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# The Prospectus

**August 2022**



LittleLEC competitor Neil Furze at work a RSME on 19 June 2022 with his hard working Rob Roy. Photo John Billard

**A VIEW FROM THE CHAIR  
KNUCKLE JOINTS  
BATTERIES FOR A LITTLE LOCO  
SIXTIES STEAM  
FAREWELL TO THE HARRISONS**

## **THE VIEW FROM THE CHAIR**

**John Billard**

This is being written during the hottest UK weather ever that has caused the short postponement of our regular trustees meeting and, we regret, the Tuesday club running. Health and fire risks were too much. But in the meantime here are a few issues that we, as trustees, are dealing with.

Following the break ins reported last month we are concentrating our efforts on site security. We already have plans for additional lighting, security cameras, more anti climb paint, locks, bricking up windows, strengthening as needed, just making it more difficult for attackers. This is following the advice we have received from the local police and other experts.

We have quantified our losses and considering whether an insurance claim is to be pursued. In the meantime replacement items are being purchased.

Concentration on this effort is side lining some existing site projects other than essential jobs to keep things operational. First things first.

Following our decision last month those who have not now renewed their subs for the current year are now being removed from our mailing lists. This will give us an opportunity to circulate our combined rules document as previously mentioned to a correct list.

An early reminder that our Annual General Meeting is to be held on 27 October. Papers are being prepared and there will be the normal retiring by rotation of trustees, the opportunity to elect, and the opportunity to put motions to the meeting. One such subject is a possibly radical look at our subscription structure and more of this in due course.

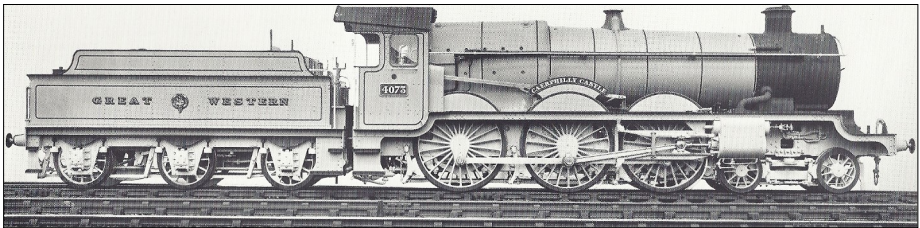
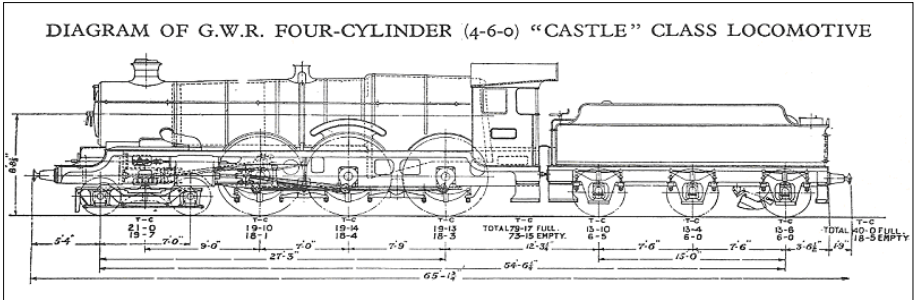
On behalf of all members I express our thanks to Peter and Carol Harrison who are leaving us for pastures new very soon now. Peter has been a tower of strength to RSME over the years and they will all be very much missed. We send all our good wishes to the Harrison family for their new future.

## **GWR Locomotives: Coupling Rod Knuckle Joints Part 3 by Alec Bray**

My attention then turned to the four-cylinder express 4-6-0s. With these, the general rule seemed to be that the Stars and the early batches of Castles (up to number 5012) had the knuckle joint on the first part of the coupling rods (that is, in front of the driving crank) (as did 111 “The Great Bear”), whereas later batches of Castles (certainly from 5023) and all the “Kings” had the joint after the driving crank.

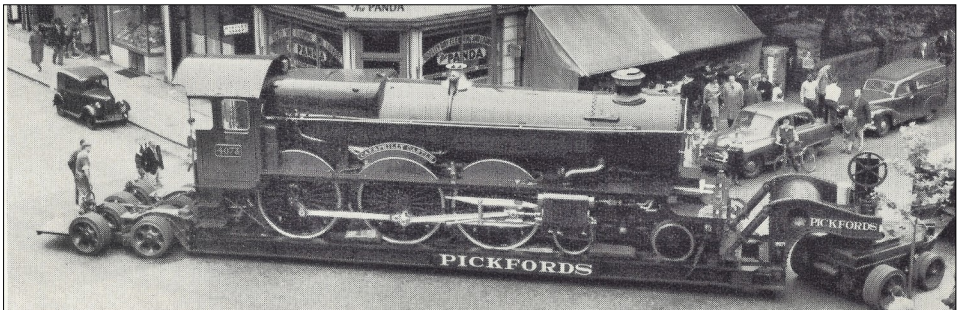
For the Stars and early Castles it seems reasonable as a design feature: the front coupled axle is also a driving axle, and would be subjected to lifting and dropping forces as the leading crank axle was rotated with the cranks at a different phase to the centre coupled wheels, driven by the outside cylinders. There was clearly a design change, however, somewhere around the time of construction of 5018 “St Mawes Castle” (completed 31/07/1932).

