

# AUTOCAR

1903 North Eastern Railway Electric Autocar Trust

Newsletter No.14 — Winter 2011/2012



# The North Eastern Railway 1903 Electric Autocar Trust

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- Front Cover:** The underframe in the shed at Embsay on the  
12th January, showing the work done.  
(Simon Gott)

## January 2012

Welcome to the 14th issue of our newsletter. Re-reading the last issue and looking through my collection of photos, I realise just how much we have achieved in the last three months. The autocar's roof has been canvassed, and a great deal of progress made on the timberwork of the body. Work on the underframe and mechanical elements is also going well.

Producing this newsletter could be a metaphor for restoring the autocar itself - there's a lot of work on various different tasks and then, suddenly, everything comes together and all your work is rewarded. From the various reports in this issue, it appears that 2012 should see 3170 transformed from a Cinderella to the belle of the ball.

## Contents

Chairman's notes .....	4
Project Engineer's report .....	5
Roofing the autocar .....	8
AGM report .....	10
Building the Medley kit .....	11
Publicising the autocar .....	12
Book review .....	14

## New members

A warm welcome to Mr D Sunderland of Newcastle, Mr D T Gibbs of Enfield, Mr J F Saville of Uttoxeter, Mr M Massey of Ely, Mr J Sutcliffe of York and Mr D Idle of Pickering.

## **Chairman's notes**

*Stephen Middleton*

The exciting bit! The extensive repairs to the underframe are almost complete. The headstocks are cut and ready to fit to bring the underframe to length. The body is looking a world away from this time last year and the engine is due to be delivered. 2012 should see all these pieces come together and the autocar be a locomotive for the first time in over 80 years. We expect to begin work on the autococh in Spring. Great progress, thanks to a dedicated team....thank you.

We must not lose sight of the educational and training aspect of this project and again we have made progress. Thanks to the efforts of film maker Michael Massey we have an excellent educational DVD available, free to schools. Already, one school in Harrogate has shown the DVD to 7 and 8 year olds and found it very useful. We need to get the DVD used in more schools, if you can help, please contact me.

A woodworking training centre will be built at Embsay this year where machines will be commissioned and training given. One of our stalwarts, Len Clark, has not been so well recently but has kindly offered to continue work at home, sharing his skills through the medium of training boards which will be displayed in this area. Simon's press release promoting training opportunities has attracted younger volunteers to the cause. This is important, as without them our project would not have a long term future.

Finally, a belated Happy New Year to you all and I look forward to meeting and working with you in 2012.

<p>We are now members of the Heritage Railway Association. The Association represents the interests of the majority of heritage railways and railway preservation groups within the U.K.</p>
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# Engineering Progress Report

*Stephen Hoather*

We're going to The Ark – but no jokes about sinking ships please! A lot has been going on in the last three months, but we haven't got much to show for it yet. Like most engineering projects, the important phase is the design and planning at the beginning, before any metal is cut.

The underframe repairs shown in the last newsletter have taken much longer than hoped, due mainly to the other commitments of our contractor, Bryn Engineering. However, by the middle of December, the new cross members and steel headstock at the motor bogie end had been bolted in place, and the old members removed at the other end. The new members at the trailer end were already machined to size, and just needed drilling (using the old members as patterns) before they too are fitted, and then the bolts at both ends can be replaced by rivets. After this, the wooden headstock extensions need drilling and fitting, and the motor bogie can be fitted. It is estimated that this work will be finished early in February.

**The motor bogie end (Simon Gott)**



In parallel with this, our Structural Engineer has been beaver away designing the reinforcement necessary both to strengthen the corroded solebars, and to provide sufficient strength to support the power unit. His preliminary design was completed just before Christmas, and the next step is for this work to be independently reviewed by another Structural Engineer, and this process was started with a design review meeting on the 6th January. The method of strengthening the underframe was accepted, and the independent Structural Engineer will now check the detailed calculations as they are finished.

Whilst I was in Loughborough for the design review meeting, we took the opportunity to visit a steel fabrication firm who will be able to fabricate the steelwork needed and then fit it to the underframe.

The basic CAD drawing of the underframe is now finished, and the brake cylinders and rigging have been added. This has revealed a problem with the location of the handbrake column in the cabs. We have been fortunate in having donated to us two sets of handbrake columns and linkage from an SR CIG unit which is being used as a donor unit for the Brighton Belle project, and we are very grateful to the Brighton Belle team for this. Like all mechanical handbrakes, this needs rodding under the floor from the column in the cab, past the bogie, towards the centre of the vehicle. Once allowance has been made for the wheels taking up various positions on sharp curves, the scope for moving the column is limited, and our first design had the column at one side of the driver's seat, which prevented him getting to the seat! Problems like this show why we do drawings before we start fitting parts.

