

# AUTOCAR

1903 North Eastern Railway Electric Autocar Trust

Newsletter No.31 — Spring 2017



# The North Eastern Railway 1903 Electric Autocar Trust

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- Front Cover:** *The autocar in spring sunshine on the 4th March.*  
(Alan Chandler)

## March 2017

Welcome to the 31st issue of our newsletter. At Embsay and elsewhere, the restoration team has been busy, constructing parts and components and fitting those 'made earlier'. As the photographs show, the autocar is starting to take shape. It may be prudent not to make too many plans for 2018...

Many thanks to Alan Chandler for providing photographs of the work done by our volunteers, all uncredited photos in this issue are his.

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## New members

A warm welcome to Kohn Pratt of Radcliffe on Trent and GP Quayle of Fulwood.

### Newsletter Back Issues available:

Numbers 7, 9, 11— £1.50 each

Numbers 14, 16, 17, 18, 19, 20, 21, 22, 24. — £2.50 each. Postage at cost.

Available from the editor. Embsay station bookshop also has *some* newsletters.

# Chairman's notes

*Stephen Middleton*

Nearly there!

We had a big push before the AGM as we wanted to show attendees the autocar progressing well and an almost finished autococh. In the event we managed to panel, glaze and paint half the autocar and I think you will agree that the results look fantastic. Everyone who came to the AGM was impressed with progress and several generous donations were made. Thank you.

The autococh is awaiting finishing touches and work to dual brake it, adding air brakes equipment so that it can run with steam locomotives and be the trailer car for the autocar.

The autocar threw up a problem with the floor and we had to remove a large section to refit broken transverse beams and fit a new, level beam under the sliding doors. Removing the sliding doors, panel and frame was quite a job and testament to Alan Chandler's skill that they came away undamaged. All this is adding to time and cost but we expect to complete this year and thanks to your generous support, almost on budget.

As usual we include an appeal leaflet and so many of you have used this to donate, enabling us to add to your donation through gift aid. We still welcome and appreciate donations. However, the major fundraising task is to cover the £40,000 the Heritage Lottery Fund retains until completion. One member has generously made a loan to cover almost half this sum. If you are able to help with a loan and would like to discuss terms and security, please call me on 01423 561965.

Once again, thank you all for your generous support, helping make this dream come true.

