

GCR Rolling Stock – still extant – by Phil Hetherington

Introduction

The Trust is mindful that it has already rescued - saved – nine original carriages from manufacture in the late 1880s to 1911, for the MS&LR and GCR – and is committed in principle to the restoration to operation of them all. However, this latter task is necessarily long term, as the first restoration project has absorbed some 16 years of patient and skilled working, and is determined by three factors – namely availability of skills, manufacturing and display space, and a substantial funding requirement for each vehicle.

Nevertheless, the Trust has still to develop its understanding of passenger and freight development by rail so that it can pass this increasing accumulation of historical knowledge to a much wider public – to encourage transfer of skills to next generations and to provide evidence of the social influence that the railway, in particular the GCR, had in its short existence. The Trust is therefore keen to collect together details of the remaining GCR vehicles, and in collaboration with the NRM and the GCR Main Line Museum, build that knowledge and increase its availability in tangible form and in the collection of historical drawings, specifications and relevant documents.

Having already a massive potential restoration workload – estimated roundly at 150 man years – the Trust is now actively seeking partners to move the project forward. For instance moves by the NRM and GCR Main Line Museum to consider the restoration of the nationally-owned Barnum open saloon no.666 are much welcomed.

Phil Hetherington has made an invaluable contribution by bringing together an outline record of the GCR stock that is thought to exist today.

GCR Goods Stock

Before I do, however, I feel like I should make a few comments about the surviving GCR and related goods stock. The Trust does not currently have any, and given the workload on the carriages I suppose it isn't seeking to get any either, but we should be keeping an eye on the surviving vehicles and unfortunately the picture is not good, with three original GCR vehicles having been lost in the last few of years:

No.	Year	Type	Last known location	Status.
?	1920	Single bolster	NRM Shildon	Stored, under cover but in poor condition. Would be made available to anyone who offered to restore it.
10 / ?	1917 / 1882	GCR van body on MSLR chassis	NRM	BODY SCRAPPED Chassis dismantled and given to Aysgarth station project. No information on what has happened since. Does not look promising...
2606		4w 2 plank open	Darlington RPS	SCRAPPED
6671	1890	4w 4 plank open	Manchester Museum	Restored and under cover. Also known by no. 2703.
22081	?	4w 3 plank open	Chatham	Fictitious number. Restored.

516537	1920	Double bolster	Derwent Valley	SCRAPPED
509950	1903	CLC 6w brake	Kirkby Stephen	Restored but has vertical planking whereas I <i>think</i> it should be horizontal. Not under threat.
539242	1917	Box van, sliding doors	Derwent Valley	Modified (windows added, sliding doors removed). Could be for sale – was under threat last year but has gone quiet.

There are now so few left that I feel that we should be actively seeking, if not to acquire the extant ones then at least to maintain contacts with their custodians in case of future disposal. The one surviving box van is almost certainly available if we want it and, once restored, could happily (if not entirely prototypically) run with the 6-wheelers to give a longer train. The single bolster was apparently offered to the Leicester museum project but turned down...

There is, I believe, a further GCR van body surviving as a garage but whether it would be moveable, let alone restorable, is questionable. It is not listed on the VCT register.

GCR Carriage Stock

The 'overall picture' for the carriage stock does seem somewhat better with the restoration of 946 now at completion, but of course as one major project comes towards its conclusion it is only right that we think about what to do next – and indeed what to do about those vehicles which are still a long way down the queue. I would like to widen this discussion further to include vehicles elsewhere, both with and without a certain future, which would fall within the trust's remit.

No.	Year	Type	Style	Last known location	Status.
?	1873	C		Western Road Community Orchard, Wolverton	VCT list as MSJAR/CLC and Wolverton built so this may not actually be a GCR designed vehicle.
?	1880	FY	4w	Isle of Wight	FYNR No.6, body only. Stored awaiting restoration. There is no way the IoWSR will ever let this one go as it's the only FYNR coach they have. There is, allegedly, another ex-MSLR (later FYNR) vehicle on the island which I believe is part of a house and could become available one day...
?	1905	BT	Sub.	GCR RST	Body in 3 parts, mounted on LMS chassis. VCT report number as one of 575, 580, 585, 590 or 592 but GCR RST have previously referred to it as '555'. Are we any nearer knowing its number?
154	1876	CY	4w	VCT Keighley & Worth Valley	Restored.
228	1910	TO	Barnum	GCR RST	Stored in workshop building. Part restored
373	1889	TZ	6w	GCR RST	Stored in poor condition, flat packed.
652	1916	BT	Sub	Quainton Road	Under cover, under restoration.
664	1910	TO	Barnum	GCR RST	Stored externally. Previously restored externally and ran at GCR under MLST ownership.

666	1910	TO	Barnum	GCR RST	Stored externally. NRM owned.
695	1911	BTO	Barnum	GCR RST	Stored externally. Unique saloon/brake
793	1905	T	Sub	GCR Swithland	Stored externally in poor condition having been cosmetically restored some years ago.
799	1905	T	Sub	GCR RST	Stored externally in poor condition. Conversion to stores vehicle
888	1885	BTZ	6w / 4w	Tanfield	Restored and operating on SR PMV 4w chassis. Ideal brake to run with 373 & 946
946	1888	TZ	6w	GCR RST	Restoration complete.
957	1906	F	Sub ?	Brockford Green, Suffolk	Used as camping coach. One to watch for the future, but not thought under threat.
1076	1890	TZ	6w	Quinton	Restored.
1470	1898	BCZ	6w	Chasewater	Under cover and under restoration. The perfect brake vehicle to run with 373 & 946... seems secure where it is though.
1509	1899	Family Saloon	6w / 4w	Tanfield	A rare example of a surviving Family Saloon. Mounted on SR PMV 4w chassis but doesn't seem to have progressed to full restoration – would be worth enquiring about to run with 373 & 946, though not believed to be at risk.
1663	1903	BCL	Sub clerestory	GCR RST	Stored externally. Body on 50ft LMS underframe.
?	?	T	?	Midland Railway Centre	Listed on VCT as CLC but looks like a GCR design <u>Part body</u> (3 compartments only) stored on wagon chassis. Do we know if it is an ex-6 wheeled or bogie vehicle?
?	?	F	Sub	Garlogie, Aberdeenshire	Listed on VCT as CLC but clearly GCR designed and contemporary with our suburbans. Not preserved. In two pieces but looks fairly sound.

Follow-up – 6-wheel brake to GCR design built by LNER - fully restored.

Photos A1

Caption – This is serious. The Clerestory body no.1663 nearly succumbed to arson – an adjacent DMU carriage obliterated

Caption – GCR Robinson restaurant carriage at Neasden – scrapped

Caption – MS&L Parker London Extension restaurant car at Neasden - scrapped

The Barnums – excursion carriages for the Great Central Railway

– by **John Quick**, Trustee

During the early years of the 20th century the traffic department of the GCR recognised the need for new excursion stock. In October 1909 approval was received for the manufacture of 32 bogie saloons and 6 bogie brake saloons. They were to be built at the company's newly constructed works

at Dukinfield, Manchester. It is believed that these were all delivered the following year though the bogie brake versions may have been released to traffic in 1911.

An American performing circus, the Barnum & Bailey's, toured this country shortly before these new-design carriages were built. The vehicles that conveyed the circus by rail, animals, the equipment including the "big top" and all the staff and performers, were built at the Stoke works of W Renshaw to a distinctly American rail-road style. The new GCR carriages shared some of these of these features – which led in time to their nickname of the Barnums.

This new production, which were of the saloon type, were 63ft 7inches long over the buffers and 60ft long over the body. The extreme width was 9ft and from rail head to the top of the water tank fillers was 12ft 9 ins. Roof ventilators were dispensed with by introducing flush sided vents. Hence these vehicles exploited the GCR loading gauge to maximum advantage. A new design pressed steel bogie with a wheel base of 10ft 6inches was employed. These provided body mount points at 41ft 6ins centres. The result was an excellent ride at speed and over indifferent track, smoothed by the 3ft 7 1/2 in diameter wheels.

We asked John why the bogies had become so much bigger. John's reply: The new, larger bogie was used because the Barnums were, at the time, some of the heaviest stock on the GCR. The earlier 8ft wheelbase bogies which were fitted to the Parkers, and other vehicles, were designed for a shorter and, therefore, lighter carriage.

Another feature was that the underframe was fabricated of steel and had the characteristic stress bars which ensured that the body was freed of any centre sag. To enable the vehicles to travel off the GCR to adjoining company networks – in particular the GER which employed air braking extensively, both vacuum and Westinghouse air brake systems were fitted. Steam heating and electric lighting was fitted throughout, with the unusual provision that both were regulated by passengers. Ventilation was by controllable vents and hand cranked drop lights.

We asked John whether there had been any connection between the GCR discussions with the Pullman Car Co, initially agreed, but discontinued in 1910. And did the Barnum design, not dissimilar to the Pullman carriages, emanate from a potential GCR competing service?

John's reply - I have never read anything which connects Barnums with Pullman cars. There is no mention in the Board Minutes I have on this and I think it important that we realise how quite austere the Barnums were internally when delivered. I suppose that there were some common features; there always are, all rolling stock designers copied others' work but, I have never heard of any linking.

Internally the saloons were laid out as follows, mimicking the design adopted for the Parker first and third class dining cars of 1898 for the London Extension. Passengers entered the carriage by inset doors at the ends and then into an end vestibule. On one side was a water closet compartment, the opposite side a lavatory. Passing through into the saloon, which was 22 ft 6 ins long, there were 32 seats. They were arranged in fours around 8 tables with a central walkway between, and at each table was a large picture window (making the most of the latest large-size glass making), an attendant's push button, an ashtray and match striker, and hat-racks. A novel feature was that in the summer the seating was covered with rattan cane and this was changed in the winter season to upholstered seating. A sliding lockable door (so that separated party groups could be accommodated) gave entry to the second saloon which was a mirror image of the first. The lavatories were supplied with hot and cold water from a ceiling mounted 40gallon tank each end.

We asked John about the uses of the Barnums as dining cars. John's reply: We have photographs of Barnums set up as dining cars and, I feel sure, they were used as such at times, but there was one feature that would have been inconvenient – each table had a pair of folding leaves to enable easy access to and from the seats. I feel that such views were excellent P.R. for the company, but these vehicles were primarily meant

for excursionists. The earlier Parker dining cars were much nearer being Pullman vehicles.

The brake saloons, the only variant of the type of Barnum, were literally a full saloon occupying one half of the vehicle, the other half being a large baggage compartment, with sliding exterior doors and a guard's brake section.