The scrap ex-BR Mark 2 coach from Neville Hill has not yet been broken up at Booth's scrapyards so we have not yet been able to recover the gear, but we also have other possible "irons in the fire" to obtain most of the brake gear. However, the 12" brake cylinder we need is unlikely to be available from vehicles being broken up, but is known to be fitted to most Post Office vehicles, many of which are on heritage railways. Stuart Hiscock is compiling a list of these vehicles, so we can approach their owners to see if they are willing to sell us the cylinders.

Our diesel engine was delivered in November from the Cummins Darlington plant to their factory in Wellingborough, where it will be assembled on the bedplate with the traction and auxiliary alternators, which come from Cummins Generator Technologies' (CGT) Stamford plant. Our expert, Dave Moore, is at present in discussion with CGT on the duty cycle for the alternator set. Our duty cycle is unusual in that we need about 800 amps to start the two coaches on the steep gradients on the North Yorkshire Moors Railway, but once speed has built up, the current drops to less than 100 amps. It is essential that CGT are happy with the duty cycle so that the normal warranty will apply and we hope to reach agreement early in the New Year, which will enable manufacture of the alternators to commence.

Our Independent Competent Person (ICP), John Payne, came up to Embsay just before Christmas to look at the vehicle and underframe. We have agreed a method of working and a list of topics which will need reviewing, although we will doubtless add to the list as work progresses. Work on preparing the Safety File has begun, and at the end of the day this File, independently assessed by John, will be the document we present to the operating railways to demonstrate that the vehicles are safe and fit for purpose. This process is new, having only been applied to heritage railways since 2007, and we believe ours is probably one of its first applications.

When we take delivery of the power unit, the first major task is to design and build a soundproof and fireproof housing for it, before we fit both the housing and the power unit to the (strengthened) underframe. As virtually all our Engineers live in the Derby/Loughborough area, we have taken out a lease on a unit on an industrial estate in Loughborough. As well as building the housing there, we can store the material which currently is gradually building up in various domestic garages! By the time you read this we should be installed in the unit, which goes by the name of THE ARK.

**STOP PRESS** - the alternator specification was agreed at a meeting on 10 January, and it is now expected to be delivered by the end of March.



### Roof canvassing

After removing dozens of projecting tacks and nails, left from previous coverings, the roof timbers were cleaned and scraped. Roof canvas bonding was applied using spatulas and the canvas rolled out on top. This was then tacked in place. Paint will be applied at a later date.





## Engine room roof

The metal sheets which formed the engine room roof were removed some time ago and are currently being needle-gunned prior to painting. The supporting girders were cleaned and painted in November.



## **Report of the Annual General Meeting on Saturday 15<sup>th</sup> October 2011**

*Dave Cullingworth*

Thirteen members attended the AGM, held aboard the LNWR saloon attached to the 13:30 departure from Embsay. Various reports were heard.

Stephen Middleton reported on successful Prism and HLF funding. The additional work required on the underframe was detailed but the project was still within target (4.5 years to completion).

A publicity DVD had been produced to target the non-railway enthusiast market.

Peter Lund reported that we need to employ the services of a professional auditor, which was now in hand.

Stuart Hiscock will investigate a junior membership rate and report back. It was hoped to encourage junior members to come along and help out.

Simon Gott reported on lots of magazine coverage and publicity, including that in Robin Jones' book 'Railmotor'.

Steve Hoather detailed technical progress on underframe for which a CAD drawing had been produced, and timelines for bogie work, engine and alternators. The engineering project team was being assembled for each area of expertise. He explained the approval process and that we had an independent surveyor on board.

