

## Challenges and opportunities for railway carriage preservation in the UK

*Paper presented by Michael Cope at the Biennial Conference of the International Association of Transport and Communications Museums (IATM), York, June 2007 and for publication in IATM's Journal "Transport".*

The Conference theme is "sustainability". Within this theme, I am going to speak in praise of the "preserved" railway carriage and its importance and relevance to the sustainability of not just preserved railway carriages themselves but also and importantly to the sustainability of the many Heritage Railways within the United Kingdom. In particular I'll give you some appreciation of the scale of Heritage Railways (and preserved carriages) in the UK.

Railways began in the United Kingdom. Small beginnings, then massive expansion leading to a proliferation of railways and massive over-provision. Then in more recent times decline, closures and restructuring. Today, we have a much smaller but a generally effective main line railway system.

The railway preservation movement – the Heritage Railway movement – began in the United Kingdom. First, the narrow-gauge Talylyn Railway, re-opened in 1951, well ahead of anyone else. Then on the standard gauge, the Middleton Railway and then the Bluebell Railway, both in 1960. Then the Worth Valley Railway in 1968.

After that, in this country, proliferation! The umbrella body for the UK Heritage Railways is the Heritage Railway Association (HRA). HRA's most recent available figures show 87 standard gauge heritage railways, plus 35 narrow gauge – plus 15 museums, 8 steam centres, 4 tramways. We are a small country: having a total of 149 operating such Heritage Railway enterprises surely represents proliferation – and poses major questions about long-term sustainability.

HRA reports a total annual income for all these organisations of some £54M (about 80M Euro). The visitor figure is some 6.6M/year. "Only" about 5.6M of these actually travel, but between them they make some 14.1M passenger journeys each year.

Yes, it's big business – but is it sustainable?

Heritage Railway maintenance, operating and renewal costs continue to increase. There's more and more external regulation, all of which seems to cost money. Volunteer numbers are reported as decreasing, with the corresponding need to employ more people to ensure that things are done – meaning more costs.

But I need to return to my subject, which is railway carriages and their sustainability.

On occasion we lose focus and stop thinking about the passenger.

The passenger is the *paying* visitor to the Railway: the person who represents most of the income. Hopefully he or she is enjoying the visit, and will return for many further visits in the future. So let's think about these 14.1M passenger journeys. Each one represents a "Visitor Experience" and it is crucial to the continuing sustainability of the carriages (and of the Heritage Railways!) that these visitor experiences are really positive ones and lead to repeat visits.

Just about every Heritage Railway, world wide, uses a picture of a steam locomotive on the front of their advertising literature. However, it's noteworthy that most visitors do not give a great deal of attention to whatever is at the front of the train. The reason for this is the great majority of the visitors are made up of family parties. Family parties come primarily for a pleasant afternoon out. They may have a modest general interest in railways. Particularly for what seems to be an increasing number of grandparents taking their grandchildren out for the day there will be a deal of reminiscing about railway travel in the "old days". The thing conspicuous by its absence is a burning interest in steam locomotives as such.

It is the railway experience *as a whole* that is of importance to our visitors. It's this that we need to emphasise and develop to the very best of our abilities. And the place to gain this experience is historically the place where passengers – travellers, people – would have been, which is within the railway carriage. That is where the visitors of today spend the majority of their time on any Heritage Railway. We owe it to them to make their visit a really positive "railway" experience. (And we owe this to ourselves – unless our visitors have a really good experience, they won't come back!).

I'll quote Linn Moedinger of the Strasburg Railway in Pennsylvania, USA.

When talking about interpretation of the whole realm of railroading he said:

"To look at a car [carriage] with a 'do not touch' sign says 'Oh, well, yeah, that's a really swell car'. But if you can't get in that car, if you can't rattle down the line and hear the creak and groan, and the smoke doesn't get on your shirt, nobody is going to have any idea what you are talking about."

For people visiting any Heritage Railway, interpretation, learning and enjoyment is very much centred on their experience within the railway carriage. It's their environment for most of their visit!

## 'Modern' carriage preservation: British Railways Standard Mark 1 and Mark 2 vehicles



How well do the carriages at present in use on UK Heritage Railways contribute to the overall visitor experience?

