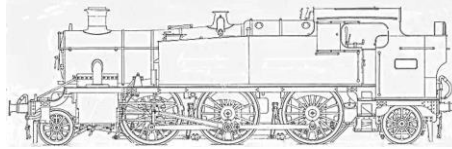


The 4150 Fund 2018 Newsletter



CHAIRMAN'S REPORT

Welcome to the 4150 2018 Newsletter. 2017 has been a very busy and productive year for the Fund, the biggest event being The Big Lift on the 29th March.

The financial position of the fund continues to improve and as you probably know, we have the last Severn Valley Railway Association raffle in the Spring magazine. It is hoped this will be well supported so we will be able to complete the Boiler and still have money in the bank to finish the job and hopefully have a little left in reserve.

There is also good news on the boiler, the report from the visit by the Boilersmith was excellent. This was then followed by an inspection from the "Non-Destructive Testing" representative to check for any cracking, particularly in the firebox corners. This report was also good, and the results will go to the Insurance Inspector. This report will detail the work required and from this the Severn Valley Railway will give us a Quote. We hope we will have more information by the time of the AGM. The only outstanding issue is whether some localised corrosion pitting on the boiler barrel can be repaired by a coded welder or will need replacement platework.

There is going to be a delay in the boiler going to Bridgnorth as we are to follow 2968 into the Boiler shop, there being work still to be done to complete other boilers which are taking longer than was first planned.

As we have a very good and capable team at Bewdley, it has been decided to start the boiler prep work before it goes to Bridgnorth. This will be supervised by the Boilersmiths and on the positive side, all work we do will save us time and money on the final bill. The Trustees have started to discuss the running agreement with the Severn Valley Railway General Manager, Nick Ralls. It may seem a little early to be dealing with this, but it will take time to get right and time does tend to fly by as we know. I hope to see you at the Annual General Meeting 14.00hrs at Kidderminster Railway Museum on the 24th February 2018. On a personal note I would like to pass on congratulations to Dave Insull (a 4150 stalwart) on his marriage to Louise.

SECRETARY'S REPORT

I would like to thank all those who have once again contributed to making this Newsletter a very interesting read. This year 2018 marks 40 years since 4150 arrived at Bewdley and 10 years since the commitment to see the engine in steam and in service on the valley was re-energised. In those 10 years tremendous progress on the restoration has been made, seeing where we are today would have appeared little more than a pipedream back then. It has only been made possible by the financial support and enthusiasm of Fund members. Feedback has established the preference for a hard copy of the Newsletter, so we have reverted to a format which is more cost effective to produce, the postage is more than covered by the increase in revenue the Newsletter always appears to generate. It will still be prepared in electronic form and available on request, as well as being featured on the 4150 Fund website, minus the confidential information. It was suggested at the last AGM we would be looking at updating the constitution and were to include a copy of the current one in this Newsletter, however as there are numerous issues still needing to be clarified we have had to put this on hold, a copy of the constitution is still available to any member on request. If there is no letter 'e' after your surname on the address label on the envelope this *Newsletter* arrives in, it possibly means we do not have an email address for you. If you now have one, please send it to pww1946@gmail.com and please remember to inform me of any address change. Give some thought to the name of the engine being piloted by 4150 out of Dainton Tunnel on page 2, one of our more learned committee members thought he had it only to change his mind. So, it is over to you - all suggestions will be listed in the next Newsletter. A digital image of the photograph can be made available on request.

Shareholder Trip

Shareholders' and Friends' events

Evening Social Special—Saturday 5th May 2018

For the third year we intend to run an evening special train which has proved very popular and enjoyable. We include three fine old Great Western toplight coaches, and provide suitable liquid refreshments (thanks in part to our shareholders and supporters at Bewdley Brewery). Such has been the success of this pleasant and enjoyable evening that we are repeating it for the third year running. It will depart from Kidderminster at **7.25pm** for a leisurely run up the valley with a short break at Bridgnorth for a visit to the Railwayman's Arms, or for the more energetic a quick walk to and from the local chip shop. We will then run back to Kidderminster by 10.30 in time to make connections back to Stourbridge and to Birmingham. The cost of the tickets has been kept at £15 per head, there are 9 coaches so plenty of room for friends and family and their friends and family - all are welcome.

