

AUTOCAR

No. 10

Winter 2010



The Newsletter of the
1903 North Eastern Railway
Electric Autocar Trust

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Registered Charity No: 1105829
Company Registration No: 05171008
www.electriconcar.co.uk

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Please send all correspondence to the secretary, address as above.
- Front Cover:** Our new underframe at Priors Lane on the E&BASR after arrival
from the North Norfolk Railway.

Photo: Stephen Middleton

Chairman's notes

Stephen Middleton

Good News!

I am delighted to report considerable progress. Brush Traction Ltd. has given a satisfactory quote and the promise to provide many components from redundant diesels, refurbished at an advantageous rate. We have funding in place to restore the underframe and body now thanks to the generosity of our membership, a £5000 grant from the Ken Hoole Trust and, by the skin of our teeth, a £20,000 PRISM fund grant. However to comply with the terms of the PRISM grant we have to complete these works by 26th November 2011 and PRISM managers are to inspect the project in February to evaluate progress.

WE NEED YOU!

Whatever your skills we need you to join working parties at Embsay to restore the body and underframe. The underframe arrived at the Embsay and Bolton Abbey Railway from the North Norfolk Railway just as the bad weather hit in December and the challenge of acquiring it is covered in this issue.

The grants and our fund raising have given just enough to act as balance funding against a Heritage Lottery Fund grant. We passed stage 1 two years ago and thanks to recent developments submitted stage 2 with just seven days to spare! We await the decision in March. If we are successful we should see a fully operational autocar in spring 2012, over 80 years since it was withdrawn and the autococh two years later. That's the dream and with your help we are close to making it come true.

I hope you all had a good Christmas and will enjoy a happy new year. Please contact me on middletonmarketing@btconnect.com or 01423 561965 if you can help with the restoration.

Progress Report

Steve Hoather

The last 3 months have been a bit of a roller-coaster as we have worked towards submitting our second stage application for an HLF grant before the December deadline-but we made it with a week to spare!

We had hoped to receive quotes for the traction equipment by the end of September to allow time for follow-up questions etc before the deadline. By the beginning of September we had narrowed the field to 2 firms, Brush Traction at Loughborough and Nemesis at Barrow Hill. Brush were working on a scheme to design and supply a set with a new diesel engine and alternator, whereas Nemesis were looking for second-hand equipment. Our application is different from most diesel alternator sets which are usually for standby power generation, needing a constant voltage and frequency to replace a failed mains supply. In a traction application such as ours we need a high starting current of about 400 amps at low voltage, dropping to about 150 amps as train speed and voltage increase.

The Engineer assigned to our project at Brush, David Moore, is very enthusiastic and experienced, having been involved in the build of class 60 locos some 20 years ago, and more recently in HST re-engineering. He was able to find a diesel engine which would fit into the space available, meet the latest emissions regulations and could be coupled to an alternator whose electrical characteristic was compatible with the English Electric traction motors on our bogie. Inevitably timescales slipped-ours is a fairly small job for Brush-but at the beginning of November Stephen M and I were able to go down to Loughborough and spend several hours with Dave Moore reviewing Brush's ideas. We came away confident that, after a number of changes we had agreed, the price would be within our budget, but obviously aware that the job needed to go through Brush's costing process before they could issue a formal quote.

Imagine our consternation however when the formal quote finally arrived as it was some 40% higher than expected. However, our spirits were lifted

when at almost the same time, Steve M's work with PRISM bore fruit and they awarded us a grant of £20,000 for conservation work subject to the money being spent within 12 months. (PRISM grants are being abolished as part of the government's "bonfire of the Quangos"). We therefore picked ourselves off the floor and arranged a further meeting with Brush at Director level which helped to identify further changes in the scope of work, and bring the price down to an affordable level. Having received written confirmation, Stephen M was able to submit our HLF bid on December 10, and we are promised an answer at the end of March.

Assuming we are successful with HLF, Brush will be designing and supplying the diesel/alternator set and 3 control desks (2 for the Autocar and 1 for the Autocoach). One of the savings identified was to install the alternator set as a complete and tested package, which means it is too big to go through the doors or roof, so the plan now is to fit the alternator set to the underframe at Loughborough before the body is transferred from its current, temporary, underframe. If needed in the future the set can be broken down in situ and the major components taken out through the doors or roof.

We obviously cannot start on the traction equipment until we have a decision from HLF, but this means that conservation of the body, using the PRISM grant, can start immediately whilst it is still on the temporary underframe.

