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# What colour was that?

## The repaint of Newcastle 114

Liveries and the accuracy of their recreations always arouse considerable controversy throughout the railway preservation movement. **Paul Jarman** recounts the trials and tribulations of getting the paint job on a Newcastle tramcar exactly right.





This article could be sub-headed 'adding to the controversy' because the matter of Newcastle's earlier electric tramcar liveries (like so many railway locomotive and rolling stock schemes) has been the subject of much debate, some speculation and also a lot of reasoned and careful thought and research. Most readers will be familiar with the lengthy discussions and emotive debates that (mainly locomotive) colour schemes can evoke. The same applies to tramcars (and probably all other sectors of heritage preservation come to that).

Some background to this story may be useful. Beamish Museum operates a 1.5 mile electric tramway around the extensive museum site, which serves as an attraction in its own right but is also vital in the movement of some 450,000+ visitors per annum from each defined area to the next. Some come just to ride the trams, for others it saves many miles of walking during a visit to the site. The tramway has developed since its inception in 1973 and if each visitor uses the tramway an average of three times in a visit, this equates to nearly 1.4 million passenger journeys per year – all with a current fleet of seven trams drawn from a total number available of up to 10 tramcars (allowing for loans, visiting trams and those under or awaiting overhaul).

There are currently three north-east tramcars in the working fleet, including Gateshead 10 (ex-British Railways Grimsby & Immingham), Sunderland 16 and Newcastle 114.

This latter tram was built in 1901 by Hurst Nelson in Motherwell. It was one of a batch of 20 trams built to the A class design with short canopies and an open top. The shape of these trams led them being known as 'Coffins' – a name also bestowed on the Sunbeam trolleybuses used in the city from which batch Beamish's 501 is an example. Between 1905 and 1907 all of the A class trams were rebuilt with full length canopies and top deck covers.

In 1941, 114 was sold to Sheffield Corporation along with 13 sister A class cars to alleviate a critical shortage of trams in that city, caused by a high level of casualties among tramcars during wartime bombing raids. 114 became No. 317 there and was extensively rebuilt as a fully enclosed tram and outshopped in the 1928 cream and blue livery which it carried until being withdrawn in 1952.



A view of 114 taken in Newcastle and showing the dirt accumulated on the dash panel.



This side view of 114, taken after its repaint, uses a panchromatic negative and shows the bright waist panel (with crest on), contrasting with the dark dash panels at each end.

## Discovered in Scunthorpe

114's lower deck saloon was subsequently one of a batch sold to a farm near Scunthorpe, later being discovered by members of the Tramway Museum Society. Initially rescued and stored at Middle Engine Lane in North Tyneside it was later transferred to Beamish in 1987 for eventual restoration. This was completed in May 1996, using a truck and electrical equipment from Oporto. It has since been a regular performer on the Beamish tramway and is unique in the UK as an open top short canopied car (thus far).

After 14 years' hard service at Beamish 114 was brought into the workshop for an overhaul and repaint in late 2010. Work required included tyre turning and attention to the mechanical components (truck and brakegear) plus a list of the other small jobs that inevitably build up over the years in use. 114 had some attention to its paintwork several years ago, none too successfully. The original finish was never all that had been hoped for due to an incompatibility between the base coats and top coats of paint used. So a repaint to a very high standard was also deemed desirable.

At this stage the curatorial research began and delving into the files as well as various articles on Newcastle tramcars and livery that have appeared over the years in various specialist publications, an inconsistency in scheme appeared. 114 had been outshopped in what was understood to be as-built guise in 1996, a livery described as being dark maroon (deep lake) for dashes, decency and waist panels with chrome yellow rocker panels and window surrounds in ivory.