Bookings and tickets can be obtained in the usual way from the team at the engine or email Dave McFall at davidmcfall@blueyonder.co.uk. Also from Dave Adams via the Erlestoke Manor fund shop at Bewdley.

Name the Loco

This photo taken by H.W. Robinson was sent in by a Shareholder who holds the copyright. It shows 4150 when it was shedded at Newton Abbot piloting a 'Castle' emerging from Dainton Tunnel at the western end presumably heading for Plymouth. The leading coach is a Super Saloon which normally saw service on the ocean liner traffic between Plymouth and Paddington. The picture was taken c1958, this date appears to be about right because 4150 is still in black with early crest. It is thought to have been painted green with later crest in June 1959 when overhauled at Caerphilly. Despite the best efforts of many the "Castle Class" cannot be identified – unless of course you know different! It appears to have a 'Castle Class' addition to the nameplate reducing the options to 31 engines and the Hawksworth tender providing another clue further reducing the options.



Overhaul in the "Works"

There is some debate as to whether this location is Swindon or Caerphilly, the latter being favoured. 4150 is in the centre of the three Prairies nearest the camera, the engine with the smoke box door open is 4161. If the works is Caerphilly, the date would be either September 1956 or June 1959. Confirmation on both date and location welcomed.



Final part of a very difficult puzzle

Dave Link holding the most complicated part of our new boiler cladding which covers the top front of the outer firebox often referred to as "Elephants Ears ". Like many groups we had struggled to get these items made but we hit on the idea of approaching a car body repair specialist.

Help was nearer than we could have imagined, Luke Martin from Classic Motor Cars of Bridgnorth produced these two beautiful panels for us by hand. Finding people with such skill is getting ever more difficult.

Our NDT Preparation Team

Dave Insull, Dave McFall, Charles Lewis and Peter Dodson on Thursday 14th December 2017 with Jim Kennedy of Bolton NDT & Inspection limited. We spent one of the coldest days of the year de-icing and de-rusting for Jim who completed the non-destructive testing of our outer firebox plates and boiler barrel. As mentioned in the Chairmans report results from the testing are very favourable.



History repeating itself

As you are about to read details of the recent boiler lift, just take a small step back in time. This photograph showing a previous lift was sent in by a Fund Member, taken in 1980 just 2 years after 4150 first arrived at Bewdley. Note not a hard hat or Hi-Viz jacket in sight.

The Big Lift

Unlike back in the 1980s preparing for a boiler lift is not so far removed from a full-scale military operation, and in the days leading up to “The Big Lift” many hurdles had to be crossed. From the outset it was decided to carry out the task over two days both needing to be non-running days. In order to clear the yard of a lot of rolling stock and park it in the platforms, two diesel shunters were required. Leaving a full day for the lift meant more time to deal with any issues that might arise. Even something as innocuous as wind direction could potentially have a major impact on the lift.



A near perfect fit

things like underground pipework, overhead cables and siting of the crane needed to be taken into account. A risk assessment and method statement were produced in triplicate, a copy for the SVR Infrastructure



Safe and secure

On the 29th of March the team gathered (fingers crossed) for the lift, the first job was to have the obligatory site briefing and then to set up the crane. The first lift was to place the bunker on the frames, a near perfect fit being achieved. The tanks were then lifted into position to see how they would locate while the boiler was still in the frames. Only some very minor adjustments were required on the right-hand tank, in all an acknowledgement of the high standard of workmanship from our dedicated team.

The tanks were taken off ready for the boiler to be removed, a point of balance was established and once this was done the boiler was removed and carefully placed onto GWR Wagon 40554 kindly loaned to The Fund by the Wagon Department, our thanks for that. Once the boiler was strapped down and made secure we then put the tanks back on and positioned the cab roof. The Fund is indebted to the eleven who turned up on the day and who are photographed adjacent to the Locomotive. This was a fantastic turn out and the day went without a hitch.

