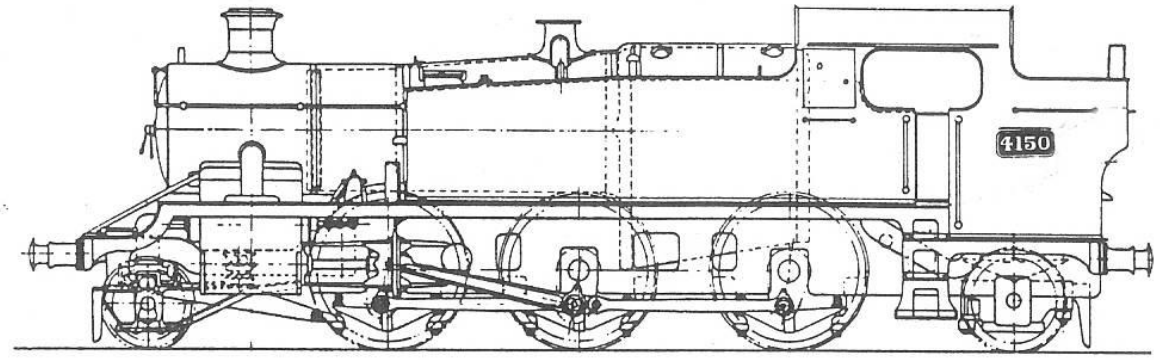
The 4150 Fund



Newsletter 2012

Including notice of the A.G.M. on 25th February

Chairman: Peter Maddicks
Treasurer: John Whitcomb
Secretary: Peter Willoughby
Committee: Derek Brixey-Mike Hutt
Dave Massey - Dave Insull - Frank Walker

The bunker taking shape and a trial fitting of the baffles Tony Summerton

CHAIRMANS REPORT

I will start my report this year with the sad news of the death of Miles Snow who passed away in December. Miles was heavily involved with the restoration of 4150 in the early days at Bewdley. He spent many happy hours cleaning scraping and painting various components as they were required. We lost contact with him in the late 80's during the quiet time of the loco's restoration. I was very pleased to catch up with him upon the relaunch of the fund over the last couple of years and our sympathies go to his wife, family and many friends at this sad and difficult time.

It has been another busy period for the fund, fund raising continuing to do well and more than keeping pace with restoration work. With work on the locomotive progressing on many fronts. A more detailed engineering report will follow on later in the Newsletter.

Last year's Peep behind the Scenes was a more subdued event but still raised a useful sum of money for 4150. This year's event is going to be much bigger as Peter W will explain in his report at the AGM but please if you can try and help out as much as you can on both days, it would be much appreciated.

Look forward to seeing as many if you as possible at the Annual General Meeting.

Peter Maddicks
Hon. Chairman 4150

SECRETARY'S REPORT

A date for your diary is **Saturday 21st and Sunday 22nd July's "Peep Behind the Scenes".** This is a major fund raising event which also elevates the profile of the SVR and **4150,** and any help at all will be welcome - please get in touch as soon as possible, as we are always pushed to the limit. The letter at the top of Page 2 was received some time ago and demonstrates how 4150 touched the lives of others long before becoming the focus of our Fund. It has been reproduced with the writer's permission and shows the affection still felt for our engine. It also includes a hidden message for the need to continue to build on our bank balance. With the boiler estimate finally in our possession and 2012 seeing work start on the tanks things are beginning to get serious and will involve serious money. Few of us need reminding that finances have been tight since the economic down turn which coincided with The 4150 Fund's re-launch. ***The good news is*** we currently have over £45,000 in the bank despite having to compete with other groups, the devastating line washout and the Wheeldrop Appeal. ***The not so good news is*** in the next couple of years or so we will need at least as much again before our urgently needed engine can be returned to steam. 2013 will mark the 40th year since The 4150 Fund was formed and 4150 was removed from Barry providing a milestone to redouble our efforts for the final push, but more on that next year. Recently the years appear to have taken their toll on a few of the early stalwarts of The Fund and we have lost some dear friends and regular contributors. The latest being over the Christmas break, I was contacted by his widow in the new year who informed me instead of floral tributes a collection for his beloved 4150 has been requested, a much appreciated gesture.
As for this year we need to keep edging towards our all important goal so please consider our special boiler appeal. These the year regular monthly subscriptions are really important - just £5 a month, less than two pints of beer, will bring in £60 over the year and will count towards your share allocation. A special application form can be found at the rear of this newsletter or is available directly from The Fund. If you belong to a group, even one not directly railway related, this may provide a fund raising opportunity, and consider donating any unwanted railway books or memorabilia which can be sold on our behalf through the EMF Fund shop at Bewdley, always worth a look when visiting 4150. With almost 200 Shareholders a little effort from everybody will make a worthwhile impact.

