-engineer and modify a design that is already proven to work well.



Braking system

To replicate the brakes as original would be an expensive and challenging task. It also would render the loco unable to haul air braked stock. We have considered many options, including fitting the class 58 direct acting brake pistons. However, this option brings with it other difficulties, and we have been advised to utilise an already proven method of braking these bogies; the standard EM2 air braking system and its very clever mechanical acting handbrake mechanism.

The flawed class 58 brake compressors and associated equipment will be removed and replaced with a standard BR Davies and Metcalfe brake compressor as used on classes 43 and 56. The train vacuum braking system will be Westinghouse equipment, as fitted to class 37, controlled from the Davies and Metcalfe E70 brake system as fitted in various guises to class 43, 56, 89, 90 and 91. The decision to use the



E70 system on 10000 has been made based on its known reliability, and the currently plentiful supply of spares.

The two main air receivers within the loco will be relocated to the nose ends. The vacuum exhausters will be located between the cooler group and the cab, in the area made vacant by the reduction in size of the class 58 cooler group.

Engine

We own an original 1947 Mk1 16SVT English Electric engine with very low hours, and are also in contact with the MOD regarding an identical engine. The possession of a spare engine will give us great resilience against any future engine issues that may be encountered. The engine will be mounted in the location where the alternator currently resides. The free end of the engine will have to be mounted on the frame further back, which will necessitate the relocating of the current engine bearer stretcher to align with the rear engine mountings on the 16SVT. It is convenient that our engine is actually a similar weight to the 12 cylinder Ruston utilised in the 58. The engine will require a modified class 56 governors that will be bespoke to our project. A supplier able to provide this service has been identified and discussions are underway regarding the design. The current air start system will be removed, and the injectors will be exchanged for class 20 parts. The fuel pumps may also need to be exchanged for class 20 items, but this has not yet been confirmed.



Electrical equipment

The Brush BA1101 alternator utilised on the class 56/58 is of similar dimensions of the EE823A used in the original. As the original 16SVT and the Paxman fitted to the 56 are basically the same engine, albeit with considerable development and improvement, the fitment of the alternator to the engine will be straight forward.

For convenience, the electrical equipment cubicle will remain in its existing location, although it will contain mainly class 56 equipment. Some alterations will be necessary, especially to the various control modules. A specialist contractor has been identified who is able to carry out this work. The benefit of 10000 being a full width loco compared to the 58 means that there will be plenty of space around the cubicle.

Cooling

We will not require the full cooling capacity of the class 58, and consequently the cooler group will be reduced in size to both reduce weight and replicate more closely the aesthetic appearance of the original Serck radiators fitted to 10000. Although it will be reduced in size, the increased capacity of the class 58 cooling system allows us the opportunity to finally resolve the overheating issues experienced on the original locomotives.



Cab design and equipment

We aim to replicate the original cab interior as far as is possible. The design of the cab structure has been completed, and CAD drawings completed of all components. The practicality of the construction has been discussed with steel fabrication contractors, and the construction of the cabs has been fully costed.

The cab will have a steel structure which has been designed in a similar way to the original, but with added structural integrity for protection of the occupants should the worst happen. The controls will be tried, tested and certified and calibrated class 56 equipment, disguised to maintain the appearance of the original. The nose ends will house air receivers, the handbrake mechanism and access to the cab control equipment.

Train heating.

It is our aim to fit 10000 with steam heating; however this is not without its issues. A modern equivalent, *left*, will weigh several tonnes in fully working order and take up a lot of room within the loco. To fit steam heat may require the relocation of the brake and electric cubicles.

It is also planned to fit 10000 with electric train heating, to increase the flexibility of the loco and allow it to operate with more types of stock. The auxiliary alternator that we will be using has been proven to supply an ETH index of 100 on the class 57/3. This equates to around 700hp power consumption which would supply a long air conditioned train. With this capacity we have the ability to haul and heat a rake of mk1 coaching stock or heat a longer rake of mk3 coaching stock with an additional loco for extra traction. As the original loco was not fitter with ETH, the cable will be hidden behind the nose end doors, to maintain the authentic 1947 nose end profile. Here's a photo of steam boiler from D5631 by Anthony Smith.



Fuel and underslung equipment

Underneath a class 58 there is a lot of weight suspended between the bogies. All this equipment, including the fuel tank, will be removed. The air receivers will be relocated to the nose end compartments. The battery boxes will be modified to the dimensions and appearance of the originals. A new, significantly smaller fuel tank will be fabricated, that will sit between the battery boxes.

Projected locomotive performance

LMS 10000 has been designed to be a very capable machine. It utilises traction equipment that is capable of much more power than we can feed it with, and retains the reliability of the very lightly stressed engine which was designed to generate 1600hp continually for many hours. The loco will have a theoretical top attainable speed with a 300 tonne train of 80mph with one stage of field weakening taking place at around 45mph. Locomotive tractive effort is expected to be dramatically increased over the original D16/1 design, as is its overall suitability and reliability as a railway vehicle in its own right. However the important factor is, it will operate, look and sound just like it did in 1947.