**Opposite:** *The autocar in December.* (Alan Chandler)



# Engineering Progress Report

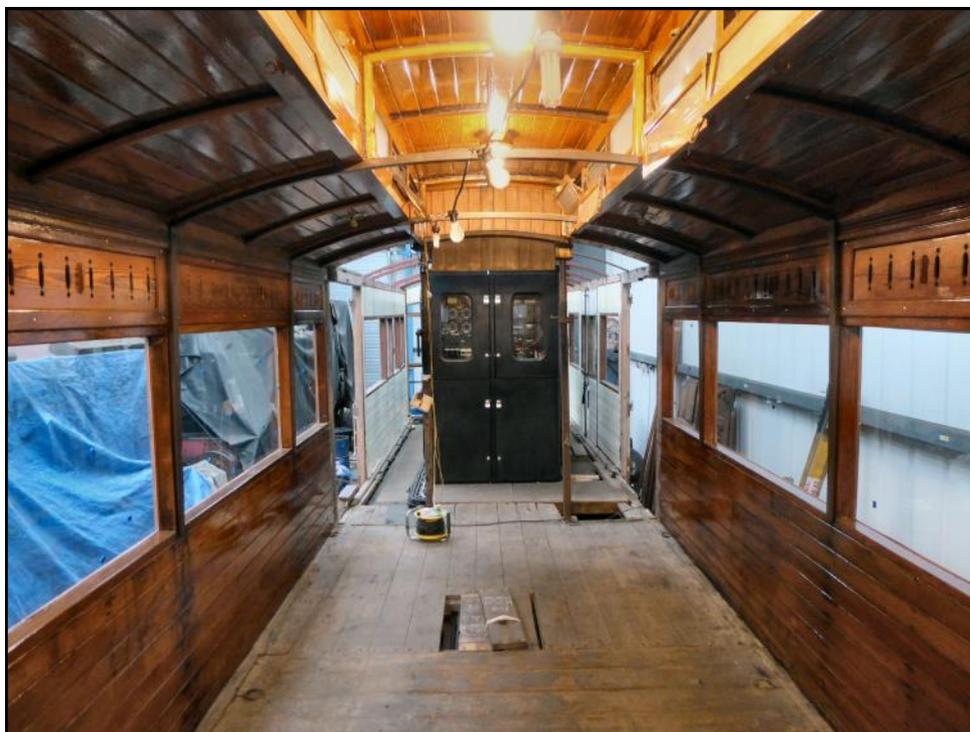
*Steve Hoather*

At the time of the last report, we had lifted the body onto the underframe and were preparing to bolt the body down. The width of the bottom rail left very little room for the bolts, and the holes for these had to be drilled from the bottom upwards, so Alan made a jig to position the holes accurately, and this greatly simplified the job. The photo below shows a section of bodyside after fitting the bolts. Over the following few weeks, new external tongue & grooved boarding was fitted to most of the saloon area, Stephen fitted the new glass, and Dave undercoated part of the side and end (before it got too cold for paint to dry), so that by the time of the AGM in December one side of the trailing end was looking very presentable, as the photo on the previous page shows. During this time, Geoff was overhauling the latches for the small toplights on the sides of the clerestory so that these can be opened and stay in the required position, and Colin was continuing his work on repairing and refitting the droplights. Colin has also repaired and refitted the door from the saloon to the driving cab at the trailing end, and Stephen has been hanging the external doors.



I mentioned last time that we found that that the floor bearer under the engine end partition was broken when the body was lifted over. Since this bearer supports the sliding door between saloon and luggage area, and a level base is essential to make the door slide smoothly, we decided to replace this bearer before proceeding further. This meant supporting the end of the steel roof assembly of the engine compartment with Acrow props before removing the partition and then the end section of the flooring. Having done this, we discovered that the tenon on the next floor bearer in the saloon was broken at one end, and a third bearer had no tenon at either end, so it was effectively floating. Geoff therefore fitted steel corner brackets to both these and the new bearer which Alan had made and fitted, to secure them before replacing the floorboards. As far as we can see, the remaining floor bearers are OK.

**Below:** *The view from the saloon into the engine room, with the partition removed to allow work under the floor. (Alan Chandler)*



One piece of air piping which we could not fit until the body was fitted, is the pipe from the main air brake pipe to the passenger alarm valve in the saloon (our equivalent of a 'chain'). A blanked off tee piece was already fitted to the brake pipe, and Chris Hubbs, one of Embsay's volunteers, volunteered to make and fit the connecting pipe which can be seen in the photo on page 13 – this had to be bent under the floor bearer and is a very complicated shape. He will finish off the pipe when the partition is refitted.

The first priority from an engineering point of view, is to fit the removable steel floor in the luggage area and around the engine and cab desk. However, this could not be done until the external door thresholds had been renewed as they were rotten (Alan has now done these), and the Acrow props supporting the roof have been removed. Alan has done the outline design for engine room floor, and we should be able to order the material shortly.

We had originally intended to wait until the power car was virtually finished before starting further work on the trailer, which needs converting to dual brakes and a set of cab controls fitted in the van end. However, some of this work, such as running air pipes and conduit along the underframe, needs the vehicle to be lifted off its bogies on the jacks. The jacks at Embsay are now heavily used, as the railway has embarked on a programme of overhauling its Mark 1 coaches, but it looks as if there will be a 'window of opportunity' in March. We have therefore set about doing the detailed design work on the brake conversion and obtaining the material – the main items are two 10" brake cylinders which we already have from Northern Ireland Railways (these have now been overhauled by Railway Brake Services), and two large air reservoirs, which we have but they need hydraulic tests. The work on the trailer is much less than on the power car, and to avoid the need to take people off the power car we are planning to have kits of parts for the brake cylinders and reservoir mountings designed and made at Loughborough to simplify the fitting at Embsay.