Externally the Barnums broke all the previous GCR design criteria. The universal use of previous panelled sides and ends of past builds had been shelved, although a drawing exists of a proposed but not built panelled Barnum, similar to the Parker dining cars referred to earlier. (*Line diagram from JQ*) When former Swindon apprentice John G Robinson, the new Chief Mechanical Engineer got to work in 1900 he brought a range of new ideas – he was tasked with an ambitious target, to build quicker, at less cost. He determined that carriage ends and sides would be of teak match boarding with bevelled edges. Even the transfers, universally applied in earlier times and indeed rather ornate, were outdated, replaced by cast brass characters about 5 ½ inches in height, which indicated ownership and identity.

These carriages anticipated many of the features that British Rail incorporated in their mass produced saloons built half a century later. The TSOs – or Tourist Second Opens - had large windows, a central walkway and four seats in pairs bench style around tables. The Barnums were the first of many more similar vehicles that ran throughout LNER days and into the BR period. With the introduction of the Barnums and the larger, modern locomotives hauling them, Robinson transformed the GCR into an increasingly efficient, competitive 20th century railway system.

We asked John about the influences in the delivery and timing of the Barnums. John replies: The timing of the introduction of the Barnums was due entirely to the traffic requirements at the time and new production capacity at Dukinfield. The days of the painted two-tone carriage livery on the GCR were coming to an end because of the difficulties of keeping carriages in good external condition. Teak wood does not hold paint well due to the wood's oily nature so paint gave way to varnished wood. Think back to BR days when Gresley teaks were looking shabby because of this. Also we must remember that at that time there were very serious plans to amalgamate the GN, the GE and the GC into one company. Natural varnished teak would have been the livery of the combine. The GCR board decided, in 1908, that this would be the livery of all new carriages from thereon.

On the GCR these saloon carriages were allocated to areas of concentrated population to cope with the likely demand. Today at Ruddington there are three saloons, nos. 228, 665 and 666, and the now unique brake saloon, no.695. When new no.228 was allocated to Manchester London Road, but the other three vehicles were Sheffield-based. Even Mexborough had two on hand. It is believed that all but one, which was destroyed in World War 2, survived into BR days. Thus is testament to their use to the traffic department. The last Barnum was not to be taken out of BR service until October 1958.

We asked John about the confidence in ordering 38 of such a radically different design off the drawing board and where the production was allocated. John replies: I believe that 24 saloons were built at first, but I not sure how many brakes were. The GCR ordered another 8 later. I suspect a study was made of how many would have been required to cover the excursion needs of the traffic department. The allocations of them gives us a clue; 12 at Manchester + 2 brakes, 6 at Sheffield + 2 brakes, 2 at Mexborough, 3 at Nottingham, 3 at Leicester and 6 at Marylebone + 2 brakes. This means that the main population areas served by the GCR were covered when excursions were planned.

When the end came to their passenger service all four carriages were found new employment. No.228 was sold and served in Alexandra Docks in Hull as an engineers-support vehicle, latterly being used to grow tomatoes requiring three stoves (which ultimately rotted the floor). No.664, by now BR no.5664E, became departmental no. DDE320540, the Darlington tools van, hen acquired to run on the Severn Valley and then the GCR. No.5666E was renumbered DE320709, a mobile workshop and store for the Peterborough area. This latter coach is owned by the National Rail

Museum. The brake saloon became BR no.5695E and was allocated to Newcastle area as a mess van and was ultimately saved by the North Yorks Barnum Group.

The restoration of the first Barnum example is being scrupulously planned with the aid of CAD and electronic scheduling and will be commenced shortly. The GCR RST was extremely fortunate when having responded to an advertisement in the local press, it secured a large quantity of redundant teak doors, these having been replaced by steel versions to increase the fire protection in a tobacco warehouse. Machining of the cut down doors has enabled provision for much of the external and internal vertical boards for at least one vehicle, no.228.

Challenges to authenticity have been largely settled by the provision of drawings from the original GCR drawing office and by way of the previous owner of no.695, the North Yorks Barnum Group. However, this failed to provide the evidence needed to deliver the finishings. For instance, to provide drawings for the identifying numerals and owner, transparencies were made from original photographs, to be projected to size, traced and adjusted to enable drawings to be made for casting of the brass items.

Much more recently a considerable research energy has been devoted to the type and colour of material of the upholstery and seating. The NRM and the Public Records Office at Kew appear not to have any helpful records – a major factor of concern as so much was destroyed due to War action. However, that very researching has uncovered a contemporary coloured illustration which will form the basis of evidence when ordering the replacement upholstery covering. The Rattan alternative will not be part of the initial consideration.

The Barnum carriage which will be restored first will require very many hours of work, but most of the bogies are in relatively reasonable condition though needing substantial overhaul. All the interiors were stripped out many years ago and require complete replacement, including the re-running of steam pipes and heating, all the electrics, plumbing of water tank and supply for the water closets and lavatories.

Here is a tremendous opportunity for all to join in to recreate a fascinating slice of GCR railway history.

RTS – 23 March 2017

A2 – Photos

Captions -

Barnums ~ carriages of renown

Team research – by Roger Penson, Trustee

Having completed the original Manchester, Sheffield and Lincolnshire Railway 6-wheel, 5-compartment carriage no. 946 of 1888, we in the GCR Rolling Stock Trust are now turning our attention to what the public affectionately dubbed the Barnums, which technically are described as Open Saloons – Third Class. Some 38 of these were built at the newly-opened Dukinfield Works for the now re-named Great Central Railway.

To the travelling public, as well as to the railway world in general, these carriages – 32 Open Saloons and 6 Composite/brakes (which included a luggage and guard's facility) - must have been a revelation. Built to near-Continental loading gauge, their size, the seating arranged to make the most of their picture windows, electric lighting, and even bell pushes on each of the tables, speaks of a very significant 'move forward' in both comfort and design.

Technical aspects, not necessarily seen by the traveller, included longer bogies with larger diameter wheels, compensation springing, giving an enhanced ride in terms of both speed and smoothness. Built in 1910/11, for the excursion trade, these carriages show how far railway design, based on the increasing understanding of how far apt choices of metals, wood and safety aspects, had come in the 30 years or so between no. 946 and the Barnum design.

Heavily influenced by American production and design practice, partly recognised by the appearance of carriages used by the Barnum and Bailey Circus tour of the kingdom in 1904, and techniques witnessed at the Chicago Railway Fair visited by GCR executives, they were intended to attract members of the public who had rising wages, and hence spare money to go on holiday or day-trips. The increasing speeds of railway travel meant that day excursion trips did not take all day to reach seaside destinations such as Scarborough.

These ideas included mass-production techniques. Whereas no.946 was hand-built, shown by slight differences, for example, in compartment dimensions, Barnums were built along similar lines to Henry Ford's car plants. They were the first GCR type that were production engineered for mass manufacture. This – to restorers, can be a great benefit when planning the restoration of the only four Barnums left. It can also be very much the opposite!

Chasing original detailing

As is often the case, vintage carriages only survive by being adapted, after withdrawal from passenger service, without benefit of new planned drawings to various types of engineering support wagons. Hence the lack of complete interiors, and amendments not at all original. Mass-production requires an enormous amount of

detail, especially in technical drawings, and – in theory, their availability should direct the restorers' efforts (allowing for modern safety requirements) – a boon to those who have never 'had their hands' on one before.

Unfortunately, the 1941 London Blitz put paid to that idea. GCR records which had long been archived in the Marylebone Goods Yard warehouses, which took a serious pasting, with a pile of hot ashes the result. This has left us with two options – either we rely on 'forensics', that is seeking what marks we can find inside, or we look elsewhere. But where?

Fortunately, within GCR, there seems to have been enormous pride in their innovations, and, having patented many of these, much detail – including some fabulous treasure (for restorers) of quite detailed and dimensioned drawings and explanatory text, appeared on the *Railway Engineer*, a monthly magazine directed at designers, draughtsmen and directors of railways across the world. Even during the Great War, issues continued to describe both new and existing innovations, as well as proposing further developments. Copies of this magazine are held at the NRM in York, and their curatorial staff have proved magnificent in the help they have given us.

Recording our finds

Having an inquisitive volunteer with extensive CAD experience, we are beginning to use this information to extrapolate the components for such complex items as the hot water system, wiring diagrams and the like, enabling us to plan an echo of the original build process.

One of the major components the traveller sees on entering a Barnum, of course, is the seating. We were fortunate enough to hold plans and elevations of the 64-person seating per carriage (32 in the composite). These were not strictly to 'engineering' standards, but enough to build a quarter inch-scale model of both seats and tables, in order to prove information needed for the real thing. As this progressed, we decided we could use these as part of an eventual museum model. Thus, we chose a period in the late-1920s to include scale manequins of adult travellers dressed for the times. These were provided by a wonderful local artist in many mediums, and we were delighted at her results.

Let down on colour guides

Many carriage restorers will have seen photographs – both exterior and interior shots – of their types of carriage, and very helpful they are too, as they give the 'atmosphere' of the period and type. Anyone with photos of past family members will realise the problem here! Lack of colour! This is especially problematic when it comes to fabric for seating. In any case, the picture may show your carriage, but who's to say it is not a later recover?

Chasing every lead

This is where it pays to 'read the small print'. Magazines such as the *Railway Engineer*, can contain that last nugget of information you need. For example – always read the 'ERRATUM' section, as we found an apology for an omission from an earlier article that opened up a whole new avenue of research: We had thought that the seating would have been made 'In-House' at GCR's new 1910 production plant at Dukinfield, and this may well have been so for First Class seating (for their other carriages). However, the omission included reference to a company called G. D. PETERS, based in Moorfield, London, from circa 1894. These people were devoted to Transport seating and automatic door opening systems, until - it seems - they closed circa 1956 in Slough. They it was who had 'made the third class seating'. So – a trip to Slough Transport Museum is in the offing. We also know from the erratum that 'First Class carriages had Walnut seating and interiors, and Third Class carriages had Mahogany..'

We were still left with the puzzle about suitable fabric – until one of our volunteers came across another magazine of the period, called *Railway and Travel Monthly*. In an edition dated 1912 (ideal timing!) we found an artist's watercolour of the interior of a Barnum, reproduced in full colour, alongside some text that basically told us no more than we already knew, but at least confirmed our information. Now colour reproduced through the print process can be highly variable, and the passing of time does not help, but we were able to compare colours directly against other known livery details.