Today, usually this means former British Railways Mark 1 carriages. A typical such carriage is seen here, this time on the Worth Valley Railway. These carriages were the first modern-generation all-steel British Railways passenger carriages to see volume production. Many hundreds of these were built between 1954 and 1965. From the Heritage Railway's point of view they have considerable advantages:

- Fairly simple construction and so easy to maintain:
- Vacuum brakes – as applies for almost all of the locomotives in preservation in the UK:
- Importantly, they were available at realistic prices when most of the present Heritage Railways were being set up.

From the passengers' point of view: they are adequately comfortable, and have opening windows – meaning that one can hear and smell and generally appreciate what's going on.

For the Heritage Railways the Mark 1 carriage is a pretty useful carriage, if possibly a little uninspiring.

However, there are problems.

One which all too often evades us is a general feeling of "tattiness" – torn or even missing luggage nets, sagging seats, faded varnish, scuff marks on the doors, minor damage to the woodwork. Overall this sort of thing represents a significant detraction from the visitors' environment and therefore from the overall visitor experience.

Of more significance to the long-term sustainability of these carriages is the question of age. All the Mark 1 carriages are now over 40 years old, many are over 50 years old – which is far beyond the coachbuilders' design life. These carriages are prone to significant problems with rust and corrosion – the side panels, at the windows, and importantly the corner pillars. Many are approaching the time at which major rebuilds will be needed. These will be expensive.

Sadly there's no longer a continuing supply of Mark 1 carriages from the main line railways – none remain in main-line operation. The available stock is therefore that which already in a state of 'preservation' on the Heritage Railways and elsewhere. So: how many Mark 1 railway carriages are available?

This question can be answered by reference to the source material of the ongoing Railway Heritage Register (RHR) Carriage Survey, a joint project under the auspices of the HRA, the [British] National Railway Museum and the London-based Transport Trust and of which the present author is the Honorary Coordinator. The Survey cannot claim absolute accuracy but it is felt that the figures now quoted are indeed of good accuracy and will be of assistance in understanding the overall situation.

The above-mentioned material gives the number of complete Mark 1 railway carriages 'preserved' in the UK Heritage Railways as 1,059. Put another way, that's about 12 miles [19 km] of Mark 1 carriages!

This sounds a tremendous number. But we have previously noted that there are 87 standard gauge Heritage Railways in the UK. This gives an average of only about 12 such carriages for each Railway, which does not give much flexibility. Again noting that the long-term future of the Mark 1s not being good, alternatives are necessary.

The successors to the Mark 1 carriages on the British main line railway system were (somewhat predictably) Mark 2 carriages. These were built in quantity between 1965 and 1974. There's now some 371 of these available for use – but this includes quite a number used by main line charter tour operators.

The Mark 2 carriages are of integral construction: they are air braked: and have progressed from pressure ventilation and heating to full air-conditioning in the later versions (including that shown below). Particularly for the later fully air-



conditioned versions, ongoing maintenance is rather more demanding. Your author has no personal experience of Mark 2 carriages in Heritage Railway operation but fears that, particularly for these later builds, a great deal will be lost from the visitor experience. Travelling in an air-conditioned sealed metal box, with no opening windows, is a long way

from the Heritage Railway visitor experience as generally understood. However, this may of necessity have to be the way forward. If so, this question of "Visitor Experience" will need a great deal of thought.

Returning to the Mark 1 carriages: there is a parallel problem. This is the need to identify the definitive Mark 1 carriage or more likely carriages for ongoing conservation for the future, essentially as "museum" objects. Their importance in UK main-line railway history is certainly enough to justify this.

The RHR Carriage Survey gives an excellent starting point for the "identify" part of this. There are however many problems concerning the "conservation" part of any such project – notably, ownership: responsibility: location: access: and who pays. However, it is suggested that a determined effort should be made to find at least some way in which progress can be made – possibly in the first instance by the Railway Heritage Register project team.

There are many carriages other than British Railways Mark 1 and Mark 2 vehicles in preservation within the UK. Before considering their sustainability – and the ways in which they can help the overall sustainability of the Heritage Railways – we need to note two key dates in British railway history. These are 1 January 1923 and 1 January 1948. On 1 January 1923, the then many small railways were "grouped" into just four large Railways - the Great Western Railway (GWR): the London, Midland & Scottish Railway (LMS): the London & North Eastern Railway (LNER): and the Southern Railway (SR). On 1 January 1948 these "Big Four" railways were nationalised, to form the new "British Railways" (BR).