A month before the lift we needed to get everyone on board, so your Chairman met with the crane driver from Stourport Crane Hire, known locally as Badger, (please notice the free advert). We then had a site meeting, where the lift was debated in detail,



The Lift

Photo Bob Sweet

Manager, one for our records and one for the crane operator. During this time, we had to liaise with the Carriage & Wagon departments as well as the other groups using the site. However well planned, some disruption to their daily routine would be inevitable, so our thanks to them for their support and understanding.



A winning team

ENGINEERING REPORT

The major challenge facing us in 2017 has been fitting of the boiler and firebox cladding. Early in the year, while the boiler was still in the frames and under cover from the elements, we made a number of improvements to the fit of the backhead cladding, and to the brackets for the all-important tea can tray/oil feeder tray which sits above the firehole door. Then, once we had removed the boiler from the frames and got it on a wagon ready to be taken up to Bridgnorth, we took the opportunity to fit the rest of the cladding while there was time available and easy access, rather than risk delaying the loco's entry into traffic by leaving it till after the boiler overhaul is completed. We did have a head start, in that we had had the 2mm thick boiler sheets cut and rolled by Accurate Section Benders of Kingswinford, not an easy job as the taper boiler is an asymmetric cone with a level base and a mostly inclined top (after the front parallel section). Even so, it took a good six months to fit the eight boiler barrel sheets and five firebox sheets, plus eight boiler and firebox bands which hold the sheets in position. These two and a half-inch wide bands are in two parts, riveted together in the centre at a slight angle to allow for the taper of the boiler and joined on their opposite side by a length of all-thread between clamps, which enables the band to be tightened. The all-thread adjusting joints are generally hidden away beneath the boiler, but those on top of the firebox and the second one back from the front of the boiler are noticeably prominent in photographs, those bands being permanently fixed at their bottom ends. The bands are up to 6 feet in diameter and 19 feet long stretched out, which makes them extremely unwieldy when not in place.

Before attempting to fit the cladding sheets we constructed a framework of 'crinolines' around the boiler and firebox, made of 25mm x 5mm steel strip cut and rolled to form a cage standing 2 inches off the boiler, under which the lagging will be positioned and against which the sheets can be tightly compressed by the boiler bands. The intention is that when the time comes for final fitting of the cladding sheets, the crinolines will be a great help in getting everything back exactly as fitted, and with everything carefully marked up, we are reasonably confident that this will prove to be the case. In steam days, the boiler lagging was asbestos-based and formed a solid layer against which the bands could be tightened, but not anymore!

There are eight boiler sheets (four on each side) and they overlap at the top and bottom of the boiler. We have gone to some lengths to ensure that the centre line of the overlap is exactly in line with the centre line of the boiler, and the same applies to the handrail which is positioned on top of the boiler on Great Western tank engines to assist the fireman climbing up onto the sidetanks to take water. To make sure the handrail is central and in line, it sits on its own crinoline framework under the boiler sheets, into which three-quarter inch holes have been tapped for the handrail end-bosses. Photos of 4150 in BR days show the forward end of the handrail left open and looking rather scruffy, but Alan Baines has machined not only a brand new end-boss (as one was missing), but also a very smart end-plug which will make the handrail appear to be all one piece and get people wondering how on earth it could have been fitted! All of this means that hopefully you will be able to look down from the footbridge at Bewdley or Bridgnorth as your engine passes underneath and take pride in the perfect alignment.

Various apertures had to be cut in the cladding sheets, for whistles, mudhole doors, washout plugs, lubrication pipes, handrails, and not least the clacks and safety valve. Woe betide us if any of these cut-outs turn out not to be in the right place! The 'elephant's ears' (front firebox top corners, see page 3) and the throat plate cladding (under the boiler at the front of the firebox) are complete, and the only missing sections now are the short pieces that fit vertically between them, which you might refer to as the 'ear lobes'. With the safety valve bonnet on and the whistles in place, the boiler really looked the part, but we'll all have to wait until after the boiler overhaul to see it in that state of completeness again.