Summary

With railway industry help it has been confirmed that our design is the most fundamentally sound way of recreating 10000. The design decisions that we have made will ensure operational compatibility and

availability of spares for many years to come. As a prototype, the locos were not without their issues and faults. However, we have managed to retain some of the best features of the EM2, 58 and D16/1 designs, as well as eradicating many of their main shortcomings. In addition, we have saved ourselves a lot of time, effort, money and materials by re-using existing proven equipment where possible.

Now that the design decisions have been made comes the most challenging part of the process; turning our design into reality, recreating the legend that was, and will be, LMS 10000.

Note from the editor

I'd like to highlight the huge amount of work achieved by a small band of volunteers, notably Paul and Mark who continue to produce results despite their 'day jobs' which can regularly take up 14 hours a day, not to mention spending time with their families. Thank you chaps for your continued hard work.

It's good to see the results becoming public, with more still awaiting the right time to publicise. Andrew

THANKS

We are happy to acknowledge the support and help in kind from a growing range of companies. More companies will be added to the list after they themselves publicise their assistance over the winter and spring period. We are grateful for the support offered to our project from the following companies:



Waverley will provide security to our workshop

www.waveley-security.co.uk

Unit 13, Stadium Close, Cardiff, CF11 8TS



TAS have scanned the original loco's end cap forging, provided castings, estimates for construction along with storage space.

www.thinkant.co.uk

Unit 1, Grain Warehouse Yd,

Millers Lane, Burton upon Trent DE14 2NS



Serco have provided technical drawings.

www.serco.com/uk/sector-expertise/

[transport/rail-technical-services](#)

RTC Business Park, Derby DE24 8UP



D W Walker 26th May 1963
Courtesy of Andrew Walker
www.ebay.co.uk/usr/regalwalker

VISIT DERBYSHIRE

In our winter edition of ICON we intend to give you details of an open day for members at our workshop. It will be scheduled for warmer weather, so somewhere in the April to June window. With that in mind we thought it would be good to share with you the delights of the local area. Derbyshire is rich in heritage rail attractions. The main ones are displayed below.

In addition Derbyshire is home to a host of other attractions worth visiting, which we hope to include in subsequent newsletters. Hopefully this will encourage you to plan a visit to the area.

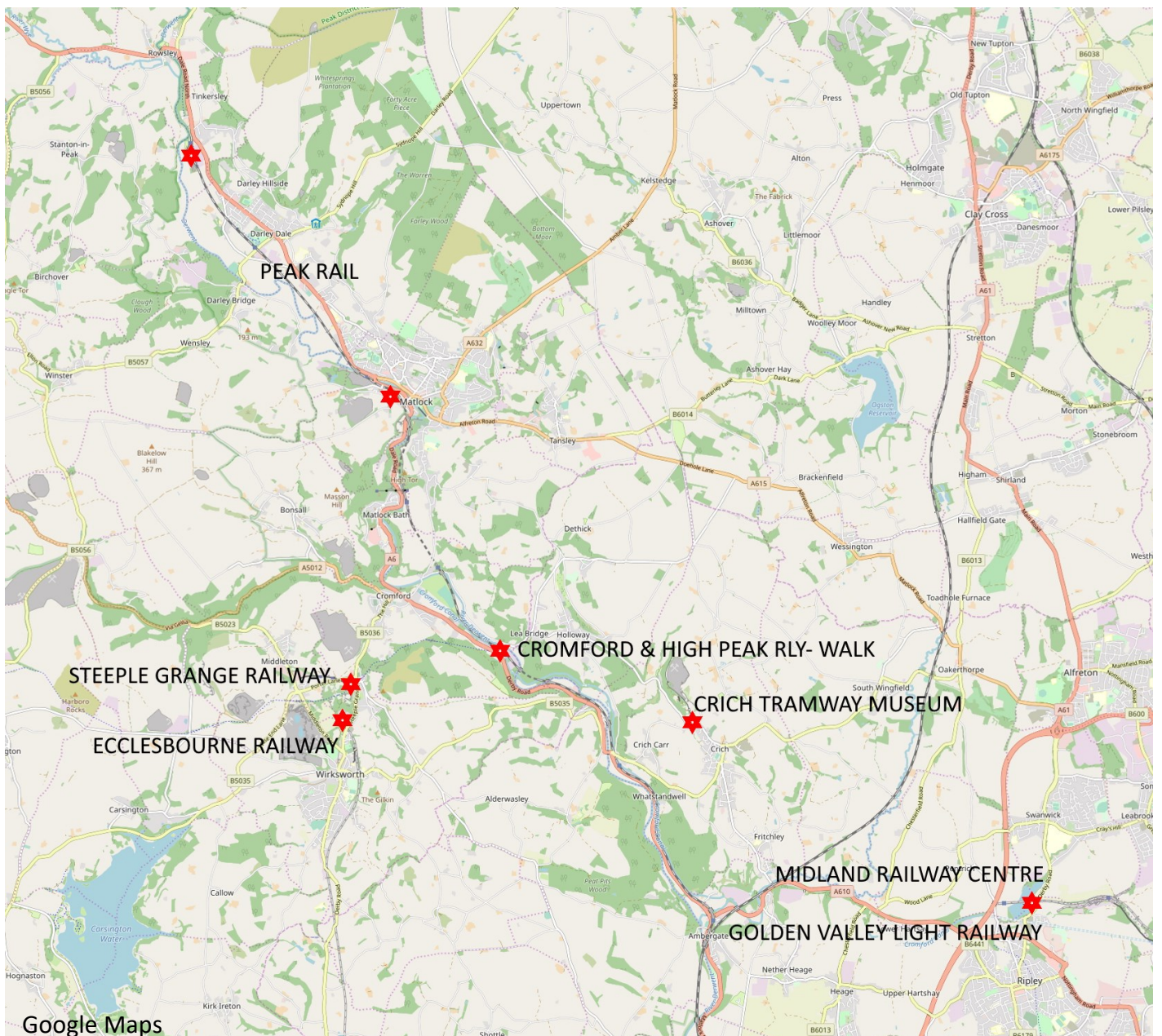
Crich Tramway Village , near Matlock, Derbyshire, DE4 5DP www.tramway.co.uk