The weeks leading up to Christmas also bore fruit from Peter Lund's work in finding a suitable replacement wagon to send to the North Norfolk Railway for use as a replacement for their crane runner, thus releasing the GNR underframe we need. Peter organised a working party to paint this wagon at Llangollen before it went to Sheringham, and this in turn resulted in our underframe arriving at Bolton Abbey on December 6, promptly to be buried in the deep snow which followed!

Although we cannot start substantive work until we hear from HLF, we will not be idle over the next 3 months. We have found a suitably experienced Brakes Engineer, Keith Nicholson, who can design an automatic air brake system for the Autocar, and convert the Autocoach to dual braking to retain its flexibility. We will be meeting him and his team at Embsay in

January, and when we have identified the components required we need to obtain these from scrap ex-BR vehicles. We also need to obtain drawings and centre castings to enable us to fit the motor bogie to our underframe, and I recently visited the NRM's Search Engine to look for GNR underframe drawings which will help in designing the layout of the brake components. At the same time we will be starting conservation work on the body, and you will see Steve Middleton's appeal for volunteers elsewhere in this issue.



The Macaw underframe after repaint in Pentrefelin yard on the Llangollen Railway, ready for delivery to the North Norfolk railway at Sheringham.

The Macaw wagon is to replace the GNR Milk van underframe which was used as a crane runner, by co-incidence this had previously replaced a Macaw wagon! The vehicle at the extreme left of the photo is the GW steam railmotor, which had just had its engine and boiler installed on 23-11-2010.

Photo, P Lund.

A Call to Arms

You will have read elsewhere in this issue of our successful PRISM grant award, the submission of our HLF application and also the very positive quotation from Brush.

This is all very good news but it does now throw the ball very firmly back into our court, we have to complete the PRISM funded restoration work by the 26th of November 2011 barely ten months from now, not long but achievable.

After nearly seven years of planning the practical work is to begin and we need YOU, Stephen Middleton is organising volunteer working parties on most weekends throughout the year to restore the autocar body. All are welcome and no special skills are required though joinery and engineering skills are a bonus.

The autocar body is currently in two pieces mounted on a temporary underframe, a contractor is to rejoin the body halves and undertake repairs to the frame, the rest of the work will be undertaken by volunteers. The steel clerestory above the engine compartment needs to be removed and repaired ready for refitting, and the body stripped ready for frame repairs

The majority of work will be paint stripping and cleaning up timber mouldings and matchboarding, on the job training will be given! If you have any free time at all please consider coming to help, one day a week/month would be ideal but even just a few hours will help.

WE MUST SUCCEED.

Please ring Stephen on 01423 561965 and offer your services, there will be working parties most weekends also some days in the week, Embsay Station is a pleasant place to work and we don't bite!

Building the Medley Petrol Electric Autocar: The Ends and Assembling the Body

R Marsden

In my previous articles, I discussed construction of the unpowered bogie and the sides. Before we assemble the body into a 'box', we need to build the ends.

The two ends are identical except for the positions of the lamp irons. I found it useful to mark each end with a permanent marker so that they could be easily distinguished. Each end consists of one piece which is bent around three formers. These formers are at the base, just below the windows, and just above the windows. The lower former also includes the buffer beam which bends down. I found the webbing that attached the buffer beam to the lower former was extremely thin and fragile. Eventually they broke during construction, and both buffer beams had to be re-attached using bent pieces of scrap nickel-silver. I would recommend you add similar pieces, immediately after each etch is bent.

The three formers do not have any alignment marks, so carefully measure their correct positions. The lower former has position references on the buffer beam in the form of holes for the buffers and the couplers. I found the coupler holes were not quite central, so I used the buffer holes (which were correct).

Yes the coupler holes were not quite central. The error was only about 1mm or so, so it was solved by carefully widening the hole, and then using coupler overlays from the spares box (actually a fellow modeller on the 7mm listserver!).

The buffer bodies can also be fitted. The kit is supplied with buffers consisting of whitemetal bodies, and whitemetal overlays for the oval buffer heads. The biggest problem with the overlays is making sure they are nicely symmetrical and matching. Hence I have already paired them up so that the ones on each end match as close as possible.