With the boiler overhaul now firmly in the frame, attention will be turning to the cab fittings, most of which have been sitting patiently in a number of secure locations for many years! We are fortunate in that most of them are either brand new, and machined from bronze or gunmetal castings, or were overhauled in the early days of the

Fund, mostly by Gerald Peacock and the late Richard Eagle. Fittings which are still in the process of acquisition or machining are:

- The combining valve, also known somewhat confusingly as the 'W' valve, or 'Jockey' valve. This performs the critical function of controlling the flow of steam to the sight feed lubricator as the regulator is opened, and sits at the centre of the backhead just above the firehole door. Recently delivered, this casting has been the subject of some complicated machining and is virtually complete but for a spindle to be machined from stainless steel round bar.
- Two 'J' cocks which sit on either side of the steam fountain and govern the supply of steam to the combining valve. These are being supplied by Tyseley Loco Works and are very close to completion.
- The lubricator warming cock, also being supplied by Tyseley.
- The pressure gauge shut-off cock (essentially an accurately-tapered plug in a housing), for which we have a raw casting yet to be machined.
- Buffer beam-mounted steam heat shut-off valves, for which we again have castings ready for machining. The one on the rear buffer beam incorporates a safety valve, for which the internal components have been machined.
- We are soon to take delivery of a brand new 10mm injector, machined by Tyseley as one of a batch for various GW locos. Large Prairies have a 10mm injector on the fireman's side and an 8mm injector on the driver's side, the 10mm one normally being the one which does most of the work. For those like me who are not trained engineers, these seemingly miraculous pieces of equipment are able to take water from the bunker at atmospheric pressure and feed it into the boiler against the boiler pressure of 200psi. Impressive!

All of these and the many other fittings will need to be connected up by a network of pipes and unions of various sizes, most of which are mounted on the firebox backhead and can't be finally installed until completion of the boiler repair. In the meantime however, we will be able to machine new unions where needed – you just can't buy them off the shelf.

Having the tanks and bunker in position on the frames has enabled us to install the massively heavy balance pipes which enable water to flow between the sidetanks and the bunker. These are so heavy that their 3/4" diameter securing bolts go through 53mm of flanges and stiffening plate, with six bolts at each end of each pipe. A number of the holes for these bolts had to be drilled vertically upwards using hand-held drills, the magnetic drill being unable to be used due to the restricted location – not easy!

Other tasks we can now tackle include fabrication of the internal splashers which bolt onto the inner faces of the sidetanks. Splashers are very evident on tender engines, but they are also needed on tank engines, to fill the gap between the top of the frames and the bottom of the tanks (an 8" gap on the fireman's side and 12" on the driver's side), and prevent water, oil and general dirt thrown up by the driving wheels from getting into the inside motion. These splashers are more difficult to make than you might imagine, as their width varies as they fill the space between the tapered tanks and the parallel frames, while all the time having to keep well clear of the boiler. Two of the four splashers have been made so far, with a third well under way.

Also now possible is completion of the alignment of the cab roof with the tanks and bunker, and attachment of a range of operating levers and fittings, like the handbrake pedestal, water valve rods, reverser quadrant, cab doors, condensing coil and so on, plus we have easy access now for fitting the window frame castings at the front and rear of the cab. Having the bunker firmly bolted down on the frames means we can now weld in the coal shovelling plates which separate the water and coal spaces, and work is under way on the cab floor area, including replacement of some heavily corroded supporting angles, victims of the corrosive mix of water, oil, ash and coal dust which always congregates in these parts. Having the boiler out of the frames means that we now have much easier access to it, and with guidance from the Bridgnorth boiler-smiths, we have made a start on drilling out the steel firebox stays. With any luck, we will have accomplished all of these tasks before the frames are summoned to Bridgnorth as the boiler repair nears completion. Extra help would certainly be very welcome, particularly from people with engineering skills

who have been through the SVR volunteer induction process – we work most weekends, and we are increasingly frequently working on Mondays, ideal for retirees – tea provided!

(For those of you with internet access, photos of much of the work mentioned can be found in the Restoration Update sections of our website, www.4150.org.uk)

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