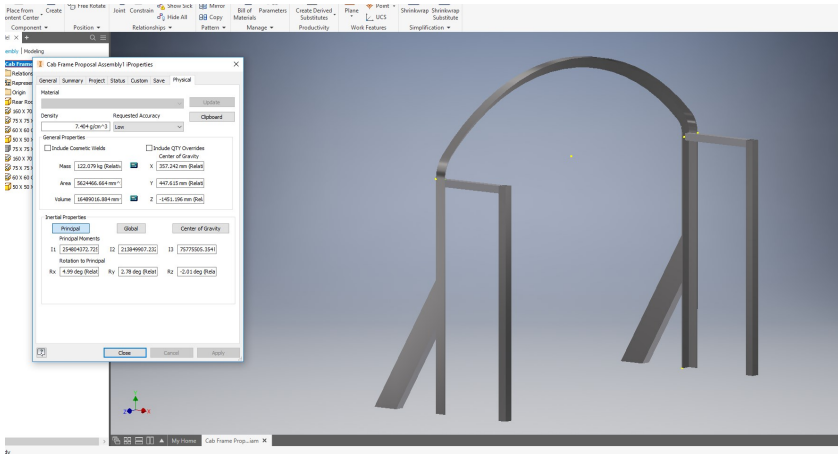
Ecclesbourne Valley Railway, Station Road, Wirksworth, Derbyshire, DE4 4FB www.e-v-r.com

Midland Railway Centre, Butterley station, Ripley, DE5 3QZ www.midlandrailway-butterley.co.uk

Peak Rail, Darley Dale Station, DE4 2EQ www.peakrail.co.uk

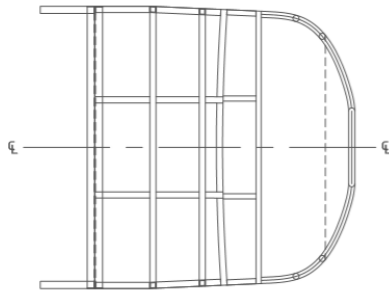
Steeple Grange Light Railway, Old Porter Lane, Wirksworth, Matlock DE4 4GE www.steeplegrange.co.uk



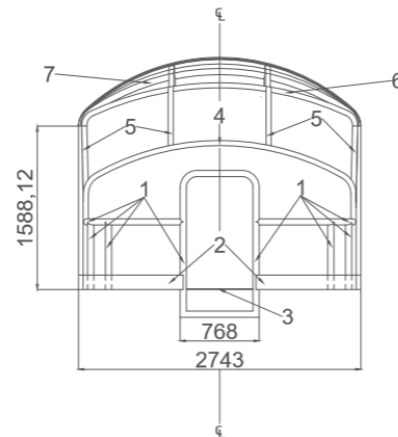
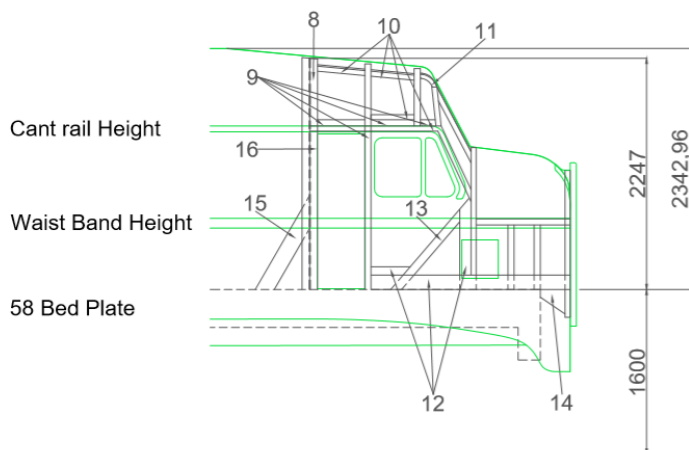


CAD artwork from Iain MacIntosh

Top: Cab back wall and door frames
 Middle: Cab frame complete
 Bottom: Cab frame design