Into our possession came a letter from an employee at Dukinfield plant (Carriage Foreman during the 1930s) who claimed the original fabric was CHERRY RED – a colour we would never have thought of – as being 'rather bright!' for the period. The carriages had obviously come in for refurbishment, as he went on to describe a fabric very similar to the shreds we had recovered from another type of carriage – built circa 1905, but carrying a clearly 1930s pattern/colour from LNER days.

So - we have learned not to ignore the slightest hint, the smallest print, and the un-likeliest source on the hunt for guidance when trying to re-create 'the look' for Barnums, and indeed any other carriage or wagon that comes our way.

Managed Build Plan

Not everything is resolved yet, but we have enough to create and start on a managed building plan, thanks to many sources of information, and the wide range of volunteers, artists and technical knowledge. It seems quite rare to be able to use one 'set' of evidence across a number of carriages. We hope this will enable a full rake of these magnificent 'beasts' to show the public what Edwardian through to 1920s travel experience was like.

Rescue considerations

Under the progressive CME John G Robinson, we know that GCR designer staff had attended the Chicago Railway Fair in 1900, and came away inspired by the then

'modern' style of carriages there displayed. Of course, adaptations to the United Kingdom's taste and weather had to be incorporated ~ e.g. no open balcony ends for enjoying the Southern heat and Prairie scapes!

'Picture windows' – enabling the passengers to appreciate the scenery on Excursion traffic - must have been a revelation for the increasing range of passengers, now finding that rising wages (due to increased mechanisation and productivity) gave the mass working classes opportunity for day trips – or longer - to the seaside, from the many Northern industrial towns and cities. Their restrained opulence and comfort both impressed and encouraged the traveller. Their design, including the 'hidden' engineering details the traveller did not see, aimed to fulfill the company aim to be the most comfortable and impressive railway in the U.K. It is almost true to say that – after the Barnum design, railway travel was never the same again – except for the Great War and the extremes that caused.

Naturally, these carriages worked hard over their lifetime, the last ones being withdrawn (after at least two internal seating refits), in the mid-1950s. It is sad but true, that we have only four Barnums left from the original 38, and only because these were 'converted' to a second life to various types of engineering support wagons.

Gazing at these once magnificent beasts, we have to ask some hard questions: “What level of restoration do we pursue?; How are these carriages to tell their story? Where and how do they 'earn their keep?'”. It pays to take time to consider these points very carefully, including as many potential 'user representatives' as possible, alongside the working team. There are, generally, 3 approaches which could be taken:

* CONSERVATION ~ meaning 'save what you've got'. This maintains the item as it is. In consequence, it may not be a usable item, and in anycase it may have later additions that do not truly reflect its original state. However, you could identify these to visitors, and these become part of its history. A static exhibit is the result, possibly lacking interest and excitement, except to a knowledgeable viewer;

* REPAIR – often called 'an honest repair', meaning that what has been done is clearly visible, producing a useable item that could earn revenue and give the user some understanding of 'how it was' for the Edwardian travellers;

* RESTORATION – meaning that the item is fully returned to its original state, using the correct original materials, based on the original engineering drawings and other explicit evidence from the period of manufacture. This is often the ultimate aim of any restorer, but it can produce a 'magnificence' you hardly dare use. Again, this can become merely a static exhibit, not least because modern legislation to permit 'live usage', the carrying of passengers, requires today's enhanced compliant safety features – such as kite-marked Safety Glass, and fire-retardent seating amongst others not so obvious.

In consequence, the decision to work towards a revenue-earning carriage often includes elements of both REPAIR and RESTORATION. It is the only way that the

great number of people, interested in the Heritage Railway experience, can immerse themselves in the impressions of period travel. So -what should we do?

All four Barnums arrived showing little physical evidence: stripped interiors, largely missing brassware, 'modern' (i.e. 1950s lighting), to guide us. There were, however, many useful – and often original, engineering drawings; much descriptive text and sized drawings of details such as water-heating for the washroom, b/w photographs etc., found in archives, books, and letters from railway staff who had first-hand experience of the Barnum brand.

Thankfully, we found much interior wood and metals, to act as patterns at least. We had to devise a work-programme, before we could even develop the restoration programme. This meant the following exercises (currently on-going):

Identify the various 'sections' of future work:

- * Under the solebar, such items as Bogies, Braking Systems, Electricity generation, etc. etc;
- * Exterior Fittings, such as roof, timber cladding, window glass, brassware, etc;
- * Interior Fittings, such as lighting, seating, interior claddings, washroom and toilet design; Water and waste disposal provision, etc;

In short, re-create the work-programme similar to the original build plan. We now have a spreadsheet, from which a planned work-sheet for each of the sub-elements can be created. The above, of course, is useless until you know: what you've still got available, how many and what condition. This leads on to the need for:

Condition and engineering Survey:

Whilst surveys were available, these were around 10 years old. Deterioration, due to outside storage, rendered these unreliable. We had thus to:

- * Organise new surveys by experienced members, recognising that, until work actually commences, we may find un-expected horrors requiring more funds;
- * Expect that any we find will likely delay the programme, but at least we will have other elements we can address, whilst these are 'fixed'. Leading on to:

Stock-take:

A physical stock-take of materials and items held by the Trust. As we hold a range of carriages and a stack of bits, we need to identify, from drawings and photos, whether the items in question actually belong on a Barnum;

- * How far the item matches evidence such as drawings or photographs, or as described in texts we hold;
- * Their condition, especially of any mechanical/technical item, must be assessed for:
 - * restoration/use, or merely acting as a pattern for new;
 - * Quantity held/required for manufacture;

- * Whether we can restore/make on-site, or must sub-contract;
- * Identify members' skills/necessary equipment required:
- * A members' skill/training set is required; or
- * Suppliers must be identified and (in both cases) availability of acceptable materials and their costs must be identified;

Funding considerations:

The spreadsheet must identify both costings of materials and sub-contractor costs (including – where necessary transport off-site); as well as:

- * Timings of expenditure: (This is essential to accelerate fund-raising and monitor costs against progress). It is also an extremely valuable exercise to demonstrate we have the controls in place to manage any funding we derive from funding bodies and donors.

All the time, we must ask ourselves: “Does what we are doing now continue to meet the criteria we started with, and produce a useable and revenue-earning result?” As railway enthusiasts continue to identify and bring onto Heritage lines, engines and rollingstock they deem worthy of rescue, to avoid the build up of a sad and neglected siding space, such considerations must be addressed and adhered to. It is the only way to keep sane!

So – having said and done all that – When can we start?!

Roger Penson Feb 2017

Photos - A3

Captions -

Heritage halfway, better than no way...

Re-using GCR vehicles to conserve them

Decisions in the Heritage Rail world all need hard cash to support them, massive when rare vehicles are concerned – and their life expectancy is under constant threat. Any restoration raises the ire of the rail enthusiast as hated compromises are an essential part of any rescue. But is a part restoration acceptable? That is the current question facing Ruddington-based GCR Rolling Stock Trust.

The old wooden stock present the toughest test. And when the work of years is done, the challenge is always there. Too many or too few rivets. Wrong shaped handles.

That's not the right colour. What colour was it anyway? The cliffs to climb for all heritage restoration sectors are the same – but even more so for those from the early railways. Being much further back in time, they are unsupported by evidence of precise colour swatches or even colour photographs.

It is a tougher task with the Great Central Railway and its predecessors, despite the absolute thoroughness of the George Dow trilogy, as much of the former company's records went up in flames in the 1940s blitz. The total loss in the Marylebone goods yard destroyed the main L&NER and GCR archive. So what indeed was authentic for the earlier liveries and, as our upholstery guru, Roger Penson asks, who can help with the seating design, fabric type, pattern and colours? The team has done brilliantly on the Victorian 6-wheeler now complete. The research has turned to the original 1910-11 G.C.R. “Barnum” carriage manufacture, out of the then new Dukinfield works?

Simple request. Can you help please?....

The need for this information is the more crucial as the GCR Rolling Stock Trust has three Barnums and the National Railway Museum has one. These are the last 4 survivors of that unique design and build. It is also a fact that the potential sources are becoming increasingly scarce as involved people die out and highly valuable “old rubbish and Dad's old memorabilia” is thrown away because its value is simply not recognised.

We were very grateful to be approached recently by the son of a former Colne Valley Museum volunteer who had worked on the early restoration of MS&L 6-wheel carriage no.373, now in the Trust's ownership. Offering invaluable “bits” is to include castings and other vital pieces. Let us hope it comes to be.

Vital storage

As with most Heritage railways storage space for both new and irreplaceable original materials is at a premium so GCR Rolling Stock Trust is launching an unusual and maybe trend setting means of achieving that storage by adapting its existing but unrestored GCR Suburban railway carriage no.799 built at the GCR Gorton works in 1905. As Promoter of the scheme, Clyde Pennington, says:

“On the one hand, we have 8 rescued MS&LR and GCR carriage potential restoration projects here at Ruddington. On the other, we are salvaging, manufacturing and generally accumulating a whole range of relevant information and materials, all of which require fully cataloguing plus a great amount of storage space. This we do not currently have.

Primary Objectives

“Our part-solution is to take this Suburban and convert it into a secure storage unit. This can be divided into unit areas and shelved out for the smaller items, with suitable racking for larger items, such as reclaimed timber and materials already prepared for use.

“The advantages are that, through a relatively simple cladding job on the exterior of the carriage, we will provide ourselves with much needed vandal-resistant and watertight storage space - that will also present well to the public. The finished facility will present an unusual but attractive vehicle in place of the current derelict wreck. It will preserve the carriage chassis and main body framework intact for future restoration. It will ensure that scattered stores can be brought together, catalogued and monitored. And of course, it could set a trend among preservationists who are determined that similar vehicles are not lost to the scrap-man, but saved for future restoration.

“To achieve this, the structure has to be thoroughly photographed and examined. Our aim must be a scheme to avoid causing condensation and further rot. A minimal amount of further removal of external panelling is envisaged as the much deteriorated skin was removed to ensure free air circulation. So some packing will be needed prior to fixing the new skin panels. As always the access to the interior is the most challenging aspect. But there is a cunning plan afoot for that.

What is to be delivered?

By utilising this former 8-compartment carriage No.799, the project will deliver the secure storage facility for our wide ranging stock of wooden and metal parts, fabrics, materials, tools, patterns and fabrications plus a range of museum exhibits, centred around its existing fleet of two MS&LR and seven GCR carriages. Additionally, this much needed asset will enable GCR-RST to produce fully searchable records and catalogues, thus facilitating stock-takes of individual items at last. This task is currently near impossible due to lack of space and the haphazard spread of items around the site.