24 June 2010

Dear Mr. Willoughby

I spoke to you on the phone the other day about 4150. I first saw it – almost brand new – on its allocation to STB on the evening of 24th June 1947. She was on a local stopping passenger train, just having set off from Rowley Regis to Blackheath Station and about to enter Old Hill tunnel. (4150 at STB and 4153 at KDR were the source of much joy to us schoolboy train spotters: "They're making more '51' Class Tankers"!)

24 June 1947 was my 14th birthday. Today is my 77th and I have great pleasure in contributing £5 for each of the 63 years of 4150's life since I first saw it. Here is my cheque for £315, I'm sure you'll find it some help in bringing 4150 back to life.

With best wishes

Edgar Brown

P.S. I've had a lifetime of interest in all things Great Western; it's great to see such a lively GWR presence at the SVR.

All in a day's work for 4150

We are grateful to the Editor of the Journal of the Stephenson Locomotive Society for permission to publish the following article

An Account of a Footplate Journey through the Severn Tunnel on a G.W.R. Steam Locomotive

Since the construction of the Severn Tunnel a prominent feature of Severn Tunnel Junction Locomotive Depot was the large allocation of engines purely for assisting trains through the tunnel up the 1 in 100 gradient on the Gloucester side and the 1 in 90 gradient on the Monmouth side. Of course the Depot had other locomotives for normal running requirements but with the decline of mineral traffic in the late 1950s and early 1960s there was a corresponding drop in motive power numbers. At the date of this journey the stud of banking engines had fallen to about 12 – all 2-6-2 tank engines of the former G.W.R. 5100 class.

It was on the fine afternoon of 8th April 1965, that I joined the crew of Number 4150 who were preparing the engine for the afternoon's work at the running shed. About 1.30 pm we moved off bunker first to the West end of the station to wait for a goods train in need of assistance. At 2.15 pm the train arrived and No. 4150 eased back into position at the head of the train with the train engine a Hymek diesel behind.

Some twenty minutes later we moved off through the station past the locomotive shed off the mainline into a loop at the commencement of the dip down into the tunnel mouth. Once inside the loop we stopped to allow an express through on the main line. After the section was cleared we moved off and ran down into the tunnel with the train engine doing the work – the pilot just ran freely at the train's pace. On entering the tunnel the noise became deafening and the cab filled with sulphurous smoke. The fireman shut the firebox door after each shovelful in the true G.W.R. tradition and it was only the occasional light from the fire on firing that broke the complete blackness. This made it impossible to see anything inside or outside the cab. At this stage I was standing behind the driver and as we neared the bottom of the incline under the river the driver shouted in my ear above the din that he would open the regulator so that the locomotive would change the retarding effect on the train to a gradual pull which would be intensified as we started to climb up the Gloucestershire side. This is of great importance to avoid a sudden snatch on the coupling which would result in breakages. It was quite apparent when we had started climbing up for a tiny pin point of light showed in the pitch darkness. The time taken to reach this pin point seemed interminable but finally we burst out into the sunshine up the cutting to Pilning where we came to a stand in another loop.

4150 was uncoupled and we ran light bunker first to the rear of the train and then came up behind the brake van (chimney first of course). After waiting for another express to pass the diesel moved the train off and 4150 was to assist by banking at the rear. The driver explained the technique was to push the rear of the train gently to take up the load from the train engine but not to try and push the whole train along. We proceeded into Patchway tunnel and the rear light shining on the brake van made it comparatively simple to maintain a consistent position and thrust by sight. The driver pointed out, however, that if the train had been hauled by a steam engine it would have filled the tunnel with smoke and steam, completely obliterating the tail lamp and the banking engine could only be driven by feel.