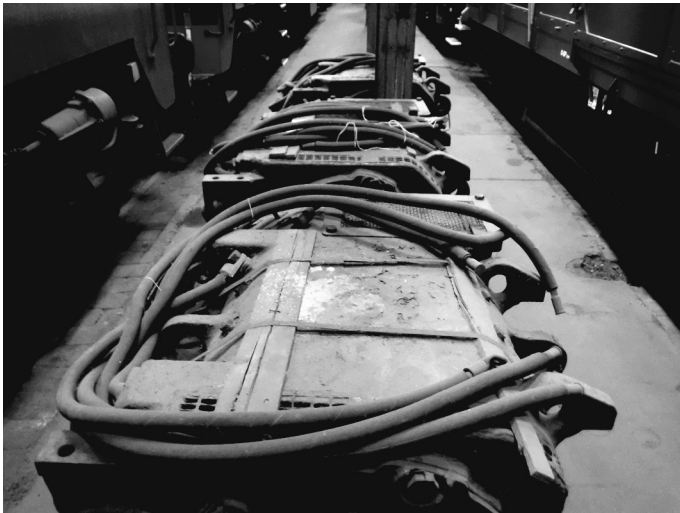
Cab Framework Material Specification	
1	60mm OD cold drawn to be 6.35mm wall thickness
2	6mm thick rolled steel plate 140mm wide
3	6mm thick rolled steel plate (nose bed)
4	6mm thick radius angle 80mm X 50mm
5	6mm thick box section 50mm X 50mm
6	6mm thick box section 50mm X 50mm radiused
7	6mm thick box section 60mm X 60mm radiused
8	6mm thick angle raised back to back 75mm X 75mm
9	6mm thick box section 60mm X 60mm
10	6mm thick box section 50mm X 50mm
11	6mm thick boxed section radiused 50mm X 50mm
12	6mm thick rectangular section 160mm X 70mm
13	6mm thick box section 80mm X 80mm
14	6mm thick H/S plate
15	6mm thick rectangular section 160mm X 70mm
16	6mm thick angle back to back 75mm X 75mm



ALL WELDS TO FOLLOW PROCEDURE ID001
 ALL STRUCTURAL STEEL TO CONFORM TO LATEST
 APPLICABLE GROUP STANDARDS FOR RAIL VEHICLES

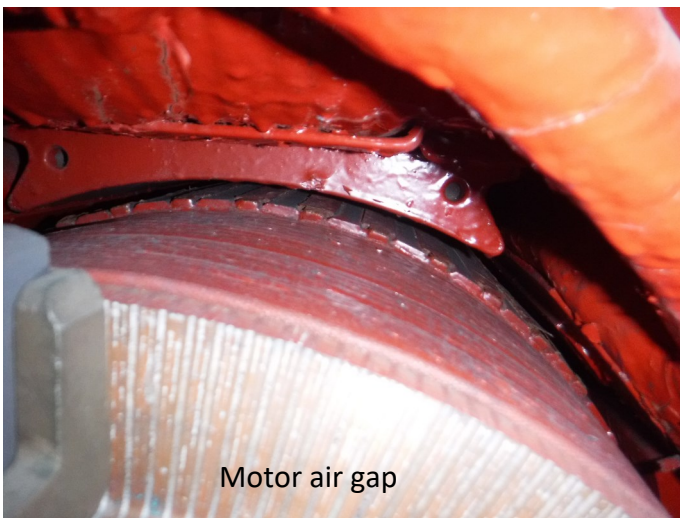
Title	B0001 Cab Framework Proposal	Scale	1:25 @A2	Drawn By	Iain MacIntosh	Company	64G Design Ltd	Returned	
Projection		Revision	A	Produced For:	IDRS	Date	26/02/19	Checked	
		Sheet No	X/X	All Dimensions in	Millimetres (mm)	CAD Produced Drawing	Do Not Change Manually	Passed	

EM2 TRACTION MOTORS - Mark Walker



Earlier this year we were discussing, as we often did, which traction motors we should put under 10000. We had 6 already, in our EM2 bogies. The problem was, we didn't really know what state they were in, and assuming they were useable, they clearly needed a full refurbishment. The worry was, we didn't have any spares - what if one failed in the future?

On a hunch, we made contact with a friend of the group who we hoped would know someone at Werkgroep 1501 in Holland, who are the owners of 1501, formerly Class 77 / EM2 27003 Diana. We hoped they might know of a spare motor hidden away somewhere. To our delight we discovered they had not one but three motors, which had been overhauled after the EM2s were withdrawn from service by NS, and stored indoors ever since.



In August our lead engineer Paul Etherington, took the boat to Holland to inspect the three motors. Paul's day job is fixing power stations, so he has lots of experience in looking at large electrical equipment. He was given a very warm welcome by the Werkgroep 1501 chaps, and found not only the three motors, but six large crates of assorted bogie and brake spares. Paul's conclusion is that the traction motors are in good overall condition and are ideal for our use. He also discussed the crates of spares, which would be very useful to us in refurbishing our bogies, which last ran under 1503 / 27004 Juno.