“As with the Clerestory body of the same period, we are determined to ensure the long term survival of this rare 1905 Gorton-built GC carriage, No.799 (later L&NER no.5799, BR no.040452, which was withdrawn from BR service 16th July 1955 and finally rescued from Hull docks in 1984 by the GCR Coach Group. It was bought at auction from Kim Brooker and donated by Mr Stuart Copson to the GCR Rolling Stock Trust in 1999. Thence, due to site constraints, it has been stored externally at the Heritage Centre, exposed to the vagaries of weather and vandalism.

This proposal will, at a projected modest cost, provide a visually attractive and much needed secure parts storage facility for GCR-RST. It will help conserve no.799 as a future restoration project and it is hoped that it can be easily replicated on other vehicles to provide more site facilities if desired.

As GCR RST Carriage Engineer and Trustee Pat Sumner confirms: “This is an eminently practical scheme which ticks so many boxes. It is straight forward and do-able without a mass of highly skilled volunteers. It also shows very clearly that this halfway approach is an excellent means of securing an historic vehicle for restoration - sometime in the future. It is as well to remind ourselves that the GCR was quite a rail innovator – in locomotive and carriage design, later in signalling and

freight rolling stock. Thus, it is not in our interests to scrap such an interesting under frame design, carried forward to the ‘Barnums’ and later Robinson designs – and also influencing the great Gresley some twenty years later.”

In terms of direct cost and manpower requirements, all are containable and fundable within the Trust's existing income levels. Can the same principle be applied to other GCR vehicles in the Trust's care? That is an open question at this time – until this first adaptation is proved. But this half way house has great merit – and especially as the RST team wants to get into it. Want to join in?

Photos - A4

Captions:

Stripped GCR Suburban carriage no.799 at Ruddington today – Photo -Clyde Pennington

Interior of GCR Suburban no.799 with seating as applied by Hull Docks Engineers – Photo - Clyde Pennington

Basis of the conversion to store vehicle on CAD - by Keith Stimpson

- ENDS -

RTS 27/07/16

RST09/19/05/2016

Understanding Heritage

by Trustee, Tony Keeble, GCR Rolling Stock Trust

Former Joint Owner – MS&LR no 946 of 1888-build

How do we get a better understanding of the value of the railway heritage – which on GCR is rich and represents the heyday of Britain's steam hauled rail transport? The challenge actually increases year by year as new generations have not grown up with the realities, the smoke, steam, smell of hot oil and the liveliness of a locomotive at rest and at full chat. There is a growing gap and that will go on increasing. We are putting a lot of faith in the proposed GCR Main Line museum Annex at Leicester North, with its hope to have substantial workshop and facility to train apprentices.

What can be preserved?

The fact is the railway heritage and preservation is approaching a crisis, as the generations of doers and skilled bodies declines through age and infirmity. The big risk, unless there is much more determination and endeavours to reverse it, is that only those locomotives and stock already restored or in museums will be the reminders of that previous glory. We are only too well aware that the glamour comes

with the gleaming locomotive and most have little interest in the poor relation carriage in which they travel. This is further aggravated by the hierarchy of interest in carriage viewing by the public – with Royal vehicles top, then diners, the first, followed by second class and finally right at the bottom, the humble extremely hard worked mostly neglected and easily scrapped 3rd suburban.

The other factor is of course that any restoration takes an enormous amount of skill, time, dedication and money. It has been no exception that the 6-wheel wreck that came out of British Rail and eventually in the hands of the late Robert Drage and me, in Cambridgeshire, and latterly with a near neighbour Pat Sumner, also came with our aspiration to restore it. One thing to talk a restoration but altogether a different story when it came to starting the real work. It was small enough we thought to be an easily do-able project, and fairly quickly. That was in 1970....

And the heritage railways of the UK do have lines of historic vehicles at risk the whole time. Kim Brooker sold out his GCR collection when it got too much for him – some coming to Ruddington, others to Quainton Road. Even when the owner of the GCR Suburban carriage now at Swithland sidings, thought he would restore it, it has remained derelict and unwanted – and abandoned to the point of scrapping. That brings out the awful truth – once gone, gone for ever.

Caption – GCR Suburban at Swithland awaiting its fate
Photo - Andrew Horrocks-Taylor

That is where we hope to reverse the modern view that only BR Mark 1 carriages are railway history. They are of course very handsome. However, they do not compete in character with the wooden stock of the previous century. Of course the Mark 1s carry by far the bulk of heritage passenger traffic. They are relatively an easier proposition to maintain and repair – by sheer weight of numbers. But as with our later Victorian 6-wheel carriage, now and in original build in 1888, obtaining off-the-shelf materials and parts is a wholly more complex and expensive affair, as each new buffer or stock, brake block or grab handle is bespoke, a one-off order and with no economies of scale. There are probably penny numbers of that type still around.

Nothing is easy....

Our own experience, learning from scratch, has been expensive in hours, skills developing, frustrations of having to undo and redo, over a 15-year period. We chose a small vehicle but the problems and challenges have proved monumental. And we have not finished even now. While the resulting bodywork is superb, as Pat our ex BR Carriage & Wagon Engineer would endorse, there is a mountain of detail work to complete to ensure that the vehicle can run, be passed fit-to-run and become revenue earning. At this point the work below the sole bar is very much common to all eras of carriage design. The end-result has been worth the effort – so far!

Whilst working on the six wheel carriage, we restorers have been amazed at the interest shown by visitors, some of whom appear regularly to inspect our progress. It is very heartening – even though one or two of our team really rather enjoy the

diversion to show admirers what we have been doing and why. It is a particular attraction and one we would not like to change – to show skilled work in progress.

For instance we have had the heavy struggle of extracting the leaf springs at each end, getting those re-fettled and reinstalled, and we are very grateful for the help we got from other groups. The highly unusual Mansell wheels have been scraped back to bare wood to ensure they are seen to be able to continue to carry the weight of the body and valuable passengers. The whole brake system – vacuum operated – must be re-linked and proved able to provide the stopping capability such a public service vehicle needs to be safe. The whole of this is crucial – and the Trust will not let the vehicle be used if there is the slightest doubt.

Priority protection for work done

We took an unusual decision when it came to protecting our newly painted 6-wheeler – and indeed the start has been made again to cover the other GCR vehicles in vulnerable open storage. Even though inside the Engineering Shed, our vintage gem now resides in its own metal-framed cocoon. The Barnums and other carriage stock, which had under cover storage, or was under lighter weight sheeting, is now being progressively covered by heavy-weight tarpaulin. And who does all this protection work? It is all by co-operation of Trust members and our hosts Great Central Railway (Nottingham). And it is hard work – co-coordinating and lifting the material over the roofs of the carriages.

Caption – MS&L no 946 in protective cocoon

Caption – GCR Barnum brake no.695 – under wraps

As Stephen Middleton discovered the hard way, and we are trying to uncover, how do we protect these ancient and valuable vehicles from the occasional neglects during transporting, the chafing and scratching of paintwork, the vagaries of film-makers who work to the tightest of schedules and short cut and damage compartments to achieve the effects they want.

Call for more caring approach

We have concluded that there is need for a new approach by the Heritage Rail Association, and indeed the major heritage railways, that inculcates a new, much more responsible, more caring approach to the whole of the vintage stock that comes their way. This Trust is ploughing through the writing of a protocol to cover all aspects of the appearance of our own increasingly unique carriages. That is from static display at home, the lifting and travelling to other lines, how to be stored, how much weight on the draw bar and how protected from steam locomotive exhausts. And so it goes on.

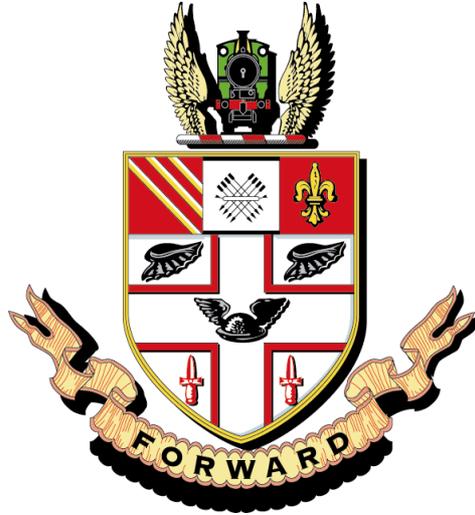
Our hope is that there will be a growing value of all heritage carriage stock and how critical it is not only to convey heritage rail passengers but also to be cherished in its own right.

(Kate - Do we add in the Conditions of Hire here.....? R)

RSTprom06

Photos - A5

(Kate – Are you able to take the brochure and convert it into an illustrated article?)



MS&L No.946

A short History



GCR ROLLING STOCK TRUST

Kate - Full text follows.... R)

What an achievement....

Fifteen years of meticulous rebuilding

This is a record of outstanding achievement by a small band of volunteer enthusiasts. After a painstaking fifteen-year rebuild, the first of the Victorian railway carriages owned by the GCR Rolling Stock Trust is readied for passenger use. Our team has devoted thousands of hours of their invaluable time to travel to and from the former Ministry of Defence Depot at Ruddington, now a flourishing Heritage Railway Centre. Here three remaining bomb-proof buildings have been converted to civilian use, adopted by the present-day enthusiast-run Great Central Railway (Nottingham).

This is where the registered charity GCR Rolling Stock Trust set up and rescued eight original pre-1923 GCR carriages with the intention of eventual restoration. This brochure is a mark of the achievement of our dedicated team and the high quality of work in restoring the first of those carriages. Well done the Restoration team – and thank you for giving so readily of your time, skills and dedication – and your utter unflagging determination.

Richard Tilden Smith
Chairman of the Trustees of the GCR Rolling Stock Trust
11 November 2015

**The re-building of a
Manchester, Sheffield & Lincolnshire Railway
3rd class, 6 wheeled,
five compartment carriage**

Panel

Description of Vehicle

This is a rare survivor of a classic Victorian railway carriage, built by the Manchester, Sheffield and Lincolnshire Railway (MS&LR) (later the Great Central Railway) to the design of the company's Locomotive, Carriage and Wagon Superintendent – Thomas Parker, at their Gorton Works. Carriages of this type were or of similar pattern produced between 1878 and 1899 and later converted for main line use with vacuum braking, and from gas to electric lighting. The 6-wheeled vehicles built by the MS&LR were originated by Charles Sacre, the company's Locomotive and Rolling Stock Engineer.

As built, no.946 was lit using compressed oil gas. It catered for 10 persons per compartment, with 50 seated in all. It may have been used on local trains when new, but spent its first years in express and semi-fast train formations.