It is here that the story gets tricky, however. Diagrams and photographs of 4073 of “Caerphilly Castle” in its original condition clearly show the knuckle joint *before* the centre driving wheel crank [5].



The photograph is from J.H. Russell’s book [6]. A left elevation of 4073 is in “GWR Engines” page 36, that is, from the 1928 edition of the book [1].

However, a poster of “Caerphilly Castle” issued by the Science Museum shows the knuckle joint after the outside cylinder connecting rod crank. Photos of “Caerphilly Castle” being taken to the Science Museum [7] shows the knuckle joint in this position, and the locomotive is in this condition at Steam, the museum of the Great Western Railway.

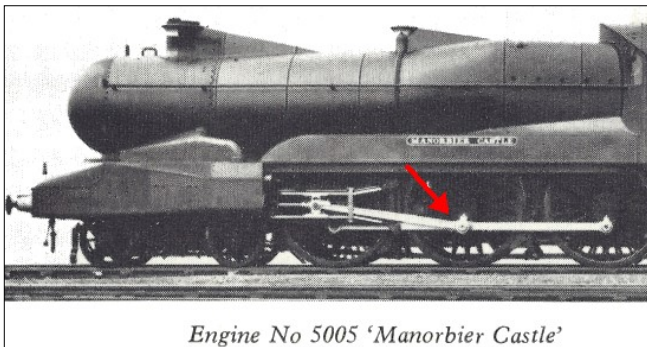
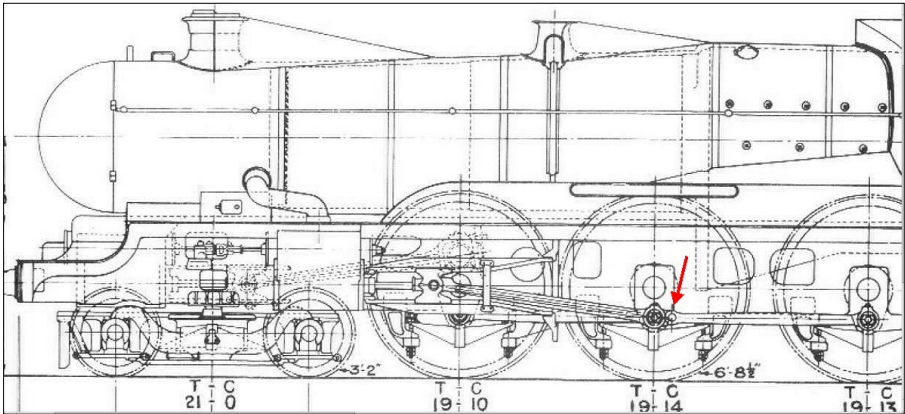


So at some time in its life, “Caerphilly Castle” had its coupling rods replaced.

“Caerphilly Castle” was not the only Castle to have replacement coupling rods. 5080 “Defiant” (built May 1939) as preserved has the knuckle joint in

front of the outside cylinder driving crank, whereas 5043 “Earl of Mount Edgcombe” (built March 1936 – an earlier build date than “Defiant”) has the knuckle joint behind (that is, trailing) the outside cylinder connecting rod crankpin. Interestingly, when 5043’s inside crossheads were checked for repair and refitting, they were found to have been fitted at one time to sister GWR Castle 5080 “Defiant”!

Line illustrations for 5005 “Manorbier Castle” (built June 1927) with its “streamlining” additions (1935)[6] show the knuckle joint behind the centre couple axle crankpin: photographs of the engine in service, however, clearly show that the knuckle joint is in front of the outside driving crank (that is, on the first part of the coupling rod between axle 1 and axle 2) [7].



Since the Locomotive Diagrams (Weight Diagrams) were produced by the GWR Drawing Office, it is surprising that there is this difference – particularly as there was much interest at the time about the “air smoothed” locomotives! The most likely explanation is that by 1938 (the date of the streamlining experiment), the GWR Drawing Office was producing locomotive drawings with the knuckle joint located after the driving wheel crankpin, and simply adapted the “new” weight diagram to show the streamlining...