We are currently in discussion with the 1501 group about what they are able to release to us. The future of 1501 itself is uncertain. Many of their group would understandably like to see it back on the mainline. However, the loco needs much

expensive work carried out before that can happen, and as with all preservation groups, money is tight. If it is decided not to repair 1501 to mainline standards, it may become a static exhibit. Until a final decision is made, the group, understandably, want to retain the spares that they will need for the work on 1501.

Whatever we are able to purchase from the group, it will be a great boost to the refurbishment of our bogies, and jump the project forward significantly. We would like to thank Michiel and Bert at Werkgroep 1501 for their assistance. As soon as we have more information, IDRS members will hear about it first. Paul Etherington provides us with the story of his visit to Venlo on page 21.

THE SECOND POWER UNIT

English Electric 16SVT power unit IH1863 is currently sited at RAF Fairford. Hopefully you received an email about this since April (*see Emails and post, below*). This engine needs to be removed and therein lies a challenge. To date, our contact at the RAF is discussing possibilities with one of their existing contractors. Thank you to everyone who has contributed to the Buy-A-Metre appeal to remove the engine. Hopefully this can happen before too long. We had originally arranged to store the power units and bogies under cover for free thanks to the generous assistance of TAS Engineering in Burton on Trent and a company near Manchester Airport. Subsequently the workshop became available and so they will move directly there.



MOVING THE BOGIES - Andrew Hoseason

After purchasing the bogies on the last day of 2018 we thought that progress would be a lot quicker than it has turned out to be, since we have the finance in place to begin examination of the bogies.



The bogies in 1990 & 2005—Ian Dobson

Unfortunately, as is the way with these things, complications have arisen that we did not expect. However, arrangements are moving along. Risk assessments and safe working procedures have been completed and approved, and the work to be carried out has been agreed, and an order placed. The bogies now need to be moved to a location where they can be worked on, which has been complicated because they are blocked by a class 40 bogie which has one or more seized wheelsets.

The intention is to strip the bogies to inspect their condition. We already know that the manganese liners need replacing, which will be expensive. The bogie frames will then be shotblasted and painted.

Subsequently the traction motors (one on each axle) will be removed from both bogies and stored in our workshop. The plan is then to restore as many as are needed, depending on how many traction motors we are able to obtain from Holland.



We may also acquire some replacement EM2 springs from Holland, which could be temporarily fitted to allow us to test the reassembly of the bogies. However, we will at some point need to fit new springs to the bogies since they will be carrying a greater weight than was the case previously. If all goes well, the first bogie may be prepared for exhibition purposes before fitting the traction motors (since it will be lighter to transport without them). We'll keep you up to date via the website and social media along with emails.

MOVING THE BOGIES - Mark Walker



Lubricating the bogies — Sept 2019

As most of you will know, on the last day of 2018 we purchased the EM2 bogies that will go under 10000. Since then, the year has been something of a rollercoaster, and although many things have been achieved, we haven't yet started on the bogies. However, progress has been made. The order has been placed for the stripping of the bogies, and we have arrangements in place for them to be shotblasted and painted. The risk assessments and method statements have been completed and approved.

In order to strip down our EM2 bogies they need to be moved a short distance to a spot where the crane can get at them more easily. This has been slightly delayed because the class 40 bogie in front of them seems to have seized up and won't move. Paul Etherington our engineer has been making the most of the delay by soaking the bearing surfaces and fasteners in lubricant to make them easier to remove. He has also been looking at removing the brush boxes from the motors to ensure there is no damage to the commutators when they are moved. The good news is, although the bogies and motors require a full refurbishment, they are in much better condition than we expected.



In preparation for the stripdown, Paul has given all the fasteners and pins that he could get to a healthy soaking in diesel and coated them with used engine oil. He also gave the bogies a very thorough visual inspection, and there is no sign of cracks or excessive

corrosion. Full crack detection will be done when the bogies are shotblasted, but this is good news. The commutators on the motors all appear to be in good condition, but Paul is concerned that damage might occur when the bogies are moved, so as a precaution, all the brush boxes will be removed. The wheelsets are in good condition, and because Dutch Railways use a wider tyre profile than in the UK, the tyres have lots of turns left in them. All the axle bearings were visually inspected and found to still be full of oil, apart from one, which has now been drained and refilled with oil.

Paul will be back at Swanwick soon to do more preparation work, and an updated report will be in the next issue of Icon.

ON THE ROAD - Tony Ellershaw

We reviewed what was being sold in the shop and came to the conclusion that we were being charged more every month than we were taking in sales. We decided to convert to an eBay shop. This is effectively a pay as you go setup, so I put some of the most popular items up and we'll see what happens.

In May we had all of the electrical items pat tested to comply with insurance requirements. During the year we bought some more polo shirts, and children's Hi Viz vests. We continue to sell raffle tickets and loco works plates from time to time.



The first event was the Derby Model Railway exhibition at the round house. After that I went to the "All Change" event at Crewe, in June.