On emerging from Patchway tunnel we reached the summit and the regulator was closed allowing the train ahead to gradually draw away while 4150 coasted through Patchway station to the East end braking to a standstill opposite Filton aircraft works. We waited for two trains to pass and then the reversing lever was set appropriately and we crossed over onto the down line and proceeded bunker first to Pilning running onto the loop line en route.

While enjoying the cup of tea I learnt that it might be necessary to wait quite a few hours for a train back into South Wales, but this was not to be for soon afterwards the car ferry train arrived from Severn Tunnel Junction hauled by a sister 2-6-2T (4115) and we were to take the train back again. We moved forward onto the up main line and reversed onto the train which had been shunted onto the down line by the other engine.

There were very few passengers and only one car. Within ten minutes we were off again and this time the driver said we could open up a little. The throaty exhaust cough resulting from the regulator handle movement gave a most impressive feel of power control. The beat of the vacuum pump and the A.T.C. bell ringing periodically emphasised that even in 1965 the G.W.R. was not dead. The engine hurtled down the cutting towards the tunnel mouth looking like a rabbit hole ridiculously too small for the machine running towards it. The view was quite clear through the rear spectacle plate and the driver estimated the speed to be in the region approaching 70 m.p.h. as we entered the tunnel. The return passage was consequently more rapid but the driver slowed down as we reached the bottom, allowing the engine to accelerate gradually up the Monmouthshire side avoiding any excessive regulator opening which would shower the train with smuts. Once again we burst out of the darkness into the rock cutting on the Monmouthshire side past Severn Tunnel West signal box and into the station where I left the train.

I feel most fortunate in having experienced this journey through Britain's longest tunnel from the footplate and I can easily appreciate the difficulties and discomforts of the crew in steam days.
The trip will remain firmly planted in my memory but two features in particular stand out, these are:

(a) the feel of the immense power output which the driver has in his control;

(b) the smoothness of the ride both forwards and backwards particularly the latter when on this occasion the speed was higher.

B.D. Coldwell

ENGINEERING REPORT

Work during the last twelve months has concentrated on construction of the new bunker, as this and the tanks are probably the biggest challenge we have to meet before we can consider pushing for a slot in the boiler shop. The principle remains to rivet everything where rivets are visible, but to weld as much of the internal structure as possible in the interests of speed and economy. We are too close to houses at Bewdley to consider riveting on a large scale, so we are drilling all of the steel sheets and the substantial internal 'skeleton' of heavy angle to which they are attached, and then bolting everything together until the entire bunker can be taken up to Bridgnorth for riveting in the boiler shop. The clearance holes for 1/2" and 3/8" rivets are 9/16" and 13/32" respectively, and it so happens that 14mm and 10mm metric bolts are an almost perfect fit for the clearance holes, keeping the various components securely in their correct positions with a minimum of scope for unwanted movement. They're also cheap (!), but we have to ensure that none end up staying anywhere on the loco in the long run - Whitworth nuts and bolts are the Swindon norm, and Bridgnorth would rightly get upset if anything else found its way onto the engine. Hence the blue paint adorning every metric nut and bolt, the cause of much admiring comment but I'm afraid they're only temporary! Alternate holes are bolted, and when rivets are eventually put into the intermediate holes, the bolts will be removed for those holes also to be riveted.

The welded 'box' seen in part on the left covers the sloping section of the loco mainframes, where they drop from footplate level to bunker base level.