Mounted on a wooden frame with side reinforcement of steel plate, the body is mainly teak on oak frames, using traditional coach building methods. The body is carried on three axles with six Mansell wheels (3ft – 7 ½ inches diameter) that are leaf sprung. The buffers similarly react to two massive

springs mounted in the middle of the carriage.

The ‘Historic Railway Carriage Survey’ indicated that this vehicle was built in the late 1870s and was believed to be numbered 766. Later this was thought to have been no. 466. However, after much research by John Quick, of the Great Central Railway Society, and historian to this Trust, determined that no.466 was one of five similar carriages destroyed in Britain’s worst railway disaster, resulting in 436 casualties, mainly from Leith-based The Royal Scots Regiment bound for Gallipoli, at Quintinshill Bridge, near Gretna Green, on the West Coast Main Line, on 22nd May 1915. It has been agreed that this carriage is most likely no.946, although no evidence has been found since to substantiate this.

We are sure that no.946 was built at the-then MS&L Gorton Works, Manchester, in 1888, and the move from four-wheeled vehicles to this type of six-wheeled vehicle reflected the need for increased passenger capacity..

General Dimensions

Overall, the vehicle is 34ft 8 ½ inches long by 8ft 7 ½ inches wide and 12ft 6 ½ inches high. It weighs in the region of 12 tons.

Line drawing side elevation of carriage

Panel

The Early Years

Little is known of its early working history. However, it was withdrawn from passenger revenue service in the early 1930s by the London & North Eastern Railway and converted into a holiday ‘Camping Coach’. There seems little doubt that no. 946 was removed from normal traffic sometime before March 1934 by the L&NER. It was altered to become a camping coach, was repainted green and cream and renumbered C.C. 15. These vehicles were then rented out and delivered to almost anywhere on the network where there was a platform for ease of access, including seaside holiday and remote country destinations. This continued until the commencement of World War Two. Its home depot is unknown. However, it survived into British Railways ownership as a locomotive boiler tube store at Stratford Locomotive Works, London, with the interior stripped out – hence early photographs show missing panels at one end to ease tube handling.

RTS 68 Mono with smashed end panels

RTS Mono shots in Manningtree siding

1971 mono Manningtree siding

Condemned – and saved for rebuild

It was finally condemned in 1967. Fortunately it was not broken up, but was used in the late 1960s in a Civil Defence exercise at Takeley, Hertfordshire, on the now-defunct Bishops Stortford to Braintree line, in a mock train crash - where it suffered considerable damage to its bodywork. Afterwards, it languished in the ‘Up Side yard’ siding at Manningtree station until purchased for preservation in 1971 for the sum of £50, on condition that it was removed promptly. A hint was dropped to a local Royal Engineers squadron that they might transport it as a training exercise to its new site. To this they

enthusiastically agreed and thus it arrived late one summer afternoon at its new home, Robert Drage's New Buildings Farm, Great Chishill in Cambridgeshire, but only after blocking the main road at Halstead, fouling overhead wires at its new location and falling through the floor of the trailer.

1999c on the farm

RTS 49 Inside Hunters lodge

After arrival in June 1971, the missing body panels were replaced with marine ply and the roof weather-proofed. The intention was to use the first London Extension livery at the launch of the Great Central into London, French Grey/Old Oak brown livery. Unfortunately enthusiasm in its restoration waned and it stood unattended for many years until being adapted to become a hunters' shooting lodge.

The carriage was originally lit by compressed oil gas, and all but one of the roof gas vents survived, with only part of this vent remaining in situ – the rest having been removed by the previous game shooter occupants, to install a coke stove. One of two compressed gas storage cylinders also was still attached together with its pressure regulators and some pipework. Unfortunately, none of the 'Pope's Patent' gas lights had survived, nor had any of the door furniture. Most of the under frame was however intact.

2000c Early days

No.946 has very characteristic Mansell wheels, that is wheels which have wooden insets intended to dampen vibration and noise when running. . The oldest axle is dated 24/12/1899 (Christmas Eve no less!) and was tested to 70 tons tyre pressure. Drastically, sometime during the carriage's later years in service it had been 'hump shunted' and had passed through Retarders (which grip the wheels to slow unbraked vehicles). This severely mangled the tyre retaining bolts on all wheels. These have since been extracted and replaced - with great difficulty.

Work in earnest

On arrival in 2002 at Ruddington the body was stripped of all the panelling. The framework was repaired and braced with long steel bolts across each compartment. A replacement end panel was made and fitted and five new compartment partition walls made and fitted. Originally the outer panelling was thin teak, but this is difficult material to preserve and has a tendency to warp and split especially as BR commonly used steel nails. These nails tended to expand when they rusted, so was replaced in the rebuild with marine ply and copper nails.

2000 Arrival on low loader at Ruddington

RTS 29 Arrives at Ruddington – Tony Keeble

2002c Interior with no walls and 2 persons at work RTS

2002c the start exterior

Due to the damage inflicted in the earlier civil defence exercise new buffer and with two newly cast iron buffer housings were fitted. Parts of the oak frame had to be cut out and new wood spliced in. All the body bolts were replaced after machining from steel bar.

Wood splicing

Part of the Fitch Plate timber frame (the wood/steel beams which form the outer beams of the chassis) had also rotted and was replaced.

Brake gear has been renovated and defective parts replaced with substantial machining of new components.

2004c – Jeff Cox vacuum cylinder Variety of shots of rebuild

All ten doors have been painstakingly rebuilt, some from scrap condition, and re-glazed. Totally new seating has been designed and made, employing traditional Victorian/Edwardian techniques but using modern materials to comply with current safety legislations.

Doug Atkins completes last door

The gas lighting has been replicated using a combination of original and new materials. The flame is simulated using a 1.5w LED bulb fed (via the gas pipework) from 12volt storage batteries in the end compartment.

2011-11MSL gas lamps - NEW 2015-02 New lighting commissioned 2014-03 Netting and bracket 2015 04 Top step and undercoat

After fifteen long years, with restoration nearing completion, an estimated ten thousand hours of skilled volunteer labour, and some £35,000 expenditure on materials and paint, no.946 becomes the Trust's flagship in its museum quality finish. This was revealed on 11th November 2015, to the media and the wider world.

The ceremony was dedicated, firstly, to the many talented and skilled members who have contributed their time, financial support and materials to restoring this beautiful historic carriage, and secondly - with a special commemoration service - to the memory of all who were injured or died so tragically in the accident at Quintinshill one hundred years ago.

The future for MS&LR No.946

There is still much detail to finish off before no.946 is completed and passed fit to traverse GCR metals once again. It may well be offered for period film dramas, special charters or for photo shoot occasions. The Trust's objective is to form a rake of fully-restored genuine MS&LR/GCR carriages, all Victorian or Edwardian in origin, hauled by an original or replica GCR engine of that era, running on part of their original route known as the London Extension.

2014 08 C Pennington

Meanwhile, the race is on to provide secure, environmentally clean storage on site, in which no.946 can be displayed to the public, along with other GCR memorabilia currently stored on site. In the longer term it is hoped that no.946 will become part of the display in the new satellite National Railway museum planned for the Leicester end of the restored Great Central Railway – a project

supported by Heritage Lottery funding of some £15 million, which is due to be up and running in the early 2020s.

Panel

Centenary Commemoration of the Quintinshill Rail Disaster - 1915 Tribute to The Royal Scots Regiment

Introduction by Colonel Robert Watson OBE

On 4 August 1914, as war was declared on Germany, the 7th (Leith) Battalion The Royal Scots (The Royal Regiment) (7RS), a Territorial battalion recently returned from two weeks' annual camp training, mobilised at their Drill Hall in Dalmeny Street, Leith. From there they were deployed to positions on the south coast of the Firth of Forth as part of the Forth Defence Force. They remained there until April 1915 when, now known as the 1st/7th Battalion (1/7RS), they joined 52nd (Lowland) Division at Larbert, near Stirling for concentrated training before being deployed to France. At the last moment, as a result of the stalemate after the initial landings in Gallipoli, the Division was diverted there.

At 3 am on Saturday 22 May the first of three trains carrying 1/7RS to Liverpool to embark for Gallipoli left Larbert Station. At 6.49 am that troop-train, which included wooden bodied GCR 6-wheeled carriages, carrying half (498 all ranks) of the Battalion, collided head on with a local passenger train which had been 'parked', facing north, on the south-bound main line at Quintinshill, just north of Gretna, to allow a following express to overtake it. Normally the local train would have been held in one of the loops at Quintinshill but both of these were already occupied by goods trains. The troop-train overturned, mostly onto the neighbouring north-bound mainline track and, a minute later, the Glasgow-bound express ploughed into the wreckage, bursting gas tanks and pipes, causing it to burst into flames.

The ferocity of the fire, and consequent difficulty of rescuing those trapped in the overturned and mangled carriages, was compounded by the fact that most of the carriages were of an old Victorian design, made of wood and lit by gas contained in tanks beneath them. Between the crash and the fire a total of 216 all ranks of the Battalion and 12 others, mostly from the express but including the driver and fireman on the troop-train, died in, or as an immediate result of what was, and remains, Britain's worst railway disaster for numbers killed. A further 220 from the Battalion were injured, many very seriously with, for example, lost limbs, severe burns. Only 7 Officers and 55 soldiers of the 498 who had left Larbert earlier that morning survived unharmed.

Fifteen years ago the Great Central Railway (GCR) Rolling Stock Trust located the remains of one of the type of Victorian carriages forming the majority of the troop-train. Members have spent the period since faithfully and meticulously restoring the carriage to the pristine state it is in today. The Trust most generously decided to dedicate the restored carriage to the memory of those who died at Quintinshill one hundred years ago this year. The Regiment is greatly touched and honoured that there should be such a special Memorial to the 1st/7th Battalion and an event of unique importance in our history.

Mono Quintinshill Rail Disaster Awful sequence of trains on fire – to sepia

Beccy's new square Plaque

Portrait of "berried" man outside office – colour (Author below)

Prepared by Colonel (Ret'd) Robert S B Watson OBE

Robert Watson was born in January 1942 at Farnham, Surrey, then schooled at The Edinburgh Academy, and joined the Army from school at the end of 1959. After two years at Sandhurst, he was commissioned into The Royal Scots in December 1961, joining the 1st Battalion in Tripoli, Libya. "Subsequent tours saw me serving in Tidworth, Aden, West Germany and Northern Ireland and instructing at the School of Infantry. I attended the Australian Army Staff College in 1975 and the US Armed Forces Staff College in 1980.