I then took the stand for a 3 day visit to Toddington on the GWSR, again we were inside the diesel shed, an enjoyable few days including making good contacts. (photo, above)

As we are now moving more bits and pieces around, and the Zafira was struggling I bought a transit van, and passed the Zafira on. As a change from exhibitions, we bought a locomotive compressor and I collected it from Bury St Edmunds, and delivered it for storage in Darley Dale.

The fourth event was the 2 day diesel gala at the Ecclesbourne Valley Railway, again it was raining and we sheltered under the gazebo until the wind suddenly moved it into the carpark. Overnight repairs meant we were ok for the following day.

Through the year we have been selling raffle tickets, and am happy to say we have covered our costs and look forward to taking more entries at the Warley model railway show in November, at which the draw will be made.

We intend to have a stand at the Rail Vehicles & Enhancements expo in Derby on 3rd October highlighting our limited company Red Diamond Diesel Construction Ltd which is responsible for overseeing construction of the third D16/1 locomotive.

Meanwhile Peter Scott took his *Southern information Stand* at Netley Marsh Steam Show held near Southampton from Friday to Sunday, *shown below*.



He was showing two stationary engines but spent a lot of time talking to people interested in the LMS 10000 project. Lots of leaflets were taken which hopefully will result in new members. Well done Peter. If other members would like to do similarly please get in touch to obtain material for an information stand. info@LMS10000.co.uk or 07551621685

PASSING IT ALONG - Andrew Overton

You will be pleased to know that you've picked up a new monthly subscriber to the membership scheme. I forwarded the newsletter about the Dutch bogies to a couple of likely lads who were maintaining a watching brief, and this convinced one of them this build really is going to happen and he ought to be on board. Perhaps if every member forwarded the newsletter to a few friends you might pick up a few more? Worth a try.

EMAILS AND POST - Andrew Hoseason

Acknowledging donations: we try to acknowledging smaller donations by email. Once a year I intend to write to donors with a summary of the project and their current amount donated and the associated benefits accrued.

If you have not seen emails from us since April: Please look in your Junk Mail folder. Bulk emails often get sorted there in error. However please note that Junk mail folders are often emptied automatically after a month or so. So it's worth looking there every week or so as a matter of routine. I often find legitimate emails filed there!

If you do not have an email address: Since the last ICON newsletter in April I've sent out news to members via email. I'm aware that some of our members do not have email. If you would like to receive breaking news via the post rather than email please let me know. However, since letters cost money I'm obliged to point out that our website and social media carry the same news, though not always as quickly as members' receive the news by email.



LMS 10000 Co-Co Club

The winner of our first Co-Co Club draw was Peter Scott, £26.25. Michael Jakeman and Ted Taylor won second and third prize.

The next draw (October) will be larger with 34 entries already lined up.
The First Prize (based on current entrants) will be £47.25

The winners will share 50% of the prize fund with the remaining 50% going to the Presidents Centenary Appeal to help us recreate 10000.

To join the Club see our webpage <https://lms10000.co.uk/coco-club-and-raffle>

GOING DUTCH

IDRS Engineering visit to Werkgroep 1501 Depot in Blerick, Netherlands on Saturday 24th August 2019 - Paul Etherington

During our equipment selection evaluation we have been constantly aware of the fact that the original Metropolitan Vickers MV146 motors we own are few and far between. However with research and communications with 1501 Werkgroep we were invited to inspect three such traction motors that have laid dormant in storage in Holland for over 33 years.

So off I set sail from Hull to Rotterdam on a darkened overcast Thursday evening eagerly anticipating the two days ahead. Having had a pleasant journey across the North Sea I was pleased to see a glorious sunrise over Rotterdam and an excellent full English breakfast! Within the hour I was on the coach on route to Rotterdam Central, taking in the heavy industries surrounding Europort for many miles, also taking in the sheer amount of rail borne freight being moved around between the rail served industrial areas. Rotterdam Central was reached in no time at all, and I quickly found my platform easily for the next train to Eindhoven. In drew my train into the very clean airy modern railway station consisting of eight inter city coaches top and tailed by two Traxx 186 class Bo-Bo multi voltage electric locos bang on time. Obviously with both the locos pantographs up *taking juice* the acceleration out of Rotterdam was very brisk indeed. After racing through the glorious Dutch countryside for little over an hour it was time to change trains to my destination Venlo. To my surprise I was able to walk off the Inter city service straight onto the VIRM double deck EMU heading my way, a great bit of luck, or an excellent run railway system? Probably a bit of both. Upon arrival at Venlo I was greeted with the most beautiful summers day in an absolutely picturesque Dutch town near the German border, but I was here on business so the hotel and the laptop beckoned. Luckily for me the hotel I was recommended was opposite the Station with my room overlooking all the comings and goings of freight and passenger trains. After four hours of typing my curiosity (and my hunger) got the better of me so off I went for dinner and a truly memorable walk round the vast array of shops and bars in this excellent place.

Before it was time to have an early night in preparation for the next day ahead.

Waking early I was greeted with another promising summers day ahead, but I was more than happy to be spending the day inside a large railway shed nearby. Michiel, our contact in the group had arranged to pick me up from my hotel at 10 am and off we went to Blerick locomotive depot.