A glance at a photo of a 41xx bunker will demonstrate just how many holes there are to be drilled, each of them going through between 13mm and 26mm of steel. We still haven't had time to count them, but one of these days..... An impressive spectacle at this time of year is to see the bunker from the outside when we've got a light set up inside it - something akin to a demented pepper pot, and certainly an acid test for confirming that all the holes are in line! Much of the drilling has been done by Terry Howes, who has a knack for inventing things and found time to design and construct a jig for drilling holes in angle or strip at predetermined centres in a perfect straight line. This will really come into its own on the tanks, where virtually all the steel we use will be brand new - no need to line up with old oval and irregular holes in wavy lines, as we initially did on the bunker. A lot of time was spent last year sorting out the large (and heavy) sheet which forms the upper part of the back of the bunker. This is 7ft wide, and has two opposing radiuses built in, so was always going to be a challenge. Too wide for our supplier's rollers, it had to be made in two sections, and unfortunately the rolling of the difficult smaller radius wasn't quite the same on the two sheets. So we ended up having to cut the two sheets into four before welding them back together again, with much welding, cutting and grinding in between. This sheet is still positioned temporarily on the old bunker, but we are anxious to get it in place on the new one as soon as possible to confirm it's a good fit. We are conscious at all times that we're dealing with a water vessel which has to not leak, so accuracy of fit is something of a mantra. Lucky the people constructing bunkers for pannier tanks and small prairies, which contain nothing but coal!

Progress on the bunker was also slowed by a change of strategy during the summer, brought about by an inspection by Ian Walker and Duncan Ballard, Bridgnorth Production Manager and Boiler Shop Contracts Manager respectively, of the work completed so far. As they were both in Bewdley for an SVR meeting, we asked if they would have a look at 4150, specifically to review what we were doing on the new bunker.

They were happy with all of the new structure as fitted onto the frames of the loco, but were far from happy with the plan to cut out and re-use the back corner sheets and upper coal plate from the old bunker, along with the angles forming their supporting framework (our plan had been to lift these out in one piece by crane, and with the loco positioned alongside, drop them into place and line them up with holes already drilled in the new structure). Ian and Duncan pointed out various areas where the old plate was wasted, and numerous elongated rivet holes and areas of pitting in the old angles which might cause potential water leaks. At first this seemed a setback, as we'd been approaching the point where we could merge the two halves together and finish the bunker off, but on reflection the end result should be significantly better if everything in it is new, even though completion has been delayed by several months. Bridgnorth may have been influenced by their experience with 1501, which had entered traffic in the late 1990s with its bunker containing a mixture of old steel and new, but corrosion in the re-used old platework has led to a decision to replace the entire bunker during the loco's current overhaul.

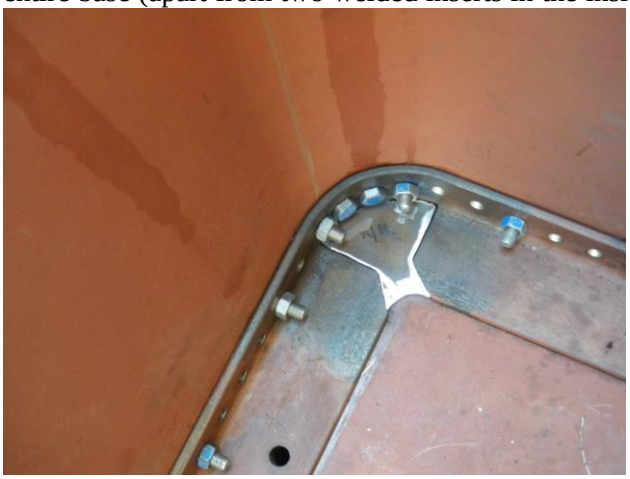
Upper section of the rear of the bunker, positioned temporarily on the old bunker. Note that the bottom halves of the old corner sheets have been carefully cut out.

On the positive side, we will at least now avoid what would have been a very tense hour or two trying to line up rows of holes in two very large structures which have been drilled independently, and one of which would be dangling from a crane. However careful the drilling, this would have been a lot to ask, and could be regarded as a nightmare avoided! Progressing one sheet or angle at a time is a lot easier on the nerves. Something else we would have needed is a major shunt involving much of Bewdley yard, in order to get the loco positioned alongside the old bunker - another nightmare avoided! We do though now have the problem of fabricating the awkward corner sheets at the top of the back of the bunker, but we've cut out the really difficult multi-radiused corners at the centre of these sheets from the old bunker, and found them to be in excellent condition - the corrosion about which Bridgnorth were so concerned is around the edges of the old sheets, where they meet the angles and flat strips to which they are attached. This is a similar phenomenon to the grooving which causes a lot of problems along the lap joints in boilers and fireboxes. We have the option of either welding the central section of the old corners into an outer 'frame' of new sheet - another challenge for our ace welder Bob Russell - or having new corner sheets made complete, which Bridgnorth works are planning to do shortly for 1501.