" After a tour in Defence Operations in The Ministry of Defence, including over the Falklands Campaign, I commanded a Territorial Battalion in Glasgow, and served on the staff at Sandhurst before returning to Scotland as Divisional Colonel of The Scottish Division, responsible for the Scottish Infantry Regiments. My final post, before retiring in 1993, was as Chief of Staff at Army HQ Scotland".

On retirement he was appointed Secretary to the Lowland Reserve Forces and Cadets Association until retiring in 2004. He became a Regimental Trustee in 1993 and, in the same year, joined The Royal Scots Museum and Heritage Committee, which he chaired from 1996 until handing over in October 2015.

Panel

With especial thanks to Our Dedicated Restoration Team

All names in a box

Age shall not weary them....!

No pictures – run on

Tony Keeble

Pat Sumner

Robert Drage

Clyde Pennington

Doug Atkins and Bob Hanson

Andrew David

Peter Wilson

Dr Jeff Cox

Dave Epton

Dave Ablitt

Jim Kent

Melvyn Rowbotham

Wilf Ankers

Roger Penson

Francis Bailey

Tony Goodacre

Richard Potter

John Quick

How the upholstery and seating was restored

It has been a great pleasure to be involved, along with Francis Bailey, in the design and execution of the upholstery of this magnificent and historic carriage. While there was no documentary proof of the technical design of the seating, there was sufficient evidence – from marks on the floor and carriage sides - of the dimensions. Our researcher was able, very fortunately, to discover a memoir from a traveller of the time, which identified both the colour of the fabric, and the fact that the seating was 'deep-buttoned' – along the lines of the familiar 'Chesterfield' sofa.

Having spent some many years restoring such Victorian and Edwardian domestic furniture, we were able, in close collaboration with the coach-building team, to re-create technical drawings for the replacement of the missing seating. With three sections per side – one seat, one back-rest and a head-rest, we were faced with 30 individual items to manufacture. This required a minimum of 90 metres for Grade 5 Fire-retardent pile fabric in a small, neat, black and red pattern – adjudged to be the closest possible match to the likely original fabric.

In its original state, the upholstery would have been hand-made, using coil springs of Victorian design, jute/linen webbing, hessian and horse-hair, over which would have laid 'mungo' (re-claimed wool shoddy) and a wool pile on cotton back top cover. There were no man-made fibres available during the whole period these carriages were manufactured. Fortunately, wool has a tendency to resist fire, if only from a dropped cigarette. However, from a more severe fire, it produces heavy acrid smoke.

Nowadays, regulations require fire-retardancy with certificates to prove. We had thus to adopt modern materials, including foam in place of springs and hair. Despite these requirements, the separate pieces were upholstered using the traditional tools – including foot-long buttoning needles to secure the 1,800 buttons needed to produce the original look. Each corner of each piece was hand-sewn, as my 'ancestor upholsterer' would have done. He would have been using techniques and processes first devised in Georgian times. The result would have amazed Third Class passengers of the day – more used to wooden seating. It deeply impresses us today that so much care and attention was given to railway seating, and we hope that modern-day passengers will enjoy the experience as much as their forebears.

Our restoration team would like to acknowledge, with heart-felt thanks, the assistance of Martin Flear, a local upholsterer, who most generously gave us much material, and access to sources without which we could not have achieved such attractive results.

Roger Penson and Francis Bailey.

2014 Seating and hatrack - Interiors of carriage and seating

2012-4 Template for seat

2015 the last button

New luggage racks and nets

Back page

Beccy's new oval plaque - 946

A blow-by-blow account of the rebuild of MS&L no.946

by Tony Keeble – Trustee and former Co-Owner

This Carriage was built in 1888 at the MS&L Company's works at Gorton, Manchester. It is a 35ft. long, three axle, five compartment third class vehicle. As was usual at this time, lighting was by gas, and wheels were of the Mansell type. Mansell wheels have wooden segments between the axle and the steel tyre; this is to reduce vibration and noise. Gas lighting was discontinued in the early 20th. Century as a result of the horrific fires that gas caused in train accidents – particularly that at Quintinshill in May 1915 when 227 people mainly army personnel died. Despite the proved risks associated with them gas lit carriages were still in use up to the 1950s!

Carriage 946 had a long life on the MS&L, Great Central Railway, LNER. and lastly British Railways. In early days it was used mainly as a suburban carriage by both the MS&L and Great Central railways. Latterly in LNER service it would have been used on country branch line services. When withdrawn from regular use in the early 1930s, it became a Camping Coach, but at the outbreak of war in 1939, it was transferred into departmental use, re-numbered DE 320256 and was located at Stratford London locomotive works as a boiler tube store. This resulted in considerable modification of the vehicle. Firstly, all the compartment partitions were removed, eight of the ten doors were nailed up and most of the door furniture removed. An access point was also made in one end by cutting out the centre framing to assist loading/unloading of the boiler tubes. Fortunately apart from the lamps, all the gas equipment survived.

Added damage

When Stratford steam loco works closed the vehicle was made redundant and surplus to requirements. It was allowed to be used in a Civil Defence exercise in 1960s which resulted in severe damage to one end of the vehicle. Also sometime during this period it was involved in some hump shunting. This was against all regulations for vehicles with Mansell wheels due to their construction.

Hump shunting invariably involves slowing the shunted vehicles by using "Retarders" which clamp on to the wheel rims to reduce the speed of the vehicle. Each Mansell wheel is held together by sixteen 5/8inch Whitworth nuts and bolts around the wheel rims on each centre wheel and 3/4 inch nuts and bolts on the outer wheels- so it doesn't leave much to the imagination as to what happens when they come into contact with retarders, particularly at night – a free firework display, and, much more dangerous, nuts and bolt heads are rapidly converted into shrapnel! This

caused two of us six months soul destroying work removing the remains of the bolts which can be best described as being “S” shaped, and replacing them with new ones.

After 90 years – dumped then saved

The vehicle finally ended its BR days dumped in the up side dock at the back of Manningtree station in Essex, awaiting disposal for sale or scrap.

A friend and I approached the BR procurement department at Derby with a view to purchase and were surprised at the response. “Yes” they said, “You can have it for £50 – provided it is removed within a week of purchase”. Now this presented us with a bit of a problem! A site was available on a farm at Heydon, near to Royston, in Hertfordshire, but it could not be removed by rail due to the damage sustained in the C.D. exercise. We heard rumours that 39 Sqn. Royal Engineers based at Waterbeach might be interested in helping out to give them experience of removing rail equipment by road. Lucky for us they agreed, provided we paid for the meals for their crew. It certainly was an experience.

When loaded, the wheels fell through the floor of the low-loader. They blocked a main road at Halstead on an awkward bend, and when they arrived at New Buildings Farm near Royston the load was too high to clear the electricity power lines at the entrance to the farm. To clear the lines they decided to let the air out of the trailer tyres. Amazingly, the carriage survived the ordeal, and it stayed at the farm for the next 30 years. Some work was done to repair the damage sustained in the Civil Defence exercise, but with lack of funds and labour etc., little was done to fully restore it and it eventually ended up as a lodge for a local game bird shooting club who did additional damage to make it fit their needs.

Final destination

It arrived at Ruddington in 2001, when it was learned that Richard Tilden Smith was trying to collect enough carriages to form a Great Central Railway train which resulted in him visiting the farm resulting in the carriage being denoted to the Rolling Stock Trust. The idea was to fast track restoration of the vehicle. Little did we know what was in store. Although most of the under floor equipment was complete, it required two new buffer headstocks and a complete new floor. The roof had to be stripped exposing severe rot in some places and one of the buffers (which have 10ft. long tail rods,) was “S” shaped, trapping a broken buffer guide. The Churnet Valley Railway did the straightening for us. A replacement buffer guide was also cast.

Stripping what was left of the body panels revealed a number of horrors. All the panels were beyond salvage. Being teak, they were badly split – mainly caused by using ferrous metal panel pins for repairs instead of non-ferrous ones. Rust had badly split both the panels and the frames underneath. When the eight doors which had been nailed up were removed, the whole body became unstable had to be braced with metal straps and tie rods, cleverly hidden by Peter Wilson and his colleagues. The remaining two doors not nailed were a total wreck and both the side frames were

fractured. However at least these two doors still had the door locks in situ. All the compartment partitions have been replaced.

Body lift at last

Having stabilised the body, the next stage of restoration was to lift the body from the chassis, but before this could be done the vehicle had to be removed from the public area. The body is fixed to the chassis by sixteen ¾" x 15" threaded studs. The existing studs had to be cut in half before lifting could take place. Being of wrought iron construction, they had severely rusted reducing their diameter to about ¼" and become embedded in the oak chassis. This job took many days of tedious work, broken saw blades, wrong nails being clouted, and resulting in quite a bit of blasphemy! When the body was eventually lifted, it revealed severe rot in one of the main longitudinal beams – about three feet of it had disappeared and the whole side was held only by the outer metal flitch plate. Where today, could you get a replacement oak beam 35 ft. x 11 in. x 4 in., and if you could, how much would it cost? Eventually it was decided to replace the rotted section by laminating replacement sections using ash, which was then glued and bolted in place.

Buffer beam replacement

Next came re-instating the buffer/draw gear. Oh Boy! What a game. The whole system is tensioned by two very large and very heavy leaf springs, positioned horizontally across the frame. The outer ends of these springs, when under tension, slot on to cast iron heels at the ends of the buffer tail rods and the drawbars are coupled to the centres of each spring. When load is put on the draw gear, it increases the tension on each of the buffers. Little did we know what was in store when we started this job.

First of all both the springs had broken leaves in them and were sent away for repair, only to find that on return, they had been replaced with leaves that were too short! Of this we were totally unaware until we tried to fit them. Now – these springs weigh a ¼ ton each, and had to be lifted up to couple them up to the draw gear- not an easy job especially as they had to be tensioned to two tons pressure by using jacks. As all the draw gear had been removed before we arrived on scene we were unaware that the two drawbars were of different lengths, and of course the law of Sod came into play – having tensioned the springs and fitted one end, the other end drawbar appeared to be too short, and of course we'd got them the wrong way round! All these problems had taken more than six months to overcome, resulting in much despair. Would we ever get to the bottom of all the problems? There was much relief when we finally got the gear re-assembled.

Next to be attempted was the brake gear which was remarkably free of problems due greatly to the efforts of Jeff Cox who manufactured many new parts to replace those worn out. We also had to make a complete new passenger communication chord system as there had never been one fitted previously and would be a requirement before the vehicle could be used to convey passengers. The only part that needed

professional attention was the refurbishment of the vacuum brake cylinder. This was carried out by Rampart, Derby.