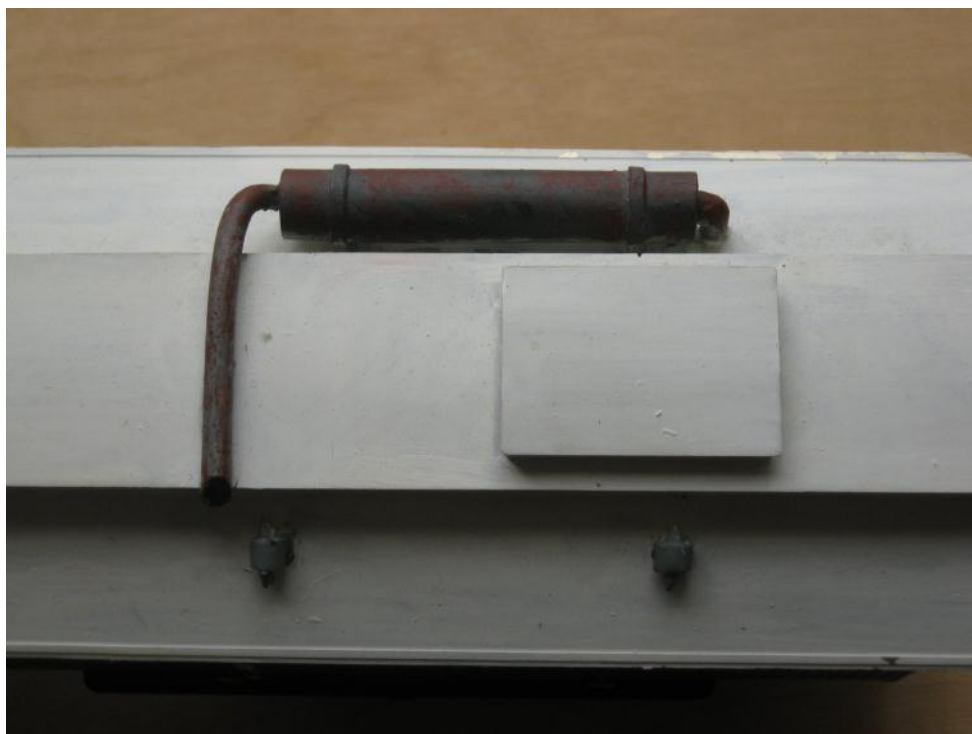
The meeting welcomed Danny Ferguson as the Embsay & Bolton Abbey Railway's representative onto the Trust.

Following the AGM, an informal tour of the autocar and chassis was held, with some members also visiting the fundraiser at Bolton Abbey.

## Building the Medley 7mm scale model Autocar

*Richard Marsden/Steve Hoyle*

Richard has had to take a break from modelling recently, so the final instalment of this serial will appear in a later issue. However, further to Richard's uncertainty over locating the silencer exhaust last issue, we've had word from Steve Hoyle, who produced the kit for Medley Models (now known as NER Days).



He says that the exhaust is attached as per the photo. To avoid a visible joint or slot, either with bends or gaps between straight edges, he suggests soldering a length of thin (0.5mm or smaller) brass wire inside, along the full length of the join line. This saves burning your fingers working with small pieces and adds strength.

**(Photo courtesy S Hoyle, showing the roof from above)**

## Publicising the autocar

*Simon Gott*

Publicity work is one of our ‘back-room’ activities and covers a wide range of work. The most obvious of these is the writing of press releases for the railway press and local papers. I tailor these to the recipients and we have had some excellent coverage, with features in various publications, ranging from *Railway Modeller* to the *Yorkshire Post*. Some pieces I write myself, others are written by journalists after a long conversation with me. As well as the benefits of publicity, the Trust sometimes receives a cheque for the article.

I also attend model railway exhibitions with our publicity stand, shown below, which tells the story of the autocar. I chat to people I think are interested and attempt to entice them into volunteering. Other people also play their part in this, Marcus Woodcock, Michael Savage and my father have all manned the exhibition stand.



I have got into the habit of posting details of our progress on the Internet as a monthly blog. This has acquired something of a following, the last update received around 1100 hits in three days—very gratifying!

I also do my best to distract the workers by pointing a camera at them when they are working on the autocar. The best of these photographs are then used to accompany press releases, illustrate the blog and are sent to Rob Shaw and Tim Warner to put on our web-site and the railway's. We are building up an archive of photographs so the Trust has a full record of its activities and the restoration.

There's a mix of other tasks, whether it's updating our leaflet and distributing it, liaising with model kit manufacturers, cutting lengths of cord to attach banners to scaffolding or opening the fundraiser down at Bolton Abbey station. This last is as much about publicity as raising funds and why we are so keen to recruit people to staff it.

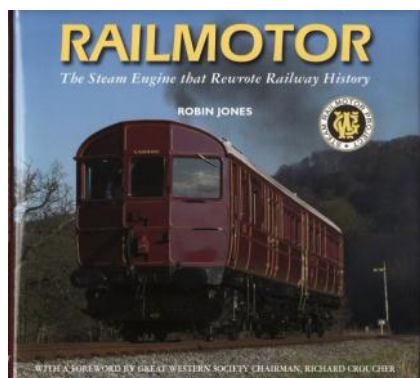
If you would like to help, whether by working in the fundraiser, taking the publicity stand to an exhibition, distributing leaflets or in any other way, do get in touch. We have received much valuable help as a result of the publicity we have received, whether financial, in materials or volunteers' time and skills.