In December 2007 Bob Howse wrote an article in *Tramway Review* titled 'Newcastle's livery: pictures can deceive' in which he proposed (in doing so reinforcing previous theories) the idea that early photography can greatly mislead the modern viewer as to what livery was carried on Newcastle tramcars before the First World War. He cited the Walter Gratwicke Memorial Lecture for 1977 by Geoffrey Baddeley entitled 'Tramcar Liveries' as a key source. This ventured that the main type of film in use for official photographs up to the 1930s was orthochromatic, which had the particular characteristic in its emulsive content of being blind to red – thus red showed up on negatives as clear film which when

printed was ipso facto dark in appearance. Yellow light (in the sense of yellow livery on a tram) being made up of red and green would fit this criteria. Thus yellows would appear, when printed, the same as dark colours like maroon and red.

The standard portrait of the A class tram (taken at Little Bridge, Gosforth) shows dark dashes, decency panels and waist panels. However, given the above potential discrepancy caused by the orthochromatic film stock likely to have been used, a yellow/orange waist would appear to be the same colour as the dashes when printed – and so an inaccuracy could be perpetuated.

Later film stocks were panchromatic, sensitive to all colours and in use from the 1920s. The continued amateur use of available orthochromatic stock should enable a comparative sample to be built up and this is what Bob Howse created in his December 2007 article. Photographs taken of the same livery but on different film types reveal startling differences in rendition and fully support the proposition. Of course caution must always be exercised in accepting such theories, but it certainly provides enough evidence to be worthy of further thought.

A response in the May 2007 *Tramway Review*, by Robert Clark, supported Bob Howse's ideas and added further information. Mr Clark had studied Hurst Nelson's original records which stated that the livery applied to the Newcastle order was to be 'the same as Glasgow' – with some detail differences in lining. Glasgow Corporation Transport livery at that date was traction orange waist panels, cream rockers and chocolate brown dashes. That Newcastle's general manager for the period 1900-1905, A E Rossignol, had come from Glasgow Corporation would seem to add substantial weight to back this up, and perhaps indicate the use of the Motherwell based builder in the first instance.

To the best of my knowledge the debate was left at that point, but it enabled me the opportunity to delve into my own library in search of a definitive Glasgow Corporation Transport livery for the equivalent period and see how contemporary photographs taken of this compared with those of Newcastle at around the same time. ☺







114 being repainted, with the dash panels having received their first coats of colour.



This view shows 114 lifted clear of its truck and in primer awaiting application of the new colour scheme.

## Lining was ornate

The definitive work is *The Glasgow Tramcar* by Ian G McM Stewart, the second edition of which was published in 1994.

Mr Stewart suggested that the GCT livery owed much to American practice and that paintwork could easily last 15 years in service due to the care and attention paid in applying it at the Coplawhill Car Works in Glasgow where much of the fleet was built. The livery specification was cadmium orange waist panels and ivory rocker panels with plum brown dashes (to hide the dirt).

Lining was ornate and included triple Greek Keys at the corners on the waist panels and was aluminium edged with black lines. Gold and silver were found to be unsuitable in the arduous service conditions of a heavily polluted industrial city. The brown dashes were lined yellow and red and black lining was used around the windows. Floor and roof were battleship grey, staircase treads and handrails maroon, top deck handrails black and the inner sides of the dash panels were khaki. Trucks, lifeguards and trays were maroon.

The history of the Glasgow livery is well known. Early photographs show the dash and waist panels to be apparently the same colour – knowing what we do about the actual livery carried and the relative limitations of orthochromatic film, this does offer comfort to the theory presented by this author and referenced from others, that indeed 114 should carry a variation of the Glasgow livery.

Comparison of livery styles in photographs taken of Newcastle cars in the 1902-1907 period shows the Scottish built A class cars carrying a variation of the livery carried by other trams, notably the colours of the staircase side panels. These are a darker shade on non-A class cars, while are clearly light coloured on a 1905 image of 114 at Byker depot. The same picture seems to show a light colour of numbering – very much in line with the aluminium shade carried in Glasgow. It might be speculation, but to write a full livery specification for a builder would be time consuming – much easier to specify it to be 'the same as...' in this case Glasgow, knowing the builder was already familiar with the scheme, itself very similar to Newcastle's.