Refitting the gas supply

Following this the gas equipment was put back. One of the two gas tanks originally fitted was missing as were all the gas lights. All the other equipment was still with the carriage. Unfortunately the two gas pressure gauges have since been stolen so we have had to obtain a replacements. To replace the missing gas tank, we took one from another six wheeler which is at present flat-packed, awaiting restoration. There is one light per compartment.

Although no actual lamps survive, we have four original cowls and lamp bodies, the missing one was destroyed by the “Shooters” when they decided to fit a fire place in one end of the carriage. A new lamp body has been cast and Pat Sumner has made a replacement cowl, so now the light fittings are complete. Each lamp body is stamped “POPES PATENT LIGHTING Co. LONDON”. Unfortunately we have been unable to get any information about this company and the equipment it produced. Of course, in today’s H&S dominated environment, it will not be possible to use gas for illumination, so electric lighting will have to be used, using the old gas piping to hide the electric cables. This has been done by Clyde Pennington, using LED lights and looks like the genuine article!

The roof has been re-canvassed and painted and new guttering fitted and the ten compartment ventilators replaced. To date we are left with door repairs, a major job as all ten were in a terrible state. Fortunately we have two very clever carpenters and the doors are well on the way to completion.

The work continued.....

STILL TO DO in 2012 – state of play at 24th. June 2012.-

Glazing – we have all the window glass and need only to fit it. All the seat frames have been fitted and await upholstering and we have been very fortunate to have Roger Penson, a skilled upholsterer, join our group. Forty luggage rack brackets are being cast and we are now attempting to fabricate the netting to complete the racks. Four sets of step boards need to be resourced and fitted.

Finally there remains the paint job. The livery will be French grey roof to the window line and chocolate brown for the remainder of the sides. The woodwork in the compartments will be Dulux Trade straw colour with white ceilings. Not yet decided is the upholstery colouring. The first part of a genuine recreated Great Central Railway train will soon be complete. Just another six wheeler, four Barnums, a clerestory bogie half brake composite coach and two suburban coaches still await restoration. All that is needed is much money, a carriage shed and volunteers to achieve our aim... HELP (Required urgently) !

UPDATE AS AT 30TH.NOVEMBER 2012 :-

Most of the internal undercoat painting has been completed in the compartments and we are now in the process of filling the holes and damage to the ceiling boards, door frames and window frames, which has occurred during the long life of the vehicle, prior to top coating, fitting doors and glazing windows.

Glazing commenced on 18th November and seems to be progressing well without any major snags (famous last words!). To date half of the sidelight glass has been fitted. Doug. Atkins has fitted the droplights in the doors of the first compartment which we intend to complete to find out what further problems which may arise as work progresses on the seating, upholstery and fittings throughout the vehicle.

Pat Suner has found information about Popes Patent Lighting equipment, trawling through the NRM Search engine he has found reference to the system. We now have details of the lighting fittings in the compartments. This will enable us to make up electrical lighting which we hope will replicate as near as possible the original equipment.

LUGGAGE RACKS

Using as a pattern, we borrowed from the Manx Steam Railway, forty brackets were cast by Taylors Foundry to enable us to replace the luggage racks in each compartment. Castings have been cleaned, painted and drilled and pattreses manufactured. It will be an intricate job fitting the brackets, keeping them in line on both sides of the compartment partitions as they will have to be located back to back to give them added strength.

UPDATE AS AT 16TH.DECEMBER 2012

Sidelight glazing is now complete in all compartments and a start has been made on fitting the luggage racks. Provided no further unforeseen problems arise then maybe the vehicle will be complete in a.d.2013.

UPDATE AS AT 15TH. APRIL 2013

To date all compartments have received three coats of Dulux Trade white undercoat, and start has been made to top coat the interior of the roof. Next job is to top coat the internal sides which will be straw coloured.

Work has commenced by Roger Penson assisted by Francis Bailey, upholstering the seating, giving a demonstration of manufacture of the buttoning (64 per compartment) to interested visitors.

Luggage rack brackets and framing are complete and ready to be mounted. Next comes the manufacture of the netting – when we can obtain the correct string!

UPDATE AS AT 16TH. AUGUST 2013

All compartments have been painted above seat line. Roof is painted gloss white, remainder Dulux Trade straw.

Pat Sumner has started to fit the grab handles next to each door, but firstly the original bolt holes required drilling out. The internal panelling also required re-facing

to cover the scars caused by filling the bolt holes. A somewhat tedious job, but the result was worth the trouble !

Clyde Pennington has found a firm that has manufactured the glass (plastic) globes for the gas light fittings and has also obtained low voltage LED light bulbs, which he has adapted to expertly resemble the original gas lights.

Doug Atkins has completed eight of the doors which he is in the process of fitting to the carriage.

We had hoped that 2013 would see a completed carriage. Regrettably this won't happen. We still have two doors to complete, upholstery to complete, worn thresholds to level out, luggage racks to fit, brake hoses to obtain, batteries and wiring for the lights, door locks to refurbish and fit and running boards to obtain and fit. So hopefully 2014?

UPDATE AS AT 12TH. JANUARY 2014

Nine of the doors are now complete and Doug. is working on the final one. He is also fitting the door hinges – no easy job. The door is held by three hinges, each one different.

Pat Sumner has been busy fitting the luggage racks. We are now awaiting the luggage rack netting which has been ordered from a contact in Lowestoft and should be here by the end of the month.

Roger and his friend are close to completing upholstery in the first compartment and the effect is fantastic.

Painting interiors is almost complete. It has been decided to paint the lower sides (behind the upholstery) chocolate brown instead of the original plan to leave them bare wood.

Beading on the outside if the sides of the carriage is having to be re-aligned, mainly due to distortion when the carriage was lifted from the chassis.

The end of the tunnel is slowly approaching!!!

UPDATE AS AT 23RD. MARCH 2014

Internal Paint work is now complete. All doors have now been completely refurbished by Doug. Atkins, and seating in the first compartment has been completed by Roger Penson. Luggage rack fittings have been installed and Pat Sumner has started fitting the netting on the racks. Handles have been fitted

on two doors by Bob Hanson so the end is approaching at a faster rate than it has been since started in 2001.

Known items outstanding :- Purchase and fit the two side step boards on each side – four wood boards 35ft. x 11in.x1in. [June 2015] Fit tongue and groove panels on inside of all the doors [March 2015] Hang and fit furnishing to remaining 6 doors. [February 2015] Fill outer panels above each door.[February 2015] Fit lighting in each compartment including fitting electrical wiring and batteries [February 2015]

Purchase and fit vacuum brake hoses [October 2015] Examine and where necessary repair with plastic wood filler any damaged woodwork [March 2015] Fit Pass. comm. alarm chord [May 2014] Fit metal strips on floor in each door way [October 2014] Apply the final coat of paint to the roof AFTER the lighting equipment has been fitted [September 2015] Fit two lamp brackets to each end of the coach [October 2015] Adjust brakes and test vacuum brake system [] Fit grab handles at each end roof and metal steps on buffer stocks [October 2015] Remove remaining bitumen paint from underside of chassis and wheels [July 2016] Clean and varnish wood sections of Mansell wheels [September/October 2015]

UPDATE AS AT 29TH JUNE 2014

All doors have been hung. Netting on luggage racks is complete. Pass. Comm. chain fitted. North end of carriage prepared for priming – delayed due to inclement weather. Still to do – Step boards to purchase and fit, six door locks to fit, fill holes in woodwork after priming, and all the items indicated above

UPDATE AS AT 13TH.JULY 2014

Nottingham end of coach has been given first coat of primer after imperfections in woodwork were filled with two stage wood filler. Leicester end prepared for first coat of primer. Work continues fitting door furniture.

UPDATE AS AT 5TH. OCTOBER 2014

First undercoat has been applied on both ends of the coach, Second compartment upholstery has been completed. Door locks have been fitted to all compartments on one side and on the other door of the first compartment by Bob Hanson. All wiring for lighting has been completed by Clyde Pennington. Doug Atkins is re-aligning beading on the coach sides, preparatory to adding final touches to the doors. Kick strips have been fitted to compartment entrances.

On 12th. September a film crew from BBC radio Scotland, attended making a documentary program to commemorate the centenary of the Quintinshill disaster in May 2015 in which 227 soldiers died in an horrific train crash and a resulting inferno. Some of carriages involved were MSL six wheelers, identical to 946 and the film crew wanted to know all about gas lighting, it being the cause of the inferno. This resulted in Pat Sumner having a long filmed conversation with the presenter (Neil Oliver) about how the system worked also other equipment fitted to the carriage.

UPDATE AS AT 19TH. OCTOBER 2014

Final undercoat applied to both ends of the carriage. Re-aligning of beading being attended to by Doug Atkins. Mis-alignment caused when body was lifted to work on the underframe.

UPDATE AS AT 30TH. NOVEMBER 2014

Final primer and undercoating completed on both ends of carriage. Start made to cleaning and priming side fitch plates. Start made on filling panels above doors. Upholstering of seating in three compartments complete.

UPDATE AS AT 15TH. FEBRUARY 2015.

First coat of primer started on carriage sides. All beading on doors and body sides realigned. "Gas" lighting commissioned. First u/coat paint on carriage sides completed. Bottom step fitted to buffer stock at both ends.

UPDATE AS AT 26th.APRIL 2015

Final coats of primer complete on both sides. First coat of grey undercoat applied to window side. Pitch pine steps added to m/c side fitted by Doug Atkins.

UPDATE AS AT 21ST. JUNE 2015

Final preparations being made in preparation for Top Coat of outside of the carriage being applied by Heritage Painting to museum standard. Some further attention required to interior, such as doors and the floor. Upholstery now complete and fitted. All door handles given final polishing. Carriage featured on BBC4 television in documentary on the 1915 Quintinshill disaster. Application for PRISM grant to finance final painting, declined.

UPDATE AS AT 11TH. SEPTEMBER 2015

Final finish to museum standards commences on 14th. September, Arrangements made to dedicate the vehicle to the memory of those who lost their lives at Quintinshill at Ruddington on 11th. November. There remains to be completed are the interior door painting, varnishing the Mansell wheels with Danish Oil, preparing for fitness to run examination and replacing door furniture, side foot boards, end step plates and handrails giving access to the roof.

UPDATE AS AT 11TH.OCTOBER 2015

All fittings removed for final painting have been replaced, step boards painted with Cuprinol "Black Ash" preservative and refitted. There remains : completing Mansell wheels, fitting vacuum brake hoses, running gear to be adjusted, "Fitness to Run" certification to obtain and clean and varnish droplights and ventilation panels in the compartments.