The rear of the buffer bodies was too wide for the holes in the buffer beam. I had a similar problem with my Y7. The solution is to ream out the hole as much as is practical, and then to turn the rear of the buffer down. Lacking a lathe, this is achievable with an electric drill mounted in a vice. This worked well with brass buffer bodies on the Y7, but the railcar buffer bodies were whitemetal and were easily deformed in the drill chuck. Therefore I needed replacements with brass bodies. Luckily I was able to source some suitable buffer bodies from Gladiator.

The windows have drop lights. Be careful when attaching these as I found them to be a close fit.



Finally, the lamp irons can be fitted. I fitted these at this point in the construction (as per the instructions), but I have already managed to already break one. With hindsight, I should have fitted them near the end of construction. The instructions recommend the use of bent pieces of brass strip. Not knowing the lengths, etc. I chose to add a lamp iron etch to my Gladiator order. This etch arrived with lamp irons of various sizes. I decided the largest was the most suitable, but the etch only had four examples. Therefore I used three of these for one end, and fabricated the three for the other end, using the Gladiator examples as a length guide. In order to ensure the new lamp irons had the same profile, I taped a few pieces of brass strip together, and filed an identical pointed profile on all the strips. They were then cut, and bent.

The ends of the buffer beams can be bent around and filled with Milliput or other filler. I will probably be using Squadron Putty because that is what I have, but I am waiting until all end body soldering has been completed.

The railcars should have three internal partitions, but the kit only comes with two. I have decided to use wood to build the missing partition (front of passenger compartment with two sliding doors). The two supplied partitions have half-etch indications of door positions, but these are only on one side. Therefore I have decided to also apply wooden veneers on either side of these. I constructed these next, while the partitions were loose and available for use as patterns.

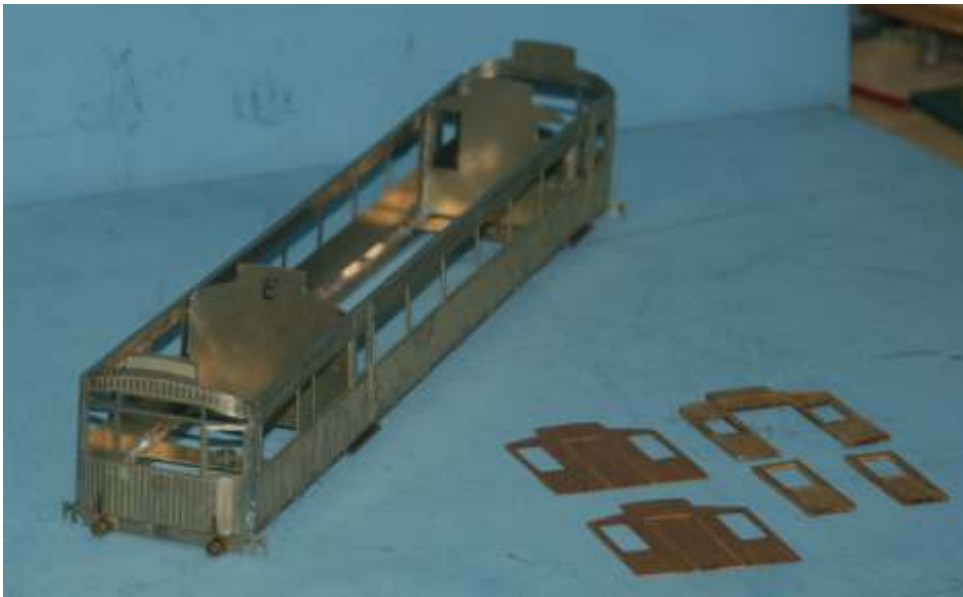
The partitions and veneers were constructed using plank-scribed wood. The thinnest scribed wood that I could find was used for the veneers, whilst thicker wood was used for the new partition. Wood strip was used to add door and window detail.

I have not been able to find any information on the wood stain used other than "varnished", so I applied a fairly light wood stain followed by two coats of slightly-thinned polyurethane varnish (all spares from the garage).

Finally we "build up the box" and start to make something that resembles a railcar. Everything must be 'square' and should be completed on a flat surface. Therefore I built it on a pane of glass (actually an old broken mirror) and made extensive use of small tri-squares and a set of right angle metal blocks. The ends and sides slot together with slots on the corners. Test fit these first, to make sure they are bent correctly. I found the slots also needed opening out slightly. I initially soldered the four corners using two spot joints each, making sure everything was as square as possible before progressing. Despite this, I re-soldered one of the corners to remove a slight "trapezoid" shape. With only point corner soldering, there was still some flexibility and it wasn't quite square. This was fixed by adding the bogie pivot points. These are wide strips across the floor of the railcar which hold the bogie pivots. Luckily there are markers on the inside of the railcar sides. This made it easy to locate their correct positions, and to ensure the railcar is square. Next I attached the two internal partitions using spot solder joints. After much checking, I then made the joints

more permanent, and filled gaps on the outside corners. This was then cleaned up over a period of two weekends. I often find it a good idea to wait a few days after a session of cleaning up, as you will always find a little bit more when you go back after a few days rest.