#### 'Classic' carriage preservation: the "Big Four"

Let's look at the time of the "Big Four" – that is between 1923 and the very end of 1947. Again, source material for the carriage database allows a count of how many carriages survive from this period. Again this is with good but by the nature of the question not with absolute accuracy. Restricting the search to complete carriages on their own wheels the figures are as follows:

- Great Western: 114
- London, Midland & Scottish: 141
- London & North Eastern Railway: 90 (including the one illustrated)
- Southern Railway: 92.

This totals 437 carriages: a quite sizeable resource, of importance when considering "sustainability".

Many of these 437 carriages are wooden-bodied or have bodies with wooden frames: but almost all have steel underframes and therefore potentially can be used as carriages to actually work on Heritage Railways. Indeed several already do, whether occasionally or in regular service. Approaching possible major problems with the Mark 1 fleets emphasise the importance of these 437 or so carriages as a major resource, and as one which is available now.

These older carriages also can allow a significant improvement in the quality of the passenger experience, certainly by comparison with the utilitarian Mark 1s. This can be of considerable help in sustaining the Railway, and consequentially also the carriages in question. Those railways that operate a mixture of Mark 1 and older carriages either regularly or on special occasions will know that visitors very much prefer to travel in the older carriages when available.



Examples of "Big Four" carriages in successful use in this way include the LNER carriages on the North Yorkshire Moors Railway: Southern Railway carriages on the Bluebell Railway and elsewhere: and LMS carriages on the Severn Valley Railway.

The perceived advantages of using these older carriages is well illustrated by the West Somerset Railway. This is a UK Heritage Railway which currently uses nothing but Mark 1 carriages. This Railway is however determined to improve their offered visitor experience by gathering together a working rake of GWR carriages. This is to the extent of bringing one GWR carriage all the way home from Steamtown, Scranton, in Pennsylvania USA to form part of this planned rake.

Spread over the 87 standard gauge railways these 437 carriages from the days of the "Big Four" is not a lot – but it's a useful contribution and certainly will help the sustainability of the Heritage Railways using them, especially if marketed appropriately. In so doing, it also helps the long-term future of the carriages themselves.

It would however be very useful if exemplar carriages within this group could be identified, with consideration given to their assured long-term future as 'Museum' objects. Again, identification can be much helped by the RHR Carriage Survey: and again how then to proceed is a major challenge, hopefully for consideration by the RHR Group and others.

### 'Veteran' carriage preservation: the Pre-Grouping years

Considering now the earliest carriages – those built by the many railways which operated before the January 1924 'Grouping' which produced the "Big Four" Railways. Problems intensify!

The first problem: age. We're now looking at carriages which are at least 83 years old – most definitely beyond the coachbuilder's intended life expectancy. Incidentally, most are (or were) 4 wheeled or 6-wheeled vehicles.

Also, a great number are the proverbial "bodies in fields" or are otherwise no longer complete. Many were withdrawn from railway service many, many years ago and then sold for use as farm stores, or chicken houses, or holiday cottages – or as straightforward living accommodation. This does not stop them being an important historical resource: but it certainly does not help easy restoration for actual use on Heritage Railways!

At this time, not only the body but also the underframe was made of wood. Modern requirements mean that putting any carriage with a wooden underframe into regular service on a Heritage Railway is quite a challenge. This has however been done for a number of such vehicles – as has the alternative approach of restoring the body itself and putting it on to a more recent steel chassis from another vehicle.

There are some excellent examples of wooden-bodied wooden-framed vehicles from these early years in passenger use on the Heritage Railways. However, for the great majority of carriages of this age it's not realistic to rely on restoration to actual use to ensure the survival of that particular carriage. Thus for carriages – or carriage remains – of this age there is a need to take more of a "Museum" approach when trying to establish whether or not a particular carriage (or carriage body, or remains of a carriage body) is worthy of conservation.