### **Laptop/portable DVD player Wanted**

We would like to play Michael Massey's DVD on the stand at exhibitions, and in the fundraiser when it is open. Does anyone have a spare which we could use? A battery powered version would be preferred, as mains power is not always available. Please contact Simon or Stephen.

**Opposite:** The publicity stand at Kirby Stephen East, attending a model exhibition organised by the Stainmore Valley Railway (also ex-NER).

## “Railmotor”



This was published just as the last issue went to press. ‘Railmotor’ is a hardback book published by Halsgrove and is the same format as their photographic albums, approximately 8.75 inches tall by 9.4 inches. There are 144 pages of good quality paper, with a mix of text and photographs, both colour and black & white. Although the same size as Halsgrove’s albums, this title goes

beyond being just a collection of photographs and is a serious history. It was written by Robin Jones, the founding editor of *Heritage Railway*, with photos from a range of contributors.

This book seeks to place the railmotor in its historical context and I think it succeeds. Other railcars are examined, with emphasis on the autocar as a counterpoint to steam propulsion. British Rail’s use of DMUs is covered, as is the restoration of the steam railmotor.

The autocar has two chapters to itself, indicating how important the author feels it is to the story of rail passenger transport. The first chapter covers the autocar’s construction and operation by the NER and LNER. The second examines the restoration up to the summer of 2011.

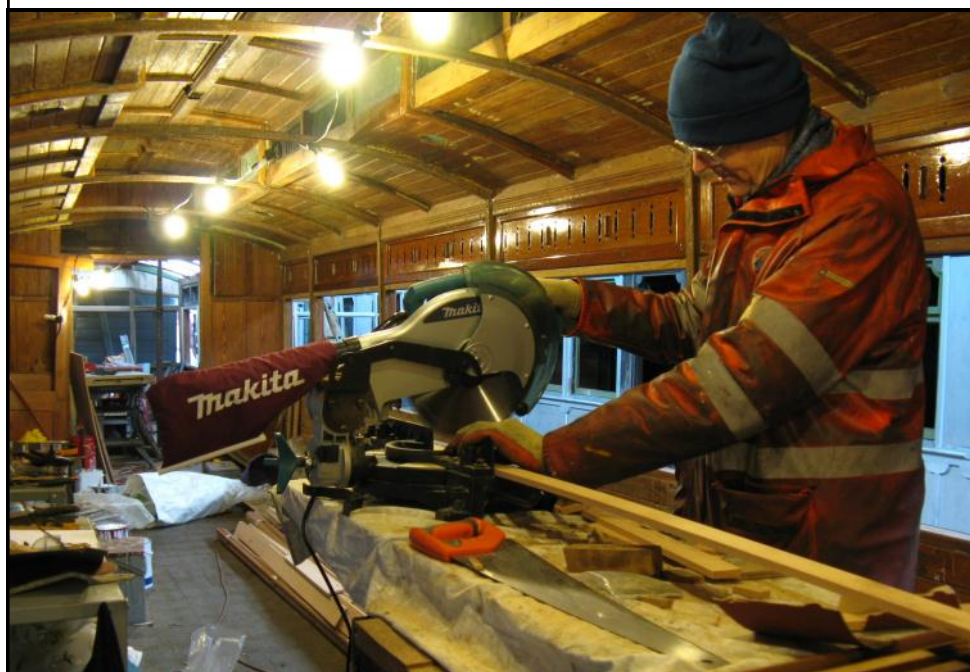
Whilst I doubt the book will tell Trust members anything they do not already know about the autocar, I would still recommend this book. It is nicely produced and tells the story of the railmotor well. I think it would appeal to both railway enthusiasts and anyone interested in railway history. And before anyone asks, yes, I am building up a collection of photos so we can tell the story of the *autocar* in a few years’ time...

The book is priced £16.99 and is available at £15 (plus £3.50 postage) to Trust members from the Embsay station bookshop. (Tel: 01756 794 727, E-mail: [embsaystationshop@gmail.com](mailto:embsaystationshop@gmail.com) , 10—4, closed Mondays)





After the AGM, members visited the workshop to see work on the underframe.



Alan Chandler at work on the beading strips for around the windows and doors



An overall view, on the 15th December, showing the progress made since the last newsletter.