Finally, a photograph of 114 immediately after its rebuild with canopies and top cover shows quite clearly the waist panels to be a lighter shade to the dash panels. While there was an intermediate livery style in Newcastle, to see it directly applied to 114 is useful evidence to argue that it was probably a partial repaint when rebuilt (as it was only five or six years old) and that the waist panels were indeed a different colour to the dash panels.

It is interesting to speculate on such matters in relation to early railway company liveries. While there were probably fewer schemes based on red shades (the Midland being an obvious larger example) than there were for green, the depth of shade rendered in black and white photographs is clearly at risk of distortion by the emulsion of orthochromatic film.



A close up 114's dash panel.



## Attention to detail

To carry out 114's repaint Beamish called upon the services of coachpainter and signwriter Phil Anderson (who carried out the stunning repaint of the NRM's J52 and 'Crab' locomotives). His superb work on Blackpool 31 tram at Beamish and his attention to detail were exactly what this project needed. Fortunately 114's body was in sound condition and was rapidly rubbed down and prepared for painting. Once in primer we looked at various shades of 'cadmium yellow' which has such a distinctive orange characteristic that it took some time to settle on a shade (BR warning panel yellow being suspiciously similar incidentally). At this stage there was no going back and as Phil applied each colour and built up the finish I felt more confident that this was the right thing to do! The brown/maroon/plum colour was mixed by Phil with a strong content of Midland Railway crimson in the tin. A shade that fitted descriptions was arrived at and applied and manages to look brown or maroon depending on who is describing it! Lining and varnishing followed and 114 was duly rolled out for commissioning in the early summer.

We were keen to further investigate the rendition of the livery on film and Beamish's





114 basks in the evening sunshine outside Beamish's reconstructed Barclays Bank.

digital communications manager Andy Martin, a keen photographer and exponent of continued use of b&w film stock, put together a collection of period photographic equipment and film. This included stocks of orthochromatic, panchromatic, modern Ilford and paper stocks, all b&w. 114 was duly photographed on both bright and overcast days and the results are included here. What we couldn't replicate was use of truly contemporary film stocks (for obvious reasons) but the results are certainly supportive of our hypothesis.

Further to this, comparison of the livery currently worn by 114 with those carried later (such as on Newcastle 102 at the National Tramway Museum at Crich in Derbyshire) reveals that the main change was to repaint the rocker panels from ivory to the dash panel colour – perhaps to cope with dirt and grime in a heavily industrialised city (we have seen how Glasgow adjusted its livery to suit the dirty road conditions before surfaces were sealed with bitumen), or perhaps to reflect more modern practices in livery styling. Either way, this would have been a much easier correction to make to the fleet than reversing the colours as appeared on 114 when first painted in 1996.

So, I hope that I have demonstrated a weight of argument for deciding on the style of livery 114 now carries. It certainly looks good and it stands up to scrutiny in terms of the historical records which are available.

A minority of enthusiasts have disagreed while many others have been supportive – the basis of the research was published on my blog before the work started and the information fed back through this was added to the record for 114.

It would be interesting to see these ideas developed further to include a variety of schemes, colours and shades throughout the heritage transport arena. Close examination of photographs taken during the mid to late Victorian period can often reveal a certain metallic quality to the rendition of colour used and it would be interesting to see whether this could be recaptured (likewise the wonderful patterns of polishing that were sometimes seen on locomotives).

For those interested in seeing a time lapse film of the repaint (and re-trucking) of 114, visit the Beamish Museum's dedicated YouTube page at: [www.youtube.com/user/BeamishMuseum](http://www.youtube.com/user/BeamishMuseum) and look for the film titled 'How to paint a tram in five minutes!' ■



Phil Anderson applies the black edging to the silver lining on the waist panel of 114.



Phil picks out the beading below the windows on 114. Such work transforms the appearance but is extremely time consuming!