GWR 517 Class No 848 – a Tale of Three Chassis

(Uploaded to RMWeb 30 Sep 2018)

Introduction

GWR No 848 was a member of the very long-lived 517 class. She was built in 1875, rebuilt and modernised several times and finally scrapped in 1945. For fuller details, check out the reference list (below).

My model started life as an Airfix 14XX class, bought new around 1980. Never a brilliant runner, its plunger pickups failed after a short while. I did attempt to upgrade the pickups with home-made wipers, but with little success. Eventually, it contributed parts to keep another of its class running.

In the mid-2000s, I bought (via eBay) a Dapol chassis which fitted the body perfectly. (The current Hornby design appears to be the same as Dapol's.) When new, it ran very sweetly. Around 2009, I took the opportunity to convert the model to a 1930s period 517 class which ran in the Mid-Wales area that many of my collection are focussed upon. I briefly described the conversion of the model in Ref.1. It still ran sweetly.

In recent times, the model's running became very rough. The causes were traced to:

- Tired wiper pickups making intermittent contact
- Warped plastic chassis bottom (Hornby Part X8065) which allowed too much vertical movement of the driven axles in the die-cast chassis block
- Traction tyres preventing good power pickup and also not running perfectly smoothly

I tried a few fixes, which did not work too well:

- Adjustment of wiper pickups. (Reassembly was more challenging than a Chinese puzzle!)
- Replacement of traction tyres with Bullfrog Snot (Difficult to get a perfectly smooth tyre.)
- Replacement of rubber-tyred wheels with a pair recovered from the old Airfix chassis (Better power pickup, poor traction, and still ran roughly. The driving wheels were not quite square on the axles and could not be corrected.)
- Replacement of Airfix/Dapol wheels with Romfords. (The chassis still ran roughly, with too much slack.)
- Application of shim plastic sheets to take up the slack between the chassis bottom and the diecast block (It still ran roughly!)

I decided to make a new brass chassis. I thought about using a Comet chassis, from Wizard models, but found that, while the list price of a kit was acceptable, the airmail charges to Australia quoted on the Wizard website were simply exorbitant – more than doubling the list price. I therefore scratchbuilt a new chassis from another offcut of the same piece of brass channel that I used for the project described in Ref. 2.

Construction

Channel was cut to the same length as Dapol chassis.

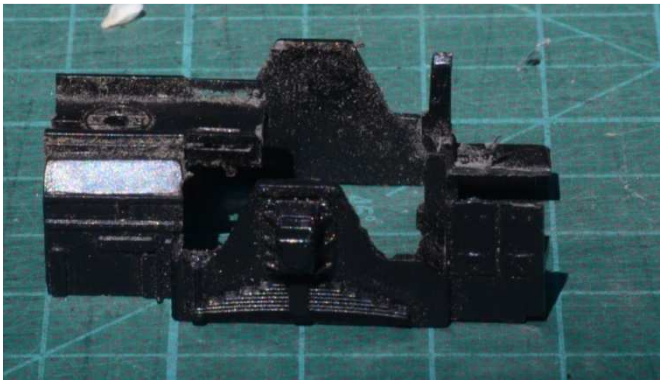
Paper overlays of frame were prepared from copies of Fig 1, page 22 of Ref 3 glued to brass channel as a guide for drilling.

Driving wheel axle holes were drilled undersize, then opened up carefully, ensuring that the axles were parallel to each other and vertical to the chassis.

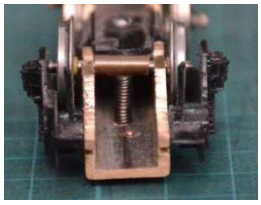
The lower side of the channel was sculpted to represent the outline of the prototype's frames, using the paper overlays as guides.

A slot was cut for the vertical movement of the rear axle.

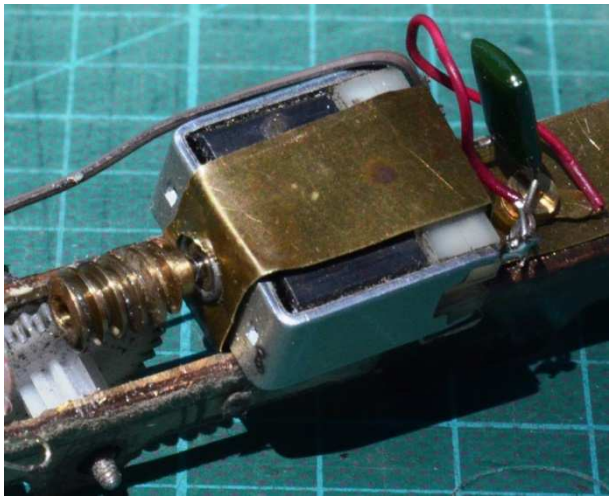
The plastic dummy rear axlebox assembly was cut from the scrap Airfix chassis bottom and trimmed to fit the new brass chassis.