11TH.NOVEMBER 2015

A dedication to the memory 0436 members of the 7th [Leith] Battalion of the Royal Scots Regiment was held on site and 946 is now a dedicated war memorial.

UPDATE AS AT 11TH.SEPTEMBER 2016

Suspension springs on both end axles have been refurbished and re-fitted. Final underside painting with black bitumen completed. Damaged and worn thresholds repaired. Brake hoses fitted. Screw couplings cleaned and spray painted with "Steel Wheels" cellulose. Droplights re-fitted to open and close easily. There awaits to be done are to move the vehicle around the site to settle the refurbished springs and to

adjust them to correct height; obtain vacuum supply to enable brakes to be adjusted. These two latter items await the co-operation of GCRN.

SUNDAY 25TH, SEPTEMBER 2016

A true “Red Letter” day. For the first time since arrival at Ruddington in July 2001, 946 has been towed out of the workshop and run down the track to settle the re-fettled suspension springs. A successful day with the vehicle behaving satisfactorily with no distortion to the body work – all doors and drop lights still fitting perfectly. There now remains only to clean the floor boards in the compartments and to obtain a source of vacuum to enable brake adjustment to be completed.

SUNDAY 30TH. OCTOBER 2016

Spring heights adjusted to obtain correct buffer height. Final adjustment correct to $\frac{3}{4}$ ” over height. Unable to make further adjustment due to the tops of the spring hanger pins fouling the flitch plates. Thresholds repaired and sanded and given a coating of dark Danish oil. The floors in each compartment will be sanded and cleaned and then given a coating of the same oil. Use of Danish oil was selected as it will not show scuff marks. There now remains only brake adjustment when GCRN can supply a loco so fitted!

SO WHAT HAS BEEN THE FINAL COST?

Materials ?

Contractors fees (Painting, scaffolding) Painting [top coats only]£10350:00

Total hours involved in the 14 plus years restoration.....unknown but must amount in the thousands!

Involved in the restoration to whom we pass our grateful thanks are :

Peter Wilson, Tony Goodacre, Richard Potter, Clyde Pennington, Bob Hanson, Andrew and Thomas Horrox – Taylor, Tom and Robert Drage, Andrew David, John Quick, Dave Ablitt, Jeff Cox, Jim Kent, Keith Spencer, Melvyn Rowthorne, Wilf. Ankers, Doug. Atkins, Roger Penson, Francis Bailey, Richard Tilden Smith, Pat Sumner, - myself [Tony Keeble] and many other short term helpers.

Compiled by Tony Keeble

Photos – A6

Captions -

**Deferred project to erect a
GCR Vintage Carriage shed (1a)**

at the Heritage Centre, Ruddington - 2015

Filling an essential need

GCR Rolling Stock Trust exists to save and recover its stock of eight Victorian and Edwardian carriages, all of which in theory are restorable from their present dilapidated state - and showing the public how it is achieved. Having just engaged some 15 years on its restoration the Trust has an immediate duty to present no.946 to the public, young and old, not only to see what a seasoned restoration team can do to emulate the period skills in metal, wood and woodworking, but also what a very different build-concept was the normal feature of manufacture of Victorian rail carriages – which were a carry forward from horse-drawn carriage construction. The aim is to allow controlled public access to fully upholstered compartments.

At present the Heritage Centre has no provision for presenting and explaining the work that goes into a full size historic vehicle, in protected environment where the public can hear, see and touch – and sit inside – a genuine Victorian carriage. The Trust seeks to correct this deficiency with a modest new-build exhibition space, between the main engineering workshop and the car park.

While this new facility is small, it is intended to be at the heart of the drive by the Great Central Railway to record and explain the development of the railway, its influence on the social changes of the East Midlands and to act as a conduit for preservation - in connection with joint venture GCR/NRM/City of Leicester £15 million rail museum .

Funding of construction

The Rolling Stock Trust is investing some £25,000 in a matching bid for grants from funding bodies. On the basis of what has been presented of the Project so far, a grant of £10,000 has been approved by East Midlands Railway Trust (at the Meeting of Trustees on Thursday 13 December).

Build programme - To be established in two Stages, the first controlled by a main contractor.

Resources to build – To meet agreed programme and to ensure that there is minimum impact on the resources of the Heritage Centre, all the work will be undertaken by contractor staffing. Preferred advisors to date are:

Planning – Andrew Dudley, AD Drawing Services
 Structural Engineer – Andrew Clover, Diamond Wood & Shaw
 Earthworks – Sinbad Plant
 Foundation construction – Killingley of Derby
 Steelwork – Able Engineering
 Main contractor - to be advised.

Features of the Proposed Building No.1a - Stage 1

Size – This has been determined by estimated funding availability, what area is available on site to create an economic structure and provide reasonable vandal and weather-proof cover for completed GCR Vintage rolling stock.

Design – As formulated for and employed in the design and construction of Building no 4, a similar method has been adopted for Building no.1a. This allows for 1) the conversion of an existing lightly insulated wall of Building no.,1 to become a concrete block fire wall with increased insulation properties and 2) the insertion of high level window lights to raise natural light levels within that building.

Fast build – Using concrete pads and strip footings, as with Building no 4, spoil can be extracted and footings installed with minimal interruption to site activities.

Simple structure – Steel frame structure and exterior panelling provide simple build method – as Building no.4 – and concrete block infill gives thermal and fire protection.

Mono slope roof – As with Building no.4, this makes for simplified arrangement for removal of rain water for recovery or to main drains. Insulated roof sheeting will have translucent inserts to provide natural light.

Services - Initially power supplies for heating, lighting and power tools will be required.

Exterior finish – The main side wall is intended to be a masonry infill between steel columns with cast iron existing shaped multi-pane, curved lintel windows (already in stock and subject to availability). The western end facing the yard will be built of concrete infill blocks with roller shutter doors. The eastern end wall facing the Mess Room is being designed to allow an extension to be added and therefore will consist of steel panel finish. All other finishes - masonry colour and bond, style and colour of cladding yet to be considered and approved.

Doors – All to be compliant Fire exits: 1) On the side facing the Mess Room will be double and be compliant for wheel chair access. 2) The double doors facing the Car Park will be inserted into one of the main window apertures. 3) Two roller shutter doors will provide the main access to and from the yard, separated by a single width fire door, as with Building no.1.

Windows – All are recovered typical cast iron frames with multiple lights and curved tops, complementing the style of Building no 5.

Interior layout – 2 standard gauge rail tracks will be laid on ballast above a blinding layer of sand, pending decision on floor design (Stage 2), and a platform of standard height to allow for public viewing. Power supply for power tools and lighting.

Fitting out and Finishing

Stage 2 – to be considered and agreed. This will cover all aspects and use of the interior of Building no 1a, and specify the building services requirements. All to be undertaken when funds are available.

Drawings - AD1

Richard Tilden Smith
30 December 2015
RSTprop07

Deferred project to erect an Extension (1b) to Engineering Building no.1 at the Heritage Centre, Ruddington - 2015

Filling an essential need

GCR Rolling Stock Trust (RST) is aiming to build a new Vintage Carriage shed attached to the Engineering Building no.1 (referred to as Building no.1a) at the Heritage Centre and, as a parallel part of that design and construction of Building no.1a, and offers as a proposal a western extension (tagged Building no.1b to avoid confusion) to increase the working space in the main shop by some (20) percent.

While RST is prepared to carry forward an approved design, based on previous GCRN proposals, to obtain Planning and Building Regulations approvals, it has neither the inclination, nor funds available to undertake the construction itself which it leaves to GCRN/EMRT to progress as deemed appropriate.

While Building no.1b, the proposed extension to the facility, is small, it would provide a substantial increase in the capacity and capability of Building no.1 to cater for larger vehicles, by extending work space cover for a relatively low cost. The net advantage would be that the equivalent of two 65ft long vehicles would be accommodated in each of the three shed roads. This, for instance, would enable the productivity of GCRN volunteers to be improved by their being able to work under cover on two BR Mk 1 carriages at a time with all the engineering facilities immediately accessible to them.

Construction of Building no.1a

The GCR Rolling Stock Trust is investing some £25,000 for this project in a matching bid for grants from funding bodies. On the basis of what has been presented of the Project so far, a grant of £10,000 has been approved by East Midlands Railway Trust (at the Meeting of Trustees on Thursday 13 December 2015). The extension Proposal for Building no.1b was presented as part of the main GCR RST scheme. It is for GCRN to decide whether or not to progress the construction concurrently.

No.1b Build programme - To be established following Planning Consent for Building no.1a which will be under the control of a single main contractor. GCRN has to decide whether and how it might coordinate work with Building no.1b.

1b Resources to build - This for GCRN to decide whether not to participate in the RST build programme. However, the work on Building no.1a is intended to be undertaken by contractor resources.

Features of the Proposed Building Extension No.1b

Structure - Simple portal framed steel structure with block in-filled side walls (one wall shared with proposed Building no.1a) and mono pitch roof. It is noted that existing door frames and roller shutter doors, and other matter, could be recovered for reuse.

Continued 1/2

1 -
- 2 -

Size - This has been determined by the relationship with the dimensions of adjoining Building no.1a to create an economic structure and provide reasonable expansion of productive covered workshop. The Building no.1a extension would cover approximately 17.25 m wide (56ft) by 7.00 m deep (23ft) to produce 120.75 sq m additional work space.

Design - As formulated for and employed in the design and construction of Building no 4, the design is compatible with that for Building no.1a. This allows for maximum reuse of the existing steelwork, doors and door frames and panelling.

Fast build - Using concrete pads and strip footings, as with Building no 4, spoil can be extracted and footings installed with minimal disruption to the use of the building.

Simple structure - Steel frame structure and insulated exterior panelling provide for simple build method – as Building nos.1a and 4.

Mono slope roof - As with Building nos.1 and 4, this makes for simplified arrangement for removal of rain water for recovery or to main drains.

Services - Initially existing power supply runs will be extended and surface water drainage connected to the existing system.

Exterior finish - The western and northern walls will be masonry infill between steel columns. The southern wall is shared as part of the RST scheme.

Doors - All to be compliant Fire exits. Three steel roller shutter doors will presumably provide the main access to and from the yard, separated by a single width fire door, as existing with Building no.1.

Interior layout and fitting out – Decision is a matter for GCRN.

Drawings - AD2

Richard Tilden Smith
30 December 2015
RSTprop08