Dave Moore is making two more cab desks at home, one for the trailing end of the power car and the other for the trailer car. They will be virtually the same as the one already fitted to the power car, although one of the large valves is not needed on the second cab of the power car. In preparation for the second desk, Dave Sunderland has fitted a steel protection plate inside the centre section of the trailing cab front – this provides a degree of additional protection in the event of a collision with a fallen tree etc. (*Photo on page 14*).





Work is continuing on repairs to the saloon partition and we hope to have this refitted soon, so work can then start on the engine room floor and the interface between the top of the engine housing and the roof. The cab desk at this end is now in its final position and partly bolted down, but there is considerable work to do on the cab end frame at this end.

I gave a lecture (*pictured above*) on the Autocar Project to the North West Centre of the Institution of Mechanical Engineers in Manchester just before Christmas. The lecture described the many technical and logistical challenges which had to be overcome in converting a derelict wooden body which had lain in a field for 70 years into a working vehicle fit for passenger use. The lecture was attended by about 100 people and was well received. I seem to be leaning sideways in the photo, I was not drunk but probably turning round to point at the screen!

I will be repeating this paper to the North East Centre of the Institution on Monday 10 April at the Wabtec Works in Doncaster. The session begins with refreshments at 1700 hrs, and visitors are welcome.

## Letters

*Dear Sir,*

*We know and accept that many compromises have had to be made with the restoration of a working autocar because of changes in safety, working practices and technology.*

*We are now hopefully into the final stages, but I hope that it is not too late to keep one aspect of the original operational design – the whistle. The original vehicles were fitted with a steam loco type whistle mounted just above the driving position at the engine room end. This can be seen quite clearly in picture four on the archive section of our web site. It was powered by compressed air from a small compressor located under the trailing end.*

*May we hope that this feature can be restored – the last thing I would like to hear when the autocar moves off is some sort of modern diesel stock horn being sounded!*

*Yours sincerely*

*Richard Stagg*

Stephen replied:

*We are using a steam loco-like whistle, and an old one at that, but from ex LT scrapped underground trains. We had to get three the same and that seemed the best answer.*

### **'Situations Vacant':**

Practical, skilled people to work on restoring the autocar at Embsay.

A fundraiser, both to solicit donations and to generate finance through sales.

A researcher, to seek out historical information about the autocars.

If you can help with any of these roles, do please contact us.

## Repairing cross-members

*Alan Chandler*

When the body was lifted on to the underframe, back in July 2016, it was found that the cross-member under the partition was broken in the centre and would therefore need to be replaced. It was then discovered that another cross member had broken tenons, and a third was loose, without any joint or fixing to the timber frame at the base of the walls, allowing the floorboards closest to the walls to twist and split. A survey of all the remaining cross-members did not reveal any further problems.

These cross-members join the walls together at floor level and support the floorboards. To gain access to the first cross-member it was necessary to remove the partition and lift the floorboards at the engine end of the passenger compartment (*as per the photos on pages seven and nine*).

**Below:** *A close-up of the partition old cross-member, showing its condition.*





The other two cross-members, with broken and loose tenons.

The partition cross-member has now been replaced with a substantial beam of hardwood, jointed and bracketed to the wall bottom rails (*as in the photo below*). The cross members with broken or missing joints have been securely fixed to the bottom rails with strong brackets. New door sills and new pipework for an emergency brake application from the passenger compartment can also be seen. Work has now started on replacing the partition and passenger compartment floor.







Above and below: Tongue and groove replacement body-side panels.





*The autococh at Battersby Jct on 9th December 1979, in transit from Hull to the NYMR. Loco: S15 Greene King (Peter Brumby)*