Having spotted this very useful depot on the way in, I had a good idea of where I was going, but unlike many Heritage railway centres around the UK there were no old rolling stock outside, or rusting boilers on lowmacs indeed there was not anything outside to hint at what goes on here, except A grand looking carriage on supports getting an in depth overhaul in a very orderly fashion. As Michiel opened up the door I was starting to wonder what I would find inside this huge dark, well kept building? I need wait no longer, upon entry I could see the nose end of an Alstom 1700 electric loco from the 1990s, Michiel informed me that it belonged to his employer, kept only for spare parts, in front of it were two Commonwealth co- co bogies, much like the bogies fitted to the BR class 31 which H.G Ivatt had a great degree of input towards the design whilst under the employ of Brush. Michiel informed me that these were spare bogies for the three 1200 locomotives kept here. We headed into his staff accommodation coach and adjacent workshop spares coach, he explains to me that he purchased them for one euro each on the understanding that they will be moved from their location, what a bargain! Being a very resourceful chap and a train driver with vast experience of how the Dutch rail system works, he soon got them relocated in this depot and sorted out for their new role as rail vehicles. Michiel is a career railwayman joining the railway from leaving education, driving his first locomotive, under supervision, at 17 years of age! Due to his mechanical and electrical curiosity, and his ability to



Michiel at the controls of Alstom no. 1315

troubleshoot issues on the locomotives he was driving, Michiel soon gained the respect of operations and maintenance staff alike. He now drives for Rail Force one mainly on 1800 locomotives hauling freight trains throughout Holland. He informs me that Fairtrains (1501 Werkgroep) currently have two types of locomotive that are currently allowed and are fit to run on the network, 1200 and 1300 type locomotives, he explains that most of the work their locomotives have done over the years has been contract hire to freight companies. This led to one of the 1300 locos being badly damaged by poor driving techniques employed whilst starting a heavy train out of a tunnel up an incline. The traction motors of which I looked at for myself, thankfully 1304 is now fully repaired.

I asked on how many railtours that they run a year? To my complete surprise he informs me that there isn't the following of historic locomotives as there are in the UK. The last railtour only carrying 150 people hence the reliance on contract works to help pay the bills. Having been highly impressed with the Dutch rail system thus far I am left thinking how good it would be to travel on a railtour behind historic traction. Michiel informs me that it is very easy for him to organise pathing, pay access, hire stock and drive the Groups locos to many varied locations throughout the Dutch network just not viable! (Watch this space)



We then go for a quick tour of the fantastic locos very well kept inside this depot., starting with 1315 a very stylish Alsthom designed Co-Co

locomotive from 1954. Me being me I quickly identify the bogies as an earlier derivative of the ones used under the BRCW Lion. Climbing aboard this well kept loco Michiel tells me how well these locos perform both in power output and reliability, being extremely well built. He switches 1315 on with everything coming to life as though it was used the day before. Indeed the level of engineering and quality of their build is immediately apparent, what a machine! We disembark and make our way round to a 1200 locomotive, again we climb aboard and I am given a brief talk on this American designed Co-Co that

is very much like an electric Deltic. Again all the systems and safety systems spring to life waiting for the pantograph to go up and take the juice. The Werkgroep very obviously keep its loco fleet in good order with regular maintenance enabling any possible hire contracts to be taken on with the minimal of preparation. Currently the Werkgroep have 1315 almost ready for hire, 1304 and 1254 ready. The group has another 1200 that could be worked on and made available. The loco I had come to see as part of my visit was at the back of the shed 1501 ex BR EM2 27003 Diana.



Michiel explains to me that Diana has serious issues to be tackled before it could ever run again on the Dutch network, as we walk towards her I am amazed on how well the Dutch NS livery actually suits the class close up. Still looking in very well kept, presentable condition Michiel points to the bottom of the main body behind the cab to a small visible area of rust, he explains to me that although it does not look like a lot of corrosion but due to various leaks and other water ingress over the many years of intensive use, there is serious corrosion issues between the body angle iron frame and the steel cladding which has been riveted together. This is causing the loco to slowly rot inside out. Indeed this has caused serious corrosion to the loco air piping that is hidden between the inner and outer skin along the locomotive above the frame.

We climb aboard and Michiel turns on the batteries of this fine piece of 1940s Modern Locomotive engineering, for a guided tour. It immediately becomes apparent the similarities of its basic body structure design to the LMS 10000, 10001 diesel electric locos. The reliance of angle iron both straight and rolled, clear to see creating the outer

shell of the EM2. It is surprising to note the amount of bolted and riveted sections throughout the loco. I would say they were built minimising the welding required on the bodyshell. Ironically it is this build method that has caused the Werkgroep a huge headache with how to repair the potentially galvanic corrosion between the two different types of steel sections throughout the locomotive.

Walking through between the cabs it is clear to see how over-engineered the EM2s are, the traction motor blowers and their motors are simply huge designed to never give any trouble, the equipment room is completely bereft of touchscreens and LEDs just full of heavy reliable switchgear designed to last a very long time. In the centre of Diana sits two huge compressors in place of where the steam heat boiler would have been in BR days, Michiel explains to me that these were removed from the 2600 class diesel locomotives after they were retired due to poor reliability, a real example of recycling.