Checking the radius of the butt strip linking upper and lower rear sheets.

One consequence of creating a new framework for the back half of the bunker is that we've had to develop a technique for bending hefty angle and flat strip to follow the curvature of the various sheets they relate to. In the case of angle, this involves cutting out a calculated length of one 'web' of the angle and using a great deal of heat to bend the other web round a solid steel former of the right radius. A new section of curved web is then welded into the gap left by the piece that was cut out. This sounds a bit 'agricultural', but has turned out to be quite successful, even on the massive 100x60x10mm angle which forms the inner perimeter of the bunker base. Final tweaking of some of these radiuses will have to await the arrival of the coal plate, in order to ensure there are absolutely no air (and hence water) gaps between sheet and angle

To sum up the position on the bunker, the front half is completely finished and drilled ready for riveting, as is the entire base (apart from two welded inserts in the inside angle) and the bottom half of the back. New top corner sheets have been rolled and fitted, but need modification to incorporate the old corners. The new upper central sheet is complete but needs drilling (this is imminent), and everything above that is complete. The two transverse baffles and their associated angles are complete, as is the longitudinal one except where it joins the coal plate. The coal plate, which separates the coal space from the water space, is in fact the only part of the new bunker still missing - at 8mm it is too thick for our previous supplier to roll and guillotine, so we will shortly be approaching firms in the Black Country capable of taking the work on. We've set ourselves a target of having the bunker completed ready for riveting and final welding in time for the Behind the Scenes weekend in July, after which we'll start ordering steel for the tanks.



The large angle round the inner perimeter of the bunker base, with insert to be welded in. The hole is for one of the 3/4" bolts securing the bunker to the loco frames.

As was the case last year, work on the bunker has diverted Dave Link from the job of fabricating the 'crinolines' - the steel framework to which the boiler cladding will be attached. We have, though, been given the crinolines which were made at Bridgnorth for 2857 but were not, in the end, used on the loco. We are optimistic that they can be used on 4150 with a certain amount of modification, which would save us a lot of time and effort. They were retrieved from Bridgnorth after Christmas on one of the last trains operating before services were suspended for engineering work.

Steve Morgan has been smartening up the backhead cladding sheets (which fit on the back of the firebox in the cab, behind the cab fittings). There are a dozen or so sheets altogether, made in different shapes and sizes to accommodate the various cab fittings and their mounting points, so the end result is something of a jigsaw puzzle. They are thicker gauge than the rest of the boiler and firebox cladding, so they have suffered minimal corrosion and can all be re-used, much improved in appearance now with their new paint. Also being painted by Steve at present are the flat cladding sheets at the front and back of the cylinder casting, made during the year by Alan Atkinson. Although these sheets are flat, several of their edges are radiused to fit the casting, requiring much use of our new jigsaw and a lot of filing to shape. We will be pleased to get these fitted on the loco, along with their associated heat-retentive lagging, as once they are in place we can re-fit the refurbished front sand boxes and free up some valuable space in the container. Alan is currently tackling the more difficult pieces of cladding which go over the valve end covers and are shaped rather like a meat dish.

Having finished the new steam heat pipework under the loco, Paul Mason has moved on to the vacuum pipe and completed about half so far, before his daughter's wedding caused a temporary halt to progress. Paul has been able to salvage the flanges from the old vacuum pipe, as they are in excellent condition and able to be skimmed for re-use with minimal loss of thickness.

Preparing to fit the upper rear sheets, with the bottom angles now fully drilled.

We are grateful to Terry Jenkins of the Erlestoke Manor Fund for renewing and machining (at home) the driver's and fireman's seat pivots, which had worn distinctly oval, and to Dave Kilner for replacing a number of rotten planks in both ends of our Fruit D - the old ones were letting in rather too much wind and rain!