The rear wheelset was installed with my usual springing system, as detailed in Ref. 2.



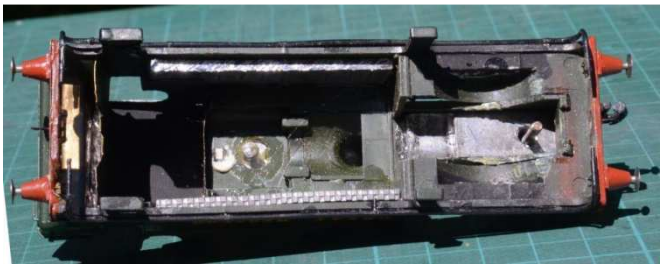
The motor and worm gear from the discarded Dapol chassis was mounted on top of the new chassis, driving on the second axle, and mated with a suitable nylon gear from my spares box. The motor was kept in place by a bespoke sheet brass fitting.



The Romford wheels were drilled and tapped 10BA for the crankpins and new connecting rods made from car windscreen rubber steel reinforcing metal.

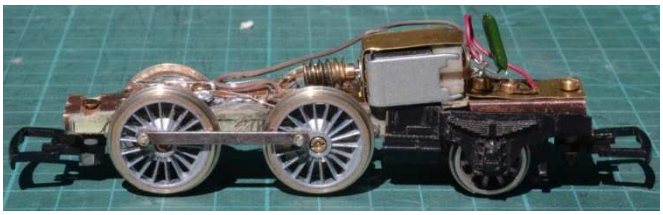
Pickups were made from PC board and nickel silver wire and screwed to the top of the chassis. The inner vertical surfaces of the front wheel splashers were cut away to make room for the pickups.

Lead ballast weights were made and fitted to the insides of the smokebox and both side tanks.



Tension-lock couplings were screwed to front and rear, set to avoid buffer-locking with Autocoaches on 1st radius curves, as found on my Gennigael layout (Ref.10).

Before painting, the completed chassis looked like this:



Results

The model works and is no longer the rough runner that it was! I don't have to just look at it longingly on the shelf! It no longer has the fine brake detail seen on Airfix, Dapol and Hornby chassis, but who cares, if it works? (They are hard to see when the model is moving, anyway.)

It has a good speed range and can pull and shunt suitable loads. It looks fine with a short string of 4-wheelers or an autocoach – especially on Gennigael.

Parts

- 12mm brass C channel
- 20mm dia Romford wheels & 1/8" axles
- Romford crankpins
- Steel strips recovered from old windscreen wipers
- Scrap Airfix 14XX chassis bottom (similar to Hornby X8065)
- Dapol motor & worm from 14XX
- 0.010" brass sheet
- 0.4mm nickel silver wire
- 8BA screws, nuts & washers
- Lead weight offcut from Rivarossi 4-4-0, as used in Ref.11.
- Offcuts of lead-based linotype strips

References

1. Post 22 here: http://www.rmweb.co.uk/community/index.php?/topic/64173-gwr-14xx-to-517/

2. http://www.rmweb.co.uk/community/index.php?/topic/132253-gwr-ex-cardiff-railway-kitson-0-6-2t/
3. Model Railways, Jan 1980, pp 22-26
4. Model Railways, Feb 1980, pp 92-97
5. Railway Modeller, Oct 1997, pp 454-456
6. GWR Journal, No.74, Spring 2010, pp 63-80
7. GWR Journal, No.75, Summer 2010, pp 122-145
8. Mike Romans: "Great Western 0-4-2Ts", Locomotives Illustrated No.60 (Ian Allan, Jul-Aug 1988)
9. C.C.Green: "Cambrian Railways Album – 2" (Ian Allan, 1981)
10. http://www.rmweb.co.uk/community/index.php?/topic/83929-gennigael-a-fictional-mid-wales-branch-terminus/
11. http://www.rmweb.co.uk/community/index.php?/topic/134586-gwr-stella-2-4-0-kitbash/