We step down off the loco and Michiel shows me another major issue with Diana on one of her bogies. The centre axlebox is very obviously tilted within the manganese liners, he tells me that the loco does make considerable noise when shunted around. Whether this fault has been caused by a broken triple spring or poorly loaded up equalising beams remains to be seen but it has resulted in potentially serious damage to the axlebox guides. Obviously to repair this will require a lift and a partial bogie strip at the very minimum.

Michiel informs me that this loco is a very important part of the collection and as much as they would like to repair and reuse 1501 again on the mainline there is very little potential of utilising the loco much with the current appetite for railtours in the Netherlands. With the work required currently beyond the Werkgroep's available labour and financial resources. He explains to me that it is likely that conservation will be undertaken when a safe dry museum place can be found for this magnificent artefact from the Woodhead route. She last ran as late as 2003 but was withdrawn due to the obvious need for attention.

Due to time constraints and a ferry to catch I quickly get the photographs I want before Michiel informs that he has to go get the shunter from the premises next door. So I Head to the open shutter door to watch the most useful loco in the collection.

In the glorious sunshine I watch probably the most useful machine for a heritage railway I have ever seen No231 a diesel electric 75 hp shunter which was designed for the traincrew to be able to control the locomotive whilst stood on the running boards below the axleboxes, allowing the crew to jump on and off the loco as and when required with ease. It has a Stork three cylinder diesel engine that is ingeniously cooled with its own diesel supply therefore never freezing up during harsh winter conditions. As with some other Werkgroep locos 231 is registered to go on the Dutch network.



Michiel soon had the shunter put back to bed within the shed and it was time for me to make tracks, I had one last quick look round of this great place before heading back to Venlo station for my train to Rotterdam. On the ride to Venlo Michiel mentions the Open Day event they organise once a year, a real good excuse for me to return here to this great place full of really friendly people for the weekend and enjoy it for all it has to offer, and furthermore I would definitely recommend it to anyone with an interest in railways. A real weekend away to remember.

Many Thanks to 1501 Werkgroep and my host Michiel for giving me access to their premises and fantastic collection of Historic locomotives and stock.



PARTS ACQUIRED

Andrew Hoseason

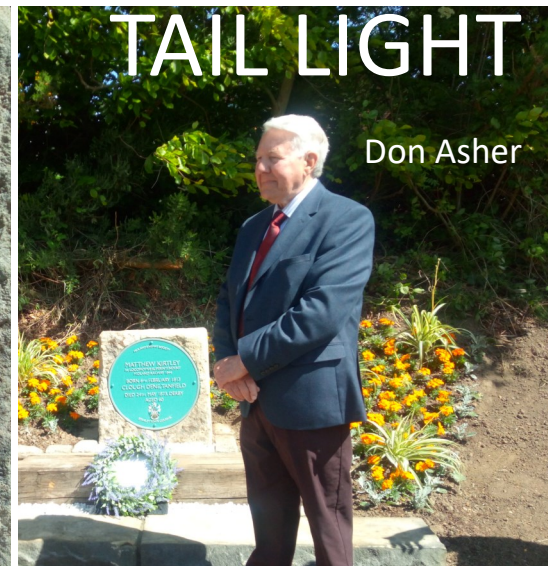
We have obtained a variety of parts and in future issues of the newsletter we will share news about them.

Our thanks also go to Craig Oliphant who donated an original class 76 speedo in May, *pictured*, which is very similar to the ones used in 10000/1. Thanks to Craig and to Darrin Banks who drove it over to us.

At the start of September we managed to obtain four ex class 37 Smith's speedos which are already tested. Thanks to David Downer of the Class Forty Association for supplying them.

This enabled us to revise our plans.

The class 76 speedo will be used as a template to allow us to cosmetically modified the class 37 items to give a more original look. Two will go in the loco, with two as spares.



On 24th May I attended the unveiling of a blue plaque to commemorate the life of the Midland Railway Company's CME, Matthew Kirtley, at his birthplace of Clough Dene near the Tanfield Railway, Gateshead.

I was accompanied by fellow members of our Society, my wife Diane and our Secretary Andrew Hoseason.

Matthew Kirtley was born in 1813 and also held posts with the Stockton & Darlington, Liverpool & Manchester and London & Birmingham Railways before being appointed a locomotive foreman for the Birmingham & Derby Junction Railway in 1841, one of the constituents of the Midland Railway. Therein lies a tenuous link to our own 10000 which was constructed at Derby.

During my research for a talk on LMS 10000, I have been struck by the extraordinary similarities of character of Ivatt & Kirtley, even though they came from entirely different backgrounds : -

Matthew Kirtley was the first Midland Railway Locomotive, Carriage & Wagon Superintendent (CME) at Derby works. George Ivatt was the last CME to hold the post for the London Midland Scottish Railway at Derby. Both were born natural mechanical engineers and held in great affection by their staff.

It was good to be able to attend this event and see Matthew Kirtley, who had a significant influence on the shape of the Midland railway, recognised in the town of his birth.

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