In the 1946 edition of “GWR Engines”, the Castle or 4073 class is represented by a photograph of locomotive 5000 “Launceston Castle”, which also has the knuckle joint hidden behind the connecting rod, although the locomotive diagram which accompanies the photograph clearly shows the knuckle joint *after* the driving wheel crankpin (page 54). Again perhaps the Drawing Office was ahead of actual locomotive construction!

So, in general, over the space of some 10 years, published Castle class locomotive diagrams showed a change in the location for the knuckle joint.

*To be continued*

## References

[5] Chapman, W. G. *Loco's of the "The Royal Road"* pp123 London The Great Western Railway, 1936 (reprint ISBN 0 85059 081 7)

[6] Russell, J. H. *A Pictorial Record of Great Western Engines* Volume 2 Oxford: Oxford Publishing Company, 1975 SBN: 902888 30 7

Drawings and photographs from the volume above are used by kind permission of Crécy Publishing ([www.crecy.co.uk](http://www.crecy.co.uk)).

[7] Nock, O. S. *The G.W.R Stars, Castles and Kings* part 2 Newton Abbott: David & Charles, 1970 ISBN 0 7153 5149 4

## Batteries for an electric loco

by Terry Wood

After having problems with the wheels spinning on my electric loco when carrying passengers or when the track is wet, I decided to fit some extra batteries to give more weight and hopefully more traction. The problem was where to put them, the dummy boiler was already full and at first I tried fitting them into the cab but room was restricted because of the motor, the only way to fit them in was to move the dummy boiler rear and firebox right back which then looked a bit odd because you no longer had a cab plus in order to remove the batteries for transit you had to take the back off the loco which was a bit awkward.



The only other alternative was to make up some battery carriers at the rear of the dummy boiler one on each side in front of the cab so that when the batteries were fitted they looked a bit like water tanks. I found a strip of thick aluminum two feet long and 2 " wide in the work shop which when cut in half would be long enough providing I only bolted one side of it to the dummy boiler.

The first thing to do was to bend each strip to the appropriate dimensions in order to hold the batteries in place. Not possessing a sheet metal folding machine I improvised by using two pieces of angle iron one end clamped together using mole grips while the other end was fitted in a vice. Once the piece was lined up it was a simple matter of bending the metal at right angles using



a hand each time to form the correct shape and being aluminium, it was fairly easy to do if it had been steel it would have been much more difficult.

Once the carriers had been made it was just a matter of drilling the holes in the carriers and the dummy boiler and bolting everything up making sure to use spring washers as well to stop everything rattling loose when on the track. I then had to wire all four batteries in series and parallel to achieve 24 volts to power the motor then connect to the motor controller and test on the bench with the driving wheels up in the air all seems ok all I have to do now is try it on the track!

## A FOND GOODBYE TO PETER, CAROL AND CHRIS

Photos by Richard Coleman



20 July was marked by a presentation to Peter, Carol and Chris Harrison to mark their leaving to their new home in Derbyshire. Trustee Chair John Billard presented them with mementos to celebrate their work for RSME over some 15 years and all present wished them well for the future.

Peter and Chris received Christopher Valkionen's book of National Railway Museum engineering drawings and Carol was given two patio roses for their new garden.





*Above.* Normal services on the Bluebell were provided by the Adams Radial Tank and the ex-Chesham stock from the Met.



*Above* Empty stock into Paddington with Hawksworth pannier No 1504 seen by young spotters.



*Above* Another Weymouth street scene with an unusual Renault Dauphine in company with ex-GW pannier 9754 and a steam ship.



*Left* An East Grinstead bound SECR H class 31263 at Three Bridges. *Above,* Schools class 30901 *Winchester* on the LMR at Willesden 1A.



++++ STOP PRESS +++++

**Shockingly there has been a further break—in at the club house. The Thames Valley Police are again involved and their forensics team are investigating. The trustees are taking every effort possible to protect our property. Please give them all your support.**

## DIARY

### August

Sunday 7th Public running	12 noon onwards
Saturday 13th Club running	10:30 onwards
Tuesday 23rd Club running	10:30 onwards

### September

Sunday 4th Public running	12 noon onwards
Saturday 10th Club running	10:30 onwards

**Warriors Maintenance Day every Wednesday unless notified.**

**Note from the Editor. Thank you to all contributors. Please remember that the copy deadline is now 20th of the month and material, unless previously notified, can be held over if received after that date.**

**Please provide photographs as separate files and not embedded into the text.**

Opinions expressed in PROSPECTUS are the personal views of the contributor and cannot be taken as reflecting the views of the trustees or editor.

**The deadline for the September issue is 20 August**

Contributions may be submitted in hard or soft copy to the editor.

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***Please write for Prospectus. Photos welcomed.  
Comments by RSME members on any subject appearing in  
Prospectus are welcomed by the editor.***