Concerning numbers: this time, all known survivors are included, whether intact or not. Note that most of these are (or were) four or six wheeled vehicles: also that it is thought that there is still a considerable number still hidden within farmyards or within the structure of holiday homes etc. The figures below do however represent the very best (and possibly the only!) such information currently available:

Alexandra & Newport Docks: 1	Hull & Barnsley: 4	Metropolitan District: 4
Barry: 6	Isle of Wight: 7	Midland: 40
Bodmin & Wadebridge: 3	Jersey: 1	Monmouthshire: 1
Caledonian: 3	Jersey Eastern: 3	North British: 12
Cambrian: 6	Lancashire & Yorkshire: 13	North Eastern: 43
Central London: 2	Lancashire, Derbyshire & East Coast: 1	North London: 11
City & South London: 3	Liverpool Overhead: 2	North Staffordshire: 3
Cowes & Newport: 2	London & Birmingham: 1	Pullman (various Railways): 20
East Coast Joint Stock: 7	London & North Western: 50	Rhymney: 2
Eastern Counties: 1	London & South Western: 44	Ryde Pier: 1
Glasgow & South Western: 3	London, Brighton & South Coast: 26	Somerset & Dorset Joint: 3
Great Central: 11	London, Chatham & Dover: 28	South Eastern: 2
Great Eastern: 76	London, Tilbury & Southend: 2	South Eastern & Chatham: 26
Great North of Scotland: 23	Manchester & Birmingham: 1	Stockton & Darlington: 3
Great Northern: 33	Manchester, Sheffield & Lincolnshire: 8	Swansea Harbour: 1
Great Northern, Piccadilly & Brompton: 1	Maryport & Carlisle: 1	Taff Vale: 8
GWR (prior to 1924): 70	Metropolitan: 11	Underground Electric: 2
Highland: 7		War Department: 1
		West Coast Joint Stock: 6.

This totals an impressive 668 carriages (or carriage remnants) from a total of 56 railways, all at least 83 years old and many much older than that. The 668 carriages and 56 railways in themselves are figures of no great importance – what is of consequence is the wide range which these cover and their overall historical importance. For many of these pre-Grouping railways very little else survives!



Scope for restoring any carriage from this era to operating condition is limited. There is however a steadily-increasing but modest number of carriages which have indeed been so restored, very usefully improving their long-term future sustainability. This means that there is no obvious "sustainability" route for the majority of carriages from these years. This is particularly challenging because these carriages represent a very significant resource as far as engineering and social history is concerned. Again there is a problem with identifying which of these are of especial importance, and then doing something about it. "Doing something about it" is the critical problem – for a start, just what? Full restoration? In-depth measurement, lots of photos, detained investigation to give a comprehensive dossier for the more important items? Once again, these are matters deserving serious consideration.

#### Conclusions:

Possibly only a very few would wish to argue with the railway carriage being the key location from which any visitor to a Heritage Railway experiences that railway and gains a feeling as to what rail travel in the past actually felt like.

British Railways Mark 1 railway carriages are widely used by most of the UK Heritage Railways. Their future life is very much tied up with the anticipated high cost of any fairly fundamental rebuilding that may be needed in the relatively near future. This will affect not only their future but also that of the Heritage Railways themselves – ever-increasing costs are the key factor here.

There is a separate need to identify and ensure the long-term conservation of key examples of the Mark 1 carriage.

By comparison with the Mark 1 carriages, the sustainability of carriages from the years of the Grouping – 1923 to 1947 – is rather more assured. This is because increasingly the Heritage Railways are becoming aware of the commercial value of using coaches from this era. Restoring them to running order means that they will be looked after to a very much greater extent than would otherwise apply. This will very much help towards assuring their long-term future.

The pre-Grouping carriages (and carriage remnants!) provide a different challenge. Restoration to operating condition and so helping assure their future is not an option for the majority of these, by reason of age, construction and general condition. They do however represent a major social and engineering historical resource and deserve significant attention. Initially, this possibly could be by a rather more in-depth individual survey and assessment than has been possible so far. As for the other groups of carriages discussed above, further consideration is needed: possibly in the first case by the Heritage Railway Register or its component bodies.

*The Railway Heritage Register on-line carriage database covers passenger-rated vehicles across the entire British Isles and can be found via [www.vintagecarriagetrust.org](http://www.vintagecarriagetrust.org) This is a searchable database having over 5,000 entries, most of which are complete with photographs. It is well used, with currently some 800,000 pages downloaded annually.*

Michael Cope has been actively involved within UK railway preservation since 1962 as a "hands on" volunteer with the Keighley & Worth Valley Railway Preservation Society (including spells as Hon. Secretary and then as Hon. Treasurer) and with the Vintage Carriages Trust, based on that Railway (for far too many years as Hon. Secretary, now as one of the Trustees). He is also the Coordinator of the Railway Heritage Register on-line carriages database project.