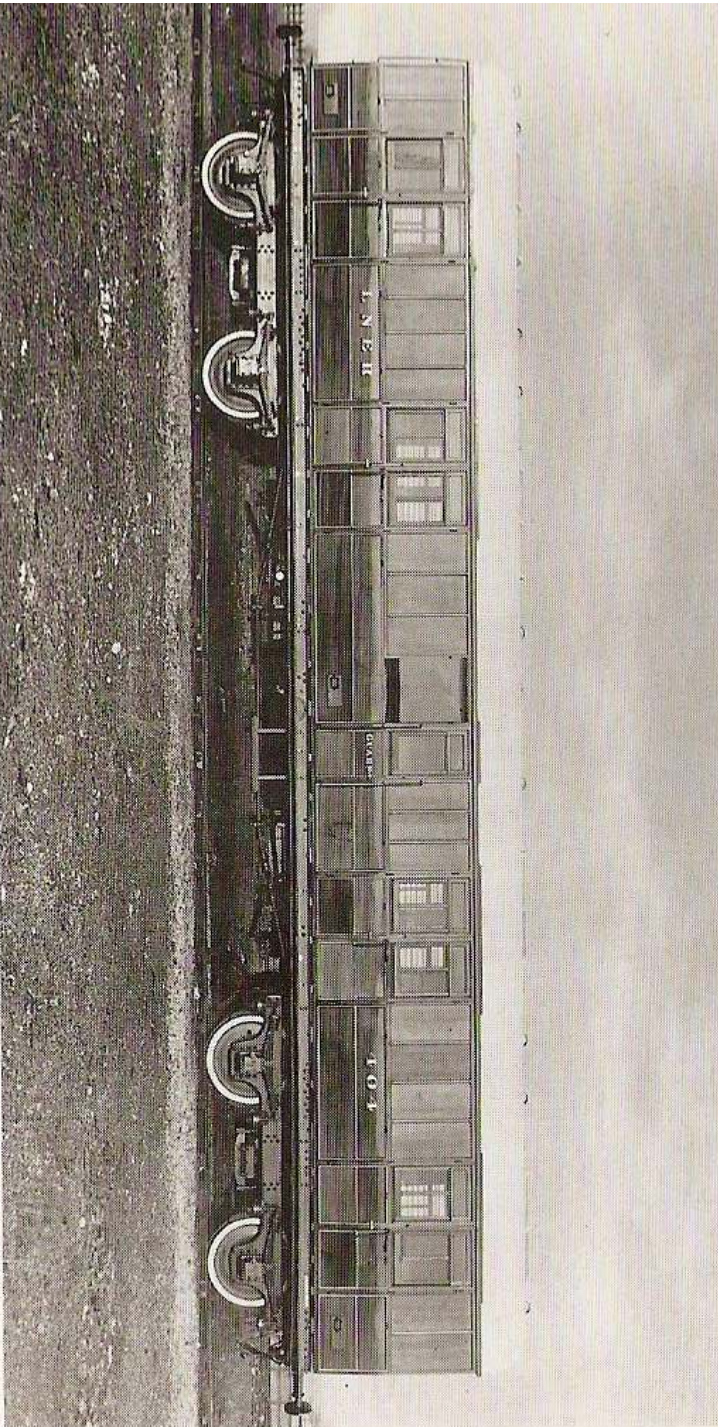
The results can be seen in the accompanying picture. Finally the railcar is beginning to take shape!



Welcome to the following new members;

Mr A Winter of Bedford, Mr R Murray of Ipswich,
Mr R Taylor of York, Mr R Langham of Luton,
Mr S Kowal of Richmond, Mr I Evans of Leeds,
and Mr A Chandler of Ilkley.

We now have 79 members.



This photo of a GNR built milk van as LNER No 404 shows the type of vehicle which donated our underframe, which came from GNR 2391 of Diagram 310 built in Doncaster in 1920.

Photo courtesy of the NRM